

Medical and sanitary reports of the native army of Madras for the year 1874 : framed on the weekly an annual returns, on the reports of regimental medical officers, and on the inspection reports of deputy surgeons-general of the Indian Medical Department.

Contributors

Royal College of Physicians of London

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MEDICAL AND SANITARY REPORT

OF THE

NATIVE ARMY OF MADRAS

FOR THE YEAR

1874.

FRAMED ON THE WEEKLY AND ANNUAL RETURNS, ON THE REPORTS OF
REGIMENTAL MEDICAL OFFICERS, AND ON THE INSPECTION REPORTS
OF DEPUTY SURGEONS-GENERAL OF THE INDIAN MEDICAL DEPARTMENT.

(ALL STATISTICAL INFORMATION IS GIVEN IN THE TABLES
AT THE END.)



MADRAS:

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[The Regiments are placed as they stood in the Army List on the 31st December 1874.]

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OFFICE OF SURGEON-GENERAL, INDIAN MEDICAL DEPARTMENT,
FORT ST. GEORGE, 19th July 1875.

No. 395.

FROM

THE SURGEON-GENERAL,
INDIAN MEDICAL DEPARTMENT,
Fort St. George.

TO

THE SECRETARY TO GOVERNMENT,
MILITARY DEPARTMENT,
Fort St. George.

SIR,

I HAVE the honor to submit the Medical and Sanitary Report on the Madras Native Army for the year 1874.

2. *Seasonal phenomena.*—The rainfall for the year was unusually heavy, averaging for the whole Presidency 54.53 inches, the average for the three previous years having been 46.49. During September and October there were heavy floods in the North Arcot, Nellore, and Kistna Districts. The following tabular statement exhibits the chief meteorological occurrences in five of the more important military stations in this Presidency:—

STATEMENT I.
Meteorological Table.

Stations.	Barometer reduced to 32°.					Thermometer in Shade.								Relative Humidity.	Sun Maximum in Vacuo.	Minimum on Grass.	Rain.		Wind.	
	Highest in Month.	Lowest in Month.	Range in Month.	Mean Daily Range.	Mean for Month.	Highest in Month.	Lowest in Month.	Range in Month.	Mean Maximum.	Mean Minimum.	Mean Daily Range.	Mean Dry Bulb.	Mean Wet Bulb.				Amount collected.	No. of Rainy Days.	Mean Daily Velocity.	General Directions.
	IN.	IN.	IN.	IN.	IN.	°	°	°	°	°	°	°	°	C.	°	°	IN.	D.	M.	F.
Bangalore ...	27.046	26.787	.259	.112	26.923	88.1	58.9	29.2	83.3	61.8	19.8	71.9	64.6	69	133.2	61.6	56.65	126	165	...
Bellary ...	28.539	28.248	.292	.132	28.391	98.0	64.6	33.3	92.8	70.1	22.7	79.2	66.6	54	140.8	68.1	25.69	83	144	...
Madras ...	29.982	29.656	.325	.123	29.836	95.3	68.6	26.7	89.8	74.2	15.6	80.5	73.7	74	131.8	71.1	62.90	105	168	...
Trichinopoly ...	29.677	29.380	.297	.140	29.467	95.3	68.8	26.6	90.8	73.1	17.7	80.4	71.8	66	135.7	73.1	28.28	69	205	...
Secunderabad ...	28.208	27.883	.325	.143	28.042	95.5	62.2	32.5	89.1	66.9	21.2	77.1	68.2	65	149.3	60.7	29.78	85	144	...

3. *Necessaries of life.*—Owing to the abundant rainfall the crops were good, the food-supply ample, and prices generally low.

STATEMENT II.

Years.	Strength.		
	Present.	Absent.	Total.
1871...	28,702	1,247	29,949
1872...	28,772	1,321	30,093
1873...	28,162	1,493	29,655
1874...	28,301	1,663	29,964

4. The marginal table, compiled from the annual returns of medical officers, gives the strengths, present and absent, and the totals for the past four years. The strength absent has increased year by year, probably owing to the increasing facilities afforded by railways and water for moving sick men.

STATEMENT III.

Distribution
of force.

Military Command.	Average Strength present.
Presidency	3,394
Northern	3,352
Southern	3,277
Malabar and Canara... ..	1,960
Mysore... ..	3,476
Ceded Districts	1,602
Hyderabad Subsidiary Force	2,498
Nagpore Force	2,871
British Burmah	2,452
Saugor Division	2,873
Bengal... ..	546
Total	28,301

5. *Distribution of force.*—

The table in the margin shows the average present strength of the troops in each command, including one corps serving in Bengal.

STATEMENT IV.

Health of the
troops.

Years.	Admitted.	Daily Sick.	Total Deaths.	Invalided	
				For Discharge.	For Sick Leave.
1871	21,417	771	334	510	560
1872	29,104	895	370	520	670
1873	24,633	820	274	578	540
Average	25,051	829	326	536	590
1874	22,981	867	297	885	636

6. *Health of the troops.*—

From the marginal statement it will be observed that, while the number of admissions and the death-rate is below, the daily sick and number invalided both for discharge the service and sick leave is above the average of the three previous years.

STATEMENT V.

Years.	Percentage to Strength.				
	Admissions.	Daily Sick.	Total Deaths.	Invalided for	
				Discharge.	Sick Leave.
1871	74.62	2.68	1.11	1.70	1.86
1872	101.15	3.11	1.22	1.72	2.22
1873	87.46	2.91	.92	1.94	1.82
Average	87.74	2.90	1.08	1.78	1.96
1874	81.20	3.06	.99	2.95	2.12

The statement on the margin gives the per-centages to strength under the same heads.

Relative rates
of sickness,
&c., in the
Cavalry and
Infantry.

7. *Relative rates of sickness, &c., in the Cavalry and Infantry.*—The following tabular statement contrasts the health of the Cavalry and Infantry, and, as has been the rule in previous years, the former arm has maintained a higher standard of health. The proportion invalided in the Cavalry is also lower than the Infantry notwithstanding that the average age and length of service of the men in the former is greatly higher than that of the latter :—

STATEMENT VI.

Period.	Service.	Strength.		Percentage to Strength.				
		Present.	Total.	Admissions.	Daily Sick.	All Deaths.	Invalided for	
							Discharge.	Sick Leave.
1871 to 1873	Cavalry	3,475	3,769	73.98	2.53	.84	1.75	1.40
	Infantry	82,161	85,928	88.34	2.91	1.10	1.79	1.99
1874	Cavalry	1,049	1,187	67.58	2.38	.75	1.93	1.51
	Infantry	27,252	28,777	81.72	3.08	1.00	2.99	2.14

STATEMENT VII.

Years.	Caste.	Strength.	Percentage Death.
Average 1871 to 1873 ...	Hindus ...	16,436	1.16
	Mussulmans ...	11,068	1.02
	Christians ...	2,419	.88
1874 ...	Hindus ...	16,121	1.14
	Mussulmans ...	11,314	.76
	Christians ...	2,551	1.05

8. *Statistics of caste.*—The table on the margin, contrasting the mortality of the three principal classes composing the Native Army, shows the highest mortality amongst the Hindus, next among the Christians, and, least of all, among the Mussulmans.

Statistics of caste.

9. *Causes of sickness.*—In the marginal statement the diseases causing the greater proportion of admissions are shown, malarious fevers, skin diseases, continued fever, and rheumatic affections being the most frequent. Malarious fevers were especially prevalent throughout the greater part of the Presidency, perhaps influenced considerably by the unusual rainfall.

STATEMENT VIII.

Year.	Admissions.							
	Eruptive Fevers.	Continued Fevers.	Malarious Fevers.	Rheumatic Diseases.	Diseases of the Eye.	Diseases of the Lungs.	Diarrhoea.	Dysentery.
1874 ...	271	1,400	9,276	1,315	724	728	634	644
								2,071

STATEMENT IX.

Years.	Percentage of Admissions to Strength (Present).							
	Eruptive Fevers.	Continued Fevers.	Malarious Fevers.	Rheumatic Affections.	Diseases of the Eye.	Diseases of the Lungs.	Diarrhoea.	Dysentery.
1872 ...	.92	31.1	23.0	6.5	2.1	2.4	2.6	2.5
1873 ...	1.3	15.0	25.3	4.9	3.2	2.5	2.4	2.6
Average ...	1.11	23.0	24.1	5.7	2.6	2.4	2.5	2.5
1874 ...	.95	4.94	32.77	4.64	2.55	2.57	2.24	2.27
								7.31

10. *Rates of sickness contrasted with previous years.*—In the marginal table the percentage of admissions to strength for the more frequent diseases is contrasted with that of the two previous years.

Rates of sickness contrasted with previous years.

STATEMENT X.

Years.	Deaths in Hospital.						
	Eruptive Fevers.	Continued Fevers.	Malarious Fevers.	Rheumatic Diseases.	Diseases of the Lungs.	Diarrhoea.	Dysentery.
1874 ...	2	7	42	1	31	12	19

11. *Causes of mortality.*—The chief diseases causing mortality in hospital were, in order of frequency, malarious fevers, diseases of the lungs, dysentery, diarrhoea, continued and eruptive fevers.

Causes of mortality.

STATEMENT XI.

Years.	Percentage of Mortality to Strength (Present).						
	Eruptive Fevers.	Continued Fevers.	Malarious Fevers.	Rheumatic Affections.	Diseases of the Lungs.	Diarrhoea.	Dysentery.
1872 ...	.01	.02	.18	.006	.13	.04	.07
1873 ...	.003	.02	.08	.003	.08	.03	.04
Average ...	.006	.02	.13	.004	.10	.03	.05
1874 ...	.007	.02	.14	.003	.10	.04	.06

12. *Deaths contrasted with former years.*—The statement on the margin contrasts the percentage of mortality to strength for three years; the percentage under each head for 1874 very closely approximates to the average of the two previous years.

Deaths contrasted with former years.

13. The following table shows the diseases which have principally caused invaliding both for sick leave and discharge the service:—

STATEMENT XII.

Year.	Invaliding																	
	For Discharge the Service.									For Change of Climate.								
	Eruptive Fevers.	Continued Fevers.	Malarious Fevers.	Rheumatic Affec- tions.	Diseases of the Eye.	Diseases of the Lungs.	Diarrhoea.	Dysentery.	Skin Diseases.	Eruptive Fevers.	Continued Fevers.	Malarious Fevers.	Rheumatic Affec- tions.	Diseases of the Eye.	Diseases of the Lungs.	Diarrhoea.	Dysentery.	Skin Diseases.
1874	8	67	33	32	5	1	11	...	15	82	103	6	49	29	18	15

14. The ailments chiefly causing discharges from the service were rheumatic affections, diseases of the eye and lungs. Rheumatic affections, malarious fevers, and diseases of the lungs were the chief diseases leading to men being sent on sick leave.

15. In the following table the percentages of invalided to strength are contrasted for the past three years:—

STATEMENT XIII.

Years.	Invalided per Cent. to Strength.																	
	For Discharge the Service.									For Change of Climate.								
	Eruptive Fevers.	Continued Fevers.	Malarious Fevers.	Rheumatic Affec- tions.	Diseases of the Eye.	Diseases of the Lungs.	Diarrhoea.	Dysentery.	Skin Diseases.	Eruptive Fevers.	Continued Fevers.	Malarious Fevers.	Rheumatic Affec- tions.	Diseases of the Eye.	Diseases of the Lungs.	Diarrhoea.	Dysentery.	Skin Diseases.
1872	02	01	22	08	07	006	01	01	006	09	29	27	02	77	09	05	04
1873	03	03	17	05	09	003	003	01	003	04	20	22	03	20	04	10	03
Average	02	02	19	06	08	004	006	01	004	06	24	24	02	48	06	07	03
1874	02	22	11	10	01	003	03	...	05	27	34	02	16	09	06	05

Small-pox.

16. *Small-pox*.—There were fifty cases of small-pox with two deaths distributed over twenty-two regiments. The greatest number in any one corps was ten (the 37th Madras Native Infantry at Madras). The disease was very prevalent among the civil population, although to a less extent than the previous year.

Cholera.
Venereal diseases.

17. *Cholera*.—The Native Army enjoyed a complete immunity from this.

18. *Venereal diseases*.—This class of ailments is always rare in the Madras Native Army; the total number of cases was 418, and even that is 47 more than the previous year; the mortality from this cause was five.

STATEMENT XIV.

Military Commands.	Serial Number.		Daily Sick per Cent. of Strength.		Serial Number.		Admissions per Cent. of Strength.		Serial Number.		Deaths per Cent. of Strength.	
	1	2	3	4	5	6	7	8	9	10	11	12
Malabar and Canara ...	1	158	1	35.56	1	47						
Ceded Districts ...	2	162	2	44.49	2	57						
Bengal Presidency ...	3	164	3	49.45	6	96						
Southern Division ...	4	198	6	74.33	7	97						
Presidency Division ...	5	226	4	56.18	9	109						
Nagpore Force ...	6	247	7	84.63	4	84						
Mysore Division ...	7	250	5	63.46	3	80						
British Burmah Division ...	8	326	8	88.94	11	170						
Saugor Division ...	9	351	10	117.57	5	89						
Northern Division ...	10	480	9	94.36	8	107						
Hyderabad Subsidiary Force.	11	632	11	144.11	10	126						

Health of divisions.

19. *Health of divisions*.—

The marginal table shows the comparative health state of the troops serving in the different commands. Hyderabad, the Northern Districts, Saugor and British Burmah Divisions had the highest percentage of daily sick, Malabar and Canara the lowest.

STATEMENT XV.

Diseases.	Admitted.	Died.	Percentage to Strength.	
			Admitted.	Died in Hospital.
Eruptive fevers ...	8	...	40	...
Continued do. ...	21	...	107	...
Malarious do. ...	141	2	719	10
Rheumatic affections ...	52	...	265	...
Diseases of the eye ...	14	...	71	...
Disease of the lungs ...	25	1	127	05
Diarrhoea ...	25	1	127	05
Dysentery ...	24	...	122	...
Skin diseases ...	135	...	688	...

20. *Malabar and Canara.*—The strength of the troops serving in this command was 1,960. Their general health was very good. The chief causes of admissions were malarious fevers and skin diseases.

STATEMENT XVI.

Diseases.	Admitted.	Died.	Percentage to Strength.	
			Admitted.	Died in Hospital.
Eruptive fevers ...	13	...	81	...
Continued do. ...	122*	...	761	...
Malarious do. ...	101	...	630	...
Rheumatic affections ...	72	...	449	...
Diseases of the eye ...	48	...	299	...
Disease of the lungs ...	25	3	156	18
Diarrhoea ...	17	...	106	...
Dysentery ...	14	...	87	...
Skin diseases ...	43	...	268	...

* According to the Weekly Returns, the number of admissions from *continued fever* is 100, and not 122, 22 admissions from *ague* having been inadvertently brought under that heading in the medical officer's return.

21. *Ceded Districts.*—The strength of the troops in this division was 1,602. Their general health was satisfactory. Continued and malarious fevers formed the chief bulk of admissions.

STATEMENT XVII.

Diseases.	Admitted.	Died.	Percentage to Strength.	
			Admitted.	Died in Hospital.
Eruptive fevers ...	2	...	36	...
Continued do. ...	...	...	...	...
Malarious do. ...	122	...	2234	...
Rheumatic affections ...	22	...	402	...
Diseases of the eye ...	12	...	219	...
Disease of the lungs ...	18	1	329	18
Diarrhoea ...	11	1	201	18
Dysentery ...	9	...	164	...
Skin diseases ...	10	...	183	...

22. *Bengal.*—The average strength of the corps serving in this province was 546. Malarious fevers, rheumatic affections, and diseases of the lungs were the chief causes of admissions.

STATEMENT XVIII.

Diseases.	Admitted.	Died.	Percentage to Strength.	
			Admitted.	Died in Hospital.
Eruptive fevers ...	9	...	27	...
Continued do. ...	55	...	167	...
Malarious do. ...	1,120	4	3417	12
Rheumatic affections ...	114	...	353	...
Diseases of the eye ...	66	...	204	...
Disease of the lungs ...	98	2	303	06
Diarrhoea ...	76	1	235	03
Dysentery ...	108	3	334	09
Skin diseases ...	279	...	864	...

23. *Southern Division.*—The strength in this division was 3,277. The rate of admissions for malarious fevers was high, being more than double that of the previous year. The number of cases of continued fever was 55, while in 1873, owing to the presence of dengue, it had been 1,076. Skin diseases also gave rise to a large number of admissions.

Presidency
Division.

24. *Presidency Division.*—The strength of the troops in this command was

STATEMENT XIX.

Diseases.	Admitted.	Died.	Percentage to Strength.	
			Admitted.	Died in Hospital.
Eruptive fevers ...	29	1	·85	·02
Continued do. ...	168	1	4·96	·02
Malarious do. ...	436	5	12·84	·14
Rheumatic affections ...	130	...	3·83	...
Diseases of the eye ...	60	...	1·76	...
Disease of the lungs ...	82	2	2·41	·06
Diarrhoea ...	82	2	2·41	·06
Dysentery ...	41	2	1·20	·06
Skin diseases ...	308	...	9·07	...

3,394. The sickness of the Palaveram Depôt is omitted from this table and shown in a separate statement to admit of comparison with other divisions. There has been in the year under report, compared with 1873, a very considerable decline in the admissions under the respective heads of continued and malarious fevers, rheumatic affections, diarrhoea, dysentery, and skin diseases. The general health of the troops was excellent, one regiment alone (the 37th) being somewhat below par in health.

STATEMENT XX.

Nagpore
Division.

Diseases.	Admitted.	Died.	Percentage to Strength.	
			Admitted.	Died in Hospital.
Eruptive fevers ...	111	...	3·86	...
Continued do. ...	79	1	2·75	·03
Malarious do. ...	1,131	6	39·39	·20
Rheumatic affections ...	111	...	3·86	...
Diseases of the eye ...	147	...	5·12	...
Disease of the lungs ...	53	2	1·84	·06
Diarrhoea ...	46	...	1·60	...
Dysentery ...	61	3	2·12	·10
Skin diseases ...	141	...	4·91	...

25. *Nagpore Division.*—The troops in this command were 2,871 strong. Fevers, chiefly of malarious type, form the great bulk of the admissions, the total for all classes of fever amounting to 1,321.

STATEMENT XXI.

Mysore
Division.

Diseases.	Admitted.	Died.	Percentage to Strength.	
			Admitted.	Died in Hospital.
Eruptive fevers ...	43	1	1·23	·02
Continued do. ...	116	...	3·33	...
Malarious do. ...	509	5	14·64	·14
Rheumatic affections ...	132	...	3·79	...
Diseases of the eye ...	97	...	2·79	...
Disease of the lungs ...	80	8	2·30	·23
Diarrhoea ...	143	3	4·11	·08
Dysentery ...	75	2	2·15	·05
Skin diseases ...	349	...	10·00	...

26. *Mysore Division.*—The strength in this division was 3,476. The admissions for the different classes of fever respectively show a considerable decline as compared with 1873, but there is an increase under rheumatic affections, diseases of the lungs and skin, diarrhoea, and dysentery; the health state of two of the regiments in this division was unsatisfactory, but that of the rest good.

STATEMENT XXII.

British Bur-
mah.

Diseases.	Admitted.	Died.	Percentage to Strength.	
			Admitted.	Died in Hospital.
Eruptive fevers ...	3	...	·12	...
Continued do. ...	...	...	...	...
Malarious do. ...	812	1	33·11	·04
Rheumatic affections ...	193	...	7·87	...
Diseases of the eye ...	35	...	1·42	...
Disease of the lungs ...	68	1	2·77	·04
Diarrhoea ...	84	1	3·42	·04
Dysentery ...	149	4	6·07	·16
Skin diseases ...	148	...	6·03	...

27. *British Burmah.*—The strength in this command was 2,452. Malarious fever was the chief disease, rheumatism, dysentery, and skin diseases were next in order, dysentery causing more than half of the mortality.

STATEMENT XXIII.

Diseases.	Admitted.	Died.	Percentage to Strength.	
			Admitted.	Died in Hospi- tal.
Eruptive fevers ...	14	...	48	...
Continued do. ...	570	2	19.83	06
Malarious do. ...	1,704	7	59.31	24
Rheumatic affections ...	132	...	4.59	...
Diseases of the eye ...	115	...	4.00	...
Disease of the lungs ...	50	2	1.74	06
Diarrhoea ...	44	2	1.53	06
Dysentery ...	31	1	1.07	03
Skin diseases ...	115	...	4.00	...

28. *Saugor Division*.—The strength of the troops was 2,873. Fevers, both continued and malarious, especially the latter, were excessively prevalent in this command, the percentage of admissions to strength for all classes of fever amounting to 79.62 with a mortality of nine.

STATEMENT XXIV.

Diseases.	Admitted.	Died.	Percentage to Strength.	
			Admitted.	Died in Hospi- tal.
Eruptive fevers ...	32	...	95	...
Continued do. ...	45	3	1.34	08
Malarious do. ...	1,375	3	41.02	08
Rheumatic affections ...	207	...	6.17	...
Diseases of the eye ...	73	...	2.17	...
Disease of the lungs ...	128	5	83	14
Diarrhoea ...	74	1	2.20	02
Dysentery ...	62	3	1.84	08
Skin diseases ...	325	...	9.69	...

29. *Northern Division*.—The strength in this command was 3,352; the chief disease was malarious fever; next in order, skin diseases and rheumatic affections.

STATEMENT XXV.

Diseases.	Admitted.	Died.	Percentage of Strength.	
			Admitted.	Died in Hospi- tal.
Eruptive fevers ...	7	...	28	...
Continued do. ...	224	...	8.96	...
Malarious do. ...	1,825	9	73.05	36
Rheumatic affections ...	150	1	6.00	04
Diseases of the eye ...	57	...	2.28	...
Disease of the lungs ...	101	4	4.04	16
Diarrhoea ...	32	...	1.28	...
Dysentery ...	70	1	2.80	04
Skin diseases ...	218	...	8.72	...

30. *Hyderabad Subsidiary Force*.—The strength of the troops in this command was 2,498. Of all the divisions in which the Madras soldiers were serving during the year, Hyderabad was by far the most feverish, the total percentage of admissions to strength for all classes of fever amounting to no less than 82.29 with nine deaths. Skin diseases, rheumatic affections, and disease of the lungs being next in order of frequency.

STATEMENT XXVI.

Years.	Admissions.	Daily Sick.	Deaths.	Invalided for	
				Pension.	Change of Air.
1871 ...	173	15	8	10	101
1872 ...	111	9	11	2	74
1873 ...	197	16	21	...	133
Average ...	160	13	13	4	103
1874 ...	204	17	17	7	131

31. *Palaveram Depot*.—The majority of the cases treated in this depot are men from foreign service; the admissions, daily sick, deaths, and invalided are all above the average for the three preceding years, but do not differ much from that of 1873.

32. *Health of Regiments*.—The following table has been framed to show the regiments of the Madras Army in order of sickness, &c., for 1874 and the

average for the three preceding years. The average daily sick for the three previous years ranging from 0.87 to 6.09 per cent., while in 1874 it ranged from 1.14 to 10.63, the 3rd and 7th Regiments N.I. being both over ten per cent. The former regiment was stationed at Secunderabad and suffered much from fever, but the medical officer accounts partly for the high average daily sick list by the presence of a number of broken-down men who were not invalided until the close of the year. The 7th Regiment N.I. was stationed at Vizagapatam, and the medical officer imputes the high average sick list to the imperfect drainage of the lines. Two corps, the 4th Regiment L.C. and the Governor's Body Guard, had no deaths.

STATEMENT XXVII.

Regiments.		FROM 1871 TO 1873.						Regiments.		FOR 1874.					
		Rate per cent. of								Rate per cent. of					
		Average Strength Present.				Average Strength.				Average Strength Present.				Average Strength.	
		Serial Number.	Daily Sick.	Serial Number.	Admissions.	Serial Number.	All Deaths.			Serial Number.	Daily Sick.	Serial Number.	Admissions.	Serial Number.	All Deaths.
33rd Regiment N.I.	...	1	.87	1	21.08	28	1.12	30th Regiment N.I.	...	1	1.14	2	34.20	5	.28
25th do. do.	...	2	.93	2	30.10	3	.44	4th do. L.C.	...	2	1.19	12	47.22	1	...
26th do. do.	...	3	1.11	11	63.95	12	.76	26th do. N.I.	...	3	1.27	7	42.99	19	.84
9th do. do.	...	4	1.31	3	30.70	20	.92	38th do. do.	...	4	1.36	25	73.67	17	.71
16th do. do.	...	5	1.47	5	46.84	11	.74	9th do. do.	...	5	1.42	1	24.24	7	.43
22nd do. do.	...	6	1.68	10	63.23	18	.86	34th do. do.	...	6	1.49	3	39.07	3	.13
4th do. L.C.	...	7	1.94	4	43.44	9	.68	14th do. do.	...	7	1.58	4	39.97	36	1.40
21st do. N.I.	...	8	1.99	6	46.94	1	.23	33rd do. do.	...	8	1.64	16	49.45	23	.96
38th do. do.	...	9	2.04	17	75.80	41	1.47	4th do. do.	...	9	1.66	13	47.34	16	.71
17th do. do.	...	10	2.08	28	89.14	7	.61	21st do. do.	...	10	1.73	5	40.81	15	.69
3rd do. L.C.	...	11	2.10	15	73.17	36	1.27	25th do. do.	...	11	1.81	6	42.81	21	.86
5th do. N.I.	...	12	2.11	13	66.63	23	1.00	17th do. do.	...	12	1.82	10	46.06	4	.27
39th do. do.	...	13	2.11	25	84.42	8	.61	32nd do. do.	...	13	1.87	8	43.20	12	.57
34th do. do.	...	14	2.15	9	69.95	43	1.65	1st do. do.	...	14	1.89	19	55.36	44	2.07
32nd do. do.	...	15	2.20	32	100.74	15	.81	23rd do. L.I.	...	15	1.95	21	59.18	20	.85
4th do. do.	...	16	2.27	7	47.79	25	1.02	1st do. L.C.	...	16	1.96	11	46.07	22	.94
29th do. do.	...	17	2.31	8	52.94	32	1.22	36th do. N.I.	...	17	2.02	9	45.70	26	1.01
30th do. do.	...	18	2.32	18	79.49	34	1.25	22nd do. do.	...	18	2.03	27	75.14	24	.98
1st do. L.C.	...	19	2.33	26	86.62	2	.40	11th do. do.	...	19	2.10	22	60.36	14	.58
24th do. N.I.	...	20	2.33	16	73.48	26	1.03	15th do. do.	...	20	2.10	31	86.41	33	1.31
31st do. L.I.	...	21	2.47	23	83.45	35	1.25	31st do. L.I.	...	21	2.11	33	90.48	34	1.31
23rd do. do.	...	22	2.64	29	89.99	24	1.00	35th do. N.I.	...	22	2.11	18	53.09	8	.44
11th do. N.I.	...	23	2.67	22	82.48	31	1.20	Body Guard	...	23	2.36	15	48.81	2	...
28th do. do.	...	24	2.70	21	80.99	6	.60	16th Regiment N.I.	...	24	2.37	28	76.55	6	.42
35th do. do.	...	25	2.73	20	80.56	44	1.72	12th do. do.	...	25	2.66	20	56.95	11	.56
1st do. do.	...	26	2.79	24	83.60	16	.82	19th do. do.	...	26	2.77	45	163.48	42	1.73
15th do. Rt. Wing	...	27	2.83	36	105.28	4	.47	2nd do. L.C.	...	27	2.80	23	64.95	29	1.24
41st do. N.I.	...	28	2.88	12	66.34	19	.91	24th do. N.I.	...	28	2.81	17	50.17	25	1.01
36th do. do.	...	29	3.01	14	67.98	30	1.16	Sappers and Miners	...	29	2.81	32	87.43	10	.53
2nd do. L.C.	...	30	3.11	27	87.85	21	.98	37th Regiment N.I.	...	30	2.84	26	74.88	38	1.45
6th do. N.I.	...	31	3.12	37	105.44	5	.50	13th do. do.	...	31	2.87	14	48.30	31	1.29
14th do. do.	...	32	3.12	19	79.85	42	1.62	2nd do. do.	...	32	3.07	29	81.87	43	2.02
19th do. do.	...	33	3.22	33	101.02	10	.72	39th do. do.	...	33	3.14	24	70.86	45	2.20
2nd do. do.	...	34	3.58	38	110.41	14	.78	6th do. do.	...	34	3.31	36	122.28	18	.81
8th do. do.	...	35	3.61	34	104.46	29	1.16	10th do. do.	...	35	3.46	34	100.34	46	2.87
Sappers and Miners	...	36	3.80	41	114.85	33	1.23	3rd do. L.C.	...	36	3.57	35	117.06	35	1.36
13th Regiment N.I.	...	37	3.83	35	104.90	22	.99	8th do. N.I.	...	37	3.57	40	127.79	9	.45
37th do. do.	...	38	3.87	43	144.58	45	2.19	5th do. do.	...	38	3.80	37	122.69	30	1.25
Body Guard	...	39	4.04	30	96.19	17	.83	40th do. do.	...	39	4.34	38	125.00	40	1.47
10th Regiment N.I.	...	40	4.21	31	96.32	38	1.37	41st do. do.	...	40	4.61	39	125.63	13	.57
3rd do. L.I.	...	41	4.32	45	163.27	27	1.04	27th do. do.	...	41	4.62	41	132.34	27	1.10
10th do. N.I.	...	42	4.48	40	114.75	37	1.28	29th do. do.	...	42	5.10	43	144.69	32	1.29
27th do. do.	...	43	5.11	44	160.94	46	3.06	20th do. do.	...	43	6.02	46	221.90	28	1.15
12th do. do.	...	44	5.17	42	116.33	39	1.41	28th do. do.	...	44	6.54	42	141.40	39	1.47
7th do. do.	...	45	5.26	39	112.13	40	1.43	7th do. do.	...	45	10.50	30	85.72	37	1.42
20th do. do.	...	46	6.09	46	169.08	13	.77	3rd do. do.	...	46	10.63	44	157.59	41	1.51

Movements
of Corps.

33. *Movements of Corps.*—There were twelve movements of troops inclusive of detachments during the year, with but three deaths among the troops and two among the followers.

STATEMENT XXVIII.

Regiments.	From	To	How moved.	Remarks.
Head-Quarters and Right Wing 4th Regiment N.I.	Bellary ...	Palasamudram.	By marches.	En route to Rangoon.
Left Wing 4th Regiment N.I.	Do. ...	Anantapore.	Do. ...	Do. do.
6th Regiment N.I.	Secunderabad.	Cocanada ...	Do. ...	En route to Thyetmyo.
Detachment 8th Regiment N.I.	Mercara ...	Bangalore...	Do.	
Head-Quarters and Left Wing 10th Regiment N.I.	Tonghoo ...	Yonkthwa...	By river ...	En route to Madras.
14th Regiment N.I.	Rangoon ...	Vellore ...	Part by sea and part by rail.	
Head-Quarters and Right Wing 15th Regiment N.I.	Banda ...	Palaveram...	Part by rail and part by marches.	
Left Wing 15th Regiment N.I.	Nowgong Bundelcund	Do. ...	Do.	
20th Regiment N.I.	Seetabuldee.	Banda ...	Do.	
28th do. do.	Vellore ...	Mercara ...	Do. ...	} Halted at Bangalore for Camp of Exercise in January.
Detachment 28th Regiment N.I.	Do. ...	Do. ...	By marches.	
Head-Quarters and Left Wing 39th Regiment N.I.	Palaveram...	Rangoon ...	Part by water and part by marches.	

No cholera or epidemic of any kind occurred, and the health of the troops was very satisfactory. Most of the movements were made by marches.

Deaths during the march.

Regiments.	Rank.	Diseases.	No. of Deaths.	Date of Death.	Remarks.
14th Regiment N.I.	Private ...	General debility.	1	25th Jan. 1874.	Two deaths among the followers (old women) of the Left Wing 15th N.I. occurred.
Left Wing 15th Regiment N.I.	Naigue ...	Do. ...	1	23rd do. do.	
39th Regiment N.I.	Private...	Not diagnosed ...	1	9th do. do.	
Total ...	...	...	3	...	

STATEMENT XXIX.

Corps.	Strength.	Admissions.	Deaths	Ratio per 1,000 of Strength.	
				Admissions.	Deaths
4th Regiment L.C.	238	9	...	38.62	...
4th do. N.I.	449	11	1*	24.72	2.24
17th do. do.	572	11	...	19.23	...
19th do. do.	590	52	...	88.58	...
Head-Quarters 23rd Regiment L.I.	377	9	...	23.49	...
28th Regiment N.I.	514	10	...	20.24	...
30th do. do.	549	11	...	19.57	...
36th do. do.	404	7	...	17.19	...
38th do. do.	548	38	...	69.34	...
Sappers and Miners, four Companies.	474	14	...	29.53	...
Total ...	4,715	172	1*	36.46	0.21

* From intestinal obstruction.

34. *Camp of Exercise.*—Of the Camp of force assembled in the Camp of Exercise near Bangalore from the 5th to the 31st January, the contingent of the Madras Native Army was composed of eight corps of Infantry, one of Cavalry, and four Companies of Sappers and Miners. The health of all was unexceptionable; only one death occurred (from intestinal obstruction).

35. *Lines and huts.*—Improvements have been effected in the lines of some corps, and the authorities bestow much care and attention on their conservancy. The lines are generally reported to be kept as clean as it is possible to maintain them, but there are inherent defects in many which cannot be removed without expense beyond the limited means of the sepoy, and but little real improvement can be effected until Government are in a position to undertake the responsibility of hutting the native troops.

36. From the large number of dependents (exclusive of his own immediate family) always living on the Madras Sepoy, the huts are frequently much overcrowded. This is a general complaint of regimental medical officers, and from the number to be fed on his pay the Sepoy himself is frequently imperfectly nourished, and his physical powers to endure fatigue impaired. A Native regiment is about 700 strong, but the soldiers and number of followers in the lines are usually 2,700 in number.

37. In the Presidency the Vepery lines at Madras and those at Vellore are unfavorably reported on.

38. In the Northern Division the lines at Cuttack and Vizagapatam are reported as susceptible of improvement.

39. In Mysore and the Ceded Districts the lines of the 23rd Regiment at Bangalore and the 28th Regiment at Mercara continue to be in a most unsatisfactory state. The former regiment is huddled on a most insanitary site; the mortality among children has been very high, and the health of the men much below par.

40. The Deputy Surgeon-General of the Circle, in reporting on this corps, says that: "besides the great discomfort, the sepoys complain bitterly of the unhealthiness of the locality; and the death in the lines of 153 children since the arrival of the corps shows that this impression is a correct one. The lines are in ruins; the ground on which they are built is saturated with the filth of many years; the locality is acknowledged to be unhealthy; the wells are tainted; the neighbourhood has offensive drains, and the time has come, in my opinion, as well as in that of my predecessor, when the lines should be swept away, the locality abandoned, and new lines built elsewhere. The conditions demand that the remedy be at once sweeping and effectual."

41. The medical officer of the corps has carefully and repeatedly drawn attention to the unusual mortality among the children due to these wretched habitations. The lines for the Native Regiment at Mercara are described as in ruins from the heavy rains, and the mortality both of adults and children, the latter especially, exceeds that of the 23rd Regiment; every effort is being made to repair and rebuild these lines with a view to have the men properly huddled before the next monsoon sets in.

42. In Hyderabad no changes were made in the lines. The huts of the Native Regiments at Secunderabad are good, the lines of houses regular and scrupulously clean, but year after year, as the south-west monsoon sets in, sickness in the form of fever breaks out, and all classes and all ages are injuriously affected. In August I was ordered by Government to examine and report on the lines at that station, and as it is the largest military cantonment in India, copy of my report, and of the Proceedings of Government thereon, is appended. There cannot be any doubt that exposure to the bleak, boisterous, cold, damp winds of the south-west monsoon is the exciting cause of the fever, and I have recommended that walls be erected and trees planted to provide shelter.

43. In the Nagpore Force the lines of the regiment stationed at Seetabuldee are described as situated in a swamp, and are unhealthy.

Water-supply. 44. *Water-supply* is, as a rule, favorably reported on, and is carefully watched over.

Clothing. 45. *Clothing*.—The clothing was suitable and sufficient, except in the case of the regiment stationed at Mercara, where the medical officer did not consider it sufficient for that cold wet station.

Foot-soreness. 46. *Foot-soreness*.—Foot-soreness from defective boots and non-use of socks was a universal complaint, almost all medical officers noticing its frequent occurrence. It is only of late years that the Madras Army has discontinued the use of sandals and taken to boots. The latter undoubtedly give a smarter appearance to the wearer, and he walks more alert, but they are a prominent cause of foot-sores.

Vaccination. 47. *Vaccination*.—Vaccination has been very carefully and effectually attended to. This is evident from the very small number of cases of small-pox among the troops, although the disease was very prevalent among the civil population; as far as possible the families have been protected, but until vacci-

nation is made compulsory for all residents in regimental lines, the followers and families can never be thoroughly protected.

48. *Hospitals*.—Hospital accommodation has been generally sufficient and satisfactory. Hospitals.

49. *Hospital latrines*.—Dry earth and coal tar is in general use; several of the latrines have been improved, and their condition is satisfactory. Hospital latrines.

50. Administrative and Executive Medical Officers have given me every satisfaction in the way they have conducted their duties.

51. As in former reports, extracts from the Annual Medical and Sanitary Reports are appended.

I have the honor to be,

Sir,

Your most obedient servant,

E. G. BALFOUR, Surgeon-General,
Surgeon-General, I.M.D.

action is made compulsory for all residents in regimental lines, the following and

action can never be thoroughly protected.

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MEDICAL AND SANITARY REPORT

OF THE

NATIVE ARMY OF MADRAS,

FOR THE YEAR

1874.

The regiments are placed as they stood on the 31st December 1874.

CENTRE OR PRESIDENCY DISTRICT.

Average strength	...	...	...	...	...	...	...	...	3,476
Do. do. present	...	...	...	...	...	...	...	...	3,394
Total admissions	...	...	...	...	...	...	...	...	1,907
Daily sick	...	...	...	...	...	...	...	...	77
Deaths in hospital	...	...	...	...	...	...	...	...	25
Do. out of hospital	...	...	...	...	...	...	...	...	13
Pensioned	...	...	...	...	...	...	...	...	133
Sick leave	...	...	...	...	...	...	...	...	68

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Rate per Cent. of				
	Average Strength Present.		Average Strength.		
	Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	60.02	2.75	1.33	1.19	4.22
1872 ...	136.03	3.77	.97	1.84	2.71
1873 ...	76.56	2.57	.59	3.11	1.81
Average ...	90.87	3.03	.96	2.04	2.91
1874 ...	56.18	2.26	1.09	3.82	1.95

The following corps were serving in the division on the 31st December 1874:—

Body Guard.
13th Regiment Native Infantry.
14th do. do.
15th do. do.
17th do. do.
37th do. do.

Deputy Surgeon-General Burn and Acting Deputy Surgeon-General vanSomeren held charge of this division during the year.

The last-named reports as follows :—

Seasonal phenomena. *Seasonal phenomena.*—In the Centre Division a copious rainfall has been the most noteworthy feature of the year, and specially of the last third of the twelvemonth. In Vellore this was attended with an increase in the number of cases of febricula, and in Madras ague became more prevalent during November and December after the heavy downpour of October.

Necessaries of life. *Necessaries of life.*—These have been abundant, and their prices reduced as the year advanced, and the demand for their export to the famine-threatened districts of Bengal diminished.

Health of Native Troops. *Health of Native Troops.*—The 37th Regiment has been slowly improving in health, and still is not up to the mark of other corps. The insalubrious lines of Vepery have probably, and principally, contributed to retard the restoration of the men enfeebled by a tour of service in Burmah to their former standard of bodily strength. This protracted convalescence is all the more remarkable from the contrast presented by the health-efficiency of the 14th Regiment, which returned from Burmah in January last, and shows only 294 as the total treated against 532 in the 37th Regiment.

The head-quarters and right wing of the 15th Regiment Native Infantry reached Palaveram from Banda early in the year with a large number of the men very debilitated and suffering from enlarged spleen. A few months' residence at the latter station, however, served to improve their *physique* considerably, but within a year of their arrival the corps embarked on foreign service, a change rendered necessary, doubtless, by military considerations, but to be regretted on sanitary grounds. A longer stay in Palaveram would have increased and confirmed the health of the men, and have rendered them better prepared to bear the climate of Burmah, whither they have gone.

The hygienic conditions under which our troops have been living cannot be regarded as very unfavorable, when in an average strength of 3,710 the ratio of patients treated has been 68 per cent., and the mortality only 2.05, and these favorable results would have been much more favorable still if the Native Infantry Depôt at Palaveram, consisting chiefly of sick details from regiments on foreign service, could be excluded. In an average strength of 172 at the depôt the proportion treated was 126.74, and the ratio of deaths 9.85.

Diseases. *Diseases.*—The principal diseases have been fevers, skin diseases, rheumatism, bowel-complaints (including dysentery, diarrhoea, and mæna), wounds and accidents, abscesses and ulcers, diseases of the respiratory organs, and general debility. Their frequency and fatality are shown in the following table.

Principal Diseases.								Total treated.	Deaths.
Fevers	...	...	...	...	...	...	...	645	8
Skin diseases	...	...	...	...	...	...	...	195	...
Rheumatism	...	...	...	...	...	...	...	176	...
Bowel-complaints	{ diarrhoea	87	...	...	...	...	...	138	{ 3
	{ dysentery	50	...	...	...	...	...		{ 2
	{ mæna	1	...	...	...	...	...		{ 1 } 6
Wounds and accidents	...	...	...	...	...	...	...	157	...
Abscesses and ulcers	...	...	...	...	...	...	...	107	...
Diseases of the respiratory organs, including phimosi	...	...	...	...	...	...	...	110	7
General debility	...	...	...	...	...	...	...	83	3

Besides the deaths mentioned above, one occurred under each of the following diseases :—Small-pox, diabetes, hydrophobia, Bright's disease, and erysipelas engrafted on the trifling malady of gum-boil forming a total of 29, the whole number of fatal casualties in hospital.

Cholera. *Cholera.*—Of cholera there has been not a single case among the troops.

Small-pox. *Small-pox.*—Small-pox occasioned one admission into hospital in the 14th, 1 in the 15th, and 10 in the 37th Regiments. Of the 12 cases, one succumbed to the disease in the last-mentioned corps. Still variola has not prevailed as an epidemic in any of the stations of this division.

Malarial fevers. *Malarial fevers.*—The large number of 645 cases of fevers, of which 8 were fatal, sufficiently indicates how extensively malaria has operated as a morbid agency. In the 14th at Vellore, 15th at Palaveram, and 37th at Madras, febrile affections of this nature have been specially frequent.

Movements of troops. *Movements of troops.*—The removals of the 14th Regiment Native Infantry from Burmah to Vellore, of the 15th from Nowgong and Banda to Palaveram, and of the 28th from Vellore to Mercara require to be recorded under this head. *Apropos* to this subject of marching the Medical Officer of the 15th Regiment has registered thirty-five cases of foot-soreness; Surgeon-Major Joseph describes them as frequent; and Surgeon Power states that two or three men are daily excused wearing boots on this account—facts pointing to the unsuitableness of the foot-gear worn by sepoys.

Huts and lines.—The lines at Vepery and Vellore continue as objectionable as ever, and hut accommodation for the regiment in Palaveram altogether inadequate to its requirements. The consequence of the last-mentioned defect is that many of the privates and their families find quarters, as they are able, in the pettah, and to this, to a certain extent, the medical officer attributes the extensive prevalence of itch among the men of the 15th Regiment Native Infantry.

Alleged causes of sickness and mortality.—The ratio of mortality has been a fraction above fifteen per mille among the troops of the Centre Division. The number of cases treated in hospital—of Native Non-commissioned Officers and Privates—was 2,202, and among them 29 deaths occurred, giving a percentage of 1.316. Clearly, therefore, both as respects the frequency and fatality of diseases, the experience of the year 1874 has been a happy one. Although these results may appear to point to the circumstances under which our Black Troops have lived as propitious to their health, and the occasion seems unfavorable for inveighing against any of those circumstances, I cannot help soliciting attention to the highly objectionable lines both in Vepery and Vellore, in which the 37th and 14th Regiments are respectively located. Their huts are faulty in arrangement, in construction, and in ventilation. Were these blots removed, still better hygienic results might be attained.

I feel it expedient to request attention also to the inadequate accommodation provided for the Native Regiment at Palaveram. Only those huts which are not occupied by the details at the depôt are available for the sepoys of the corps quartered at that station, and the number of these huts is comparatively small. A large number of privates and their families are consequently driven into the native pettah.

One more point demands notice. The Medical Officer of the 15th Regiment Native Infantry reports that many men of the head-quarters and right wing of that corps, on their arrival at Palaveram from Banda, where they had suffered much from intermittent fever, were debilitated and the subjects of enlarged spleen, but that in a few months they had improved wonderfully, and he had latterly been able to detect any splenic enlargement in only six of them. This regiment a short time subsequently embarked for Burmah, a more or less malarious country, and it becomes a question for serious consideration if, under such circumstances hereafter, it would not be better to detain a corps at least two years in a salubrious station like Palaveram after a long sojourn in an unhealthy one like Banda before it is removed to a trying climate like that of Burmah.

Body Guard.

STATION—MADRAS.

Average strength	...	...	...	...	...	...	...	130
Do. do. present	...	...	...	...	...	...	...	127
Admissions	...	...	...	...	...	...	...	62
Daily sick	...	...	...	...	...	...	...	3
Deaths in hospital	...	...	...	...	...	...	...	...
Do. out of hospital	...	...	...	...	...	...	...	...
Pensioned	...	...	...	...	...	...	...	...
Sick leave	...	...	...	...	...	...	...	5

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Station.	RATE PER CENT. OF				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Madras ...	66.92	3.14	...	...	4.72
1872 ...	Do. ...	133.85	5.51	.78	...	...
1873 ...	Do. ...	87.82	3.47	1.73	...	9.56
	Average ...	96.19	4.04	.83	...	4.76
1874 ...	Madras ...	48.81	2.36	...	...	3.84

The following officers held medical charge during the year :—

Surgeon-Major R. W. Cockerill.

Surgeon W. Macrae, M.B.

Surgeon A. L. Hackett.

The last-named reports as follows :—

Health.	<i>Health.</i> —The health of the men for the past year has been good, and compares favorably with the returns for 1873. The total number of admissions have been 65, including 3 Native Officers, while the admissions for the previous year were 103.
Diseases.	<i>Diseases.</i> —The chief diseases have been fevers, rheumatic affections, skin diseases, abscess, ulcers, &c., diseases of the eye, wounds, and injuries, &c. The diseases on the whole were not of a severe type.
Deaths.	<i>Deaths.</i> —No deaths occurred in hospital; one man died of heart disease out of hospital.
Epidemic diseases.	<i>Epidemic Diseases.</i> —No epidemic occurred during the year under notice.
Pensioned and on sick leave.	<i>Pensioned and on Sick Leave.</i> —One man was pensioned and five obtained sick leave during the year.

Acting Deputy Surgeon-General vanSomerén inspected the Body Guard on the 22nd February 1875, and reports as follows :—

Hospital &c.	<i>Hospital, &c.</i> —Cleanliness is manifest in the hospital and all its surroundings. Its natural drainage is good, but artificial drainage non-existent. The lighting is effected by a coarse castor-oil lamp in each ward at night. The conservancy is good.
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13th Regiment Native Infantry.

STATION—MADRAS (ROYAPOORAM).

Arrived from Palaveram March 5th, 1873.

Average strength	...	...	...	...	...	...	...	773
Do. do. present	...	...	...	...	...	...	...	766
Admissions	...	...	...	...	...	...	...	370
Daily sick	...	...	...	...	...	...	...	22
Deaths in hospital	...	...	...	...	...	...	...	8
Do. out of hospital	...	...	...	...	...	...	...	2
Pensioned	...	...	...	...	...	...	...	31
Sick leave	...	...	...	...	...	...	...	13

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	RATE PER CENT. OF					
		Average Strength Present.		Average Strength.			
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.	
1871 ...	Hong-kong ...	125.23	4.20	1.05	...	1.28	
1872 ...	Palaveram ...	89.80	3.63	1.21	2.88	2.88	
1873 ...	Madras ...	99.69	3.68	.73	.36	.98	
	Average ...	104.90	3.83	.99	1.08	1.71	
1874 ...	Madras ...	48.30	2.87	1.29	4.01	1.68	

Surgeon R. V. Power, M.D., has been in medical charge during the year, and reports as follows :—

Lines and sepoy huts.	<i>Lines and sepoy huts.</i> —The sepoy huts have only been erected a few years, and are, I believe, constructed according to regulations. The drainage in the lines is good, the drains
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are flushed every morning, and empty themselves into a main drain, which runs from west to east on the south side of the lines. From the latter a very unpleasant smell often arises, which cannot be prevented. The Commanding Officer had an interview with the District Engineer on the subject, who held out but little hopes that the defect could be remedied, as, he said, the fall for the sewage, owing to the flatness of the ground, was very small.

Guard-room.—The place for arms, in which the regimental guard-room is also placed, faces north and south; it is healthily situated, and well suited for its present purpose. Guard-room.

Water-supply.—The water-supply was obtained from tanks and wells; it seemed to agree with the men. Water-supply.

Lock-up Rooms and Cells.—The sanitary condition of lock-up rooms and cells was in every respect satisfactory. Lock-up Rooms and Cells.

Vaccination.—One very mild case of modified small-pox occurred during the year. The whole regiment, with the exception of a few men who were left behind at headquarters, was vaccinated in China with lymph obtained from England in the year 1872. Vaccination.

Phthisis pulmonalis.—Five deaths occurred from phthisis pulmonalis; all were delicate-looking men, and seemed naturally predisposed to it. Phthisis pulmonalis.

Hospital ventilation.—The hospital was well ventilated, and the wards were never overcrowded. Hospital ventilation.

Hospital drainage.—The condition of the drainage was good. The latrine was kept clean and free from unpleasant smells. The dry-earth system has been partially introduced. Application has been made for a shed to protect the dry earth from the rain. Hospital drainage.

Epidemic disease.—No epidemic disease broke out or spread in the hospital. Epidemic disease.

Acting Deputy Surgeon-General vanSomeren inspected this corps on the 5th March 1875, and reports as follows:—

Barracks.—The lines of the 13th Regiment Native Infantry are situated on an open plain north of Black Town, south of Tondiarpetta, east of Mr. Pritchard's arrack distillery, and west of the Monegar Choultry. Public roads skirt the situation on its northern, western, and southern margins, and a sandy expanse, occupied in great measure by a dhobies' village, separates it from the Poor House on its eastern aspect. *Quoad* the sea level, the locality must be but little above it. There is, however, some slight shelving of its surface, principally, if not altogether, southwards, and in this direction the drains carry their contents. There is a very good and efficient system of masonry drains through and through the lines, which empty themselves into a main, passing eastwards along the southern part of the plain; but this main effects a junction, north of the cells, with another channel, conveying the refuse fluid from the neighbouring arrack distillery; and owing to the recoil wave from this point the lines are more or less flooded occasionally with the noisome effluvia of that refuse. Barracks.

Conservancy of the neighbourhood of barracks and station generally, &c.—The conservancy of the neighbourhood of the lines is maintained by the municipality; but there are two arrangements militating against this conservancy being described as anything but objectionable—one is the arrack distillery to the north, whence highly offensive refuse fluid flows, to the vitiation of the air around, and to the fouling of the drains in communication with it; and the other is the establishment of a manure dépôt in the space between the site of the old north wall of Black Town and the road leading to Cochrane's Canal basin. Conservancy of the neighbourhood, &c.

14th Regiment Native Infantry.

STATION—VELLORE.

Arrived from Rangoon on the 26th and 28th January 1874.

Average strength	...	...	...	...	...	...	...	...	710
Do. do. present...	...	...	...	...	...	...	...	...	693
Admissions	...	...	...	...	...	...	...	...	277
Daily sick...	...	...	...	...	...	...	...	...	11
Deaths in hospital	...	...	...	...	...	...	...	...	4
Do. out of hospital	...	...	...	...	...	...	...	...	6
Pensioned...	...	...	...	...	...	...	...	...	18
Sick leave	...	...	...	...	...	...	...	...	17

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871...	Rangoon ...	72.00	3.17	1.64	...	2.59
1872...	Do. ...	104.48	2.94	1.08	...	4.95
1873...	Do. ...	63.08	3.27	2.15	...	4.59
	Average ...	79.85	3.12	1.62	...	4.04
1874...	Vellore ...	39.97	1.58	1.40	2.53	2.39

Surgeon-Major H. Ross, M.D., has been in medical charge during the year, and reports as follows:—

- Climate.** *Climate.*—The first two months were cool. The station was healthy from the commencement of March until the middle of June; it then became hot. Some heavy showers fell in the month of May. From June to the end of the year the heat was moderate. During the last quarter there was a heavy rainfall; in the cool months there was an increase in the number of admissions for febriculae.
- Marches by sea.** *Marches by sea.*—The regiment left Burmah on the 18th January 1874 by the S. S. *Abyssinia* and *T. Czarwitsch*; there was no overcrowding; the men enjoyed good health during the voyage. They were disembarked at Madras on the 26th January 1874, and sent on by rail to Vellore the same day.
- Lines, sepoy huts, guard-rooms.** *Lines, sepoy huts, guard-rooms.*—There are no barrack-rooms; the men live in huts which are very indifferent; the drainage of the lines is also bad, but is kept in as good order as the conservancy funds admit of. Owing to the lines being flooded during the rains, it is contemplated to have them removed from their present site, but to what locality has not yet been determined: the matter occupied the attention of His Excellency the Commander-in-Chief on his recent visit to Vellore.
- Sanitary arrangements.** *Sanitary arrangements.*—The sanitary arrangements in the lines have been carefully attended to, no cause of disease requiring removal.
- Foot-soreness.** *Foot-soreness.*—A few trifling cases of foot-sores have been admitted, requiring no special remarks.
- Vaccination.** *Vaccination.*—Vaccination has been regularly kept up during the year among the families of the men: 185 cases were vaccinated, 163 were successful, and 22 were unsuccessful. One case of small-pox occurred during the year; 58 cases were revaccinated owing to the doubtful marks of previous vaccination.
- Phthisis pulmonalis. General conclusions.** *Phthisis pulmonalis.*—No cases of phthisis have occurred.
- General conclusions.*—The sanitary state of the regiment is good. The average daily sick for the year is 11.339, the maximum being 18 and the minimum 6. The deaths occurred among the patients in hospital, being one from hydrophobia, one from gum-boil and erysipelas, one from diarrhoea, and one from ague complicated with disease of the heart.

Deputy Surgeon-General W. J. vanSomerén inspected this corps on the 1st April 1875, and reports as follows:—

- Barracks.** *Barracks.*—The lines are situated south of the fort, with the Sooriya Gunta between, and divided by a road passing westwards into two unequal parts, one for five and the other for three companies. They consist of 706 tiled huts, with 3.18 as the average number of occupants in each, a maximum of 11 in any one hut and a minimum of 1. Except for three companies, who have later built huts, the back wall of which is common to two huts, the others have tenements separated at their backs by narrow passages, which must always be receptacles for litter and refuse. The natural drainage is good, but what there is of artificial drainage very bad. Receiving, as these shallow and imperfect channels do, the drainage of each hut, this drainage either soaks into the soil, and seethes in what ought to be, but are not, runnels, or it flows into cesses, which, though periodically emptied, allow of still freer soakage into the soil around. The lines themselves are fairly clean, so far as the streets alone are concerned, but the exceedingly defective drainage is fatal to the drains being described as clean.
- Principal diseases.** *Principal diseases.*—Out of a total of 277 sick, there were 138 cases of febricula, and the next disease in regard to frequency was rheumatism, of which there were 18 cases. Then there were 10 admissions with diarrhoea, boil, and wound. Among these there were 10 deaths, 3 of which occurred from general debility. The average daily sick has been 11.339.

15th Regiment Native Infantry.

STATION—PALAVERAM.

Arrived from Banda and Nowgong on 17th February and 1st March 1874.

Average strength	...	...	...	...	...	...	...	...	457
Do. do. present	...	...	...	...	...	...	...	...	427
Admissions	...	...	...	...	...	...	...	...	369
Daily sick	...	...	...	...	...	...	...	...	9
Deaths in hospital	...	...	...	...	...	...	...	...	5
Do. out of hospital	...	...	...	...	...	...	...	...	1
Pensioned	...	...	...	...	...	...	...	...	55
Sick leave	...	...	...	...	...	...	...	...	...

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Rt. Wing Nowgong.	121.67	3.14	.56	2.84	1.98
1872 ...	Do. ...	93.53	2.72	.85	.28	2.00
1873 ...	Do. ...	100.66	2.65	...	...	1.12
	Average ...	105.28	2.83	.47	1.04	1.70
1874 ...	Palaveram ...	86.41	2.10	1.31	12.03	...

The following medical officers were in charge during the year :—

Surgeon J. P. McDermott.

Do. J. C. Lawrenson.

The first-named reports as follows :—

Climate and influence on health.—About the month of July a large number, chiefly children, suffered from simple continued fever, almost all the cases being of a mild type. Hooping-cough was also prevalent about the same time in the cantonment. Climate and influence on health.

The unusual rainfall, and consequent rapid evaporation, producing colds and chills, not usual at that season of the year, were, I fancy, the great predisposing causes of the above fever.

Barracks.—There are no lines here for the men of this regiment, the majority of them, with their families, living indiscriminately over the town, and the remainder in the unoccupied huts of the Native Infantry Depot. At all times and places, with very few exceptions indeed, the cubic space and ventilation in native towns are far below the minimum of regulation; but when, to the population of a small town like Palaveram, 2,000 souls are suddenly added without corresponding accommodation, the cubic space and ventilation for each must certainly, then, be far below that considered necessary to maintain health. Barracks.

It is difficult, if not impossible, to keep the men and their families in a sanitary condition equal to that maintained in the ordinary lines of a regiment.

Foot-soreness.—There were thirty-four cases of shoe-bite treated in hospital during the year, most of them occurring on the line of march. Great care has been taken to give the men a proper fit. Each man was separately measured, and the toe and sole of each boot made sufficiently wide to allow the foot its natural space, without at the same time being too loose. Foot-soreness.

Epidemic diseases.—One case of enteric fever was admitted into hospital during the month of December under the care of Dr. Hunt, who kindly acted for me during my absence on privilege leave. The man is now convalescent and doing well. The disease first appeared in the detachment of 21st Fusiliers out here for ball practice. A lady of this regiment also suffered from the same disease; she also is doing well. Epidemic diseases.

General conclusions.—There were 369 admissions during the year, the average daily sick was 9.52 and the total deaths 6, including those who died out of hospital. Intermit- tent fever gave the greatest number of admissions, being 130. The other admissions were as follows :—Itch 40, blisters of the feet 34, chronic rheumatism 29, conjunctivitis 20, boil 19, dysentery 12, diarrhoea 9, and the remainder consisted of various diseases. The causes General conclusions.

of deaths were as follows :—General debility 2, remittent fever 2, diabetes 1, and peritonitis 1. The head-quarters and right wing of this regiment, while stationed at Banda, suffered a great deal from intermittent fever, and on their arrival here, many of them were suffering from hypertrophy of the spleen and general debility; but after a few months' residence at their new station they improved wonderfully, and on my examining them some time ago I only found about six then suffering from enlarged spleen.

17th Regiment Native Infantry.

STATION—MADRAS (PERAMBORE).

Arrived from Kurrachee 14th January 1869.

Average strength ...	...	...	...	...	...	...	...	717
Do. do. present ...	...	...	...	...	...	...	...	712
Admissions ...	...	...	...	...	...	...	...	328
Daily sick ...	...	...	...	...	...	...	...	13
Deaths in hospital ...	...	...	...	...	...	...	...	...
Do. out of hospital ...	...	...	...	...	...	...	...	2
Pensioned ...	...	...	...	...	...	...	...	18
Sick leave ...	...	...	...	...	...	...	...	14

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Madras ...	26.49	1.01	1.15	...	...
1872 ...	Do. ...	171.44	3.37	.42	...	.14
1873 ...	Do. ...	69.59	1.87	.28	.99	.56
	Average ...	89.14	2.08	.61	.33	.23
1874 ...	Madras ...	46.06	1.82	.27	2.51	1.95

The following medical officers were in charge during the year :—

Surgeon L. C. Nanney.

Surgeon-Major D. Kearney.

Surgeon A. H. Leapingwell.

The last-named reports as follows :—

Marches.	<i>Marches.</i> —The regiment was present at the Camp of Exercise at Bangalore during the month of January, travelling there and back by train.
Barracks.	<i>Barracks.</i> —The barracks are well elevated; their position appears to be healthy, though the drainage in the neighbourhood is defective.
Sepoys' huts.	<i>Sepoys' huts.</i> —The huts are well constructed as regards height, windows, doors, and ventilation.
Guard-rooms.	<i>Guard-rooms.</i> —The guard-rooms are well ventilated. No overcrowding.
Hospital water-supply.	<i>Hospital water-supply.</i> —The water is supplied from the Red Hills. The quality is good, and amount sufficient.
Foot-soreness.	<i>Foot-soreness.</i> —The men do not suffer from foot-soreness to any extent.
Vaccination.	<i>Vaccination.</i> —It has not been necessary to vaccinate any of the men during the past year. All who have not had small-pox bear distinct marks of vaccination. There have been no cases of small-pox.

Phthisis pulmonalis.—There has only been one case of phthisis pulmonalis.

General conclusions.—The health of the men during the past year has been remarkably good. The sanitary arrangements in the barracks have received careful attention, and leave nothing to be desired; but in the immediate neighbourhood the drainage is defective, and there is a good deal of stagnant water, besides other nuisances alluded to in former reports. These, however, do not appear to have exercised any effects on the health of the men. There have only been three admissions into hospital for venereal disease. There have been two deaths, both occurring out of hospital, and the causes unknown. One of a man on furlough, and the other of a man on sick leave suffering from keratitis.

37th Regiment Native Infantry.

STATION—MADRAS (VEPERY).

Arrived from Moulmein 16th March 1872.

Average strength	...	...	...	...	...	...	...	689
Do. do present	...	...	...	...	...	...	...	669
Admissions	...	...	...	...	...	...	...	501
Daily sick	...	...	...	...	...	...	...	19
Deaths in hospital	...	...	...	...	...	...	...	8
Do. out of hospital	...	...	...	...	...	...	...	2
Pensioned	...	...	...	...	...	...	...	11
Sick leave	...	...	...	...	...	...	...	19

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Moulmein ...	173.21	5.03	3.89	...	1.46
1872 ...	Madras ...	181.89	3.98	1.26	...	4.74
1873 ...	Do. ...	78.66	2.61	1.43	3.74	1.007
	Average ...	144.58	3.87	2.19	1.24	2.40
1874 ...	Madras ...	74.88	2.84	1.45	1.59	2.75

Surgeon-Major J. M. Joseph, M.D., has been in medical charge during the year, and reports as follows :—

Lines.—The lines of the 37th Regiment are situated on low ground, badly built, badly ventilated, and badly drained; the position is unfavorable on account of the lowness of the grounds, and during the rainy season parts of them are under water.

Ventilation of the guard-rooms.—The ventilation of the guard-rooms is good, but that of the lines is bad; and, as the lines are situated on low grounds and surrounded by houses and streets densely populated, the air cannot be pure: the position of the lines render the drainage bad and insufficient: frequent correspondence has taken place on this subject, but without any result.

Duty and exercises.—The duties have not been over-severe; but, as the health of the corps has suffered much on foreign service, some of the men occasionally come into hospital from a state of exhaustion and fatigue from duty.

Number of nights in bed 3.13.

Drill.—The drills are usually morning and evening, and generally last an hour. The drills have had no unfavorable influence on the health of the men.

Vaccination.—Vaccination has been regularly kept up in the corps; ten cases of small-pox occurred; most of these were of the modified type. One case of confluent small-pox proved fatal. All men of the corps who bore unsatisfactory marks of vaccination were revaccinated last year. None of the men were revaccinated this year.

Hospital ventilation.—The defective ventilation of the hospital has been frequently represented to the authorities, but it still continues in the same state.

The hospital wards are occasionally overcrowded on account of the insufficiency of the accommodation.

General conclusion.—The defective condition of the lines occupied by 37th Grenadiers at Vepery has been sufficiently detailed in the replies of the various queries of this report. The health of the corps having suffered severely on foreign service, a great number of the men were in a weakly and anæmic state when they landed at this station from Burmah, and admissions into hospital from ague and general debility were of frequent occurrence, but during the past year the health of the corps has greatly improved, the climate of Madras has acted favorably on the men, and I have no doubt that a further stay of the corps in Madras will re-establish its health.

Acting Deputy Surgeon-General vanSomeren inspected this corps on the 26th February 1875, and reports as follows :—

Sanitary condition of barracks.

Sanitary condition of barracks.—The Vepery High Road intersects the lines of the 37th Regiment N.I., which are thus divided into a northern and southern portion. There are 678 thatched huts, and neither lines nor huts are in accordance with the standard of present regulations. The streets of the former are too narrow, the dimensions of the latter too small. Cleanliness is well maintained by the regimental authorities outside the huts ; within the precincts of each tenement it is not more set at naught than in the dwellings of natives generally. Ventilation of the huts scarcely exists, and yet the average number of their occupants is four, the maximum in any one seven, and the minimum one.

The situation of the lines is low and flat, so that water stands in them long in very wet weather, and the kutchra drains which pass through them give only a partial and limited aid in carrying it away.

Principal diseases.

Principal diseases.—In a strength of 640·58 there have been 435 admissions into hospital during the year, with a daily average of 17·07. Among these no less than 123 cases are ranged under fevers, 36 under rheumatism, 10 under dysentery, and 11 under diarrhoea. Only six deaths occurred in hospital, and each under a different heading from the other five ; two took place out of hospital in men absent on sick leave, of whom there have been twenty seven during the twelvemonth.

NORTHERN DISTRICT.

Average strength	...	...	...	...	...	...	...	3,535
Do. do. present	...	...	...	...	...	...	...	3,352
Total admissions	...	...	...	...	...	...	...	3,163
Daily sick	...	...	...	...	...	...	...	161
Deaths in hospital	...	...	...	...	...	...	...	29
Do. out of hospital	...	...	...	...	...	...	...	9
Pensioned	...	...	...	...	...	...	...	123
Sick leave	...	...	...	...	...	...	...	72

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.			Rate per Cent. of				
			Average Strength Present.		Average Strength.		
			Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	...	...	59·12	2·82	1·02	1·85	1·55
1872	...	...	125·18	4·08	1·38	1·98	1·56
1873	...	...	94·88	4·17	·70	1·91	2·37
Average ...			93·06	3·69	1·03	1·91	1·82
1874	...	...	94·36	4·80	1·07	3·47	2·03

The following corps were serving in the division on the 31st December 1874:—

2nd Regiment Native Infantry,	Head-Quarters and Right Wing.
Do. do.	Left Wing.
6th Regiment Native Infantry.	
7th do.	do.
12th do.	do.
41st do.	do.

Deputy Surgeon-General Burn and Acting Deputy Surgeon-General vanSomeren held charge of this division during the year.

The last-named reports as follows :—

Seasonal phenomena.

Seasonal phenomena.—In all the military stations but one the rainfall was either copious or excessive ; in the solitary exception of Berhampore it is described as having been

an average fall. In Cuttack seasonal influences appear to have combined with unhygienic conditions in the lines to determine the prevalence of ague to a great extent in November and December. The occurrence of two cyclones in the last quarter of 1874 is reported at Vizagapatam.

Necessaries of life.—Good crops furnished a good supply of food, and, as with the *Necessaries* advancing year, the demand for exports of grain to Bengal diminished, the ruling prices of *of life.* cereals reduced.

Strength of Native Troops.—The average strength of the Native Troops in the Northern District was 2748·98, of whom 1,555 were Hindus, 1,013 Mahomedans, and 180 Christians. *Strength of Native Troops.*

Health of Native Troops.—The following table contains the average strength of each *Health of Native Troops.* corps in the division, the proportion to strength of cases treated, and of deaths to strength :—

Regiments.	Stations.	Average Strength.	Percentage of Treated to Average Strength.	Percentage of Deaths to Average Strength.
Right Wing 2nd Regiment N.I.	Berhampore ...	358	82·12	·83
Left Wing 2nd Regiment N.I.	Sumbulpore ...	326	92·02	2·76
7th Regiment N.I.	Vizagapatam ...	657	91·78	1·06
12th Regiment N.I.	Vizianagrum ...	676	61·53	·59
41st Regiment N.I.	Cuttack ...	671	130·40	·44
Native Details	Vizagapatam ...	52·82	43·54	3·78

The undermentioned facts suggested by the table deserve special note :—

(a). The large percentage to strength of cases treated in Cuttack, and the small mortality. There were 843 admissions on the register of sick in an average strength of 671, and only three deaths. No less than 430 cases came under treatment in November and December, and of these 330 were patients with ague.

(b). In Sumbulpore the left wing of the 2nd Regiment, with a strength of 326 men, had 92·02 per cent. of them sick, and lost 2·76 per cent., a high death-rate for the division, but still not equal to

(c). The death-rate among the Native Details, consisting largely of sick men from regiments in other stations, which has amounted to 3·78 per cent.

(d). It is this last item which serves specially to raise the mortality-rate of the Northern District to 1·06 per cent., or, including those who have died out of hospital, to 1·52.

(e). In connexion with disease and its fatality in Sumbulpore, it is worth mentioning that Surgeon Mayne attributes the prevalence of adynamic continued fever there to the use of two wells, and especially one of them, which receives the scour from an abandoned village, latterly used, or rather abused, as a latrine.

(f). I cannot help connecting the extensive occurrence of ague in Cuttack with the unhygienic conditions of the lines at that station, as well as the seasonal influences operative during the last months of the year.

In Vizagapatam the medical officer of the 7th Regiment credits overcrowding with some of the diarrhoea occurring at that station.

Fevers, skin diseases, rheumatism, beri-beri, affections of the stomach and bowels, and bronchitis were, in point of frequency, the principal diseases, and they have been named in the order of their frequency. Among them deaths occurred in the following percentages :—

Diseases.	Death-rate per Cent.	Absolute Number of Deaths.
Bowel affections ...	5·	7
Beri-beri ...	4·	3
Fevers ...	0·73	7
Rheumatism ...	·628	1
Bronchitis ...	·28	1

The highest death-rate, however, occurred under the heads of hæmoptysis and phthisis, of which there were sixteen cases with five deaths, or 30·25 per cent., and of general dropsy, of which there were four cases and one death, or 25 per cent. I have not thought it necessary to include in the foregoing calculations the anomaly of one case of *ascaris lumbricoides*, which is stated to have been fatal.

Cholera. *Cholera.*—This zymotic disease has been altogether absent among the troops in this division.

Malarial fevers. *Malarial fevers* bulk largely in the returns. Their prevalence has been considerable in Cuttack and in Sumbulpore, but their fatality comparatively small. In the former station especially their frequency is, to an extraordinary degree, large in comparison with their gravity.

Alleged causes of sickness and mortality. *Alleged causes of sickness and mortality.*—In the Northern Districts the death-rate among Native Troops was 19·6 per mille, a larger proportion of mortality than was found in the Centre District.

In the 41st Regiment at Cuttack there were 853 admissions with diseases, and of these 434 occurred in November and December, and 330 of them from ague. The prevalence of this malady is credited by the medical officer to climatic conditions, but I am rather disposed to attribute it to combined seasonal influences and the objectionable features of the regimental lines; for when I was in Cuttack in November, I was informed that intermittent fever did not appear so much epidemic in the station as endemic in the locality inhabited by the corps in question. Surgeon-Major Ridings adverts to the protracted residence of the regiment in Lower Bengal as a cause of its physical deterioration and consequent unfitness to enter upon foreign service, a professional opinion which it may be deemed desirable to bear in mind when the next move of the corps comes to be considered.

In the left wing of the 2nd Regiment N.I. at Sumbulpore Surgeon Mayne has referred the occurrence of adynamic continued fever to the use of the water of two wells, but especially of one of them which receives the scour of an abandoned village, now resorted to for purposes of nature, a view which may or may not be correct. It would be well to consult Deputy Surgeon-General Tribe's Inspection Report on the subject.

In Vizagapatam Surgeon Wilkins mentions over-crowding in the lines of the 7th Regiment N. I., as a cause of disease.

It is satisfactory to chronicle the discontinuance, by the Municipality of Berhampore, of the objectionable practice of depositing manure on a spot adjacent to the lines of the 2nd Regiment, and the progressive improvement in the drainage of the lines of the 12th Regiment in Vizianagram.

2nd Regiment Native Infantry.

STATION—HEAD-QUARTERS AND RIGHT WING, BERHAMPORE.

Arrived from Waltair 9th January 1873.

STATION—LEFT WING, SUMBULPORE.

Average strength	...	...	...	...	...	...	...	693
Do. do. present	...	...	...	...	...	...	...	684
Admissions	...	...	...	...	...	...	...	560
Daily sick	...	...	...	...	...	...	...	21
Deaths in hospital	...	...	...	...	...	...	...	12
Do. out of hospital	...	...	...	...	...	...	...	2
Pensioned	...	...	...	...	...	...	...	31
Sick leave	...	...	...	...	...	...	...	6

The following return shows the rates of sickness, deaths, and invaliding as contrasted with former years :—

Years.	Stations.	Rate per Cent. of					
		Average Strength Present.		Average Strength.			
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.	
1871	Waltair	69·56	3·64	1·21	...	1·48	
1872	Do.	165·89	4·20	·87	3·04	1·16	
1873	Berhampore	95·79	2·90	·28	·14	·28	
	Average	110·41	3·58	·78	1·06	·97	
1874	Berhampore	81·87	3·07	2·02	4·47	·86	

The following medical officers were in charge during the year :—

Surgeon-Major W. H. Beach.

Surgeon W. H. Boalth.

The last-named reports as follows :—

The average strength of the head-quarters and right wing of the 2nd Regiment M.N.I. during the year was 367, the admissions into hospital were 278, and the deaths 5, of which three occurred in hospital and two out of hospital. The ratio per 1,000 of admissions to strength was, therefore, 757.49, and of deaths in hospital to strength 8.17. Comparing the total number admitted this year with the admissions for the previous year there has been a decrease of twenty-four cases.

Climate and disease.—The climate on the whole during the year has been mild. The hot weather was not very severe. The monsoon was about the average, and the cold weather, with the exception of a day or two, when the thermometer registered as low as 49° at 6 A.M., was very pleasant. In July, very shortly after the setting in of the south-west monsoon, sickness was rather prevalent in the wing. Sixty cases were admitted during that one month, of which thirty-six were agues. This sudden increase of sickness (for there were not more than twenty cases on an average for each of the other months of the year) was due to wet and rapid change of temperature. Of rheumatic affections there were a large number of admissions this year, there being thirty-eight against twenty-eight for the year previous. Of respiratory diseases there were but eight admissions this year.

Of diseases of the digestive system there were eleven less than the last, and of skin diseases there were twelve less. On the whole the health of the wing during the year under review bears a favorable comparison with its health during the year previous.

Health of European Officers.—Health of the European Officers has been very satisfactory. Not a single officer reported sick during the year.

Barracks as regards aspect, elevation, and neighbourhood.—No barracks for Native troops. The sepoys live in the lines; the ground is somewhat low, and has not a good fall for drainage. The civil population live too close to the lines, a street about 30 feet wide being the only separation, and some of the buglers' huts are in the same line of houses with the civil population. In case of an epidemic it simply becomes impossible to separate the military from civil population. The site, however, has not proved very unhealthy.

Ventilation and drainage of barrack and guard-room.—Drainage of guard-room natural, and the building is well ventilated. In the sepoys' lines there are no proper drains. The ground on either side of the road is simply grooved out to answer the purpose of drains. The ill-consequences of such kutchra drains have been represented, and the subject of improvement is, I believe, under consideration.

Nuisance from latrines, ash-pits, manure heaps.—The insanitary condition of a plot of ground adjoining the lines, from the deposition on it of municipal sweepings, was brought to notice, and the nuisance has been discontinued.

Foot-soreness.—Sepoys frequently have reported foot-soreness, which occur from wearing boots without socks; a few days' excuse from wearing boots was sufficient to cure most of the sore feet; some of the severer cases were admitted into hospital and treated.

Vaccination.—Number vaccinated during the year sixty-two. No death from small-pox. Four recruits with doubtful marks of vaccination were revaccinated—two succeeded and two failed.

Epidemic diseases.—No disease could properly be said to have been epidemic during the year. The largest number of admissions have been under the head of malarial fever. This disease is endemic in the district, and not attributable to any insanitary condition. Mild quotidian agues have been the prevailing type. Out of 278 admissions, 91 cases come under the head of ague.

Phthisis pulmonalis and other chest complaints.—Two cases of phthisis pulmonalis occurred—one ran a rapid course and terminated fatally, the other was a chronic case in a man of short service. He was brought before a special invaliding committee and discharged the service. Both cases were, I believe, hereditarily predisposed. Of the chest complaints there were but eight admissions.

Drainage and latrine.—Drainage of hospital natural; dry-earth system adopted in latrine. The small size of the latrine, and want of ventilation, have been reported on, and a new latrine, I believe, is to be constructed.

General conclusions.—Two hundred and seventy-eight cases have been admitted into hospital during the year just closed; as compared with the preceding year, there has been a decrease of twenty-four. The principal cause for admission has been fever. Of this disease ninety-two cases were treated as against ninety-seven during the year 1873. There is nothing particular to record about the fever. It was of the usual malarial type, and was very mild.

Three deaths occurred in hospital during the year—one from phthisis pulmonalis, one from beri-beri, and one from intus-susception.

One patient left hospital without leave and was found drowned in a tank near the lines, and another, while on convalescent leave awaiting his pension, died in the lines of peritonitis.

No epidemic occurred in the wing. On the whole the health of the men and of the families has been very satisfactory during the year just closed.

Acting Deputy Surgeon-General vanSomeren inspected the head-quarters and right wing on the 24th November 1874, and reports as follows:—

Lines.

Lines.—The lines were as clean as they admit of being kept under the circumstances to be mentioned in this section. There is so little fall from east to west as the huts are arranged, that the water stagnates in some parts, keeping the two narrow streets between the rows of huts chronically damp—a condition favored by a very wet sub-soil, for water in the wells is this day only about two feet from the surface; and there has not been rain here for at least a fortnight past. The drainage is very defective, and can scarcely be said to exist at all. Fluid from the huts flows in a channel from within each man's allotment, through the wall, into a flower-pot sunk in the ground, which again is daily emptied of its contents, and these contents are carted away by the municipality. Solid excreta are removed daily by scavengers to a distance. There is ample fall from south to north, so that if adequate drains were built with a slight slope from the centre of the lines eastwards and westwards, to meet others passing down to the north from the south along the east and west borders of the lines, these latter would effectually carry away the surface fluids into some paddy fields at a distance. But the huts are so small, the streets so narrow, the neighbourhood of the civil population so close, and the places-of-arms, hospital, and parade so remote, and besides the sub-soil so damp, that sooner or later new lines ought to be built; and it is questionable if any great expense for drainage should be incurred in the present lines.

There are 406 huts, occupied by 1,404 souls, with an average of $3\frac{1}{2}$ to each hut, which on average is $15\frac{1}{2}$ feet long, by 10 feet $2\frac{1}{2}$ inches wide, and 6 feet $3\frac{1}{2}$ inches high. The maximum number in one hut is eleven and the minimum one.

Conservancy.

Conservancy.—There are some stone-faced V-shaped drains, but these frequently open into drains which are unfaced, and so ill-directed, where there is little or no fall, that one locality is necessarily injured by the improvement of another. Still, in my examination and walk this morning, I detected no nuisances, and no offensive odours any where, nor any accumulation of garbage.

Hospital.

Hospital.—The latrine is a miserably ill-ventilated place, and though clean, could not but be offensive. The dry-earth system is carried out; but for lack of room in the latrine the earth is kept in casks in the verandah of No. II. ward.

Left Wing 2nd Regiment Native Infantry.

STATION—SUMBULPORE.

Arrived from Waltair 5th February 1873.

Average strength present 326

The following medical officers were in charge during the year:—

Surgeon W. H. Boalth.

Do. T. Mayne.

The last-named reports as follows:—

Water-sup-
ply and sani-
tary arrange-
ments.

Water-supply and sanitary arrangements.—The water-supply is from several wells, but the water of two of these I think a source of origin of the fever that I have had the opportunity of observing. One well is at the bottom of the regimental lines facing the large cross-drain. This may have become contaminated in some way or other; but since I have had charge of the wing I think it hardly possible that sewage matter could flow into it, as there is no accumulation of excrementitious material allowed, and daily the latrines are cleaned; the other well is outside of the lines, and was built by a Subadar of the 31st L.I., but is much used. It is a favorite; now this well is situated in low-lying ground, and is liable to washings that come from an abandoned village which is on higher ground a few hundred feet away. This is said not to be used as a morning resort; however I have myself seen natives there. There is a small stream between the well and the abandoned village, but the poisonous material may have exuded into the well below the soil. Frequent sanitary inspection of the lines have been made, and reports have gone to the Officer Commanding accordingly.

Foot-soreness.—After a route march there has been a considerable amount of foot-soreness.

Duty and exercise.—Duty and exercise have not been excessive, and the drills have been held morning and evening. Many of the men take a great interest in athletic sports, and in gymnastics they appear to have gone in for a large amount of proficiency.

Epidemic diseases.—Continued fever prevailed in the months of August, September, and October, and one man died from phthisis pulmonalis.

Deputy Surgeon-General Tribe, Nagpore Division, inspected the left wing on the 4th January 1875, and reports as follows:—

Barracks.—The lines are as clean, &c., as any lines can well be; but I am by no means satisfied with them. All, or nearly all, has been done that the sepoys can do; but, in order to have lines properly built, some amount of skilled labor is required. Skilled labor, however, costs money, and money is not forthcoming. The ground, though sloping from east to west, is undulating from north to south, and, as sepoys' lines are built in straight lines, the natural drainage is interfered with. Authority interferes enough with nature to disarrange, but not to control: the hutting rules lay down that these are to be V-drains, but as there is no regulation as to how these V-drains are to be made, the rule is a dead letter and as useless as the V-drains made by the unskilled labor of the sepoys. A large proportion of the worst fever cases admitted are from huts situated in a depression between two elevations, and is evidently due to the natural drainage having been interfered with. These lines cost much money, and it is to be regretted that a little more was not expended on them so as to have the work done properly. Things badly done usually prove costly in the end.

Water-supply from four wells; but as there is very little water in them during the hot weather, and as the Commandant cannot get the wells deepened, water has to be supplied from the river, which is one mile off, to do which the four puckallies allowed are insufficient, and the application of the Commandant for extra puckallies or bheesties was unsuccessful. I regret I have not the means of showing the quantity of water provided per head in these lines in the hot weather in a tropical climate, and comparing it with that considered necessary per head in the temperate climate of England.

6th Regiment Native Infantry.

STATION—COCANADA.

Arrived from Secunderabad en route to Thyetmyo.

Average strength ...	...	...	...	...	...	...	...	...	734
Do. do. present...	...	...	...	...	...	...	...	...	664
Admissions ...	...	...	...	...	...	...	...	...	812
Daily sick ...	...	...	...	...	...	...	...	...	22
Deaths in hospital ...	...	...	...	...	...	...	...	...	3
Do. out of hospital ...	...	...	...	...	...	...	...	...	3
Pensioned ...	...	...	...	...	...	...	...	...	30
Sick leave ..	...	...	...	...	...	...	...	...	8

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Nagode ...	142.63	4.06	.66	...	...
1872 ...	Secunderabad ...	109.50	2.91	.14	.70	1.68
1873 ...	Do. ...	64.19	2.41	.72	1.16	...
	Average ...	105.44	3.12	.50	.62	.56
1874 ...	Cocanada ...	122.28	3.31	.81	4.08	1.08

The following medical officers were in charge during the year :—

Surgeon E. Fawcett.
Do. A. H. Leepingwell.
Do. E. Levinge.
Surgeon-Major T. Croudace.

The last-named reports as follows :—

Climate.	<i>Climate</i> , since the end of July, when I joined, has been damp and cool, with drier weather towards the end of the year. A good deal of fever, apparently the result of the rains.
Diseases.	<i>Diseases</i> .—Chief diseases amongst the men were fever and chronic rheumatism.
Marches.	<i>Marches</i> .—Regiment marched from Secunderabad on December 2nd, and arrived at Bezwarra on December 21st, from whence they went by canal boats to Cocanada, where they arrived on the 26th, 27th, and 28th December 1874. Troops very healthy during the march.
Position of men's huts.	<i>Position of men's huts</i> .—Position of men's huts rather low with regard to the surrounding ground. They appear to be healthy.
Rooms, &c.	<i>Rooms, &c.</i> —The height of the rooms, doors, and windows is satisfactory.
Ventilation and drainage.	<i>Ventilation and drainage</i> .—Ventilation of huts very incomplete—by means of windows and doors. There is no drainage in the lines, only shallow surface drains, which do not carry off the sewage. The lines, however, were kept very clean.
Nuisance.	<i>Nuisance</i> .—None during the time I was attached.
Water-supply	<i>Water-supply</i> .—Water-supply plentiful. It is obtained from wells in the vicinity of the lines. It is pretty good in quality.
Sanitary arrangements.	<i>Sanitary arrangements</i> .—Sanitary condition of huts and guard-rooms, &c., were well attended to. There are no local causes of diseases apparent.
Liquors.	<i>Liquors</i> .—Toddy and country arrack are the chief liquors sold in the lines, and if used in moderation have no injurious effect.
Admissions.	<i>Admissions</i> .—Two from delirium tremens.
Foot-soreness.	<i>Foot-soreness</i> .—There have been a good many cases of feet being blistered by boots, but specially on the march. The men were directed to have their boots well greased.
Lock-up rooms and prison cells.	<i>Lock-up rooms and prison cells</i> .—The sanitary condition of the guard-rooms and cells is good. The cells might, perhaps, have better ventilation.
Vaccination.	<i>Vaccination</i> .—Number of cases vaccinated 355, of which 269 were successful, 64 unsuccessful, 21 doubtful, and 1 of which the result is unknown. Two cases of small-pox. No death.
Diseases.	<i>Diseases</i> .—During the months of July, August, and September there were a considerable number of fever cases, and they seemed to bear direct proportion to the quantity of rain that fell. The type of fever was the intermittent. There has not been any overcrowding in the hospital, the ventilation and general sanitary condition of which has been very good. Hospital latrines carefully attended to, and the dry-earth system applied with coal-tar to the inside of walls and floor. Water-supply good and sufficient. The wet weather is the only cause to which I can attribute the fever, for it ceased almost entirely on the cessation of the rains.
Phthisis pulmonalis. Overcrowding.	<i>Phthisis pulmonalis</i> .—No cases of phthisis pulmonalis during the year. <i>Overcrowding</i> .—There has not been any overcrowding in the ward, except during the wet season, when there was a large number of fever cases requiring accommodation.
Drainage and latrines.	<i>Drainage and latrines</i> .—Drainage natural. Latrines kept very clean. They are frequently painted inside with coal-tar.
General conclusion.	<i>General conclusion</i> .—On the whole the health of the regiment has been very satisfactory during the past year, the percentage of deaths per 1,000 having only been 9.03. Intermittent fever and chronic rheumatism were the principal diseases. The men's feet are frequently blistered and excoriated from their ill-made boots.

Deputy Surgeon-General Burn inspected this corps on the 27th November 1874, and reports as follows :—

Barracks.	<i>Barracks</i> .—The regiment occupies the Mahredpully lines, which are fairly clean and comprises 739 huts, all built of mud, tiled and limewashed. Each hut is ventilated by one door; all other means of ventilation are absent. Their dimensions are 12 x 6 x 8 feet, and the average number inhabiting each is two with a maximum of four and a minimum of one
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in any one hut. The natural configuration of the ground whereon the lines stand is favorable for drainage, inasmuch as they are situated on a ridge sloping north and south, the streets running at right angles to the crest of the ridge, and the huts occupying either slope. These natural advantages are supplemented by artificial scratch-drains which easily silt up.

Sanitary condition of all buildings.—The guard-rooms, cells, and school-rooms are clean and in good order. The barrack guard-room is small and has a very low roof. It contains 448 superficial feet, and is occupied by 28 men, and it is ventilated by two doors and two windows. There are no general latrines with the exception of a small one for the barrack guard in which coal-tar is freely used. The private latrines in the enclosure of each hut are kept clean by the use of dry earth and the daily removal of the excreta. There are no cess-pools or foul drains. Sanitary condition of all buildings.

Conservancy of the neighborhood.—Fairly satisfactory. Conservancy of the neighborhood.

Hospital.—The site of the hospital has a good elevation, the building fronting the general parade-ground. It is pukka built with a tiled roof and a stone floor on a raised basement. It is clean, in good repair, and contains two wards ventilated by 19 doors and 14 windows, and also by continuous ridge ventilation. The larger ward is 102×20×16·50 feet, the smaller 29×20×18 feet. These wards have, during the year, afforded accommodation to a daily average of 21·83 sick, giving 120·02 and 2056·85 superficial and cubic feet per patient. Water is supplied by a puccally from the wells in the lines, and a filter is in use. The latrine is clean, large, well ventilated, and in excellent order, dry earth and coal-tar being in free use. There is no dead-house and no contagious ward; no epidemic or other disease has originated within the hospital. Wounds heal and cases, as a rule, progress favorably. Hospital.

Vaccination.—There have been 533 cases of vaccination during the year; of these 441 are shown as successful, 23 doubtful, 68 unsuccessful, and one unknown. Of 21 children taken at hap-hazard in the lines seven showed marks of successful vaccination, seven were doubtful, six showed no marks of vaccination, and one had had small-pox. No attempt to revaccinate the regiment before proceeding on foreign service appears to have been made. Vaccination.

7th Regiment Native Infantry.

STATION—VIZAGAPATAM.

Arrived from Madras 14th February 1873.

Average strength	...	...	...	...	...	...	...	702
Do. do. present	...	...	...	...	...	...	...	657
Admissions	...	...	...	...	...	...	...	563
Daily sick	...	...	...	...	...	...	...	69
Deaths in hospital	...	...	...	...	...	...	...	7
Do. out of hospital	...	...	...	...	...	...	...	3
Pensioned	...	...	...	...	...	...	...	22
Sick leave	...	...	...	...	...	...	...	26

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of					
		Average Strength Present.		Average Strength.			
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.	
1871 ...	Madras ...	126·73	6·30	2·33	·31	13·3	
1872 ...	Do. ...	131·43	4·79	1·11	6·15	5·59	
1873 ...	Vizagapatam ...	78·23	4·71	·85	2·84	5·68	
	Average ...	112·13	5·26	1·43	3·10	8·19	
1874 ...	Vizagapatam ...	85·72	10·50	1·42	3·13	3·70	

The following medical officers were in charge of the corps during the year :—

Surgeon S. B. Hunt.
Do. J. J. H. Wilkins.

The last-named reports as follows :—

- Ventilation and drainage.** *Ventilation and drainage.*—There are no barrack-rooms. The drainage of the lines is decidedly bad, hardly a hut has an independent drain, and very few of them have a common drain between. The natural slope of land is from the courtyard to the streets. The guard-rooms are fairly ventilated.
- Nuisance.** *Nuisance.*—There has been no nuisance from latrines, &c., but great nuisance from want of public latrines. The inhabitants of places surrounding the lines convert a spot over the top of the lines—and the only place from which the sepoys get any sea breeze into their lines—into a latrine. Complaints have been made to the municipality about this, and they have taken no notice of the matter. These places were unfortunately clean at the time of the visit and inspection by the Deputy Surgeon-General.
- Lock-up rooms and prison cells.** *Lock-up rooms and prison cells.*—The defaulters' room or lock-up is small, but fairly ventilated. The cells are objectionable. They are small and stuffy, and the heat in them very oppressive at times, though men have not regularly complained of the stuffiness of them.
- Epidemic diseases.** *Epidemic diseases.*—There have been only a few cases of diarrhoea. The huts are somewhat overcrowded, the drainage of the lines is bad, and the ventilation of the huts is bad. There are no public latrines.
- Phthisis pulmonalis.** *Phthisis pulmonalis.*—To exposure to wet and cold, bad ventilation, bad drainage, and general debility.
- General conclusions.** *General conclusions.*—The number of cases admitted was 563; of these, the principal diseases seem to have been fevers, rheumatism, beri-beri; of the two latter diseases, I may remark that the symptoms are nearly all subjective, there really being in some cases not a single objective symptom. The average number of men in hospital has always been high. I attribute most of these diseases to the bad drainage of the place (lines). There have been seven deaths in the whole regiment—one from abscess, two beriberi, one general dropsy, one general debility, one dysentery, one hæmoptysis; of these some died on sick leave, some in hospital and in the lines.

Acting Deputy Surgeon-General vanSomerén inspected this corps on the 21st December 1874, and reports as follows :—

- Barracks.** *Barracks.*—These were tolerably cleanly—I would say altogether cleanly but for accumulations of garbage in some of the large un-faced drains. The huts are thatched (663 in number), and not built according to the regulation standard now in use. Their average number of occupants is 3.58, the maximum in any one hut 9, and the minimum 2.
- The drainage is natural from a slope westwards and large drain-channels, some faced with stone assist the flow of water from the lines. Those, however, which are unfaced are very uneven, and the artificial drainage must be termed defective so long as there are no tributary drains from and in front of the lines of huts to convey all fluid sewage away to the larger drains. At present what escapes from the huts, unless very abundant, flows into the sandy lanes between the several rows, and soaks into the soil.
- Sanitary condition of all buildings.** *Sanitary condition of all buildings.*—There are no public latrines for the lines. Each sepoy and his family have their own private privy, from which the excreta are daily removed to a distance. There is a latrine for the barrack-guard, and a very objectionable one it is. The dry-earth system is not maintained; the excrements are deposited on a slightly-elevated platform, instead of into a trench; the fluids pass out into the ablution cistern, and there soak and seethe; coal-tar is seldom used. At my visit several of the droppings were stale and old, showing neglect on the part of the toties.
- Hospital.** *Hospital.*—There are two infectious wards, thatched and matted at their sides between their pillars, on basements one and a half foot high. Their floor is of sand, which is in the highest degree objectionable for such wards, and this for obvious reasons. The roofs of both are already showing signs of decay.

12th Regiment Native Infantry.

STATION—VIZIANAGRAM.

Arrived from Tonghoo 28th January 1872.

Average strength	...	...	...	...	...	...	...	709
Do. do. present	...	...	...	...	...	...	...	676
Admissions	...	...	...	...	...	...	...	385
Daily sick	...	...	...	...	...	...	...	18
Deaths in hospital	...	...	...	...	...	...	...	4
Do. out of hospital	...	...	...	...	...	...	...	...
Pensioned	...	...	...	...	...	...	...	5
Sick leave	...	...	...	...	...	...	...	25

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	... Tonghoo ...	80.51	3.67	1.19	...	5.65
1872	... Vizianagram ...	103.66	5.42	2.06	27	2.89
1873	... Do. ...	164.83	6.42	.98	1.26	2.39
	Average ...	116.33	5.17	1.41	.51	3.64
1874	... Vizianagram ...	56.95	2.66	.56	.70	3.52

The following medical officers were in charge during the year :—

Surgeon-Major J. S. Ridings, M.D.

Do. C. R. G. Parker.

The last-named reports as follows :—

Climate.—The hot season was severe, as it usually is. The rains were scanty during the earlier part of the rainy season, but excessive towards its close, and the whole surrounding country was inundated. Doubtless malarious fevers have been prevalent in the district in consequence, but the regiment has not been exposed to these influences. The cold season has been a fairly average one and healthy.

Marches.—Not on the march during the year.

Marches.

Lines.—The lines are placed on a slope facing northward and about three-quarters of a mile from the town. Drainage easy, and the position seems healthy except for infants, who certainly do not thrive there.

Sepoy huts.—The huts are of the description usually occupied by Native Troops, and, therefore, greatly wanting in ventilation, and not conducive to health.

Guard-rooms.—The barracks or place-of-arms and the guard-rooms are well ventilated ; as to the drainage of the lines it has been my duty to bring serious defects in the plan of the same to the notice of the Commandant, and in consequence of the energetic action he has taken in the matter, these defects are being removed.

Nuisances.—A great accumulation of sewage, referred to under paragraph 5, which has now been removed.

Vaccination.—The regiment had been vaccinated in 1873. Sixty-one were vaccinated by myself during the past year ; many, indeed most of them, were revaccinations ; 19 were successful, the remainder unsuccessful : 101 children were vaccinated in the lines by the Hospital Assistant, 84 by the Senior Hospital Assistant, 15 of this total unsuccessful.

Epidemic disease.—No epidemic disease of any kind has prevailed during the year I am very thankful to say.

Epidemic disease.

Phthisis pulmonalis.—No cases of phthisis pulmonalis ; several cases of bronchitis, chiefly in the rainy weather, due no doubt to the men getting wet and not changing their clothing.

Phthisis pulmonalis.

Acting Deputy Surgeon-General vanSomerén inspected this corps on the 15th December 1874, and reports as follows:—

Sanitary
condition, &c.

Sanitary condition, &c.—The lines are beautifully clean. They consist of 785 huts, the average dimensions of each being 30 feet x 13 feet, including the compound. The maximum number of occupants in any one hut is nine and the minimum two, the average in each hut being four. Their ventilation is effected by a door at front and back, and apertures under the eaves.

Conservancy
of the neigh-
borhood, &c.

Conservancy of the neighborhood, &c.—I have in the first section dwelt sufficiently upon the former point. The station generally is admirably conserved, and is clean and free from unpleasant odours at this season.

41st Regiment Native Infantry.

STATION—CUTTACK.

Right wing arrived from Madras on the 20th October 1868, and headquarters and left wing on 21st and 25th January 1869.

Average strength	...	...	...	...	...	...	...	697
Do. do. present	...	...	...	...	...	...	...	671
Admissions	...	...	...	...	...	...	...	843
Daily sick	...	...	...	...	...	...	...	31
Deaths in hospital	...	...	...	...	...	...	...	3
Do. out of hospital	...	...	...	...	...	...	...	1
Pensioned	...	...	...	...	...	...	...	35
Sick leave	...	...	...	...	...	...	...	7

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of					
		Average Strength Present.		Average Strength.			
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.	
1871 ...	Cuttack ...	44.84	2.42	.75	2.26	1.35	
1872 ...	Do. ...	113.17	3.51	1.29	4.02	1.15	
1873 ...	Do. ...	41.03	2.73	.71	3.44	1.14	
	Average ...	66.34	2.88	.91	3.24	1.21	
1874 ...	Cuttack ...	125.63	4.61	.57	5.02	1.00	

The following medical officers were in charge during the year:—

Surgeon J. F. Fitzpatrick, M.D.

Surgeon-Major J. S. Ridings, M.D.

The last-named reports as follows:—

Lines, sepoy
huts, guard-
rooms.

Lines, sepoy huts, guard-rooms.—The regimental lines are situate on almost perfectly level ground, immediately to the south of the officers' bungalows, abutting to the east upon the regimental bazaar, which is conterminous with the civil bazaar, instead of being 300 feet distant from it. They consist of seventeen sub-divisions—fifteen double and two single—running north and south, the intervening streets being far below the regulation width, the main street between the wings, which should be 60 feet, being but 32½, and the streets between the rows, which should be 50 feet, being but from 11½ to 15½.

Built of mud, with tiled roofs, and small yards and thatched pials towards the streets, old and dilapidated, of a generally most inferior description.

The huts are both insufficiently ventilated and of insufficient capacity, of very unequal size, and below both regulation superficial area and cubic capacity. For instance, the privates' huts should measure, the centre walls 13 and the side walls 8 feet in height, whereas many of them are but 9 and 5½ respectively; and while the frontage should be 13 feet, in many cases it is but about 9.

Sanitary condition of all buildings.

Sanitary condition of all buildings.—The regimental latrine is a walled enclosure, containing a quadrilateral angular channel, faced with brick and provided with earth, upon which the excreta are dropped; these covered with earth and daily removed in a cart to be deposited in pits far to the rear, where they are buried. No tar is used here, and no cess-pools exist. There are three cells for prisoners in the fort, which I found clean and adequately ventilated with doors, windows, and air apertures above. A school is held in a building called the gymnasium, where the young sepoys practise athletic exercises when school is not held.

Conservancy of the neighbourhood.

The main guard-room is a pukka building with a comfortable verandah, but within scarcely so well ventilated on and near the roof as it might be and ought to be.

Conservancy of the neighbourhood.—With an unfavorable natural configuration, in a saucer between the Mahanuddy and Cajoory rivers, the drainage can scarcely be regarded as good and efficient. Efforts are made to prevent liquid sewage flowing into the unfaced surface drains, and solid garbage is daily removed in carts to one or other of the near-lying rivers, or deposited in hollows which require filling up.

Hospital.

Hospital.—I visited the epidemic ward in the fort. It is too far away from the lines, about 12 feet square, and cannot accommodate more than two cases.

General recommendations, &c.

General recommendations, &c.—Surgeon-Major Ridings has brought to my notice a reference to authority in Bengal, regarding the defective drainage and the necessity for better conservancy, but no active measures to remedy the former or improve the latter have been as yet adopted.

SOUTHERN DISTRICT.

Average strength	...	...	...	...	...	...	...	3,481
Do. do. present	...	...	...	...	...	...	...	3,277
Total admissions	...	...	...	...	...	...	...	2,436
Daily sick	...	...	...	...	...	...	...	65
Deaths in hospital	...	...	...	...	...	...	...	16
Do. out of hospital	...	...	...	...	...	...	...	18
Pensioned	...	...	...	...	...	...	...	126
Sick leave	...	...	...	...	...	...	...	104

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Rate per Cent. of				
	Average Strength Present.		Average Strength.		
	Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	42.33	1.59	1.01	2.62	.71
1872 ...	111.54	2.35	.85	1.86	1.67
1873 ...	90.98	2.20	.64	.93	2.16
Average ...	81.61	2.04	.83	1.80	1.51
1874 ...	74.33	1.98	.97	3.61	2.98

The following corps were serving in the division on the 31st December 1874:—

19th Regiment Native Infantry.		
32nd	do.	do.
38th	do.	do.
24th	do.	do.
26th	do.	do.

Deputy Surgeon-General Johnston was in charge of this division during the year, and submits the following brief report:—

During the year under review the health of the European Commissioned, Warrant, and Non-commissioned Officers of the several departments has been on the whole satisfactory.

The climate of the head-quarter station has been the normal mean of previous years. The average rainfall has seemingly exceeded that of past previous years. Twenty-four inches are recorded at the Observatory ; but, as no registration was kept for three months in the year, the exact quantity of rainfall cannot be stated. The seasonal conditions conduced to a plentiful harvest, and the station has enjoyed a complete immunity from epidemic disease, not one authenticated case of cholera having been registered.

19th Regiment Native Infantry.

STATION—TRICHINOPOLY.

Arrived from Singapore 7th May 1872.

Average strength	...	...	...	...	...	...	...	693
Do. do. present	...	...	...	...	...	...	...	649
Admissions	...	...	...	...	...	...	...	1,061
Daily sick	...	...	...	...	...	...	...	18
Deaths in hospital	...	...	...	...	...	...	...	8
Do. out of hospital	...	...	...	...	...	...	...	4
Pensioned	...	...	...	...	...	...	...	33
Sick leave	...	...	...	...	...	...	...	20

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Singapore...	14.01	2.11	1.12	...	3.53
1872 ...	Trichinopoly	186.64	4.82	.92	...	4.63
1873 ...	Do.	102.42	2.73	.14	1.16	2.32
	Average ...	101.02	3.22	.72	.38	3.49
1874 ...	Trichinopoly	163.48	2.77	1.73	4.76	2.88

Surgeon S. L. Dobie has been in medical charge during the year, and reports as follows :—

Health.—The health of the regiment has been indifferent during the year.

Health.

The total number of admissions has been 1,061, that for year 1873 was 675 ; the increase in 1874 was, therefore, 326.

There were 671 admissions for fever.

39	do.	for rheumatism.
39	do.	for lung affections.
36	do.	for dysentery.
23	do.	for diarrhoea.
70	do.	for skin affections.

It must be borne in mind that in January the regiment was at the Bangalore Camp of Exercise, the sick and weakly men being left in Trichinopoly.

The month of December gave the greatest number of admissions, then followed in order November, May, March, April, and June.

There was a considerable decrease in the number of admissions during the remaining months : February gave the lowest number. The admissions for fever reached their maximum in March, and fell to a minimum in January.

Diarrhoea and dysentery were most prevalent in January and November.

Respiratory diseases prevailed to the greatest extent in December and January.

Rheumatic affections were most rife in December and November.

In all serious cases the administration of mutton, arrowroot, arrack, and port wine (these being given as required) was found to be of material benefit.

Of the seven men who died in hospital—

3	died from dysentery.
1	do. diarrhoea.
1	do. anæmia.
1	do. general debility.
1	do. pneumonia.

One Native Officer died from ague and general debility.

Sepoy huts.	<i>Sepoy huts.</i> —The huts are temporary, small, and of insufficient cubic capacity.
Guard-rooms.	<i>Guard-rooms.</i> —Guard-rooms are well ventilated and kept clean.
Water-supply.	<i>Water-supply.</i> —Water-supply good and sufficient.
Lines.	<i>Lines.</i> —Sanitary arrangements of the lines are carefully attended to.
Foot-soreness.	<i>Foot-soreness.</i> —There has been no foot-soreness worth mentioning.
Duty and exercise.	<i>Duty and exercise.</i> —The duties are light. The average number of nights in bed Havildars 6, Naigues 6, and Privates 6½.
Ventilation.	<i>Ventilation.</i> —Ventilation of hospital when full is insufficient; the windows are too small; their enlargement would be beneficial or the addition of new ones.
General conclusions.	<i>General conclusions.</i> —The indifferent state of the health of the regiment seems greatly due to the small temporary huts in which the sepoys are lodged, and probably also to the state of the soil in which the lines are built, the drainage from which, on account of there being little or no fall, is imperfect, and thus sewage soakage has been favored.

Deputy Surgeon-General Johnston inspected this corps on the 5th February 1875, and reports as follows:—

Sanitary condition of all buildings.	<i>Sanitary condition of all buildings.</i> —The guard-rooms and place-of-arms are in juxtaposition with those of the 38th Regiment N.I. The cells, two in number, are not far removed from the hospital which they front. All these buildings were found to be in very fair condition. The latrines are in the same objectionable condition as that described in former Inspection Report.
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24th Regiment Native Infantry.

STATION—PALAMCOTTAH.

Arrived from Secunderabad 5th February 1873.

Average strength...	...	...	...	...	...	...	691
Do. do. present	...	...	...	...	...	...	568
Admissions	...	...	...	...	...	...	285
Daily sick	...	...	...	...	...	...	16
Deaths in hospital	...	...	...	...	...	...	4
Do. out of hospital	...	...	...	...	...	...	3
Pensioned	...	...	...	...	...	...	6
Sick leave	...	...	...	...	...	...	7

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Secunderabad ...	48·37	1·76	·71	...	·14
1872 ...	Do. ...	50·78	2·14	1·97	...	·56
1873 ...	Palamcottah ...	121·31	3·09	·43	...	·86
	Average ...	73·48	2·33	1·03	...	·52
1874 ...	Palamcottah ...	50·17	2·81	1·01	·86	1·01

The following medical officers were in charge during the year :—

Surgeon H. D. Cook.
Do. G. F. Bevan.

The last-named reports as follows :—

The cantonment of Palamcottah is situated on rising ground about two miles to the south-east of Tinnevely on the southern bank of the Tambrapurni river. The soil in the immediate neighbourhood and towards the south is rocky, grey granite, sandy, and in places covered with low jungle. It is very little cultivated, being of no depth. Towards the north and west, however, and all round the town of Tinnevely, immense tracts of rich wet cultivation stretch away, and the country is well wooded.

The rivers and lakes are unimportant, and do not call for any mention. There are no large marshes in the vicinity.

About thirty-five miles to the west of the station is a long chain of mountains, the termination of the south-western ghats extending from north to south and separating Tinnevely from Travancore.

Near to or on these hills are two favorite sanatoria which the European residents adjourn to in the hot season. One of these is called the Assambo, situated at an elevation of nearly 3,000 feet; and to the north of this, Courtallum, very little elevated, but beautifully situated near the mouth of a gorge in the mountains leading into Travancore.

Climate.—The climate of the station is on the whole conducive to health. Owing to the deficient rainfall of the previous year, as well as of the earlier part of the past year, nearly all the wells and tanks were dried up, and the surrounding country, particularly the high lands, were parched, so that fears were entertained for the crops. Unusually heavy rain, however, fell during the latter week of November, which dissipated all fears. During and after this month there was a considerable increase in the number of admissions for intermittent fever and catarrh. This may, in a measure, be attributed to sleeping on damp ground and the greater liability during the months of November and December to sudden chills, owing to the perceptible difference between the day and night temperatures and to the sudden changes of temperature during those months.

Barracks.—The lines are situated on high sloping ground to the south-east of the cantonment. The rows of houses run east and west. The soil in the neighbourhood is rocky and sandy with here and there small tops of palmyra trees. To the north and north-east of the lines, but at some little distance from them, are large tracts of wet cultivated lowland. Trees are being planted near the lines, but as a rule they are stunted, having no depth of soil. The site is on the whole healthy, and affords natural facilities for drainage.

Ventilation and drainage.—The ventilation of the native huts is totally insufficient for the requirements of the inmates; there are no proper entrances for fresh, and means of exit for foul, air, so that in the more overcrowded of them the atmosphere must be constantly impure, particularly at night, when all the family are huddled together in one wretched room.

The conformation of the ground affords natural facilities for drainage, and were some artificial assistance given, such as by the construction of V-shaped drains in front of each row of houses, it might easily be made to suit all requirements.

Cleanliness.—The huts, hospital, barrack, and guard-rooms have all been lately lime-washed; but I believe lime washing had not been carried out for a year previously. I communicated with the proper authorities on the subject, and in a short time all the buildings were attended to; they are now very clean.

Nuisance.—There has been no nuisance, and I have not had to make any representations on the matter.

Water-supply.—Owing to the want of rain during the early part of the year, there was some scarcity of water during the months of August, September, and October, many of the tanks and wells being dried up. However, there were two wells in the native lines which always contained water and afforded a supply sufficient for the wants of the corps. In November heavy rain fell which filled all the tanks and wells and dissipated all anxieties on the subject.

Sanitary arrangements.—The sanitary arrangements have on the whole been well attended to. If something were done in the way of improving the drainage of the lines and the ventilation of the houses, there would be no cause for complaint.

Diet.—Provisions, particularly rice, have been, and I believe always are, very dear in this station. Vegetables are not abundant. Compensation has been received on account of dearness of provisions, but it was not enough, and I believed that want of food was the prime cause of inefficiency during the past year.

I am of opinion that many sepoys with large families have not been able to afford food sufficiently nutritive to preserve them in a state of health, and their anæmic appearance in many cases only too plainly shows a state of semi-starvation.

Foot-soreness. *Foot-soreness.*—There has been some foot-soreness owing evidently to defective boots combined with stockingless feet. Leaving off boots for a few days generally suffices to cure it.

Duty and exercise. *Duty and exercise.*—The duties have been rather heavy during the latter part of the year, owing to the men having built butts for the Regimental Rifle Practice, a large party being struck off other duty to keep them in repair. There were in addition parades, guard and picket duties. The effects on health were favorable rather than the reverse.

Average number of nights per week in bed 5.50.

Drill. *Drill.*—There have been five parades per week during the drill season, of about one and a half hours' duration, and in the hot season two, of one hour each. For the last two or three months the annual course of musketry instruction has been going on, and the men have often been out till 11 or 12 o'clock. However, their general health did not seem to be in any way affected by these unusually late hours.

Vaccination. *Vaccination.*—The vaccination of the corps has not latterly been so carefully attended to as I would wish; this is owing to my having only one Hospital Assistant at present. However, I have made a point of examining all the men lately, and the vaccination of previously unvaccinated or doubtful cases is now being proceeded with. There has been no case of small-pox, and only one of varioloid, which occurred in a man with marks of vaccination.

I have not had occasion to revaccinate.

Hospital. *Hospital.*—The ventilation of the hospital is excellent. No representations concerning it were required.

Deputy Surgeon-General Johnston inspected this corps on the 12th November 1874, and reports as follows:—

Barracks. *Barracks.*—The regimental lines are placed to the north-east of the town of Palamcottah on elevated ground and open on all sides. The sepoy huts run in double rows, east and west, and these are separated in the rear by a narrow lane. Each row fronts a broad street, having on either side drains irregularly excavated by the action of running water, for they are not faced by either brick or stone; and but for the declivitous run of the surface, sewage lodgment and absorption by the soil would be inevitable. The huts are of the ordinary structure, mud walled with tiled roofs, and were found to be in very fair condition. In the rear of each is a contracted mud-walled-in space with a more contracted walled space in front, containing within it another walled-in-space in use as a domestic latrine. In these hut latrines the use of dry earth is said to be enforced; at all events, the absence of fœtor during my inspection of the lines, and the clean condition in which some of these latrines were found, would go far to show that if dry earth is not used to the extent it is stated to be, cleanliness is enforced by the regimental authorities.

Sanitary condition of all buildings. *Sanitary condition of all buildings.*—The place-of-arms, guard, and defaulters' room, together with one for the Native Officer on duty, are in one building, which is a very substantial structure, having a verandah all round, and three feet raised from the ground surface. The means of ventilation are ample. There are no cess-pools or foul drains in the vicinity of the lines. All excreta are removed daily to a considerable distance from the lines and utilized as manure in cultivation.

Conservancy. *Conservancy.*—The conservancy of the regimental lines is satisfactory. The lines are frequently inspected by the officers of the regiment, and once a week by the Quartermaster and Medical Officer, who pay special attention to the state of the private latrines within the hut enclosures, which are conducted on the dry-earth system, and to the state of the drains, ash pits, and grounds adjoining the lines.

Hospital. *Hospital.*—The regimental hospital leaves nothing to be desired. It is a large, lofty, substantial, well-ventilated building on an elevated basement in the centre of a large compound, enclosed by a mud wall. Its flooring is of stone. On the present occasion of its inspection cleanliness, order, and regularity prevailed in every part of this hospital.

Deputy Surgeon-General Johnston inspected the Detachment on the 27th November 1874, and reports as follows:—

Conservancy. *Conservancy.*—The conservancy of the neighbourhood of the hospital is satisfactory.

Hospital. *Hospital.*—A detachment of seventy men from the Native Infantry Regiment garrisoning Palamcottah does duty at this station as an escort to the Resident. For the accommodation of the sick of this detachment a small hospital has been assigned, and is kept in repair by the Travancore Government. Placed at a convenient distance from the Residency, and in the centre of a walled compound, this small structure consists of one ward sufficient for the wants of the casual sick. Four windows and a door secure efficient means of ventilation, whilst the site, with its natural slope, admits of good natural drainage. Inspected on the present occasion with the required minuteness, the internal arrangements and hospital economy were found all that could be desired.

26th Regiment Native Infantry.

STATION—QUILON.

Arrived from Trichinopoly 19th January 1873.

Average strength...	...	...	...	...	...	...	...	707
Do. do. present	...	...	...	...	...	...	...	707
Admissions	...	...	...	...	...	...	...	304
Daily sick	...	...	...	...	...	...	...	9
Deaths in hospital	...	...	...	...	...	...	...	2
Do. out of hospital	...	...	...	...	...	...	...	4
Pensioned	...	...	...	...	...	...	...	21
Sick leave	...	...	...	...	...	...	...	9

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Trichinopoly ...	35.68	1.12	.84	.42	.98
1872 ...	Do. ...	130.66	1.51	.75	.15	1.05
1873 ...	Quilon ...	25.52	.70	.70	...	.56
	Average ...	63.95	1.11	.76	.19	.86
1874 ...	Quilon ...	42.99	1.27	.84	2.97	1.27

The following medical officers were in charge during the year :—

Surgeon-Major F. Duckworth, M.D.

Surgeon C. Lloyd, M.D.

The first-named officer reports as follows :—

Barracks.—Barracks used only as “place-of-arms,” and never occupied by the men. Native troops with their families are housed in huts, which are grouped together and systematically arranged, forming the “regimental lines.” In Quilon these lines are situated on purely sandy soil from its proximity to the sea, which forms its southern boundary, and the elevation is very little above sea level. Its position is, therefore, very healthy. There are 540 huts occupying an area of ground measuring about 98,624 square yards, and holding a population of men, women, and children amounting to 1,733. The huts themselves are very primitive in their construction, the largest number being built throughout—the roofs as well as the walls—with bamboos and cocoanut leaves, very much in the style of the dwellings of the lower class of natives in the Western Coast. The better description of huts are a little more substantial in having mud walls for the support of the roofs. The largest and best of them are usually consigned to native officers and the non-commissioned ranks in order of precedence. Most of these huts are too low and wanting in space, and are also defective in lighting and ventilation. Happily, however, the diurnal sea breezes counteract these evils to a great extent, and the general health is still maintained. The lines are well supplied with trees, which afford an agreeable shade, and wells which yield good drinking-water throughout the year.

Drainage.—No drainage or sewerage work exists. The natural configuration of the ground being undulating, and the soil porous and sandy, all surface water is rapidly removed by natural draining and percolation.

Ventilation.—The ventilation of barracks, guard-room, prison, and cells is quite satisfactory; that of the sepoys' huts has been alluded to in the preceding paragraph.

Limewash.—Limewashed according to regulation.

Nuisance.—None that required any particular representation, excepting the highly objectionable practice of burials in an old Mahomedan cemetery situated on the canal bank, quite in the neighbourhood of the regimental lines, having a tendency to pollute the air and foul the drinking water of the wells in its vicinity. Recommended that early measures be adopted to close this burial-ground.

Water-supply.—Water is plentiful throughout the year, and the quality is unexceptionable. The supply is chiefly derived from wells, of which there are thirteen in different parts of the lines. Eight of them have pavements and circular drains around them, as well as wooden covers to the mouths to guard against accidents and pollutions.

- Sanitation.** *Sanitation.*—The sanitation and conservancy of the regimental lines and other public buildings are carefully attended to. The night-soil and sweepings are all carted away regularly and buried in a distant place allotted for the purpose. The conservancy department is kept in efficient working order by weekly inspections made both by the Quartermaster and Medical Officer.
- Diet.** *Diet.*—Provisions were rather scarce, and the prices consequently ranged at a high figure. Butcher's meat always of indifferent quality. As sheep do not thrive in this climate, goats' flesh only is daily vended to the public. Good mutton can only be procured by special arrangement and at great expense. Beef, seldom good, to be had once a week or so. The cow being held in veneration here, can only be slaughtered within military limits. Fish, however, is plentiful and good. Country vegetables abundant; English varieties scarce. Good table rice has to be imported, and is not always to be had. The coarser kinds alone cultivated in this country, and even these are far from cheap. The sepoy received compensation for dearth of provision as follows, *viz.*, Rupees 2 per mensem.
- Clothing.** *Clothing.*—The clothing generally has been quite suitable and well adapted to the various changes and circumstances of the season and climate. The head-dress alone appears not quite the thing, consisting as it does of a small close-fitting skull-cap worn throughout the year, with white cover in hot weather and a glazed cover during the monsoon; but it fails to afford adequate protection against either sun or rain.
- Sore-feet.** *Sore-feet.*—The sepoy is forced to find and keep himself in boots entirely at his own expense; and, considering the poverty of his wages, it is not at all surprising that he is furnished with wretched, badly-made, ill-fitting boots, the constant source of shoe-bites and blisters. The remedy is apparent: the sepoy ought to be provided with light ammunition boots by Government, free of charge, as a part of his kit.
- Duty and exercises.** *Duty and exercises.*—The duties of the men are light, and in no way detrimental to health. They consist of parades, drills, route marching, guard-mounting, trench and running drill, piquet duties and sham-fights, cleaning of arms and accoutrements, and daily roll-calls. For a short time the men were engaged in fatigue-duty, in throwing up earthworks at the butts, for which, I believe, they are to be remunerated. Number of nights in bed per week four to five.
- Drill.** *Drill.*—Daily amount of drill, mornings from 5-30 to 7 o'clock, evenings from 4-30 to 5 or 6 o'clock, according to the time of the year. During the annual ball practice at the butts the men are often kept out very late; but, as their health did not suffer, no remonstrance was made. Sundays and Thursdays are general holidays.
- Exercises.** *Exercises.*—There is a small gymnasium attached to the regimental lines, in which athletic sports and exercises are practised and encouraged, chiefly among recruits and young sepoys. Both as a means of recreation and profit the sepoys' leisure hours are employed in gardening, country vegetables of sorts being cultivated with success. English kinds are reared here with difficulty. The Government contribution towards the sepoys' gardens consists of 25 Rupees worth of seeds and 50 Rupees in cash annually. The money is distributed as prizes to the best producers.
- Vaccination.** *Vaccination.*—Vaccination has been duly maintained in the corps. 173 cases were vaccinated during the year, of whom twenty-one were adults and the rest children. The arm-to-arm operation generally adopted. No cases of small-pox at Quilon. In the case of the detachment at Trichoor small-pox prevailed in the lines from 6th February to 31st May. One woman and three children died of it. Of the rank and file one was attacked and recovered.
- Phthisis pulmonalis.** *Phthisis pulmonalis.*—At head-quarters one case of "phthisis pulmonalis" during the year. A sepoy thirty-six years of age and sixteen years' service, who was sent away on sick leave to Madras, where he succumbed to his malady. The disease was in this instance inherent and constitutional. Another occurred on detachment duty at Trichoor, which also proved fatal.
- General conclusions.** *General conclusions.*—The general health of the corps as a body has been satisfactory, but the actual number of sick treated at head-quarters is rather large, amounting to 234, and exceeding the total of last year by eighty-six.

Deputy Surgeon-General Johnston inspected this corps on the 17th February 1875, and reports as follows:—

- Sanitary condition of all buildings.** *Sanitary condition of all buildings.*—In association with the medical officer attached to the regiment I made a circuit of the cantonment, and found every thing satisfactory. The sanitary condition of all the public buildings, *viz.*, guard-rooms, cells, and school-rooms, &c., was all that could be desired. The night-soil and sweepings are all carted away regularly and buried in a distant place allotted for the purpose. There are no cess-pools or foul drains connected with the latrines, in which coal tar and dry earth are freely used.
- Conservancy.** *Conservancy.*—Attention is suggested to a very possible source of injury to the health of the inmates of the lines to be found in the presence of a Mahomedan burying-ground not far from the north-east angle of the lines, and about 30 yards from a well much frequented

by the sepoys and their families. This graveyard, now grown to the proportions of a mound from the many dead it contains, should at once be closed, for the water of the well, from its too close proximity, can scarcely fail of being contaminated, and the atmosphere to an equal extent, for the soil is a loose sandy one, and interments—as is the worst of Mahomedans—are said to be dangerously superficial.

32nd Regiment Native Infantry.

STATION—TRICHINOPOLY.

Arrived from Hooshungabad 6th February 1873.

Average strength	...	...	...	...	...	...	...	692
Do. do. present	...	...	...	...	...	...	...	692
Admissions	...	...	...	...	...	...	...	299
Daily sick	...	...	...	...	...	...	...	13
Deaths in hospital	...	...	...	...	...	...	...	...
Do. out of hospital	...	...	...	...	...	...	...	4
Pensioned	...	...	...	...	...	...	...	39
Sick leave	...	...	...	...	...	...	...	44

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Hooshungabad ...	68.29	1.72	.57	.57	.86
1872 ...	Do. ...	86.31	2.16	1.29	1.72	1.29
1873 ...	Trichinopoly ...	147.64	2.73	.58	.14	3.23
...	Average ...	100.74	2.20	.81	.82	1.79
1874 ...	Trichinopoly ...	43.20	1.87	.57	5.63	6.35

Surgeon-Major J. Fitzgerald has been in medical charge during the year, and reports as follows:—

Remaining in hospital 31st December 1873	...	...	...	...	...	19
Admitted...	...	...	...	...	...	299
Discharged	...	...	...	...	...	306
Died in hospital...	...	...	...	...	...	...
Do. out of hospital	...	...	...	...	...	...
Do. on sick leave	...	...	...	...	...	4
Remaining in hospital 31st December 1874	...	...	...	...	...	12

Malarious fevers.—A low form of quotidian and tertian was the prevailing type of this disease: married men, particularly with large families, suffered most, as well as the families themselves, and which I think is owing to the want of proper food and a sufficiency of it, provisions being rather dear. The compensation they receive is not sufficient to meet their wants. I have remarked on this state of things in my last annual report, and I would again desire that this subject should meet the consideration of the authorities, with the view of making the corps really efficient. Within the past year sixteen were sent to their homes under instructions received from His Excellency the Commander-in-Chief on account of being weakly and for general debility.

Climate.—The climate may be divided into three seasons, viz., hot, rainy, and cold. During the hot season miasmatic, lung, and eye affections were most prevalent; during the rainy, ague, bowel-complaints, and eye affections; and in the cold season fever, lung, and rheumatic diseases.

Lines.—The huts or lines of the sepoys are raised on red porous laterite, and are, generally speaking, healthy.

Sepoy huts.	<i>Sepoy huts.</i> —The sepoy's huts, owing to their construction, are faulty as regards ventilation. The guard-room, place-of-arms, and store-room are well ventilated. The drainage, which is very superficial, was found sufficient.
Water-supply.	<i>Water-supply.</i> —The water, which is supplied from a canal, wells, and tank, is said to be of good quality and sufficient.
Diet.	<i>Diet.</i> —The men of the regiment support themselves: the provisions are plentiful, but very dear. Compensation for the dearness of rice is allowed, but the amount is not sufficient for the support of a sepoy with his family. The dieting is not sufficient to support a sepoy with his family and to keep them in good health owing to the dearness of provisions.
Clothing.	<i>Clothing.</i> —The clothing has been sufficient and adapted to the climate.
Foot-soreness.	<i>Foot-soreness.</i> —Foot-soreness is very frequent owing to badly-fitting boots being worn without stockings, which fact is well known.
Duty and exercise.	<i>Duty and exercise.</i> —The ordinary garrison and regimental duties do not appear to affect the health of the men. Average nights in bed per week 4·75.
Drill.	<i>Drill.</i> —The usual guards and parades, generally from 6 to 7 A.M. and 4-30 to 6-30 P.M. daily, do not appear to have any unfavorable influence on health.
Vaccination.	<i>Vaccination.</i> —Vaccination kept up. No case of small-pox has occurred. Many were revaccinated.
Drainage.	<i>Drainage.</i> —Condition of the drainage of hospital and latrines good; dry-earth conservancy plan observed.
General conclusions.	<i>General conclusions.</i> —From this return it may be deduced that the health of the regiment has been on the whole satisfactory throughout the year.

Deputy Surgeon-General Johnston inspected this corps on the 5th February 1875, and reports as follows:—

Principal diseases.	<i>Principal diseases.</i> —A low form of quotidian and tertian was the prevailing type of fever. The medical officer states that married men, particularly with large families, suffered most, as well as the families themselves, and which he thinks is "owing to the want of proper food and insufficiency of it;" and he further states that "provisions being rather dear, the compensation they receive is not sufficient to meet their wants."
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38th Regiment Native Infantry.

STATION—TRICHINOPOLY.

Arrived from Rangoon on the 14th and 21st February 1871.

Average strength ...	...	...	...	...	...	...	698
Do. do. present...	...	...	...	...	...	...	661
Admissions ...	...	...	...	...	...	...	487
Daily sick ...	...	...	...	...	...	...	9
Deaths in hospital ...	...	...	...	...	...	...	2
Do. out of hospital ...	...	...	...	...	...	...	3
Pensioned ...	...	...	...	...	...	...	27
Sick leave ...	...	...	...	...	...	...	24

The following return shows the rates of sickness, deaths, and invaliding as contrasted with former years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871... ..	Trichinopoly ...	50·42	1·69	1·05	5·05	1·34
1872... ..	Do. ...	110·59	2·42	1·16	1·46	1·16
1873... ..	Do. ...	66·40	2·03	1·40	3·58	4·04
...	Average ...	75·80	2·04	1·47	3·36	2·18
1874... ..	Trichinopoly ...	73·67	1·36	·71	3·86	3·45

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Rate per Cent. of				
	Average Strength Present.		Average Strength.		
	Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	52.54	1.91	1.25	1.98	1.25
1872	35.15	1.36	1.08	.69	1.08
1873	34.35	1.14	.70	3.44	1.82
Average ...	40.68	1.47	1.01	2.03	1.38
1874	35.56	1.58	.47	2.67	2.19

The following corps were serving in this district on the 31st December 1874 :—

9th Regiment Native Infantry.		
25th	do.	do.
34th	do.	do.

Deputy Surgeon-General Johnston was in charge of this district during the year.

9th Regiment Native Infantry.

STATION—CANNANORE.

Arrived from Trichinopoly on the 7th and 28th February 1871.

Average strength	...	...	...	...	...	...	...	685
Do. do. present	...	...	...	...	...	...	...	631
Admissions	...	...	...	...	...	...	...	153
Daily sick	...	...	...	...	...	...	...	9
Deaths in hospital	...	...	...	...	...	...	...	1
Do. out of hospital	...	...	...	...	...	...	...	2
Pensioned	...	...	...	...	...	...	...	2
Sick leave	...	...	...	...	...	...	...	13

The following return shows the rates of sickness, deaths, and invaliding as contrasted with former years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	Cannanore	48.02	2.04	1.26	...	.70
1872	Do.	26.82	1.13	.90	...	1.51
1873	Do.	17.26	.77	.62	...	1.08
Average ...		30.70	1.31	.92	...	1.09
1874	Cannanore	24.24	1.42	.43	.29	1.89

Surgeon J. H. Ritchie, M.D., has been in medical charge during the year, and reports as follows :—

Remained 31st December 1873	...	...	...	...	...	9
Admitted	...	...	...	...	...	153
Discharged	...	...	...	...	...	131
Died	...	...	...	...	...	1
Remaining 31st December 1874	...	...	...	...	...	9
Average number of sick in hospital	...	...	...	...	...	9-11
Convalescents	...	...	...	...	...	...
Died without receiving medical treatment	...	...	...	...	...	...
Recruits joined	...	...	...	...	...	41
Discharged from the service without pension on account of disease	...	...	...	...	...	1
Do. do. do. for other causes	...	...	...	...	...	...
Invalided on sick leave	...	...	...	...	...	13
Pensioned	...	...	...	...	...	48

Climate.—Judging from the number of admissions into hospital, the climate seems to be favorable for sepoys, and those diseases which caused the greatest number of admissions were for the most part very trivial, Fevers, dysentery, and diarrhoea being rare and mild in type.

Guard-rooms.—The new quarter-guard room, which was formerly the serjeants' quarters, is situated between the hospital and barracks, being in the same line with them. It is too open and exposed to the prevailing winds. Accommodation barely sufficient. Prisoners' room is too small, and does not afford sufficient accommodation. No recommendations made.

Water-supply.—The water-supply is obtained from wells in the lines; is good, but during last hot months was not sufficient. No recommendations.

Sanitary arrangements.—Not applicable to native troops.

Diet.—Provisions are considered dear at this station. Vegetables are abundant.

Foot-soreness.—Cases of foot-sores from wearing bad boots are quite common. They are generally excused wearing boots until the sores heal. These are no doubt owing to the boots being badly made and to bad leather. No recommendations necessary.

Duty and exercises.—The duties of this regiment are principally parades and in furnishing its own and the cantonment guards (every other week). Its own guards are the quarter, hospital, and mess; and the cantonment fort, magazine, commissariat, and Garrison Hospital. These have had no injurious effects on the health of the men.

The average number of consecutive nights in bed is five. This varies thus: when the Mussulmen have leave the Hindus have to furnish the guards, and their tour of duty comes oftener, and vice versa. No recommendations necessary.

Vaccination.—Vaccination has been regularly kept up among the families of the men; 178 cases were vaccinated—successful 175, unsuccessful 3. There were three cases of small-pox during the year, one fatal. These occurred in the families of pensioners who had recently arrived here and were permitted to reside in the lines by the Officer Commanding. No occasion to revaccinate any of the men.

Hospital ventilation.—The ventilation is by windows, doors, and ridges in roof. Is satisfactory. No representations.

Accommodation.—There has been no overcrowding.

Drainage and latrines.—The drainage is good, and the latrine which has been recently built is clean, well ventilated, and on the dry-earth principle, which is efficiently carried out. No recommendations.

General conclusions.—The health of this regiment during the year was satisfactory. There were 153 admissions.

Deputy Surgeon-General Johnston inspected this corps on the 18th September 1874, and reports as follows :—

Barracks.—The regimental lines are placed in the north-eastern boundary of the cantonment of Cannanore, and about 200 yards from the eastern angle of the general parade-ground. The surface configuration is somewhat declivitous, thus admitting of an easy natural drainage. The surface soil is a red argillaceous earth, resting on a laterite deposit of unknown thickness. Within these lines are placed the sepoys' huts, consisting of four parallel rows, each row being separated longitudinally by a central wall, so intersected by inner walls as to give, by the resulting divisions, sufficient accommodation for the sepoys' families and retainers.

A monsoon of unprecedented severity, and during which more than 180 inches of rain is said to have fallen, has not, as I am informed, damaged the sepoys' huts in their lines. As I write this report the rain is still falling in torrents, and the weather is too inclement to permit me to itinerate these lines. This report, therefore, is limited to the hospital and its internal economy and conduct, which are all that could be desired.

Sanitary
condition of
all buildings.

Sanitary condition of all buildings.—The place-of-arms and the quarter-guard room together with all other public buildings belonging to this regiment, were found in very fair order. The regimental school within the lines affords accommodation during school-hours to the pupils under instruction in English, Tamil, and Hindustani. It was found clean.

Conservancy.

Conservancy.—Conservancy of the lines is very satisfactory.

25th Regiment Native Infantry.

STATION—CANNANORE.

Arrived from Moulmein 14th February 1869.

Average strength	...	...	...	...	...	...	...	...	694
Do. do. present	...	...	...	...	...	...	...	...	661
Admissions	...	...	...	...	...	...	...	...	283
Daily sick	...	...	...	...	...	...	...	...	12
Deaths in hospital	...	...	...	...	...	...	...	...	4
Do. out of hospital	...	...	...	...	...	...	...	...	2
Pensioned	...	...	...	...	...	...	...	...	24
Sick leave	...	...	...	...	...	...	...	...	13

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Cannanore ...	34.18	1.11	.90	6.15	.75
1872 ...	Do. ...	25.	.75	.43	...	.43
1873 ...	Do. ...	31.14	.93	...	7.73	2.01
	Average ...	30.10	.93	.44	4.62	1.06
1874 ...	Cannanore ...	42.81	1.81	.86	3.45	1.87

Surgeon-Major J. A. Cox has been in medical charge during the year, and reports as follows:—

Climate.

Climate.—Climatic influence upon the health of the regiment has not been favorable, as most of the diseases took on a low form when the monsoon and land winds prevailed during the past year.

Lines.

Lines.—The lines consist of rows of thatched mud huts to the north of the Native Infantry parade-ground. The site is somewhat low, but the natural drainage is good, and the lines are healthy.

Guard-rooms,
&c.

Guard-rooms, &c.—There are small holes in the walls of the huts to answer for windows, notwithstanding which the ventilation is defective. The building on the west side of the hospital (formerly Staff Serjeant's quarters) has been converted into a quarter-guard room, and is sufficiently ventilated to keep the air pure. The drainage is good throughout.

Water-
supply.

Water-supply.—Water is supplied from wells in the lines. It is both good and plentiful.

Clothing.

Clothing.—Sufficient and suitable.

Foot-soreness.

Foot-soreness.—Such cases occur frequently, chiefly from the men wearing boots made of bad leather and of improper size, without socks. They are excused from wearing boots until their feet are well. No remedy.

Duty and
exercise.

Duty and exercise.—The amount of duty performed is moderate. No unfavorable influence upon health; 6.3 nights in bed.

Drill.

Drill.—During the drill season drill takes place morning and evening, weather permitting, for an hour each time, but at other seasons there are only three fixed drills in a week. No unfavorable influence upon health.

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Mangalore ...	71.30	2.54	1.58	...	2.30
1872 ...	Do. ...	53.98	2.22	1.92	2.07	1.33
1873 ...	Do. ...	54.57	1.70	1.46	2.63	2.34
	Average ...	59.95	2.15	1.65	1.56	1.99
1874...	Mangalore...	39.07	1.49	.13	4.18	2.78

Surgeon-Major R. Dempster has been in medical charge during the year, and reports as follows :—

Meteorology.

Year and Month.	Localities at which observations were made.	Reading of Barometer Number.				Temperature of Air.								Dry and Wet Bulb.		Mean Deduced Dew Point.	Mean Degree of Humidity.	Rain.		Ozone.		Wind.		Cloud.	
		Mean for Month.	Highest in Month.	Lowest in Month.	Range.	Highest in Month.	Lowest in Month.	Range in Month.	Mean of all Highest.	Mean of all Lowest.	Mean Daily Range.	Approximate Mean for Month.	Mean of Dry Bulb.	Mean of Wet Bulb.	Number of Days it fell.			Amount collected.	Mean at h. a.m.	Mean at h. p.m.	General Directions.	Estimated Strength	A.M. 0-10.	P.M. 0-10.	
1874.		Mangalore.																							
January	IN. 29.87	IN. 29.96	IN. 29.83	IN. 00.13	86	68	18	80	70	10	°	°	°	°	°	°	IN.	..	..	..	W.E.W.W.	..	..	..
February90	.95	.88	.7	92	69	23	85	72	13	°	°	°	°	°	°	1	.2	..	..	W.E.W.W.	..	..	..
March89	.94	.84	.10	92	71	21	82	76	6	°	°	°	°	°	°	..	..	..	..	N.E.W.W.	..	..	..
April86	.97	.74	.23	90	72	18	87	78	9	°	°	°	°	°	°	2	.19	..	..	E.N.W.	..	..	..
May76	.88	.59	.29	89	73	16	85	76	9	°	°	°	°	°	°	16	22.90	..	..	N.E.S.W.	..	..	..
June75	.87	.60	.27	84	72	12	82	74	8	°	°	°	°	°	°	28	40.62	..	..	S.W.	..	..	..
July77	.85	.64	.21	82	69	13	79	72	7	°	°	°	°	°	°	31	50.13	..	..	S.W.	..	..	..
August78	.90	.63	.27	83	69	14	77	73	4	°	°	°	°	°	°	31	17.9	..	..	S.W.	..	..	..
September75	.90	.60	.30	83	70	13	78	74	6	°	°	°	°	°	°	27	24.76	..	..	N.W.	..	..	..
October81	.92	.65	.27	83	72	11	81	72	7	°	°	°	°	°	°	17	11.05	..	..	S.E.S.W.	..	..	..
November86	.96	.77	.19	88	72	16	83	73	10	°	°	°	°	°	°	4	3.13	..	..	N.E.N.W.	..	..	..
December89	.98	.80	.18	87	68	19	83	68	15	°	°	°	°	°	°	2	.62	..	..	N.E.N.W.	..	..	..
Mean ..		29.82	29.92	29.71	.20	86	70	16	81	74	8	°	°	°	°	°	°	13	14.20	..	..	N.E.N.W.	..	..	..

Guard-room.	<i>Guard-room.</i> —The guard-room is not sufficiently commodious, and its enlargement has been recommended. No overcrowding has taken place, as an extra room in the barracks is used when necessary. Ventilation and drainage is good.
Nuisances.	<i>Nuisances.</i> —There have been no nuisances.
Water-supply.	<i>Water-supply.</i> —Water is good and abundant all the year round, obtained from wells in the lines.
Sanitary arrangements.	<i>Sanitary arrangements.</i> —Sanitary arrangements have been satisfactory. No local causes of diseases have required removal.
Diet.	<i>Diet.</i> —Provisions have been plentiful and moderate in price. Vegetables are procurable all the year round. The men have received the usual rice money, averaging Rupees 1-5-8-per man. Diet is on the whole sufficiently nutritive, but on account of dearness of mutton on this coast many are deprived of it.
Clothing.	<i>Clothing.</i> —Clothing is sufficient and adapted to climate.
Foot-soreness.	<i>Foot-soreness.</i> —There have been many cases of slight foot-soreness unavoidable in men wearing English boots without stockings. On any slight abrasion a man is excused from wearing his boots for a few days, which always has the desired effect. No recommendation on the subject has been deemed necessary.
Duty and exercises.	<i>Duty and exercises.</i> —The duties of the troops are light; they are required to furnish only the usual regimental guards. Average number of nights in bed 10½. The duties have not unfavorably influenced their health.
Exercises.	<i>Exercises.</i> —The only recreation the men have is in the cultivation of their gardens, sufficient ground being provided for all who like to avail themselves of it. The gardens are generally well cultivated.
Lock-up rooms and cells.	<i>Lock-up rooms and cells.</i> —The cells before reported on as being unfit for requirements on account of damp during the rain and heat in the dry weather have been rendered fit for use by an additional roof. It is 10 feet high, 8 feet long, and 8 feet broad. The defaulters-room is large and contains 2,630 cubic feet of air. It is 17 feet high, 23 feet long, and 9 feet broad. The cells contain 640 cubic feet. Ventilation of all is good.
Vaccination.	<i>Vaccination.</i> —Vaccination is carefully carried out. All men in the regiment have been either vaccinated or have had small-pox. Vaccination as much as possible carried out in the families; all children above four months have been vaccinated. Total successfully vaccinated among troops and families seventy-nine. No small-pox has occurred.
Epidemic diseases.	<i>Epidemic diseases.</i> —No epidemic diseases have prevailed. No overcrowding has taken place, and there have been no defects from want of cleanliness or ventilation, or over fatigue or on account of diet, clothing, or water-supply.
Phthisis pulmonalis.	<i>Phthisis pulmonalis.</i> —There was only one admission from phthisis pulmonalis, that of a recruit boy who died.
General conclusions.	<i>General conclusions.</i> —The sanitary state of the regiment during the past year has been satisfactory. The admissions were ninety-one less, than the previous year. The average daily sick was 10·21, against 11·40 the previous year. The men each year are becoming more acclimatized to this coast; although the rainfall during the monsoon was unusually heavy, the men did not suffer in consequence. The principal diseases were ague, dysentery, diarrhoea, and itch. The admissions from zymotic diseases have been 65·90 per cent. of total admissions. Only two deaths have taken place, one a private from ague, another recruit boy from phthisis pulmonalis. The European Officers have enjoyed good health.

Deputy Surgeon-General Johnston inspected this corps on the 25th September 1874, and reports as follows:—

Barracks.	<i>Barracks.</i> —The sanitary condition of the lines is generally satisfactory. The huts are in good repair and the streets of the lines are clean, and apparently the utmost attention is bestowed by the regimental authorities in keeping them so. Thanks to the declivitous nature of the surface ground the drainage of the lines is very effective. In these huts ventilation must be reduced to a minimum—a defect which cannot fail to re-act most injuriously on the health and efficiency of the sepoy inmates, especially when regard is had to the fact that in each hut abode are huddled together, not only the sepoy himself, but also his family and retainers for months together, night and day, owing to persistent rains of the south-west monsoon. Such defect is common to all our sepoy lines, and is therefore not more marked here than elsewhere.
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Sanitary condition of all buildings.—The place-of-arms, guard-room, cells, and other public buildings pertaining to this regiment are in excellent sanitary condition. The latrines attached to the lines are in good order, dry earth and coal-tar being in constant use. The excreta are removed to a distance and buried. There are no cess-pools or foul drains in connexion with these latrines. Sanitary condition of all buildings.

Conservancy.—The conservancy of the lines and neighbourhood of barracks is satisfactory. Conservancy.

Hospital.—On the present occasion of its inspection there was nothing wanting which could detract from the evidence afforded of the zealous attentions bestowed on his duties by the medical officer in charge of the regiment, cleanliness, order, and regularity being every where present in the wards and attached buildings. Hospital.

MYSORE DIVISION.

Average strength	...	...	...	...	...	...	...	3,726
Do. do. present	...	...	...	...	...	...	...	3,476
Total admissions	...	...	...	...	...	...	...	2,206
Daily sick	...	...	...	...	...	...	...	87
Deaths in hospital	...	...	...	...	...	...	...	22
Do. out of hospital	...	...	...	...	...	...	...	8
Pensioned	...	...	...	...	...	...	...	110
Sick leave	...	...	...	...	...	...	...	65

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Rate per Cent. of				
	Average Strength Present.		Average Strength.		
	Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	77.75	2.78	1.27	3.71	2.94
1872	96.70	3.02	1.03	3.04	2.90
1873	80.40	2.51	1.13	1.77	1.87
Average ...	84.95	2.77	1.14	2.84	2.57
1874	63.46	2.50	.80	2.95	1.74

The following corps were serving in the division on the 31st December 1874 :—

Head-Quarters, Sappers and Miners.
 23rd Regiment Light Infantry.
 36th do. Native Infantry.
 28th do. do.
 30th do. do.

Deputy Surgeons-General Ranking and Smith held charge of this division and that of the Ceded Districts during the year, and the latter's combined report on these is as follows :—

Meteorological Results.

—	1870.	1871.	1872.	1873.	1874.
Mean barometric pressure	26.910	26.927	26.911	26.929	26.922
Do. temperature of air	72° 8	72° 9	73° 8	72° 5	71° 9
Do. do. of wet bulb	66.2	66.2	66.2	64.2	64.5
Observed extremes	{ maximum	84.2	82.8	84.1	83.3
	{ minimum	64.5	64.7	64.2	63.4
Do. humidity (saturation 100)	73	72	72.6	70	70
Do. maximum solar heat in vacuo	133.2	132	128.8	134.1	132.5
Do. minimum on grass	61.5	61.9	62.1	61.3	61.6
Do. depth of rain in inches	39.255	29.058	39.911	29.911	56.580
Number of days on which rain fell	121	107	92	80	126

The following table shows the mean results for each quarter of the year under report :—

Quarters.	Barometer reduced to 32° Fahrenheit.	Thermometer.				Humidity.	Sun's Rays in Vacuo.	Minimum on Grass.	Wind.	Rain	Number of Rainy Days.
		Daily Means.		Observed Extremes.					Velocity.		
		Dry.	Wet.	Max.	Min.						
First	26.990	71.9	60.4	85.0	60.5	53	136.6	55.8	128	IN.	...
Second	26.870	76.2	67	87.8	68.1	66	134.3	65.6	190	17.822	35
Third	26.861	70.6	66.9	80.5	64.1	83	126.5	95.2	237	29.080	63
Fourth	26.966	69.0	63.6	79.8	60.9	76	...	...	108	9.678	28
Means and Sums ...	26.922	71.9	64.5	83.3	63.4	70	132.5	61.6	166	56.580	126

It is a matter of regret that the results of these meteorological tables should have been partly vitiated, as regards two important points, by the loss of instruments used in registering the maximum solar heat "in vacuo," and by the state of disrepair of the instrument which registers the "minimum on grass." In each case the observations of fifteen weeks are lost, and the registered results under these heads are to be taken as deduced from thirty-seven instead of from fifty-two weeks of observation.

Sanitary.

Sanitary.—From year to year the sanitary condition of lines and cantonments has been carefully recorded. All authorities, whether civil, military, or medical, seem to be in earnest in pushing on the great work as quickly as circumstances will permit. The money question is, of course, the main difficulty, for amongst the many wants of India want of money appears to be the most prominent one.

The position which the authorities occupy in consequence of this want is not entirely one of unmixed evil, inasmuch as it gives more time for the consideration and more extended opportunities for the study of intricate and practical questions from different points of view. In carrying out sanitary changes the best practicable under the circumstances must be aimed at, rather than the best absolutely, for not only has money to be found, but native prejudices have to be studied, and native co-operation in most cases has to be secured.

The more important questions in connexion with the lines of Native Regiments, such as their drainage, sewerage, &c., are progressing towards solution more or less satisfactorily. The new lines of the 36th Regiment N.I., called the West Hutting Lines, are a great improvement upon the old. The huts are erected upon improved principles, and care has been taken in arranging for the drainage and sewerage.

The lines of the 23rd Regiment W.L.I., the East Hutting Lines, remain unimproved. They suffered severely during the rains, and, being built on an unhealthy locality, prompt and decided action is required to secure the effectual removal of their insanitary conditions. In my opinion these lines should be temporarily abandoned, the site ploughed up and drained, and placed under cultivation for a few years before the regimental lines are rebuilt.

The lines of the Sappers and Miners are admirably built and well conserved. The lines of the 30th Regiment N.I. at the French Rocks are remarkable for their conservancy and cleanliness; there are, however, defects to be remedied in connexion with domestic latrines and with the general drainage. The lines of the 28th Regiment N.I., Mercara, have been left by the rains in a condition of total ruin; they are being rapidly repaired and partly rebuilt, and a careful consideration of the principal requirements of the case has been given by the military and medical authorities.

In the Ceded Districts the lines of the Regiment of Light Cavalry are susceptible of great improvement: they are built irregularly, and are but indifferently conserved. The lines occupied by the 21st Regiment N.I., and those adjoining belonging to the 4th Regiment N.I., are irregular in their arrangement, and the huts are not built upon any definite system. The drainage is bad, and the latrine arrangements of the huts are faulty. There are no regimental latrines.

From these brief remarks it will be seen that, though much has been done, and much is doing now, to improve the sanitary condition of lines, not a little remains to be accomplished before their condition as a whole can be accepted as satisfactory. The sanitation of regimental lines naturally commences with the sepoys' hut, the arrangements of which, especially as regards the domestic latrine and lavatory, require the careful consideration of Commanding Officers and of the medical officers of corps.

The following points deserve attention :—

(a). The convenience of adopting some general and feasible plan of arrangement as regards the domestic latrine and lavatory of sepoys' huts.

(b). The necessity of separating ablution water from urine, faecal wash, and cooking wash, so that whilst the former is passed into the surface V-shaped stone drains, the latter shall invariably be otherwise disposed of.

(c). The expediency of erecting regimental latrines for men and women, and of prohibiting males from using the domestic latrines.

(d). The expediency of erecting female latrines at a suitable distance from the male latrines in retired but accessible places, so that the women and children may be induced to use them, and so restrict, as much as possible, the general use of the domestic privy—a result much to be desiderated, but only, as far as my knowledge goes, secured in the case of the Head-quarters of the Sappers and Miners at Bangalore.

The principal, if not the only difficulty, is one of expense. The sepoy purchases and repairs his hut, and he has no pecuniary margin for improvements or special sanitary contrivances, or even for repairs. This system acted well enough in days when sanitary schemes and sanitary knowledge did not exist, and when human life had far less value than it has now; but its discontinuance is absolutely necessary now, when such questions as army sanitation and conservation of life are accepted as part of the responsibilities and duties of Government. The European soldier is housed, and it is hoped that the day will soon come when the sepoy also will be housed by Government. The house is the unit of sanitary administration as regards the civil population, the hut is the same unit as regards the sepoy.

These centres secured, and the sanitation radii can be prolonged readily in all directions.

The sanitary condition of the two great military stations of this administrative circle, *viz.*, of Bangalore and Bellary, is steadily progressing. In both the chief defect concerns the water-supply. As regards Bellary, the usual scanty rainfall is a formidable obstacle to encounter. The town is mainly dependent upon the fort ditch for its supply, the deficiency of which is partly supplemented by a channel recently made, which connects the ditch with the Alipore tank.

The water-supply of Bangalore is deficient in quantity and objectionable in quality. An extensive water-supply project has been recently sanctioned, which will involve the formation of a new collecting ground to the north-west of Bangalore, and the adoption of improved method for the transmission and distribution of water through the cantonment.

Vaccination.—Vaccination has been carefully attended to during the last year with one exception. An explanation has been requested from the present medical officer of the regiment, and a report will be duly submitted.

Hospitals.—The regimental hospitals vary in form and accommodation considerably. None of them, not even excepting the Duplex Native Military Hospital built at Bellary on the Bengal muster, contain the accommodation for fifty patients laid down as necessary in the standard plan of a Native Military Hospital. The hospitals of the 36th Regiment N.I., of the 30th Regiment N.I., and of the Sappers and Miners are good; the hospital of the 23rd Regiment W.L.I. is fair; that of the 28th Regiment N.I. at Mercara indifferent. The 4th Regiment L.C. at Bellary has no regimental hospital, the sick being accommodated temporarily in a small hospital intended for the reception of the regimental followers.

The aggregate strength of the force is 4532·71. The ratio of admission per 1,000 from small-pox stands at 4·95 and the deaths at ·54, the corresponding figures of 1873 being 20·68 and 0·0.

It would be well were compulsory vaccination extended to the families and followers in the lines. I believe the time has come when this pressure could be applied, especially to male non-combatants, without difficulty.

In the group of fevers intermittent fever constitutes the most prominent item. Remittent fever claims four admissions and two deaths, as against ten admissions and three deaths in 1873. Continued fevers, a somewhat ill-defined group, claim twenty admissions without a casualty, as against forty-three with one casualty in 1873.

No cases of enteric fever have been returned for the past year, and only two with one death in 1873. This fact corroborates what has been already noted regarding the rarity of this disease among adult natives. In 1873 there were ninety admissions from dysentery with four casualties; in 1874 there were eighty cases with two casualties. Diarrhoea is credited in 1873 with 134 admissions and 1 death, and in 1874 with 151 admissions and 2 deaths. The largest number of admissions from dysentery in both years occurred at Mercara, *viz.*, thirty-six with one death in 1873, and forty-five with two deaths in 1874. Hepatitis in 1874, as in 1873, is most prevalent at Bangalore, as is also a somewhat fatal form of pneumonia, which affection is responsible for twelve admissions and three deaths in 1873, and for ten admissions with three deaths in 1874. This disease appears generally in an asthenic form. Phthisis pulmonalis is an infrequent disease amongst native troops at Bangalore and Bellary; the returns of the disease for 1874 stand, respectively, at ·54 and 1·33, and for 1873 at ·96 and ·65. At Mercara, a cold and damp malarious climate, the ratio per 1,000 of admissions stands at 3·56. Venereal diseases are more common at Bangalore, where they constitute 12·31 per mille of admissions, than at Bellary, where the ratio falls to 4·66; the corresponding ratios for 1873 were less favorable, being 15·46 for Bangalore and 10·39 for Bellary. Eye diseases, chiefly conjunctivitis, are common both at Bangalore and Bellary, the ratios per mille being for 1874 32·12 and 28·60.

Rheumatic diseases claim the following ratios per mille :—

At Bangalore ...	46.06
„ French Rocks ...	29.54
„ Mercara ...	46.25
„ Mysore (small detachment) ...	15.53
„ Bellary ...	38.65

The changeable dry and cold climate of Bangalore, and the changeable cold and damp, as well as malarious, climate of Mercara seem especially to predispose the sepoy to rheumatic disease.

No sickness of any consequence occurred amongst the troops marching within the limits of the circle during 1874. One sepoy of the 4th Regiment N.I. died in the Camp of Exercise, the only casualty among the native troops collected there.

Garrisons of
Bangalore
and Bellary.

Garrisons of Bangalore and Bellary.—The total number of Europeans of all ranks, staff and regimental, in the two army divisions, numbered 172, of whom seventy-six were admitted to the sick report and four died. The corresponding numbers for 1873 are 176, 78, and 2.

The per mille rates are as follow :—

	1874.	1873.
Admitted to strength ...	442	443.2
Died to strength ...	23.2	11.4

The four casualties occurred at Bangalore, the causes being atrophy, albuminuria, hepatitis, and general dropsy. The subjects were respectively a Field Officer, a Medical Officer, a Captain, and a Warrant Officer.

The wives of Europeans, staff and regimental, numbered 120, yielding forty-two admissions but no deaths. The corresponding numbers for 1873 were 125 with thirty-five admissions and one death.

The children of Europeans, staff and regimental, numbered 263 with eighty-eight admissions and four deaths, or 1.5 per cent. of strength. The casualties amongst Europeans, males, females, and children, in the Mysore Division, numbered in all seven, *viz.*, four European Commissioned and Warrant Officers and three children; in the Ceded Districts a solitary casualty occurred in the person of a child.

The Native Commissioned Officers numbered in the two divisions 105; this aggregate yielded thirty-three admissions and one casualty. The casualty occurred in the Mysore Division.

Mortality amongst Families.

Divisions.	Stations.	Corps.	Estimated Population, exclusive of Troops.	Died.			Mortality per 1,000 of Popu- lation.
				Adults.	Children.	Total.	
Mysore Division...	Bangalore ...	Head-Quarters, Sappers and Miners.	1,852	4	13	17	9.17
		23rd Regiment W.L.I...	1,573	18	41	59	37.51
		36th do. N.I...	1,490	9	5	14	9.40
	French Rocks.	30th do. do...	1,432	8	7	15	10.47
		Mercara ...	28th do. do...	1,745	23	47	70	40.11
Ceded Districts ...	Bellary ...	4th do. L. C...	750	12	8	20	26.67
		4th do. N. I...	1,468	13	23	36	24.52
		21st do. do.	1,647	6	17	23	13.97
Total ...			11,957	93	161	254	21.24

The above gives a table illustrating the mortality per mille of the population among the families and followers of the several native regiments in the administrative circle. This table is an interesting one as showing the very considerable numbers occupying the lines of native regiments, and the varied rates of mortality which these notable aggregates exhibit. My able predecessor has well remarked that such tables are "of interest as affording some clue to the death-rate amongst the native community generally."

He adds "as conservancy is better enforced in the lines of regiments than in towns, a better condition of health, as evidenced by a lower death-rate, may be expected than amongst the mass of the population in large towns." A short analysis of the returns is all that is required. The mortality at Mercara stands at the head of the return with the ratio of 40.11 per mille of population. Out of seventy deaths recorded 47 or 67.1 per cent.

occurred amongst children, a term applied to all under twelve years of age. The only regiment whose death-rate approaches that of the 28th Regiment N.I. at Mercara is the 23rd Regiment which occupies the unhealthy, and repeatedly condemned, East Hutting Lines at Bangalore. Out of fifty-nine deaths, 41 or 69·5 per cent. occurred in children.

To show how much the "*genius loci*" influences the death-rate, the experience of the 23rd Regiment and that of the 36th Regiment, which occupy adjacent lines at Bangalore, may be noted. The mortality per mille in the case of the 23rd Regiment is 37·51, of the 36th Regiment 9·40; the mortality among children of the former is 69·5 per cent. of the casualties, of the latter 35·7. A similar contrast, though from what cause arising it is difficult to say, is seen in the experience of the contiguous lines of the 4th and 21st Regiments N.I. at Bellary. The low death-rates of the Head-Quarters, Sappers and Miners, of the 36th Regiment, and of the 30th Regiment are due principally to a healthy and well conserved locality; in part also to the superiority of their respective lines.

The average mortality amongst the families and followers of the regiments in this administrative circle is given as 21·24; in 1873 the average stood at 39·24.

These results are probably only approximately correct. Every care should be taken by Commanding Officers of regiments to secure the careful registration of births and deaths within the lines of their respective regiments.

Head-Quarters, Sappers and Miners.

STATION—BANGALORE.

Average strength...	...	...	...	...	...	...	...	949
Do. do. present	...	...	...	...	...	...	...	949
Admissions	...	...	...	...	...	...	...	447
Daily sick	...	...	...	...	...	...	...	14
Deaths in hospital	...	...	...	...	...	...	...	2
Do. out of hospital	...	...	...	...	...	...	...	3
Pensioned...	...	...	...	...	...	...	...	38
Sick leave...	...	...	...	...	...	...	...	14

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	Bangalore	73·07	3·02	1·90	2·04	3·68
1872	Do.	108·32	3·56	1·40	3·13	2·59
1873	Do.	91·61	2·50	·65	·98	1·52
	Average	91·00	3·02	1·31	2·05	2·59
1874	Bangalore	47·10	1·47	·52	4·00	1·47

The following medical officers were in charge during the year:—

Surgeon-Major Lowe.

Do. W. Farquhar, M.D.

Surgeon J. W. Strong.

The last-named reports as follows:—

Climate.—The climate during the past year has been temperate. The fall of rain has been much in excess of the past ten years, yet no epidemic of any kind prevailed; during the autumn months the daily sudden changes of temperature brought about catarrhs, fevers, and rheumatic affections, especially in men tainted with malaria of long standing.

Sepoys' huts.—The huts are well built of rammed mud with tiled roofs. The main Sepoys' huts street is 50 feet wide with nine subsidiary streets 25 feet each; all are clean and open.

Guard-rooms.—The guard-rooms and huts are well ventilated; no defects have been observed. Good drains of granite have been laid down throughout the barracks and lines.

Nuisances. *Nuisances.*—No nuisances exist, with the exception of the quarter-guard and native public latrines, which are at times offensive. Representations have been made on the subject, up to the present without beneficial results.

Sanitary arrangements. *Sanitary arrangements.*—The barracks and lines have been regularly and properly looked after. No local cause of disease exists.

Foot-soreness. *Foot-soreness.*—There are many cases of foot-sores, induced by bad-fitting boots. Rest without boots for a few days is generally sufficient to effect a cure.

Duty and exercises. *Duty and exercises.*—The men have been employed at various trades, such as stone-cutting, brick and tile making, potting, moulding, rocket-making, carpentry, surveying, sewing, lithography, and field works. None of these duties have been severe or prejudicial to health. Nights in bed 4.5 and 6.

Vaccination. *Vaccination.*—Seventy-one fighting men { Successful... .. 21
 { Unsuccessful 50
 Total ... 71

Eighty-two women and children. { Successful 64
 { Unsuccessful 18
 Total ... 82

Epidemic diseases. *Epidemic diseases.*—Vaccination is regularly kept up. Two cases of small-pox occurred during the year. The men bore the marks of two successful vaccinations. No epidemic.

Phthisis pulmonalis. *Phthisis pulmonalis.*—No case.

Drainage of hospital and latrines. *Drainage of hospital and latrines.*—The drainage of the hospital is good. The native latrine is in a shattered condition. The erection of another building has been recommended, and is still under consideration.

General conclusions. *General conclusions.*—The general health of the corps has been very good during the past year. The admissions into hospital have been less than for the two previous years. The good health enjoyed by the men of the Sappers and Miners is due in a great measure to their being so well housed, receiving larger remuneration for their services than the men of most native corps. They are able to provide better food and clothing, which is alone productive of health, also the amount of healthy exercise provided for the men apart from their military duties. Total admissions for the past year 324. Deaths 4. The principal diseases are the following:—Ague 60, simple continued fever 14, dysentery 2, diarrhoea 1, hepatitis 2, respiratory diseases 8, rheumatism 17, venereal diseases 10, abscess and ulcers 22, wounds and accidents 64, all other causes 96, small-pox 2, varicella 4—total 324.

One death occurred in hospital from pneumonia complicated with fever of a low type. Two sepoys were drowned whilst bathing in a large tank about three miles from the station. Surgeon-Major T. Lowe died at this station during the past year while in charge of the Head-Quarters, Sappers and Miners, from hepatitis and ascitis.

Acting Deputy Surgeon-General G. Smith inspected the Head-quarters, Sappers and Miners, on the 28th December 1874, and reports as follows:—

Lines.—The Native Sappers' lines lie upon a gentle slope toward the east, south-west of the enclosure of the Sappers' barracks. The lines are not arranged into wings, but consist of rows of parallel blocks separated from each other by subsidiary streets twenty-five feet wide, and traverse from east to west by a main street fifty feet wide. The configuration of the ground is favorable to drainage, and the presence of large municipal drains on the south of the lines secures an efficient sewerage. The subsidiary streets have lateral V-shaped stone drains with sufficient gradient. The outfall from the huts is generally good, but would be improved by the use of short cylindrical pipes passing through the walls from the domestic lavatories. The huts are well built, comfortable, well tiled, well ventilated structures which keep out both sun and rain. They are made of rammed earth made into blocks in frames and mixed with broken bricks, tiles, &c. The mixture is called *pisé* here. The ridges and eaves of the strongly tiled roofs are *chunamed*. The huts are fairly clean, the courtyards ample. There are good domestic lavatories, but no domestic latrines; all the men go to the regimental male latrine, and the females to the regimental female latrine; children only are allowed to defecate in the hut. Trees young set are planted down the raised centre of the subsidiary streets, and dust-bins of stone are placed at the end of each block. The main has but one V-shaped stone drain running along its northern margin. The fall is good. I inspected the huts of the privates, of the Non-commissioned officers, and of the Native Commissioned officers, and found all clean and well conserved. The open drains, as they approach the mains to the south of the lines, emitted a disagreeable smell, and required to be swept out frequently and flushed with water.

Native military in the lines 499. Families and followers—male 431, female 731, male children 435, female children 436; total 2,532; average number of occupants per hut 4.

Sanitary condition of all buildings.—Latrines.—There are two regimental latrines, one for males and one adjoining for females. These latrines are situated to the south of the lines, and close to the road separating the lines from the cantonment bazaar. In consequence of the want of domestic latrines, these buildings are resorted to freely by the sepoys and their families. They are constructed upon a wrong principle, badly ventilated, badly conserved, sloppy with water, and in every way objectionable. Both latrines are upon the same unsound principle. They should be reconstructed upon the dry-earth system, and should have an efficient staff of toties under efficient supervision. Sanitary condition of all buildings.—Latrines.

Quarter-guard.—The quarter-guard is a good stone building situated within the barrack square. It is well raised from the ground, well drained, and well ventilated; superficial area 340 feet, cubic contents 5,440, number of men sleeping per night 13, number of sentries 10; total 23. The space is much too small. The European lavatory and European latrine attached to the quarter-guard are in a fair state of conservancy, but this cannot be said of the utterly objectionable native latrine, the conservancy of which is susceptible of very great improvement. I recommend that this latrine be rebuilt. This step has already been recommended by the medical officer. The night-soil from the European Non-commissioned officers' quarters and from the hospital is removed by carts provided by the Commissariat Department, that from the regimental latrines is removed by a contractor. The night-soil is deposited outside the cantonment, and is ultimately utilized as manure. Quarter-guard.

Recommendations.—Surgeon Strong has written officially to the Officer Commanding the Head-quarters of the Sappers and Miners, advising the erection of four contagious wards on the pavilion principle, directing attention to the insanitary condition and faulty arrangements of the hospital and native regimental latrines, and to the objectionable condition of the male and female regimental latrines. In bringing these points to the notice of the regimental authorities, Dr. Strong was acting in accordance with my suggestions. Recommendations.

I propose when I have leisure to write officially to the Officer Commanding upon these points and upon certain others.

23rd Regiment Light Infantry.

STATION—BANGALORE.

Arrived from Quilon 15th October 1872.

Average strength	...	...	...	...	...	...	...	699
Do. do. present	...	...	...	...	...	...	...	664
Admissions	...	...	...	...	...	...	...	393
Daily sick	...	...	...	...	...	...	...	13
Deaths in hospital	...	...	...	...	...	...	...	4
Do. out of hospital	...	...	...	...	...	...	...	2
Pensioned	...	...	...	...	...	...	...	31
Sick leave	...	...	...	...	...	...	...	14

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871...	Quilon ...	40.94	1.97	.29	1.16	.58
1872...	Bangalore ...	151.42	3.67	1.02	4.26	2.20
1873...	Do. ...	77.63	2.30	1.69	2.77	1.23
	Average ...	89.99	2.64	1.00	2.73	1.33
1874...	Bangalore ...	59.18	1.95	.85	4.43	2.00

The following medical officers were in charge during the year :—

Surgeon-Major W. H. Morgan.
Surgeon D. H. Cullimore.

The first-named reports as follows :—

East Hutting
Lines.

East Hutting Lines.—The regiment continues to occupy these lines; and, as the sanitary defects have been detailed in successive reports of the Deputy Surgeon-General of the Mysore Division of the 39th and 23rd Regiments, they may be epitomized as follows:—(1) That the site is bad, the subsoil being infiltrated with filth; (2) that though there is a good fall from the lines, the drainage is as bad as it can be; and (3) that the water of this locality (according to the Water Analyst) is quite unfit for drinking purposes. Although the proposal to abandon the site has met with (I believe) general support from the military and medical authorities for some years, it is in contemplation to “improve” the lines. The regiment in occupation has meanwhile furnished a percentage of 72·8 sick to strength during 1873, and 62·4 to strength in 1874; the death-rate of young children (a very sensitive test of sanitary circumstances) being represented by 107 deaths in 1873 and 45 in 1874, in other words 52 per thousand for the two taken together.

Health of
families.

Health of families.—The average strength of the population in the lines, exclusive of troops, calculated from weekly strength obtained from the Adjutant's Office, has been as follows :—

	Adults.	Children.
Males	154	449
Females	588	405
Total ...	742	854

Of the adult population, seventeen deaths have been registered under the following diseases :—Fevers four, dysentery one, old age six, convulsions one, beri-beri three, consumption one, unknown one; and the ages from 100 to 20. Among the children there have been forty-five deaths under the following heads :—

	Diseases.						Total.
	Fevers.	Small-pox.	Dysentery.	Diarrhoea.	Convulsions.	Other Causes.	
Males	9	5	1	1	2	8	26
Females... ..	9	2	1	...	...	7	19
Total ...	18	7	2	1	2	15	45*

In 1873 I reported the deaths of 107 children in an average strength of 842,† and this year there are 45 deaths out of an average of 852, the number of births during the year being 53.

Having been connected with this regiment since 1863, I desire to place on record such figures as are available of the health state of the families in the years immediately preceding the arrival of the 23rd at Bangalore. In the Quilon Cantonment Sanitary Reports from 1869 to 1871 the families of native troops (that is of the 23rd Regiment) are estimated as follows :—

	Strength.	Deaths.
1869	1,055	22
1870	1,187	35
1871	1,528	27
Total ...	3,770	84

and striking an average I obtain twenty-eight deaths per annum in a population of 1,254, or at the rate of 22·3 per thousand, a lower birth-rate than that of the general native population.

During that portion of 1872, in which the regiment remained in Quilon thirty-nine weeks and were in transit to Bangalore (two weeks), the average strength of the children was 705·6, and the deaths six, or at the rate of 8·5 per thousand.‡ At Bangalore from the middle of October to the end of the year (eleven weeks) the average strength was 530·8, and the deaths thirteen or 24·4 per thousand.§

Turning next to the population and deaths in the East Hutting Lines when occupied by the 39th (the corps relieved by the 23rd), it will be found (*vide* Medical and Sanitary

* About 5·27 per cent. (1874).

† About 12·5 per cent. (1873).

‡ 8·5 per mille (1872).

§ 24·4 per mille (1872, Bangalore).

Reports of the Native Army of Madras for 1870, page 49, for 1871, page 46, and for 1872, page 75) that the mortality per thousand was in—

1870	...	...	...	...	...	...	...	...	...	...	76.9
1871	...	...	...	...	...	...	...	...	...	...	35
1872	...	...	...	...	...	...	...	...	...	...	44.8
											156.7

Or striking an average for three years 52.2 per mille.

As far then as can be ascertained, there has been a high rate of mortality amongst children in these lines. In my sanitary report, dated April 1st, 1873, the following passage occurs:—"Twenty-eight deaths of children have been reported during the quarter, a percentage of 3.5 to strength. This contrasts very unfavorably with the mortality of children in the (European) Women and Children's Hospital at Bangalore, where the mortality of children for the whole of 1872 was 4.81 per cent. to strength," and in the next quarter I added:—

"There has been a lamentable mortality among the children of sepoys, no less than sixty deaths having been reported during the last three months." There is a fact, however, which requires to be distinctly enunciated in connexion with the mortality of families in the lines of Native regiments, familiar doubtless to the administrative and executive officers of the Indian Medical Department, and probably not within the knowledge of the Commission who "remark" on these reports in Europe. Almost the first thing done by parents in all civilized countries when their children or other relatives fall ill is to obtain competent medical advice and treatment, but unfortunately among sepoys and cognate classes such assistance which is always procurable is only resorted to when their young ones are in extreme peril. In my report for 1873 I stated: "One cannot help remarking on the gross carelessness of the parents themselves; very few children are properly clad; in the coldest weather a baby would be brought out with no other covering than a handkerchief. The greatest indifference is shown to vaccination, any pretence being availed of to keep a child from being operated on, and when the operation has promised to prove successful the vesicles are wantonly destroyed to prevent lymph being abstracted. Again, where the advice of the subordinates sought for in serious cases of diseases and attended to till some improvement is apparent, but neglected directly after."

Climate.—The experience of another year confirms the statement in the last sanitary report, that the climate of this station is inimical to the health of sepoys. Fevers, rheumatism, and bronchial and pulmonary complaints have been rife in 1874 as in 1873, predisposition to disease being engendered (1) by the unhealthy site occupied by the regiment which is year by year becoming worse by further pollution of subsoil, the want of proper drainage and impurity of the water-supply; (2) by occasional overwork, such for example as the night duty after the exertions of a field day; (3) by defective nourishment.

Whether the huts are conducive to health.—By no means so; they are low, crowded, badly ventilated, and built on soil polluted with sewage.

Whether the huts are conducive to health.

Guard-room.—As detailed in previous reports the superficial space per man in the quarter-guard is 25.6 feet. To avoid overcrowding, several of the men sleep in the verandahs of the place-of-arms, and are exposed to chills which lead to sickness.

Drainage of lines.—The drainage of the lines is as bad as it can be, as it consists of open ditches in front of the huts, which receive a constant flow of slops, sewage, and refuse, which contaminates the soil and taints the air. These defects are noted in periodical reports, which are furnished to the authorities. With reference to the remark of the Army Sanitary Commission that much has been done in the direction of "cardinal improvements," I can safely state, in regard to the lines of this regiment, that nothing has been done since the 23rd arrived in Bangalore in October 1872, except to make the sepoys rebuild the huts which have tumbled down during the rains, at their own cost.

Nuisances.—Though they are cleaned out daily, the domestic latrines may be considered a standing nuisance, and they will remain so, because they permit of the percolation of filth into the subsoil. An impervious flooring of cut-stone, with tight joists laid on sufficient slope to allow of a ready escape to a small drain discharging into the roadside drains of all liquid refuse, has been suggested by Deputy Surgeon-General Ranking, but it is out of the question to expect sepoys to pay for these when they have barely enough to live upon.

Water-supply.—The principal sources of water-supply are a reservoir near Miller's tank, two large uncovered wells, and smaller ones dotted about and behind the lines. The water from these wells is considered by the Water Analyst quite unfit for drinking purposes (*vide* Medical and Sanitary Report of the Native Army of Madras for 1871, page 37, and for 1872, page 46). Water-supply pure for drinking purposes could be obtained in the vicinity of Miller's tank, that is to say, if there were any earnestness about a water-supply and funds were forthcoming.

Water-supply.

Sanitary arrangements.

Sanitary arrangements.—Surface cleansing and removal of night-soil are attended to; but assuming that suitable habitation, proper drainage, and good water-supply are fundamental points in sanitation, an emphatic negative must be returned to this question.

Health.

Health.—The appearance of the generality of the men who have come under my observation and the lean and hungry look of the recruit and pension boys belie the supposition that their diet is sufficiently nutritious.

Clothing.

Clothing.—White belts and red caps have been recently issued to the regiment. The latter are open to the objection taken to the head dress in former years, viz., that they do not protect the most important regions of the brain, nor shade the eyes from light, nor prevent water from trickling down the backs of the wearers in rainy weather. Regulation clothing (red cloth coats and black trowsers) are worn all the year round on duty, but the undress of the sepoy is of light cotton material, and does not afford sufficient protection.

Foot-soreness.

Foot-soreness.—A large number of sepoys are rendered unfit for duty from wearing badly-fitting boots without socks, and there were sixteen admissions into hospital from foot-soreness. Seventy-six men have been excused wearing boots during portions of the year upon my representation.

Vaccination.

Vaccination.—One hundred and twenty-five cases have been operated on during the year, of which seventy were successful and fifty-five unsuccessful. There were five admissions with small-pox into the hospital; of these, all bore marks of vaccination and two had marks of small-pox. None of these cases proved fatal. Small-pox and chicken-pox prevailed among the families in the first quarter of the year. I have occasionally had to report sepoys for not bringing their children for inspection after vaccination, as they do not like lymph being abstracted from the arms of their children, and also for tampering with vesicles which promised fairly for the same reason. Orders have been issued to prevent their occurrence.

General conclusions.

General conclusions.—Small-pox prevailed to a slight extent in the early part of the year. The native families lost seven children from this complaint, but all the cases admitted into hospital recovered. All the children of European Officers suffered from hooping-cough shortly after the return of the regiment from the Camp of Exercise.

The percentage of admissions to strength was 64.2 against 72.8 in 1873.

The percentage of deaths in hospital to strength was .064 against 1.5 in 1873, and the percentage of deaths out of hospital to strength was .048.

The percentage of deaths to admissions was 1.

The percentage of men invalided and discharged to strength was 5.6.

Acting Deputy Surgeon-General G. Smith inspected this corps on the 24th December 1874, and reports as follows:—

Lines.

Lines.—Facing the hospital road and a little to the east of the lines occupied by the 36th Regiment N.I. are the lines of the 23rd Regiment W.L.I. They are divided, as usual, into wings, the right wing being upon the west of the left wing lines. The lines occupy a slope favorable to drainage. In front of the lines are three double prison cells for the use of the two native regiments of the force. North of the lines runs the main channel leading from Miller's tank to the Ulsoor tank. The cantonment bazaar lies close upon the northern boundary of the lines. The lines are divided by a main street running nearly east and west and from 15 to 30 feet in width, which is crossed by subsidiary streets of widths varying from 10 feet to 16 feet. A main road 30 feet wide runs north and south and separates the two wings. A glance at the lines from a slight elevation gives the impression of a village which has been bombarded, so complete is the state of ruin into which the huts as a whole have fallen owing to the late disastrous rains. The drainage of the lines is favored by natural configuration of ground; it is effected by gutters and ditches of different sizes dug in the ground, in which soakage, percolation, and evaporation seem to be the principal modes in which the fluids which reach them are disposed of. There are larger ditches down the sides of the main street (north and south) dividing the two wings, which are here and there faced with stone and crossed by stone slabs from the huts. These ditches are for the reception and conveyance of storm water which in the wet weather rushes along them in torrents. I visited many of the huts, and found all in a deplorable condition—roofs fallen in, walls washed down, distress and discomfort every where. The huts facing the roads were white-washed, but the whitewash merely hid to a superficial observer the real state of ruin into which the huts as a whole have subsided. The subsidiary drains were filthy, and the outlets from the huts inefficient in many cases. In the interior of the huts the measures of conservancy were imperfectly carried out, and no rational arrangements seemed to be in operation in connexion with the domestic latrines and places of ablution. Besides the great discomfort, the sepoys complain bitterly of the unhealthiness of the locality, and the death in the lines of 153 children since the arrival of the corps shows that this impression is a correct one. The lines are in ruins. The ground on which they are built is saturated with the filth of many years. The locality is acknowledged to be unhealthy; the wells are tainted; the

neighbourhood has offensive drains, and the time has come, in my opinion, as well as in that of my predecessor, when the lines should be swept away, the locality abandoned, and new lines built elsewhere. The conditions demand that the remedy be at once sweeping and effectual.

Lavatories and baths.—The sepoys, as a rule, in consequence of the coldness of the climate, and their preference for warm water, bathe in their huts. This adds to the insanitary condition of the huts already sufficiently secured by the general use among the sepoys of domestic privies. There is abundance of water, partly derived from objectionable wells in and near the lines, and partly from a reservoir to the north of the lines.

Water-supply.—The water-supply is derived partly from wells, which have been all more or less decidedly condemned by the Analyst. These wells are subsoil wells; all of them are on drainage slopes, and one of them (No. 43) is in the immediate vicinity of a disused burial-ground. Water is also procured from a small reservoir into which it passes from Miller's tank. The water-supply, as a whole, is abundant in quantity, but objectionable in quality—a valid reason why these lines should be abandoned.

Conservancy.—The municipal conservancy of that part of the cantonment bazaar lying to the north-east of the lines was this morning in a state susceptible of great improvement. Certain large drains were very foul, and the neighbouring municipal latrines were intensely offensive.

Hospital.—The hospital is built upon a slope; it faces the south; it consists of one long ward possessing a superficial area of 1,656 feet and cubic space of 18,216 feet. This ward can accommodate sixteen patients. The roof is supported by eight square pillars which take from the superficial and cubic space, and which interfere with the lighting, ventilation, comfort, and appearance of the ward. At the eastern extremity of this ward are a special ward (superficial area 204 feet, cubic contents 1,836 feet), a bath-room, a store-room, and a cook-house. Beyond the cook-room, and situated in a small enclosure, is a good latrine. At the western extremity of the ward are the office-room, the surgery, and a special ward (superficial area 62.9 feet). There is a small lavatory in the eastern end of the back verandah. North of the hospital is the hospital guard-room with a superficial space of 280 feet and cubic contents = 8,400 feet. The strength of the guard is 1 native and 3 privates. The ventilation of the hospital is by doors and windows as well as by two dormer windows and three ridge ventilators. The ward is clean and comfortable; it is badly lit up by one lamp owing to the presence of pillars. The floors of the ward and of the verandahs are flagged with stone. There have been no alterations since last inspection. The drainage is by natural means. The water-supply is sufficient and is said to be derived from the reservoir near Miller's tank; it is brought by a puckally; conservancy good. The hospital latrine is a good and useful building. The water cistern, however, is leaky and out of use; and the cess-pits (two) have no tubs. The latrine is stone flagged; has six privy recesses, and is arranged upon the short trough and dry-earth system. It is very well ventilated and very clean. I advise the use of buckets in the troughs, the repair of the water cistern, the utilization of the cess-pits, the supply of tubs, and the limitation of a space in the latrine for ablution.

The hospital has no dead-house.

Recommendations.—Dr. Ranking said that the lines "should be improved off the face of the cantonment." In this opinion I heartily agree with him. The medical officer of the regiment has officially called attention to the works required in connexion with the hospital, to the unsatisfactory condition of the huts, to the necessity of providing tents for cases of contagious disease, and to shelter such sick as could not be accommodated in hospital, &c. All the facts are before the authorities, and responsibilities are removed from the shoulders of the medical officer and from the Administrative Department of this division.

36th Regiment Native Infantry.

STATION—BANGALORE.

Arrived from Thyetmyo 26th February 1872.

Average strength	...	...	...	...	...	...	...	689
Do. do. present	...	...	...	...	...	...	...	641
Admissions	...	...	...	...	...	...	...	293
Daily sick	...	...	...	...	...	...	...	13
Deaths in hospital	...	...	...	...	...	...	...	5
Do. out of hospital	...	...	...	...	...	...	...	2
Pensioned	...	...	...	...	...	...	...	29
Sick leave	...	...	...	...	...	...	...	10

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	Thyetmyo	51.45	2.10	1.23	...	4.00
1872	Bangalore	74.80	3.48	1.11	4.46	3.63
1873	Do.	77.70	3.45	1.14	3.73	4.31
	Average	67.98	3.01	1.16	2.73	3.98
1874	Bangalore	45.70	2.02	1.01	4.20	1.45

The following medical officers were in charge during the year :—

Surgeon-Major C. Robertson.
 Surgeon W. R. Browne, M.D.
 Surgeon J. W. Strong.
 Surgeon-Major A. H. Beaman.

The last-named reports as follows :—

Lines, sepoy's
huts, guard-
rooms.

Lines, sepoy's huts, guard-rooms.—New huts or "lines" for the men to live in are still in the course of construction. A sufficient number have been completed to afford accommodation for one wing of the regiment. These are roomy and amply ventilated, the roofs being of tile. With regard to drainage defects have been observed with reference to the gradient of the main drain—a subject now under the consideration of the authorities.

Nuisances.

Nuisances.—None to my knowledge.

Foot-soreness.

Foot-soreness.—Sepoys who wear the heavy "ammunition boots" without stockings occasionally have come to hospital with blistered feet, but not to any great extent. Such men are excused wearing boots for two or three days, and are soon well.

Vaccination.

Vaccination.—One case of small-pox proved fatal during the year, but whether or not the man had ever been properly vaccinated I cannot say, not being in charge of the regiment at the time the case occurred. Hut-to-hut vaccination is at present being carried out.

Epidemic
diseases.

Epidemic diseases.—No epidemic has prevailed during the past year.

Acting Deputy Surgeon-General G. Smith inspected this corps on the 22nd December 1874, and reports as follows :—

Lines.

Lines.—The lines of the regiment are located towards the north and north-east of what is called the high ground at the western extremity of the cantonment. They approach close to the hospital road, and are divided into wings by the road which leads to the railway station. The lines consist partly of old and partly of newly-built huts; of the six rows of double huts and two rows of single terminal huts intended for the right wing, only the two terminal rows and the two western double hut rows are completed, a large raggi field filling up the rest of the space. Of the left wing lines only the western single hut row and the two adjoining double hut rows are finished, the remaining space being occupied by the old condemned and ruinous thatched huts. The main street of the new right wing lines (60 feet wide) is to run east and west, the seven subsidiary streets (50 feet wide) nearly north and south. The left wing main street will be 30 feet wide and the subsidiary streets (seven in number) will be 18 feet wide. The lines are clean; V-shaped stone drains are provided; and the huts are erected upon the improved principle with measurements and accommodation according to regulation. The huts have a solid and satisfactory look, but upon examination they are found to be constructed of mud and sun-burnt bricks, erected upon a 2 feet foundation of stone. The late rains have considerably tried these "kutchas" huts; some of the walls have shown indications of weakness, and some of the walls of the outer enclosure, &c., have been seriously damaged. Within the accommodation is good, but no care has been taken to arrange those most necessary requirements of a sepoy's hut—the place of ablution and the domestic privy. Hence matters are not so satisfactory within as they appear to be without the hut. The huts are raised upon low platforms, and the drainage of the huts can be easily made perfect; but within the hut I found soakage from ablution water and imperfect latrine arrangements, which considerably nullify the exterior arrangements. A little enclosure with rammed floor covered with a few inches of dry earth and two flat pottery dishes (mullays) would meet the wants of

the domestic privy, whilst a small space flagged with stones and with a proper slope for drainage would prevent the soakage of the hut floor around the place of ablution. The expense would be very slight. The sepoys could do the work themselves if they were only taught how. The ventilation of the huts is by doors and ridge ventilation in the case of the sepoys' huts, by doors and windows in the case of the commissioned and non-commissioned officers. As the ridge ventilators admitted rain during the monsoon, they have been all closed up. The drainage of the lines is good—in the case of the right wing lines the V-shaped drains terminate in a flat-bottomed drain which, running along the north side of the lines, passes under the road to the railway station, and finally communicates with the municipal drainage. The levels of this drain are imperfect. I found the drain filthy with stagnant and foul sewage. The drain runs from west to east. In the greater part of the left wing lines the drainage consists of gutters and ditches dug in the soil. Such gutters retain and dispose of every thing by percolation and evaporation.

Conservancy.—The conservancy of the neighbourhood of the lines is fair, but is capable of improvement. I have already alluded to the intercepting drain running from west to east along the northern ends of the rows of huts of the right wing. The said drain is a masonry drain 2 feet wide by 1½ feet deep. The floor is flat, and as the levels are apparently insufficient, the contents lie in successive pools, the fluid particles evaporating, and the residue a thick fetid stagnant mud. The drain is too large; its shape presents the greatest possible amount of impediment to the onward flow of liquids by friction, and its conservancy might be greatly improved.

The conservancy of the station generally is being gradually improved under the direction of the Municipal Commission.

28th Regiment Native Infantry.

STATION—MERCARA.

Arrived from Vellore 17th February 1874.

Average strength	...	...	...	...	...	...	...	677
Do. do. present	...	...	...	...	...	...	...	611
Admissions	...	...	...	...	...	...	...	864
Daily sick	...	...	...	...	...	...	...	40
Deaths in hospital	...	...	...	...	...	...	...	9
Do. out of hospital	...	...	...	...	...	...	...	1
Pensioned	...	...	...	...	...	...	...	12
Sick leave	...	...	...	...	...	...	...	27

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871...	Vellore ...	68.52	3.45	.95	2.11	2.87
1872...	Do. ...	121.56	2.89	.85	...	1.27
1873...	Do. ...	52.89	1.78	...	7.89	1.33
	Average ...	80.99	2.70	.60	3.33	1.82
1874...	Mercara ...	141.40	6.54	1.47	1.77	3.98

Surgeon-Major W. J. Busteed, M.D., has been in medical charge during the year, and reports as follows:—

At the Camp of Exercise the men enjoyed excellent health notwithstanding cold nights and much exposure. The admissions at the camp were only twenty-eight. None of them serious. There were besides seventy-nine cases of foot-soreness from defective boots. These cases were not admitted to hospital (except one or two), but were permitted by the Commandant of the Regiment to go without boots as long as was necessary.

- On the breaking up of the camp (31st January) the regiment (head-quarters and six companies), having been joined by their share of the families, marched to Mercara, which they reached on the 17th February after a healthy and favorable march.
- Climate.** *Climate.*—The chief feature was an unusually heavy and protracted south-west monsoon. 149 inches of rain against an average of 120. Its influence on the sepoy and their families was most disastrous. They had just come from the dry and hot climate of Vellore, and were quite unprepared for the change.
- Marches.** *Marches.*—The head-quarters and six companies of the regiment left Vellore on the morning of 4th January 1874, reached the Camp of Exercise near Bangalore by rail the same evening, left the camp 31st January and marched to Mercara, arriving on the 17th February. The two companies left at Vellore marched on the 2nd February and reached Mercara 7th March. There was no unusual sickness met with either by the head-quarters or by the detachment.
- Lines.** *Lines.*—The lines occupy a deep basin to the south of the fort. At the bottom is a swamp with a small stream running through it. The basin is filled nightly with fog and wrapped in chilly malarious mists. The situation is the very reverse of healthy.
- Sepoys' huts.** *Sepoys' huts.*—They are the usual sepoy huts of miserable construction. Those of the left wing are thatched and are in ruins. Those of the right are tiled, but are, if possible, more leaky than the thatched ones. It would be utterly impossible, within moderate limits, to convey even the faintest idea of the misery the men and families underwent in these huts during the monsoon.
- Ventilation and drainage.** *Ventilation and drainage.*—It follows from what has been just stated that ventilation is quite a minor matter to securing moderately water-tight huts. The drainage is as bad as it can be. There are no drains except furrows in the superficial earth, and gullies here and there worn by the monsoon rains. Soakage of sewage matters into the subsoil has been going on for years for want of stone or brick drains. The difficulty is altogether a pecuniary one.
- Nuisances.** *Nuisances.*—On arrival of the regiment, found a complete want of conservancy in and about the lines. The fort ditch was one vast latrine unattended to by any body. It took some time to remedy this state of things. The want of proper surface-drains to receive the foul water, &c., from the huts has already been mentioned. There are two latrines in the lines for males only, one for each wing. The absence of any latrines for women and children is an obvious source of nuisance most difficult to deal with.
- The officers of the regiment, whose residence in the fort is compulsory owing to the absence of houses outside, are exposed to a very serious nuisance within the fort walls. There are two small and utterly unsuitable and insufficient latrines, burrowed into the western rampart, for the accommodation of the servants, guards, men at roll call within the fort, women and children, say 150 persons altogether. The latrines would properly accommodate twenty or twenty-five. They are entirely unventilated. The best is done with them that can be done, but the nuisance is a serious one. One officer, whose quarters looked in that direction, had a bad attack of typhoid fever, and barely escaped with his life. He had to get two years' sick leave home.
- Water-supply.** *Water-supply.*—There are six wells in the lines, only one of them protected by a parapet or provided with drawing tackle. Three of them are 'in the line of drainage, and are accordingly not fit for drinking. They are used for drinking notwithstanding. The supply is very short in the hot months.
- Sanitary arrangements.** *Sanitary arrangements.*—On the whole the sanitary arrangements lamentably defective. Recommendations have been made on the defective points, but there are financial difficulties apparently in the way of getting things put right.
- Diet.** *Diet.*—The "troops have received compensation on account of dearness of rice" according to regulations, and if the sepoy were a single man this would be to his advantage; but as he only gets "compensation" for his own rice, and not for that of his family, it follows that the more compensation he gets (*i.e.*, the dearer rice is), the worse off he is.
- As a fact, the majority of the men are under-fed. A very inferior kind of salt-fish brought up from the coast is generally eaten with the rice. It is cheap, and, judging from the smell, a little of it goes a long way.
- Clothing.** *Clothing.*—If by this be meant the *uniform* of the men, I reply that, as long as the sepoy is in full uniform, his clothing is "sufficient." But as the sepoy is out of uniform three-fourths of his time, and as his own clothing is miserably thin and unsuited to this climate, it follows that for the greater part of his time his clothing is *not* sufficient.
- I recommended during the year the gratuitous issue of a blanket and a new boat-cloak per man, but the authorities were unable to entertain the suggestion. The present boat-cloaks were issued twelve or thirteen years ago when the regiment was embarking for Burmah, and there is very little warmth in them now.
- Foot-soreness.** *Foot-soreness.*—Foot-soreness from defective boots is a very common ailment, though it does not cause many admissions to hospital. The men are excused wearing boots till their feet get well. The obvious (though I suppose impossible) remedy is to issue good boots and stockings.

Sanitary state of lock-up rooms and cells.—Satisfactory.

Sanitary state
of lock-up
rooms & cells
Deaths.

Deaths.—The deaths here from 17th February to 31st December were ague 1, diarrhoea 2, dysentery 2, pneumonia 1, phthisis 1, syncope (out of hospital) 1, total 8. This is exclusive of two deaths on sick leave from Mercara, viz., phthisis 1, ague (complicated with pneumonia) 1.

Cholera.—No cholera during the year.

Cholera.
Accommoda-
tion.

Accommodation.—Owing to the heavy sick list overcrowding of the hospital was unavoidable.

Drainage and latrines.—The drains round the hospital are like the other drains here, mere superficial furrows or scratches in the earth, permitting saturation of the subsoil to any extent. This is very unfortunate.

Drainage and
latrines.

General conclusions.—The regiment has deteriorated in health very considerably since arrival at Mercara.

General con-
clusions.

Acting Deputy Surgeon-General G. Smith inspected this corps on the 5th December 1874, and reports as follows :—

Barracks.—The lines are built on the southern glacis of the fort and down the slope of the bowl-shaped depression or basin which lies to the south of the fort; the lines of the right wing run also round to the west. The huts are tiled, and the arrangement with main and subsidiary streets is well kept. The lines of the left wing occupy the slope of the same basin which faces the west, and consist of thatched huts built apparently without any attempt at arrangement. The lines are fairly sheltered from north, south, and east winds, but are open to the influence of westerly winds. The huts are of the sanctioned dimensions and of the standard type as regards the right wing. They are built of mud and tiled over framework of junglewood and bamboo. Thatch, instead of tiles, form the roofing of the huts of the left wing. The ventilation of the huts is by the doors and by the loosely-tiled roofs. All the huts are in a state of more or less disrepair, many of those of the left wing are quite uninhabitable and unsafe. The late heavy monsoon has left the lines as a whole in a ruinous condition, in a state, in short, most detrimental to health and destructive of the comfort of the occupants. Immediate steps should be taken to build up, repair, and make rain-tight these lines before next monsoon. The emergency is great. The left wing lines should be swept away as soon as the new lines are built, and all huts at present existing below the level I have pointed out should be removed, as they are too near the swampy ground at the bottom of the valley. The huts visited by me were some clean, some the reverse. In most huts the places of ablution and defecation were badly conserved: soakage in the yards was common, and no efficient drainage carried off the wash. The huts were damp, dark, and cold, and the occupants seem to have lost heart at the condition in which the monsoon has left them. The lines have much rank vegetation in and about them, and hedges in the right wing lines have taken the place of the outer walls of the yards. These hedges would look well if kept clean and properly trimmed. The floors of the huts should be better raised, so as to give more head to the ablution water when escaping into the road-side drain. In many of the huts the occupants sleep upon raised frames of wood to protect them from the damp of the floors. The huts are somewhat overcrowded, the average number of occupants per hut being 4.38. The drainage of the lines is by gutters and ditches of various sizes dug into the soil. The configuration of the surface favors drainage, and when the monsoon is present the larger ditches become small torrents. Some of the street drains have defective levels, and in the 'dry weather there is more or less soakage, percolation, and evaporation from all the drains. The surface-drains debouch into the marshy ground at the bottom of the basin, where a small stream carries the wash off towards the low ground on the west. A complete system of drainage with V-shaped stone drains is required.

Barracks.

Sanitary condition of all buildings.—There are two regimental latrines, one for each wing. Both are upon a good principle, which, however, has been carelessly acted upon. The latrines are in urgent need of repair. They have no stores of dry earth, and the sweepers seem not to be acquainted with the details of their duty. These latrines require early attention. The latrines are frequented also by outsiders. The excreta from lines and latrines are removed by cart twice daily and deposited in pits dug in the old Elephant Lines to the south-east of the station. The contents of these pits are sold, as soon as the pit is within two feet of the surface. I have given advice on this point. The conservancy establishment entertained for the lines is given below. To this establishment is added the additional sweepers supported by the regiment. The fort, within which the officers reside, needs to be more efficiently conserved: unused and ruinous stables should be removed; surface-drainage improved; one male and one female latrine should be erected outside the fort to the west, and the present one closed up as utterly objectionable; the space within the fort should be cleaned; rubbish carted away; dust-bins placed at convenient spots; leaking houses repaired; servants' quarters, cook-rooms, &c., carefully conserved, and spouts should be converted into pipes for the conveyance of water from the

Sanitary
condition of
all buildings.

roof of the palace; urinaries with dry earth might be placed at convenient spots for the use of the servants of the fort, and efficient latrines on the dry-earth system should be provided outside the wall at the points indicated by me in consultation with the medical officer. The conservancy of the stables should be carefully attended to.

	RS.
1 cart	30
Driver	8
4 male toties	32
4 female do.	28
Government allowance.	—
Total ...	98
3 extra male toties	24
5 do. female do.	35
Paid by the regiment.	—
Total ...	59

Conservancy.

Conservancy.—The conservancy of the neighbourhood might be greatly improved were the Municipal Commission something more than a mere name. The funds are low, and the Commission is unable to do much for the improvement and conservancy of the neighbourhood. On the slope to the west of the ground occupied by the lines is a group of native milkmen's huts, the conservancy of which is little attended to. It would be well were these huts either to share in the general conservancy of the lines, or be removed altogether. It is necessary that the ground as a whole be drained and conserved, and this cannot be effected until the Municipal Commission works in concert with the regimental authorities for the common good. The following points deserve attention:—

1. The drainage of the basin, and the planting of the drained land.
2. The widening of the bed of the small stream.
3. The facilitation of the drainage towards the west.
4. The removal of all huts from the low levels.
5. The repression of luxuriant vegetation.
6. An efficient conservancy of wells.
7. The completion of the proposed water scheme.
8. The disposal by contract of the excreta, refuse, &c.
9. The closing of the graveyards to the west of the lines.

Principal diseases.

Principal diseases.—The regiment arrived from Vellore on the 17th February and 7th March 1874. In 1873 there were at Vellore 180 admissions and no deaths. The principal diseases were ague (121), rheumatism (17), diarrhoea (14). In 1874, up to the close of November, there have been 380 admissions and 9 deaths, the mortality from the date of last inspection report (14th November 1872) up to the 1st January 1874 being one. The principal diseases are noted below, the first three being malarial in origin, the last-named deriving its cause from cold and wet:—

	Admissions.
Ague	176
Dysentery	37
Diarrhoea	98
Rheumatism	20

The causes of the disease as gathered from the reports and returns of the medical officer may be indicated as follows:—

1. The change from a healthy to a very malarial climate.
2. The foulness of the station owing to neglect of conservancy.
3. Great variations of temperature, severe heat being followed by very heavy rain.
4. Dear and often unsuitable food (raggi, rice, &c.).
Average rainfall 120·65; 148·68 inches of rain.
5. Impure water, especially before the rainfall (one case of typhoid).
6. Huts all out of repair; many in total ruins; overcrowding; wet.
7. Insufficiency of warm clothing for the men.

The greatest number of admissions took place in the second quarter of the year, the number being 187 as against 42 in the first and 73 in the third quarter, showing the influence of rain in increasing disease. The last quarter, two months of which have only run—October being a rainy month—yields 128 cases, showing the effect of rain and of the easterly winds in keeping up the high admission-rate. Although the total mortality for eleven months past has been only nine, this mortality figure by no means expresses all the injury done to the health-state of the corps. The present sick list is very high, the health of the regiment, as a whole, is below par; anæmia and scorbutus are present, though not to a great degree, but a personal examination of the corps, man by man, yielded me 134 cases of cachectic itch = 20·7 per cent., or 1 man in 5. This disease is a sure sign of general debility in those suffering from its presence. Present state of the hospital (December 5th, 1874) is as

follows:—In hospital, including "line sick," 74 non-commissioned rank and file, and 1 European Officer. The past cannot be remedied; the future may, *by very vigorous action*, be modified for the better—put the left wing into good thatched huts before the monsoon, clear the bottom of the basin of huts, conserve the lines, make better arrangements as regards the water-supply, and serve out blankets to the sepoy when the rains set in.

30th Regiment Native Infantry.

STATION—FRENCH ROCKS.

Arrived from Thayetmyo 11th February and 20th March 1869.

Average strength	...	...	...	...	...	...	...	712
Do. do. present	...	...	...	...	...	...	...	611
Admissions	...	...	...	...	...	...	...	209
Daily sick	...	...	...	...	...	...	...	7
Deaths in hospital	...	...	...	...	...	...	...	2
Do. out of hospital	...	...	...	...	...	...	...	...
Pensioned	...	...	...	...	...	...	...	...
Sick leave	...	...	...	...	...	...	...	...

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Station s.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	French Rocks ...	75.36	3.24	1.97	3.10	3.52
1872 ...	Do. ...	60.20	2.01	.56	1.84	2.12
1873 ...	Do. ...	102.92	1.71	1.24	...	.55
	Average ...	79.49	2.32	1.25	1.64	2.06
1874 ...	French Rocks ...	34.20	1.14	.28	...	...

The following medical officers were in charge during the year:—

Surgeon G. F. Bevan.

Surgeon H. G. Archdall.

The last-named reports as follows:—

Climate.—Though the rainfall during the past year has been greater than usual, it does not appear that the number of admissions were increased in consequence. In the intervals between the bursts of the rain the climate has been genial, and, perhaps, warmer than it is generally experienced here. The climate cannot be said to have any particular effect on the diseases of the place, and its influence on the health of the troops has on the whole been favorable. Climate.

Marches.—The regiment marched on the morning of the 28th December 1873 for the Camp of Exercise and arrived at the camp on the morning of 4th January 1874, and on the morning of 3rd February it left the camp for French Rocks, where it arrived on the morning of the 10th of the same month. No cases of sickness occurred marching either ways. Marches.

Nuisances.—The urinal connected with the Body Guard is in a very insanitary state, and should be removed from its present site. By the free use of disinfectants I try to abate the nuisance as much as possible. The matter has been represented, and I am in hopes that ere long the erection of a new latrine will be sanctioned. Nuisances.

Sanitary arrangements.—The sanitary arrangements have on the whole been well attended to. I am not aware of any local cause of disease requiring removal. Sanitary arrangements.

Diet.—The men diet themselves; but, as many of them have a number of relatives dependent on them, it is quite certain that in many cases they do not procure a sufficiently varied or nutritive diet. Diet.

Vaccination.—Vaccination has been properly kept up in the regiment. There have been no cases of small-pox during the year. Vaccination.

In some cases, where revaccination has been practised, the results were unsuccessful.

Phthisis
pulmonalis.
General
conclusions.

Phthisis pulmonalis.—No case of phthisis pulmonalis treated during the year.

General conclusions.—The regiment and station have on the whole been healthy during the year, the number of admissions during the past twelve months having been 209 (including 17 in Detachment Hospital) against 520 in 1873.

The principal diseases were ague, conjunctivitis, rheumatism chronic, scabies, and general debility. Two deaths occurred during the year under review, one from asthma and one from hæmoptysis.

Average number of sick 6.92.

Acting Deputy Surgeon-General G. Smith inspected this corps on the 27th November 1874, and reports as follows:—

Sanitary
condition of
all buildings.

Sanitary condition of all buildings.—The conservancy establishment consists of the authorized eight sweepers and one cart. The night-soil and refuse are removed once daily by contract, the contractor paying Rupees 180 per annum. The value of night-soil and refuse is fully appreciated here by cultivators. One sepoy from each company is made responsible for the cleanliness of his company's lines. The quarter-guard and defaulters' cell are accommodated in the western end of a long block of the native barracks which runs east and west, which also gives accommodation to the regimental arms. In a smaller block at right angles to its eastern end there are offices for the Staff Officer and for the Postal Department. In the corresponding block to the west are found the Adjutant's Office, the commissariat stores, and a room for drummers. At the northern end of this main block and separated from it by a narrow road is a small building containing a disused cook-room and a used latrine belonging to the quarter-guard. The arrangements of this latrine are very faulty, and the conservancy, when I inspected it, very inefficient. This latrine should be either entirely reformed or rebuilt on proper principles. The quarter-guard is of small dimensions. The superficial area is 384 feet, the cubic area 4,224. Exclusive of sentries, twelve men are supposed to sleep in the quarter-guard nightly. This gives 32 square feet, or 352 cubic feet per man—an allowance much below authorized accommodation. The men, however, sleep in the open verandah. There are two solitary cells, each 13 × 8 × 11, which are ventilated—over-ventilated I think—by barred openings above the walls. They are situated on elevated ground to the west of the lines. Each cell has a privy seat. The cells are clean and well conserved. There are four regimental latrines, one for each wing and two for the followers. They are open mud wall enclosures, at some distance from the lines. They are resorted to by men, not by the women. They are cleaned daily by contract. There is no dry-earth conservancy properly so called. Excreta are dropped on the ground. Soakage is unavoidable. During the rains the condition of these latrines must be very objectionable. Covered-in latrines, stone-flagged, and on the dry-earth system should be substituted for the existing latrines, and sites nearer the lines should be selected. There are no cess-pools or foul drains.

Rations, &c.

Rations, &c.—The quality of the rations is upon the whole good, and there is sufficient variety in the articles of diet. Vegetables are cheap and abundant. Raggy is the staple grain. Beef is good, mutton somewhat scarce, goat meat general. Meat sells at 4 Annas per seer. Men with large families cannot afford to eat animal food daily. This restriction has a debilitating effect upon the constitution of such men.

Duties.

Duties.—The duties are light and not detrimental to health. The proportion of nights in bed to nights on duty is as 5½ to 1.

Conservancy.

Conservancy.—The regimental bazaar, the neighbouring small village, and the ground adjacent to the lines are well conserved. No pains are spared by the military authorities to secure cleanliness and thorough conservancy.

Hospital.

Hospital.—The hospital stands in a walled space with a superficial area of 30,240 feet. The enclosure has two entrances, one at the centre of the northern and the other at a corresponding point of the southern wall.

The hospital consists of a single building, 153 feet long by 39 broad. It contains one long ward, 131 feet long by 17½ wide, surrounded by a verandah 8 feet wide; at the four corners are small verandah wards, which are used as (a) surgery, small and inconvenient; (b) guard-room; (c) lavatory; and (d) medical store. The hospital looks to the south, and is placed on a gentle slope which facilitates drainage. It stands also on a well-elevated plinth. The wash from the lavatory is carried out of the enclosure by a small brick drain. The hospital and out-buildings are scrupulously clean and well conserved. At the south-western angle of the enclosure is a well-ventilated and lighted dead-room, at present used as a special ward for an insane patient. Its size is 15½ × 12 feet. It has two doors and two windows. It has at present a clean, cheerful look. The ward of the hospital has sixteen doors and eight windows; there are also four ridge ventilators. There is accommodation for from twenty-four to thirty patients (the standard allowance is for fifty patients). In this climate forty patients might be under treatment without risk in this ward. From its shape, elevation, and ventilation the ward must be a very cold one. I agree with Surgeon Archdall in regarding it as over-ventilated, and I suggest that it be divided by fixed screens into three wards, each 43 feet long. Natives do not stand the over-ventilation of huts and

hospitals—what is necessary in this respect to the health of the European is proportionately injurious to the comfort and constitution of the native.

Principal diseases.—Since last inspection (8th November 1873) there have been 217 admissions to hospital and 2 deaths = 0·92 per cent. of admissions. One patient died of hæmoptysis and the other from asthma. One officer, Colonel Walker, died from general dropsy on the 30th of April 1874. Cholera, small-pox, typhoid, remittent fever, and diphtheria do not appear in the list. The greatest number of admissions is due to ague, chronic rheumatism and itch hold the second place, and conjunctivitis the third. The general health of the regiment has suffered considerably from an epidemic of dengue, which attacked it last year. The Surgeon also considers that the men are suffering more or less from the malarious influences of this station. The regiment reached this station from Thayetmyo in February and March 1869, and the early removal of the regiment to a non-malarious station appears to me to be very advisable. The principal cause of disease is malaria—a cause more easily named than defined or remedied. Ague is said to be most distinctly marked when the cold west wind blows upon the lines. This wind does not sweep over any extensively-irrigated or wooded line of country. Surgeon Archdall suggests that possibly the malaria may be developed from the abundant disintegrating granitic and ferruginous rocks lying to the west of the cantonment—an old theory which probably has an element of truth in it.

CEDED DISTRICTS.

Average strength	...	...	...	...	...	...	...	1,730
Do. do. present	...	...	...	...	...	...	...	1,602
Total admissions	...	...	...	...	...	...	...	713
Daily sick	...	...	...	...	...	...	...	26
Deaths in hospital	...	...	...	...	...	...	...	6
Do. out of do.	...	...	...	...	...	...	...	4
Pensioned	...	...	...	...	...	...	...	40
Sick leave	...	...	...	...	...	...	...	41

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Rate per Cent. of				
	Average Strength Present.		Average Strength.		
	Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	45·84	1·88	·87	1·31	·98
1872	48·10	1·89	·87	2·86	1·18
1873	54·12	2·16	·48	1·50	1·08
Average ...	49·35	1·97	·74	1·89	1·08
1874	44·49	1·62	·57	2·31	2·36

The following corps were serving in this division on the 31st December 1874 :—

4th Regiment Light Cavalry.
4th do. Native Infantry.
21st do. do.

Deputy Surgeons-General Ranking and Smith held charge of this district during the year. The report of the latter on this district is included in that of Mysore.

4th Regiment Light Cavalry.

STATION—BELLARY.

Arrived from Secunderabad 4th December 1872.

Average strength	...	...	...	...	...	...	...	...	312
Do. do. present	...	...	...	...	...	...	...	...	252
Admissions	...	...	...	...	...	...	...	...	119
Daily sick	...	...	...	...	...	...	...	...	3
Deaths in hospital	...	...	...	...	...	...	...	...	...
Do. out of do.	...	...	...	...	...	...	...	...	...
Pensioned	...	...	...	...	...	...	...	...	11
Sick leave	...	...	...	...	...	...	...	...	5

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Secunderabad ...	33.55	1.62	.65	.32	.....
1872 ...	Bellary ...	36.78	2.00	.66	.66	.33
1873 ...	Do. ...	60.00	2.22	.73	5.51	1.47
	Average ...	43.44	1.94	.68	2.16	.60
1874 ...	Bellary ...	47.22	1.19	...	3.52	1.60

Surgeon-Major E. S. Cleveland, M.D., has been in medical charge during the year, and reports as follows:—

Position of
barracks, &c.

Position of barracks, &c.—As in all Native Regiments the barracks are used as places-of-arms. The regimental lines are unfavorably situated on a flat level of kunkur and granitic soil with a superstratum of granite and red earth, aiding in no degree in the gravitation of its surface drainage, and thereby considered an unhealthy position.

Ventilation,
&c.

Ventilation, &c.—Objectionable points were noted at the annual inspection of the Deputy Surgeon-General of the division last made, and side-drains were, at the suggestion of that officer, duly formed along the main streets; such, however, are speedily effaced. Semi-circular concrete or tiled drains might with much advantage be inexpensively established in such level with the regimental lines as those at Bellary. The liquid sewage stored in suitable earthen receptacles at convenient distances and daily carted away.

Nuisance of
latrines,
urinals, ash-
pits, &c.

Nuisance of latrines, urinals, ash-pits, &c.—None within the limits of the regimental lines beyond a small one for use of the standard guard. There is only one regimental latrine constructed of mud, divided by a central mud wall for the sexes, common to all and insufficient for the requirements of the regiment.

Sanitation, &c.

Neighbouring nuisances in the vicinity of Cowle Bazaar have been duly brought to the notice of the Municipality and Inspector of Nuisances concerned.

Foot-soreness.

Sanitation, &c.—The sanitary arrangements within the limits of the regimental barracks and lines have throughout the year received the best attention.

Foot-soreness.—One case only of foot-soreness in blistered feet from ill-fitting boots has presented itself to my notice during the year, which was at once remedied by attention to the cause.

Duty and
exercise.
Vaccination.

Duty and exercise.—The average number of nights in bed has been 5.03 per week.

Vaccination.—Vaccination has been fully attended to in the corps, in which there has not been a single instance of small-pox or any of revaccination during the year.

Ventilation of
hospital.

Ventilation of hospital.—It has been fully noticed without any results that the followers' hospital accommodating eight men, now in use since the regimental hospital has been razed to the ground, is insufficient for the requirements of the regiment under any degree of increased sickness or prevalence of an epidemic. It consists of a single ward, and has two doors, windows, and ventilators above with an east and west verandah.

Overcrowd-
ing, &c.

Overcrowding, &c.—There has yet been no overcrowding of the little single ward hospital, but it is obvious that it is not capable of meeting any pressure on its extremely limited space under any undue sickness.

General conclusion.—The 4th Regiment Madras Light Cavalry took part in the operations at the Camp of Exercise at Bangalore during the month of January 1874. The regiment made its return march to Bellary the following month, where it arrived on the 19th February. The regiment enjoyed excellent health throughout the year under review, as exhibited by the accompanying annual return for 1874. General conclusion.

Five men of the regiment proceeded to their native countries on sick leave during the year. Eleven men were invalided on the 15th August 1874. Two Native officers, eleven men, and one lascar were brought before a special medical invaliding committee on the 11th December 1874, and are waiting the decision of the Government on their cases. No death has to be recorded in or out of hospital during the year.

Acting Deputy Surgeon-General G. Smith, M.D., inspected this corps on the 19th January 1875, and reports as follows:—

Lines.—The lines of the 4th Regiment L.C. are built upon a level piece of ground which has a gentle slope to the east and south, and which is situated south-west of the "Cowle Bazaar." The lines are arranged into three large and one small groups, and are, as a rule, built without definite arrangement, the only real exception being the block of hutting lines appropriated now to four troops, and lying nearest to the Cowle Bazaar. South-west of this block is observed a second block for the three squadron and Hindu lines, north-west of which are found the lines for the Farriers, &c., and a larger block for the regimental followers, such as ghorawalas and grass-cutters. Although the block first mentioned exhibits some attempt at regularity, this cannot be said of the others. All is irregularity, confusion, and lack of conservancy. In consequence of the greatly diminished numbers of the regiment, blocks of huts have been vacated and have fallen down or are in ruins, their vacant spaces being too often converted into huge dust-bins or worse. The huts have been built upon no definite principle, nor have they been arranged upon any definite system; their accommodation is by no means uniform, and their system of domestic conservancy varies probably with the ideas of the occupants. The lines, as a whole, have an aspect of discomfort and of ruin very disheartening to those who occupy them. The followers' lines are cleaner than the second-block lines, though not so well conserved as block No. 1 already referred to. There is no drainage; a few gutters in the roadsides are all that exists of drainage, and these are merely dug in the soil, and serve to retain and absorb, not to carry off fluids. The domestic outlets open upon the side of the road, and too often no difference is made between bathing water and water of fecal ablation. Men, women, and children all defecate and wash in the huts, and the ideas of dry-earth conservancy among them are of the most primitive kind. Huge circles of spaces called dust-bins are seen here and there in some specially-neglected locality, but the refuse is not confined to the bins, being impartially distributed all around. Some huts are flat roofed with mud masses for roofs, extremely dangerous when such huts collapse—other huts are tiled, and others thatched—many very much out of repair. There are no trees in the lines. The excreta are removed by a cart, the refuse of the lines by another, and not being utilized are buried at a distance. The line of drainage lies to the south-west of the lines, where a dirty little stream runs, into which passes whatever surface water finds its way from the lines. In the low-lying ground in this neighbourhood are many wells, some surface subsoil ones, others deep and apparently good. Many of them are very close to the line of drainage. The lines and their surroundings should by all sanitary laws be unhealthy, but it appears that they are not. Lines.

Sanitary condition of all buildings.—There are two solitary cells forming part of a block which also contains a harness-room. These cells are large enough, and have each a privy recess, but they are insufficiently ventilated, there being no roof, partition, or wall ventilation. The only inlets for air are the door and two barred windows. The quarter-guard, or standard-guard as it is called, is a large room about 30 feet square. The guard numbers one havildar, one naigue, one trumpeter, and twelve sepoy, of whom four are upon sentry, eleven sleep in the quarter-guard at night. The accommodation and ventilation are sufficient. Sanitary condition of all buildings.

There is a detached latrine for these men—a mere mud enclosure—where the dry-earth system is only nominally adopted. It was foul and entirely unconserved when I inspected it.

To the south-west of the hutting lines a large open mud enclosure, divided into two compartments, constitutes the male and female latrine for the followers of the regiment. It is a mere enclosure without arrangement, where persons resort to defecate wherever it may suit them to squat down. There is no attempt made at dry-earth conservancy. I have already mentioned that men, women and children use the domestic arrangements. They cannot be called privies. I think that an order should be passed prohibiting adult males from using the domestic privy; for them there should be erected proper regimental latrines.

Night-soil is removed to excreta pits, one and a half miles from the lines, along with the refuse by the municipality.

Recommendations.

Recommendations.—In a communication addressed to the Officer Commanding the Regiment Surgeon-Major Cleveland pointed out the pressing necessity of a regimental hospital and of a regimental latrine. He pointed out that a small ward capable of containing but eight patients was quite insufficient to meet the medical wants of a regiment with public camp followers, numbering in all 614 persons.

No action has been taken, as far as is known, upon this letter. The impression seems to be gaining ground here that the regiment may probably be broken up.

Burial of the dead.

Burial of the dead.—There is a large Mahomedan burial-ground not far from one of the deep wells lying to the south of the lines. The water is said, however, to be good. The neighbourhood of the crowded burial-ground is objectionable.

4th Regiment Native Infantry.

STATION—PALASAMUDRAM.

Arrived from Bellary en route to Rangoon.

Average strength	...	...	...	...	...	...	...	...	697
Do. do. present	...	...	...	...	...	...	...	...	659
Admissions	...	...	...	...	...	...	...	...	312
Daily sick	...	...	...	...	...	...	...	...	11
Deaths in hospital	...	...	...	...	...	...	...	...	2
Do. out of do.	...	...	...	...	...	...	...	...	3
Pensioned	...	...	...	...	...	...	...	...	5
Sick leave	...	...	...	...	...	...	...	...	17

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871...	Bellary ...	47.16	2.53	1.59	1.59	1.15
1872...	Do. ...	47.26	2.25	.76	3.65	1.52
1873...	Do. ...	48.97	2.04	.72	1.44	1.88
	Average ...	47.79	2.27	1.02	2.29	1.51
1874...	Palasamudram ...	47.34	1.66	.71	.71	2.43

Surgeon D. F. Bateman has been in medical charge during the year, and reports as follows:—

Lines.

Lines.—No barracks. The men's huts are built on slightly-elevated ground, slope facing south. The surrounding country is open and uncultivated, free from vegetation, and the site is unobjectionable.

Sepoys' huts.

Sepoys' huts.—Not so as to the huts themselves, which are of very faulty construction, floors beneath the street level, bad building materials.

Guard-room.

Guard-room.—The quarter-guard is ventilated by three doors and one window, which admit a sufficiency of air to the building; its superficial area is 639 feet, its cubic contents 6077.18; about eighteen men sleep nightly in it. The bazaar and dhoby guards are also roomy and well ventilated. The huts are, in common with most native dwellings, small, dark, ill-ventilated, and in many cases overcrowded; openings have been made in the back walls to admit air, but these are usually found closed up by cloths, &c. The drainage of the streets is entirely surface, and, as the lines are constructed on sloping ground, is sufficient to carry off any excess of fluid, as storm water. The drainage from the courtyards was very faulty in many instances, owing to their lower level than the main drains. Tarred chatties are used to catch fluids from yards, and these, as well as the yards, private latrines, &c., are kept as clean as possible.

Nuisances.

Nuisances.—None, as all refuse matters are removed to the regular filth-pits, a mile distant from the lines.

Diet.

Diet.—It is a most difficult point to determine as to how the men of a native corps diet themselves, but looking at the number of sickly men of short service seen in the ranks,

and many whose health becomes permanently broken without any assignable cause, I should think that want of nutritive food, or rather an insufficiency of it, exists in many instances, owing to the number of relatives dependent on the bare pay of a single individual.

Foot-soreness.—There has been, as usual, a good number of cases of foot-soreness from boots (515). The men were excused wearing boots until the sores healed.

Vaccination.—The number of cases vaccinated during the year by subordinates has been small (22) owing to only one being present with the regiment, the other went on duty to Bengal; but I had over 300 cases vaccinated by a female vaccinator, whose services I obtained on application to the Garrison Surgeon, Bellary.

The return of the cases done by her has been forwarded separately by the Deputy Superintendent of Vaccination. No small-pox occurred.

Phthisis pulmonalis.—Three cases of phthisis are shown in the return, one of which was a case of acute pneumonic phthisis, which supervened on an attack of laryngitis; of the two remaining cases, one was a man with a large family dependent on his pay, and in consequence under-dieted; the other a Mussulman of supposed dissolute habits; the former was pensioned and the latter sent on a year's sick leave.

Drainage.—The drainage, although surface, is as perfect as it can possibly be, and there is sufficient slope in the ground to carry off all storm-water or excess of fluid. There are no public latrines in use, but a small portion of the courtyard of each hut is screened off as a privy: these are now flagged and tarred; and tarred chatties also used for fluid and solid excreta, which are removed daily to a considerable distance from the lines.

Hospital whitewashing.—The hospital has been limewashed once during the year; this is the first time this has been done, I believe, since the building was constructed. I might mention that the entire roofs of both Infantry Hospitals are in a most unserviceable condition: rain pours in through every part: floors were covered during the heavy rains last season with three inches of water: patients had to be kept in verandahs: represented, but when I left Bellary nothing had been done to them.

General conclusions.—This corps has enjoyed good health during the year, and the mortality has been below the average for many years. The regiment formed portion of the Camp of Exercise in the beginning of the year; the men during that time showed almost the lowest sick-rate in camp. Marched for Palaveram on 19th December, and up to the present date have been in excellent health. Sanitary state of the lines rendered as good as possible, and the conservancy closely attended to. General health of civil population in lines, too, was satisfactory; there has been no outbreak of epidemic disease among them.

21st Regiment Native Infantry.

STATION—BELLARY.

Arrived from Jubbulpore 29th November and 21st December 1873 :—

Average strength	...	...	...	...	...	...	...	721
Do. do. present	...	...	...	...	...	...	...	691
Admissions	...	...	...	...	...	...	...	282
Daily sick	...	...	...	...	...	...	...	12
Deaths in hospital	...	...	...	...	...	...	...	4
Do. out of hospital	...	...	...	...	...	...	...	1
Pensioned	...	...	...	...	...	...	...	24
Sick leave	...	...	...	...	...	...	...	19

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Jubbulpore ...	42.49	1.95	.42	...	.14
1872 ...	Do. ...	41.28	1.78	.14	.14	.85
1873 ...	Bellary ...	57.05	2.25	.14	...	.14
	Average ...	46.94	1.99	.23	.04	.37
1874 ...	Bellary ...	40.81	1.73	.69	3.32	2.63

The following medical officers were in charge during the year :—

Surgeon E. Levinge.

Do. D. R. Thompson, M.D.

Do. J. C. Lawrenson.

The last-named reports as follows :—

Climature.	<i>Climate</i> .—Nothing unusual respecting the climate of the station occurred during the year, save an excess of about 10 inches over the average rainfall; this, however, did not seem to affect the health of the regiment.
Lines, huts, & guard-rooms.	<i>Lines, huts, and guard-rooms</i> .—Means of ventilation and drainage of lines sufficient; no defects observed.
Nuisance.	<i>Nuisance</i> .—A latrine situated outside the hospital compound was reported in the annual sanitary report for the year 1872, but no steps have been taken in the matter since.
Diet.	<i>Diet</i> .—Provisions and vegetables tolerably plentiful. The men have been allowed an average of Rupees 1-5-9 rice batta during the year.
Foot-soreness.	<i>Foot-soreness</i> .—No foot-soreness to call for remark.
Duty and exercises.	<i>Duty and exercises</i> .—Ordinary garrison and regimental duty. Has had no ill-effects on health.
Vaccination.	<i>Vaccination</i> .—No vaccination or cases of small-pox. No revaccination.

Acting Deputy Surgeon-General G. Smith, M.D., inspected this corps on the 20th January 1875, and reports as follows :—

Lines.	<i>Lines</i> .—The lines of the 21st Regiment lie south-west of those of the 4th Light Cavalry already described in another report. They occupy ground whose configuration favors drainage, and which slopes gently to the south and to the east. The lines are thickly planted with trees, which give a cheerful look to the streets, as well as afford a pleasant shade. The lines are very old ones, and the huts are not built upon recent measurements. There are two main streets running north and south and east and west, and subsidiary streets besides. The lines of the right wing lie to the west of those of the left wing. There is no artificial drainage. The drainage is by gutters and ditches of various sizes dug in the earth; in these ditches the water of the surface, unless in very large quantity, soaks and percolates; evaporation does the rest. In the subsidiary streets the drains are mere gutters, crossed, at the doors of the huts, by slabs of stone. Into these drains runs the wash from the huts, one outlet giving vent to the water of ablution, another running off the defecation fluid and the urine into a cess-pit outside the hut enclosure, where they are caught by a chatty and finally carried off by the toty. The lines look clean outside, but the internal arrangements are more or less objectionable. Men, women, and children all use the hut for defecation as well as for bathing, and inasmuch as there are no definite arrangements in operation for either purpose, the result is not always one conducive to the cleanliness or comfort of the inmates. The use of dry-earth is only partially understood, and no one is detailed to see that these hut arrangements are properly and daily conserved. In all cases, in my opinion, adult males should be obliged to frequent properly-built regimental latrines. The huts are at times roofed with flat roofs, at times with thatch, at times with tiles. The lines suffered much during the late rains, and much damage resulted. The flat-roofed school-room came down and buried twenty-five children, all of whom were rescued, but two were considerably injured. These flat mud roofs are dangerous. The huts are insufficiently ventilated, and some of them had collections of refuse in their yards. One conservancy cart pays two visits daily. The cart belongs to the municipality. The excreta are removed to a distance and deposited in trenches.
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There are no regimental latrines.

Sanitary condition of all buildings.

Sanitary condition of all buildings.—In one of the places-of-arms there are two rooms set apart as a quarter-guard. The guard consists of one Havildar, one Naigue, one Drummer, and eighteen privates, six of whom are on guard. The superficial area is 588 feet, the cubic contents 5,292 feet. It is well ventilated. There is no latrine attached to the quarter-guard, the sepoys making use of a dirty, ruinous, and badly-conserved old latrine close to the new hospital, which, with other ruinous old houses, should have been swept away long ago. They are discreditable nuisances. There is a small library and reading-room for the drummers in the lines, and there are small schools in which English (boys and girls), Telugu, and Hindustani are taught. The prison cells are two in number. They are well ventilated and of sufficient size; each has a recess for latrine arrangements on the dry-earth system.

Conservancy.

Conservancy.—The conservancy of the neighbourhood is good. The water of the several wells should be analyzed, and the wells themselves numbered. Potable-water wells should be conserved with proper walls and masonry platforms, and should be provided with

drawing tackle. Wells close to burial grounds should be closed. Wells in the line of drainage should be carefully analyzed and closed, or left open according to results. The practice of drawing water by chatties and by bheesties' leathern buckets should be prohibited. The immediate neighbourhood of regimental lines should receive the careful attention of medical officers and of the municipal authorities.

HYDERABAD SUBSIDIARY FORCE.

Average strength	...	...	...	...	...	...	...	...	2,607
Do. do. present	...	...	...	...	...	...	...	...	2,498
Total admissions	...	...	...	...	...	...	...	...	3,600
Daily sick	...	...	...	...	...	...	...	...	159
Deaths in hospital	...	...	...	...	...	...	...	...	25
Do. out of do.	...	...	...	...	...	...	...	...	8
Pensioned	...	...	...	...	...	...	...	...	107
Sick leave	...	...	...	...	...	...	...	...	52

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Rate per Cent. of				
	Average Strength Present.		Average Strength.		
	Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	78.23	2.25	.99	1.87	1.29
1872	96.72	3.92	1.28	1.76	1.71
1873	109.91	3.84	.91	1.37	.79
Average ...	94.95	3.33	1.06	1.66	1.26
1874	144.11	6.32	1.26	4.14	1.99

The following corps were serving in this division on the 31st December 1874 :—

1st Regiment Light Cavalry.
 3rd do. Light Infantry.
 29th do. Native Infantry.
 40th do. do.
 Detachment, Sappers and Miners.

Deputy Surgeons-General Barclay and Burn held charge of this division during the year. The last-named reports as follows :—

Lines.—There have been no changes during the year in any of the lines occupied by the Native troops. The demolition of the European barracks in the lines of the 29th Regiment N.I. is still in progress. The conservancy of all the lines is as good as the means at disposal appear to admit. The natural drainage in most instances, indeed everywhere, is good where it is not neutralized, as in the Sapper lines, by the lines being built across instead of with the natural slope, and it is aided by side scratch drains. The cost of stone-faced and mortar drains has prevented their introduction. The latrines, public and private, in the lines are kept clean by daily removal of excreta; in both dry-earth is partially used, and in the latter ashes also; the people in some instances prefer the latter. The public latrines are as free from offensive smell as can be expected in the absence of the sufficiently free and systematic use of either dry-earth or other deodorants.

Hospitals.—There has been no change in any hospital with the exception of some improvement in the drainage of the Lock Hospital. They are all clean and in good repair. The accommodation of the 3rd Light Infantry and 40th Native Infantry Hospitals was found to be insufficient, and had, during the prevalence of fever, to be supplemented by tents. The 29th Native Infantry would have been reduced to a like resource but for the large detached female ward of the old Artillery Hospital which has been left standing and is in good repair.

Hospital latrines.	<i>Hospital latrines.</i> —All the hospital latrines are large and roomy, and most of them are new buildings. That of the Cantonment Hospital has been elongated by 8 feet during the year. Dry conservancy is in use in all, but is worked with difficulty; were it thoroughly carried out, coal-tar could be largely dispensed with.
Duties and employments.	<i>Duties and employments.</i> —The duties and employments of the troops comprise the usual drills, guards, parades, brigades, &c., common to all garrisons; an escort is also furnished to the Resident, which is relieved weekly. The Sappers are employed on public works, road-making, and building barracks at Trimulgherry, in addition to drills and parades. There is no reason to think that these duties have had an injurious influence on health.
Drainage and conservancy.	<i>Drainage and conservancy.</i> —The drainage and conservancy of the station generally are attended to by the Assistant Quartermaster-General and the Cantonment Committee. Drainage is for the most part naturally good.
Water-supply.	<i>Water-supply.</i> —There are sufficient wells for all purposes in the regimental lines. Certain selected ones only, however, are used for drinking purposes. It has been recommended that all such wells should be covered in and provided with lifting power, but want of funds has so far delayed action in this direction. A scheme is still under consideration to supply the town of Secunderabad with water from the Hoossain Saugor Tank from near the western extremity of the bund.
Seasons.	<i>Seasons.</i> —The chief seasonal characteristics of the year were a milder hot season than that of 1873, the highest point registered in the shade being 106° Fahrenheit against 107·50 in the previous year. The rainfall amounted to 29·84 inches, or 3·28 inches in excess of an average fall. It fell more or less on eighty-nine days, the largest fall on any one day being 2·25 inches. The lowest registered temperature was 48·80. The rainfall throughout the Nizam's dominions was everywhere plentiful.
Statistics of fever.	<i>Statistics of fever.</i> —The most prevalent disease was as usual fever, in most cases of a mild intermittent type, but occasionally running into remittent and becoming less manageable. The admissions under this head in 1874 exceeded by 686 those of 1873. The 29th Regiment, in proportion to strength, gave the largest number of admissions for fever, then the H and K Companies of Sappers and Miners, then the 3rd Regiment L.I., and then in order of frequency follow the 6th and 40th Regiments Native Infantry.
Fever.	<i>Fever.</i> —Fever of an intermittent and remittent type obtains in Secunderabad during the monsoon months, chiefly affecting the lines of one or more native regiments in each year. During the past year fever was more prevalent and more widely spread than usual, every native corps, with the exception of the 1st Regiment L.C., suffering more or less severely from it. The 3rd Regiment L.I., hitherto the most susceptible to fever, suffered far less than the hitherto healthy 29th Regiment N.I. The pre-existing proclivity to fever in the 3rd Regiment L.I. has been attributed to the state of their lines; but all the native regimental lines labor under nearly, if not quite, similar sanitary arrangements. It has been attributed to the high monsoon winds to which the 3rd Light Infantry lines are exposed, but all the lines are to a greater or less extent exposed to the monsoon winds with varying years of health and sickness; again it has been attributed to want of acclimatization, to atmospheric vicissitudes, to malaria, and to many other sources; but, in despite of these and all alleged causes, the 3rd Regiment L.I. was, as has been said, last year more exempt from fever than either the hitherto healthy 29th Regiment N.I., or than the Sappers. In the Hyderabad Assigned Districts fever among the population exists every year in direct proportion to the rainfall in the year; but the native troops at Secunderabad do not appear to come under the influence of a like law. It may be in time, and by a process of exhaustion, that some inferences may be reached leading to a knowledge of the occult influences generating fever in irregularly alternate years in the native lines in the station; but these influences are up to the present time not only undetermined, but otherwise than seemingly incorrectly unsuspected.
Statistics of mortality.	<i>Statistics of mortality.</i> —The mortality among the native troops in Secunderabad was higher during the year under review than during the year 1873, but less than in 1872, the deaths in hospital having been 28 in 1874, against 20 in 1873 and 47 in 1872.
Other statistics of the year.	<i>Other statistics of the year.</i> —There was no marked prevalence of any disease or class of diseases, with the exception of the fever already mentioned.
European Commissioned Officers.	<i>European Commissioned Officers.</i> —With an average annual strength of 67·91 European Commissioned, there were during the year thirty-nine admissions on the sick report and no death in the station. Two officers obtained sick leave for ague and hepatitis, respectively, one to the Neilgherry Hills and one to Europe. The latter died on the passage home.
Cholera.	<i>Cholera.</i> —Not only Secunderabad but the whole of the Nizam's Dominions were free from cholera in the year 1874.
Small-pox.	<i>Small-pox.</i> —The native troops and families were free from small-pox in the year 1874, with the exception of the 40th Regiment N.I. In this corps two privates were attacked in April, of which one case was confluent; both men had, it is stated, been previously successfully vaccinated, and both recovered. At the same time twenty-one cases occurred, mostly children, among the families of the regiment, of which six were confluent, four semi-confluent, six distinct, and five of modified type. Of the confluent cases four died; all these cases, with one exception, were reported to have been successfully vaccinated.

Vaccination, regimental.—Vaccination appears to have been carried on during the year, and all the native regiments are supposed to be protected. The number of vaccinations by medical subordinates are reported to have been 1,154, of which 986 were successful, or in ratio of 85·44 per cent. The number vaccinated considerably exceeds that of the preceding year, but no very reliable vaccination registers are found to exist in any of the hospitals. Moreover it too often happens that corps in which most or all of the men have been vaccinated, whether successfully, doubtfully, or unsuccessfully, are returned as protected. From a very cursory attention to the subject at this station it appears that, roughly estimated, 200 per mille in the native combatant ranks are unprotected, and probably double that average among the families and followers. The work of a vaccinatrix cannot be always verified by the medical officer, and, it is feared, is sometimes very unreliable. Steps are in course of being taken to, as far as possible, render the vaccination statistics of native troops at this station more exact and satisfactory.

1st Regiment Light Cavalry.

STATION—SECUNDERABAD.

Arrived from Kamptee 6th February 1873.

Average strength ...	...	...	...	...	...	...	...	212
Do. do. present...	...	...	...	...	...	...	...	204
Admissions ...	...	...	...	...	...	...	...	94
Daily sick...	...	...	...	...	...	...	...	4
Deaths in hospital ...	...	...	...	...	...	...	...	...
Do. out of hospital ...	...	...	...	...	...	...	...	2
Pensioned ...	...	...	...	...	...	...	...	4
Sick leave ...	...	...	...	...	...	...	...	3

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Kamptee ...	84·06	1·99	·38	...	...
1872 ...	Do. ...	106·12	2·85	·40	...	...
1873 ...	Secunderabad ...	69·69	2·16	·43	1·73	1·73
	Average ...	86·62	2·33	·40	·57	·57
1874 ...	Secunderabad ...	46·07	1·96	·94	1·88	1·41

The following medical officers were in charge during the year :—

Surgeon-Major J. T. Williams.

Surgeon R. E. Ross.

Surgeon-Major J. M. Donnelly, M.D.

The last-named reports as follows :—

Climate.—There does not appear to have been any thing unusual in the meteorological phenomena or climatic influences of the year, which could have exercised any marked prejudicial effect upon the health of the corps. Climate.

Water-supply.—Water-supplied from open wells, abundant and excellent.

Water-supply.
Diet.

Diet.—Provisions are abundant, but scarcely cheap; in fact compensation is given to the corps on account of their dearness. At present many kinds of wholesome vegetables are plentiful, but in the hot months there is a great scarcity of them.

Duty and exercises.—Duty seems heavy owing to the low strength of the corps, but not so as to affect injuriously men's health. Duty and exercises.

Athletic sports and gymnastic exercises were practised at the station, but the men of the 1st Light Cavalry did not join in them: there are few young soldiers in the corps, which may account for this.

General
conclusions.

General conclusions.—The foregoing observations cannot be read with any other conclusion than that the regiment under my charge has enjoyed as fair a share of health as a good climate, good food, good hygienic and sanitary conditions, and good general management can be looked to, to ensure.

3rd Regiment Light Infantry.

STATION—SECUNDERABAD.

Arrived from Madras 7th and 8th February 1871.

Average strength	...	...	...	...	...	...	...	658
Do. do. present	...	...	...	...	...	...	...	658
Admissions	...	...	...	...	...	...	...	1,037
Daily sick	...	...	...	...	...	...	...	70
Deaths in hospital	...	...	...	...	...	...	...	9
Do. out of hospital	...	...	...	...	...	...	...	1
Pensioned	...	...	...	...	...	...	...	57
Sick leave	...	...	...	...	...	...	...	21

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Secunderabad ...	130.29	2.82	.38	.77	1.15
1872 ...	Do. ...	194.92	5.21	1.59	1.30	4.77
1873 ...	Do. ...	164.62	4.94	1.16	2.62	1.45
	Average ...	163.27	4.32	1.04	1.56	2.45
1874 ...	Secunderabad ...	157.59	10.63	1.51	8.66	3.19

Surgeon C. J. McNally, M.D., has been in medical charge during the year, and reports as follows:—

Year and Month.	READING OF BAROMETER.				TEMPERATURE OF AIR.							DRY AND WET BULB.		Mean Deduced Dew Point.	Mean Degree of Humidity.	RAIN.		OZONE.		WIND.	CLOUD.	
	Mean for Month.	Highest in Month.	Lowest in Month.	Range.	Highest in Month.	Lowest in Month.	Range in Month.	Mean of all Highest.	Mean of all Lowest.	Mean Daily Range.	Approximate Mean for Month.		Mean of Dry Bulb.			Mean of Wet Bulb.	Number of Days it fell.	Amount collected.	Mean at A.M.			Mean at P.M.
January...	28.318	28.462	28.150	.318	91.5	47.5	44.0	85.7	51.2	27.3	76.5	76.5	62.3	...	...	...	...	...	E.	81	92
February	28.266	28.452	28.068	.384	97.3	56.0	41.3	91.7	61.5	30.4	81.4	81.4	66.5	...	...	...	...	...	E. and W.	90	88
March ...	28.197	28.378	28.032	.346	102.5	63.0	39.5	94.3	67.4	30.2	86.0	86.0	68.4	...	1	.01	...	...	E.	95	94
April ...	28.177	28.328	28.032	.296	106.0	65.5	40.5	102.5	73.0	29.5	91.7	91.7	71.7	...	3	.46	...	...	N.W.	82	87
May ...	28.056	28.276	27.924	.352	106.2	70.2	36.0	100.4	75.9	24.7	88.3	88.3	74.5	...	7	.96	...	...	W.	66	68
June ...	28.008	28.220	27.828	.392	99.0	68.0	31.0	90.4	72.8	18.8	76.8	76.8	73.2	...	14	3.62	...	...	S.W. by W. & S.W.	43	48
July ...	27.997	28.128	27.824	.304	94.3	69.0	25.3	87.3	71.0	16.3	79.4	79.4	73.6	...	16	6.27	...	...	W.	27	29
August ...	28.051	28.200	27.924	.276	91.0	67.5	23.5	86.4	70.0	16.8	78.8	78.8	72.3	...	16	5.49	...	...	W. & N.W. by W.	44	46
September	28.056	28.182	27.884	.298	90.8	68.0	22.8	85.6	70.3	15.3	78.8	78.8	73.6	...	19	11.78	...	...	N.W. & W.	41	37
October...	28.140	28.318	27.964	.354	91.0	64.0	27.0	87.2	69.0	18.1	79.8	79.8	72.1	...	9	1.23	...	...	N.E. & N.W.	72	64
November	28.284	28.400	28.136	.264	89.4	52.0	37.0	84.1	58.0	23.6	75.7	75.7	64.8	...	...	...	...	...	N.E. by E. & E.	84	79
December	28.330	28.450	28.192	.258	89.3	46.3	43.0	83.7	56.2	27.1	75.2	75.2	63.3	...	1	.02	...	...	E. & N.E. by E.	86	87
Means ...	28.157	28.316	27.996	.319	95.7	61.4	34.3	89.9	66.4	23.2	80.7	80.7	69.7	...	...	29.84	...	...	.....	69	68

Meteorology.

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	Secunderabad	55.93	2.18	1.89	5.42	2.14
1872	Do.	42.97	2.12	1.21	1.75	1.07
1873	Do.	59.94	2.63	.56	1.42	.56
	Average	52.94	2.31	1.22	2.86	1.25
1874	Secunderabad	144.59	5.10	1.29	5.03	2.73

The following medical officers were in charge during the year:—

Surgeon-Major Wilkins, M.D.

Surgeon W. R. Brown.

The last-named reports as follows:—

Diseases of the district.—The diseases for which this station has generally been considered obnoxious, viz., dysentery and hepatitis, have not prevailed to any extent during the past year, but fever of a mild intermittent type was very general during the whole of the south-west monsoon. Diseases of the district.

Barracks.—The lines are situated on the crest, which runs north and south of a gentle elevation with slopes towards the east and west: in the first of which directions, and comparatively near, are paddy-fields and the village of Russelpoor, and the latter aspect has the villages of Begumpettah and Bugnatapoor as a foreground, with (at present uncultivated) paddy-fields farther away. The situation is generally considered a healthy one, and up to the present year the returns of the regiment have corroborated that opinion, but the great prevalence of malarious fevers during the past wet season would seem to point to some local change. Barracks.

Huts.—The huts are of the usual construction; seem to be decidedly deficient in ventilation and light, but they do not appear to have directly caused any ill-effects on the health of the men. Huts.

Ventilation.—The ventilation, at any rate in the cold weather, must be deficient from the careful closure of any openings to exclude the cold air, and cannot at any time be too good from the want of perfilation by opposite windows. Ventilation.

Drainage.—The drainage is better described by the word "soakage," as the superficial impaired furrows scratched outside the doors are well adapted to receive, but not to forward the liquids of varying degrees of filth that are poured into them. With a soil permitting quick penetration, "flushing" is impossible with an impaired drain; and, as a result, a site which, from the existence of a naturally good fall, might readily have been preserved in a pure condition, is gradually becoming more and more contaminated. Drainage.

There seems to be no chance of removing this great defect, from the cost of supplying proper stone mains.

Nuisance.—With the exception of the bad condition of the drains as noted above (and which is more of an underground nuisance) the removal of filth from the surface has been satisfactory. Nuisance.

Hospital water-supply.—The water-supply has been ample and seemingly good; it is taken chiefly from four wells close to the lines, the proximity determining the choice. Three of the wells to the west of the lines present good opportunities for a certain amount of contamination by the existence of steps, which enable the drawers to descend into the water. These would be better walled in. Hospital water-supply.

Sanitary Arrangements.—As far as was possible the sanitary arrangements have been attended to; but the contamination of the soil produced by the impaired drains is, I think, a local cause of disease, which certainly requires removal. Sanitary arrangements.

Diet.—Secunderabad is comparatively a dear station, vegetables have been abundant, but their price precludes their free use by the men. Rice-money has been given.

The nutrition and variety of the sepoy's food depend on the number of mouths there are to consume his pay. These are generally in an inverse ratio, the large figure

unfortunately for him being usually with the first, and consequently in many cases there is hardly enough of either of the important portions of diet mentioned above. The meat sold in the regimental bazaar is daily inspected by the medical officer at the hospital.

Foot-soreness. *Foot-soreness.*—The usual amount of foot-soreness from “boot-bites” seems to have existed, and permission to go without boots for a few days the general effective remedy.

Vaccination. *Vaccination.*—Vaccination has steadily been carried out except during August, when fever being very prevalent Surgeon-Major J. Wilkins deemed it prudent to discontinue vaccination: not a case of small-pox has occurred; no revaccination.

Epidemic diseases. *Epidemic diseases.*—Soon after the beginning of the south-west monsoon in June, the number of admissions from fever of an intermittent type began suddenly to increase, and the three following months were marked by a large daily number of sick varying from 45 to 101, the latter figure occurring on the 19th August. The average daily sick for these three months (July, August, and September) was 72·8, but the middle of October showed a rapid diminution in the number of febrile attacks, coincident with the cessation of the rains. Dr. Wilkins states that these cases were “almost all of a very mild type, only requiring to be under treatment for a few days,” mildness of the cases being further proved by the fact that no death occurred directly from fevers out of the 768 admissions for ague. One case admitted for ague died suddenly, and it was found on *post-mortem* examination that fatty degeneration of the heart existed. Dr. Wilkins has not left on record the cause or causes to which this epidemic might be attributed, but by a process of exclusion of all other reasonable causes, such as those mentioned in the question, I am forced to think that the contamination of the immediate subsoil by the bad drainage is the main factor in the causation of this outbreak of mild ague.

Phthisis pulmonalis. *Phthisis pulmonalis.*—No case of phthisis pulmonalis has occurred.

40th Regiment Native Infantry.

STATION—SECUNDERABAD.

Arrived from Saugor 18th February 1873.

Average strength	...	...	...	...	...	...	...	678
Do. do. present	...	...	...	...	...	...	...	644
Admissions	...	...	...	...	...	...	...	805
Daily sick	...	...	...	...	...	...	...	28
Deaths in hospital	...	...	...	...	...	...	...	9
Do. out of hospital	...	...	...	...	...	...	...	1
Pensioned	...	...	...	...	...	...	...	1
Sick leave	...	...	...	...	...	...	...	6

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Saugor ...	113·54	6·25	1·27	1·08	·99
1872 ...	Do. ...	58·34	2·65	1·15	3·47	·86
1873 ...	Secunderabad ...	117·10	3·73	1·71	·46	·77
	Average ...	96·32	4·21	1·37	1·97	·87
1874 ...	Secunderabad ...	125·00	4·34	1·47	·14	·88

Surgeon-Major E. Dixon has been in medical charge during the year, and reports as follows:—

A large number of admissions appears under the head of “Injuries,” which is due to a great proportion of them being on account of shoe-galls. I should mention that for some period during the year no men were excused from wearing shoes, who might otherwise have been allowed for a few days to have done their duty without them. The men,

however, so suffering are now excused from wearing their shoes for a while at the recommendation of the medical officer.

Climate.—The year was not considered unfavourable to health. The hot season during the first half of the month of April was severe, after which it was very moderate, especially during the latter part of the season, when heavy clouds gathered; and rain fell on several occasions, which considerably reduced the temperature. Climate.

The monsoon was a good one, the rainfall being over the average. The latter part of the year was agreeably cool, and early in the mornings somewhat cold and foggy.

Marches.—The regiment was stationary during the year. Marches.

Lines, sepoy huts, and guard-rooms.—The lines occupied by the men of the regiment and their families are built in streets running at right angles to one another, viz., from north to south and from east to west, on a site with sufficient slope for rain to run off readily. The huts, however, are faulty in construction, being badly lit and ventilated, as such buildings usually are, and cannot be favourable to health. Lines, sepoy huts, and guard-rooms.

Ventilation.—Ventilation of guard-room and cells excellent, that of the huts chiefly maintained by doorways, though in a few instances by windows also. Ventilation.

Diet.—Provisions have been plentiful and somewhat cheaper than in the previous year. Vegetables abundant. The native ranks of the regiment have received "rice money." Scarcely applicable to native troops though it may be here observed that no doubt owing to numerous dependants some of the men are barely sufficiently fed, rendering them as a matter of course more prone to disease. Diet.

Foot-soreness.—Many of them have suffered from shoe-galls, which have been due to their own carelessness and neglect chiefly, by not keeping their boots sufficiently soft by greasing them from time to time, which has frequently been explained to them. Foot-soreness.

Exercises, games, &c.—None. The men appear to have quite enough exercise in the performance of their parades and garrison duties. Exercises, games, &c.

Lock-up rooms and cells.—The sanitary condition of the solitary cells has been satisfactory as regards space, ventilation, and cleanliness. Lock-up rooms and cells.

Vaccination.—The men of the regiment are all protected from small-pox, either by already having had that disease, or by vaccination. A Mahomedan woman, sent up to this station by the Superintendent of Vaccination for the purpose, vaccinated all the women of the regiment, both the sepoys' wives and camp-followers. All the children who had not been previously vaccinated, excepting those of too tender an age, underwent the operation, and those with whom it did not succeed were revaccinated. Vaccination.

Two men of the regiment who had been properly vaccinated were attacked with small-pox during the year, one in the confluent form, and one in the distinct. Both made good recoveries; as also did another man who was remaining on the sick report with that disease at the end of the previous year.

Diseases.—What gives rise annually to malarious fever occurring in the lines at present occupied by the regiment is probably owing partly to their situation, which is nearly surrounded by paddy cultivation, and to a large tank situated to the south-west of them, where there is a large surface of shoal water drying up after each heavy fall of rain, and partly to the contamination of the subsoil by inefficient drainage. Diseases.

Phthisis pulmonalis.—A case, the only one during the year of phthisis pulmonalis, the sequel of ague, was admitted a week before the close of the year. Phthisis pulmonalis.

Drainage of hospital and latrines.—Drainage natural and good. The latrine is commodious enough for the purpose intended, and is built on a good principle, excepting the flooring, which is deficient in slope, so that the water used by the patients in their ablutions cannot run off readily, which has been pointed out to the Barrack Master, but without result. Drainage of hospital; and latrines.

Detachment Sappers and Miners.

STATION—SECUNDERABAD.

Average strength	...	...	...	...	...	...	...	...	364
Do. do. present	...	...	...	...	...	...	...	...	326
Admissions	...	...	...	...	...	...	...	...	701
Daily sick	...	...	...	...	...	...	...	...	23
Deaths in hospital	...	...	...	...	...	...	...	...	2
Do. out of hospital	...	...	...	...	...	...	...	...	...
Pensioned	...	...	...	...	...	...	...	...	10
Sick leave	...	...	...	...	...	...	...	...	3

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Secunderabad ...	193.41	4.70	1.37	.27	2.47
1872 ...	Do. ...	174.61	5.88	2.27	1.42	2.55
1873 ...	Do. ...	208.43	8.43	.31	.62	.93
	Average ...	192.15	6.33	1.31	.77	1.98
1874 ...	Secunderabad ...	215.03	7.05	.54	2.74	.82

Surgeon-Major G. F. Trimnell has been in medical charge during the year, and reports as follows:—

Lines, sepoy-huts, and guard-rooms.

Lines, sepoy huts, and guard-rooms.—The detachment (of the Sappers) as a part of a native corps do not occupy barracks, but small huts, the walls of which are built of mud and roof tiled, running north and south; the elevation is good, but the site has been unfortunately chosen, being so placed that the prevailing winds during some part of the year blows across a swamp and tank directly over the lines. The consequence is that the locality has proved most inimical to health.

The construction of the men's huts are faulty, as too many families are under one continuous roof instead of in detached blocks of threes or fours; another defect is that, instead of the floors of each individual hut being raised above the ground by a foot or more, the builders dug out the earth, so that the floors are below the surface of the ground outside, and in the monsoon must be damp and unwholesome. The huts are small and low, and do not admit of much elbow room to their inmates.

The drainage, which is surface only, is defective, inasmuch as that the blocks of huts have been built across the natural slope towards the tank to the west of the line; the ventilation is such as usually obtains among the natives; no improvement is practised in such diminutive holdings.

Water-supply.

Water-supply.—The water-supply is deficient, the higher caste men only being allowed to draw water from a well near at hand, whilst the lower caste have to go to a well near the tank to draw their water from it.

Sanitary arrangements.

Sanitary arrangements.—The sanitary arrangements in the lines are on the whole good and effective.

Diets.

Diets.—Provisions, such as rice, meat, and vegetables, are procurable, the latter being somewhat scarce; but all are dear. The usual rice-money on account of dearness of this article of consumption has been issued to the Sappers as to other Native troops.

From the anæmic condition of some of the men, it is probable that they are insufficiently fed; the fault being their own.

Ventilation and accommodation.

Ventilation and accommodation.—Ventilation excellent.

During a short time when febricula and ague prevailed extensively, there was a slight bearing to overcrowding.

Drainage and hospital latrines.

Drainage and hospital latrines.—The drainage of the hospital enclosure is very fair. The dry-earth system is to some extent carried out, and the latrines are kept in good order.

NAGPORE FORCE.

Average strength ...	2,963
Do. do. present ...	2,871
Total admissions ...	2,430
Daily sick ...	71
Deaths in hospital ...	19
Do. out of hospital ...	6
Pensioned ...	87
Sick leave ...	26

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Rate per Cent. of				
	Average Strength Present.		Average Strength.		
	Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	97.20	3.04	.68	1.93	1.58
1872	114.07	3.25	1.36	1.58	1.58
1873	104.93	2.90	1.33	2.59	1.46
Average ...	105.40	3.06	1.12	2.03	1.54
1874	84.63	2.47	.84	2.96	.87

The following corps were serving in this division on the 31st December 1874:—

2nd Regiment	Light Cavalry.
35th do.	Native Infantry.
8th do.	do.
22nd do.	do.
31st do.	Light Infantry.

Deputy Surgeon-General Tribe was in charge of this division during the year, who reports as follows:—

The native portion of the force consisted of the average strength, exclusive of Commissioned officers.

Corps, &c.	Stations.	Average Strength.
2nd Regiment L.C.	Kamptee ...	214.6
35th do. N.I.	Do. ...	663.10
31st do. L.I.	Raipore ...	661.91
Head-Qrs. 8th Regiment N.I.	Seetabuldee ...	434.24
Two Companies of do. do.	Seroncha ...	138.
One Company of do. do.	Chanda ...	72
Head-Qrs. 22nd Regiment N.I.	Hooshungabad	399.51
Rt. Wg. do. do.	Kamptee ...	289.7
Details	Do.	13.91

Native lines.—The sanitary condition of the Native lines at Raipore, Hooshungabad, and Chanda leave little to be desired, the old lines at Chanda having been levelled. The same may be said of the lines at Kamptee, with the exception of the 35th, which are capable of great improvements by levelling, drainage, &c. The lines at Seetabuldee are situated in a swamp, and I regret to say that I can see no prospect of their speedy removal to higher ground. Their state is disgraceful.

Rations.—The monsoon has been abundant, and grain—not now dear—appears to be becoming cheaper.

Hospitals.—All the hospitals at Kamptee are well suited to their purpose. That at Raipore is on the old standard plan, and is a most comfortable-looking building. At Chanda the hospital, being intended for the sick of a regiment, could accommodate the whole company. At Seroncha a very nice and suitable little hospital has been erected with every convenience.

Bedding.—The supply is everywhere ample, and usually more than what is allowed by regulation. The clothing is changed according to the weather.

Water-supply.—At all these stations in the Central Provinces, with the exception of Raipore, the water is good and abundant. At Raipore there is always a deficiency of water in the hot weather, and always will be unless some plan be adopted for impounding the water of some river in its vicinity, and conveying it to Raipore. I believe this would greatly improve the health of the place, as the tanks, which are now so necessary, are at the same time a fruitful source of disease, might then be filled up.

Conservancy.—The conservancy is at all the stations in these provinces admirable, and leaves little to be desired.

Diseases.

Diseases.—The following table shows the classes, &c., by which the admissions and deaths of the past year were caused, as well as those of the two previous years; the Europeans are included.

Years	1874.		1873.		1872.	
Strength	3054.95		2989.20		2,980	
Specific Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
CLASS I.—General Diseases.						
Sub-division A	1,362	7	2,463	11	1,688	18
Do. B	163	3	190	5	232	5
Total	1,525	10	2,653	16	1,920	23
CLASS II.—Local Diseases.						
1. Disease of the nervous system	20	1	14	...	24	1
2. Do. eye	149	...	201	...	109	...
3. Do. ear	15	...	14	...	24	...
4. Do. nose	...	...	...	...	1	...
5. Do. circulatory system	6	2	27	1	4	...
6. Do. absorbent do.	1	...	2	...	8	...
7. Do. ductless glands	...	...	...	...	...	...
8. Do. respiratory system	53	2	55	2	65	10
9. Do. digestive do.	191	4	203	4	324	4
10. Do. urinary do.	23	1	26	1	49	...
11. Do. generative do.	11	...	21	...	11	...
12. Do. organs of locomotion.	19	...	21	...	29	...
13. Do. cellular tissue	35	...	51	...	79	...
14. Do. cutaneous system	209	...	237	...	393	...
Total	732	10	872	8	1,120	15
CLASS III.—Conditions, &c.						
General debility	73	1	69	3	53	...
CLASS IV.—Poisons						
	7	...	4	...	1	...
CLASS V.—Injuries.						
2. Accidental	172	...	130	2	223	1
CLASS VI.—Surgical Operations.						
Not yet diagnosed	6	...	22	...	2	...
Total	2,515	21	3,750	29	3,319	39

From this table the past year (even including the dengue of 1873) appears to have been an unhealthy one from the large number of admissions from ague, doubtless the result of the copious monsoon which appears to have chiefly affected Raipore, Hooshungabad, and Seroncha. Chanda appears to be decidedly healthier, doubtless because my repeated recommendations have at last been attended to. Seroncha is again unhealthy.

The following remarks were left by Deputy Surgeon-General Tribe on the 28th February 1875 when relinquishing charge of the office.

There has been no cholera during my five and a quarter years' incumbency, which is, I believe, due to the recommendations of Dr. Townsend, the Sanitary Commissioner, regarding certain juttras having been attended to.

In some years small-pox has prevailed, and I fear will prevail occasionally until vaccination is rendered compulsory; but, as there is no likelihood of this being done, I would recommend a small money payment for each child vaccinated, to reimburse the parents for loss of time, &c. I would also recommend the infliction of a small fine, say Annas 2 per month, on every one residing within cantonment limits who was not protected from small-pox.

I think that, taking it altogether, the health of the circle has improved, which is doubtless in some measure due to the attention paid to sanitary matters, but it is only the most trifling cases in which the Deputy Surgeon-General can exert any influence, and I

believe the same might be said with regard to the Surgeon-General. What I could manage to get done in the way of draining at Kamptee has been done, and levellings have been taken of the sudder bazaar, which will I trust be gradually drained. In 1872 I recommended the levelling of the old huts in the immediate neighbourhood of the detachment lines at Chanda, but it was not done until 1874; why, I cannot understand.

In 1869, Dr. Ranking, the then Sanitary Commissioner, represented the urgent necessity of draining a swamp near the European family-quarters. I have frequently and strongly submitted the necessity of draining this swamp, but with no practical result. The same with the lines of the regiment at Seetabuldee. From what I have seen myself and read in Proceedings of Government, I do not hesitate to assert that, had a jail for felons been built in this swamp instead of dwellings for honest men, it would have been removed to a most elevated site years since; nor do I believe that the swamp in the vicinity of the European barracks at Kamptee would have remained undrained so many years had it been in the close neighbourhood of a jail. So far as I understand them the regulations which presuppose a knowledge almost omniscient to officers of the Department Public Work do not even give to medical officers the credit of ordinary knowledge on sanitary matters or hospital arrangements.

The hospital at Hooshungabad, built originally for a whole regiment when regiments were much stronger than now, was rebuilt, or nearly rebuilt, in 1872 without any reference to me, the consequence of which has been a deliberate waste of many thousands of rupees. The old standard plan was on such an expensive scale that a new standard plan was devised, but the wall space is so cut up by doors that it will not conveniently contain more than forty cots while it is built for fifty.

At Sumbulpore an hospital has been built for a whole regiment, though there is never likely to be more than a wing stationed there. Both here and at Raipore a number of useless rooms have been built at an unnecessary expense of many thousand of rupees.

I have made these remarks because I am of opinion that few things would conduce more to the benefit of the army than giving to Administrative Medical Officers a definite position with reference to the authorities regarding hospitals and sanitary requirements.

In conclusion I have only to thank all the medical officers who have served under me for the uniform support I have received from them, and for the unanimity and good feeling invariably displayed.

2nd Regiment Light Cavalry.

STATION—KAMPTEE.

Arrived from Bellary 12th February 1873.

Average strength	...	...	...	...	...	...	...	241
Do. do. present	...	...	...	...	...	...	...	214
Admissions	...	...	...	...	...	...	...	139
Daily sick	...	...	...	...	...	...	...	6
Deaths in hospital	...	...	...	...	...	...	...	2
Do. out of hospital	...	...	...	...	...	...	...	1
Pensioned	...	...	...	...	...	...	...	2
Sick leave	...	...	...	...	...	...	...	3

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Bellary ...	45.70	1.95	.61	1.23	1.23
1872 ...	Near Secunderabad.	75.60	2.80	.97	5.84	...
1873 ...	Kamptee ...	142.25	4.60	1.36	3.74	2.04
	Average ...	87.85	3.11	.98	3.60	1.09
1874 ...	Kamptee ...	64.95	2.80	1.24	.82	1.24

The following medical officers were in charge during the year :—

Surgeon-Major W. Arnold Smith, M.D.

Surgeon J. G. Collins, M.D.

Surgeon-Major J. J. Heffernan.

The last-named reports as follows :—

Diet.

Diet.—Provisions have been cheap and plentiful all the year round, and the quality of various articles constituting the sepoy's diet have been from time to time inspected by the Bazaar Master, and generally found to be of good quality. The supply of vegetables has been abundant and extremely cheap.

The men buy their own provisions, and their pay is quite sufficient to feed them well; but, as long as the Government will permit the men to support, not only their wives and children, but numerous relations, an under-fed condition, well known to be very prevalent in the native army at present, must prevail, and must be too a predisposing cause of disease.

Clothing.

Clothing.—The clothing of the men is well adapted to the climate of the cold and rainy seasons, consisting, as it does, of cloth tunic and overalls, but during the hot season at this station it must be most unsuitable.

There is no objection to the cloth overalls at mounted duties, but the thick cloth tunic must be a most oppressive garment during a season when the average morning lowest temperature is between 80° and 90° F., rising at times in the shade to 115° F. The European and Native Officers, also the Farriers, wear white jackets, but the men, not being able to afford to keep a necessary number of white jackets, prefer wearing the tunic on dismounted duties; the men wear a light white undress, and in the cold season a quilted cotton coat when on sentry duty at night.

Vaccination.

Vaccination.—Vaccination has been regularly kept up in the regiment, and, with the exception of about three newly-born children, the whole of the men and their families are protected by this operation. No men have been revaccinated. There has been no small-pox in the lines, although it has prevailed to a small extent in the cantonment bazaar during the year under review.

Phthisis
pulmonalis.

Phthisis pulmonalis.—Only one case of phthisis pulmonalis was admitted into hospital during the year. The disease appears to have originated because of a blow on the chest from his horse's head while on parade, although at the time of the accident he thought nothing of it, and did not seek medical treatment for some considerable time after.

Ventilation.

Ventilation.—The ventilation of the hospital has been thoroughly good. No representations regarding it have been necessary.

Accommoda-
tion.

Accommodation.—There has been no overcrowding.

Drainage of
hospital and
latrines.

Drainage of hospital and latrines.—The surface drainage is good. The hospital has a good basement, and has always been dry. Hathaway's system has been adopted in the latrine with a liberal use of coal-tar. No representations have been made.

Hospital
water-supply.

Hospital water-supply.—The water-supply is from wells, sufficient in quantity and of good quality.

Deputy Surgeon-General Tribe inspected this corps on the 29th September 1874, and reports as follows :—

Barracks.

Barracks.—The cavalry lines at Kamptee form a pleasing contrast to the tumble-down, rickety, half-ruined, untidy lines occupied by the 22nd and 35th; they are clean, well ventilated; as regards the outside well drained, both naturally and artificially.

Sanitary
condition of
all buildings.

Sanitary condition of all buildings.—All in excellent sanitary condition. The children of the followers foul the ground to the rear of the lines, but the followers are made to pay for extra toties, so that nothing is seen except early in the morning, though I cannot say the same as regards the olfactory sense.

Conservancy.

Conservancy.—Conservancy of the neighbourhood of barracks and station, &c., admirable.

Hospital.

Hospital.—The hospital is to my mind the model hospital of this circle, and I prefer it to either of the two new standard plans. It is most excellent in all points named in the heading.

8th Regiment Native Infantry.

STATION—SEETABULDEE.

Arrived from Mercara 6th December 1873.

Average strength ...	...	...	...	...	...	...	...	655
Do. do. present ...	...	...	...	...	...	...	...	644
Admissions ...	...	...	...	...	...	...	...	823
Daily sick ...	...	...	...	...	...	...	...	23
Deaths in hospital...	...	...	...	...	...	...	...	2
Do. out of hospital	...	...	...	...	...	...	...	1
Pensioned ...	...	...	...	...	...	...	...	9
Sick leave...	...	...	...	...	...	...	...	8

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Mercara ...	104.10	3.77	1.21	6.23	3.49
1872 ...	Do. ...	91.14	3.60	1.13	1.84	4.39
1873 ...	Seetabuldee ...	118.16	3.47	1.16	3.80	3.21
	Average ...	104.46	3.61	1.16	3.95	3.69
1874 ...	Seetabuldee ...	127.79	3.57	.45	1.37	1.22

The following medical officers were in charge during the year :—

Surgeon T. V. Aylen.

Do. H. J. Jones.

The first-named officer reports as follows :—

Climate.—The hot weather was not so severe as usual; the rains began about the end of June and lasted till September, more than 40 inches of rain falling, or some inches more than the average. This increased rainfall appears to have exercised some influence on the admissions for fever and conjunctivitis, which rose rather high during September. The cold easterly winds which prevailed in November also helped to swell the admissions on account of these diseases.

Lines, sepoy huts, and guard-rooms.—The huts are built of rammed earth with tiled roofs; some of the huts, which are detached from the main lines, are covered with grass. Width of main streets 31 feet; width of subsidiary streets 18 feet.

The drainage of the lines is defective, as owing to their being built in a hollow so slight a fall is obtained that the drainage, except during the monsoon, sinks into the earth instead of flowing away. The drains are simple channels cut in the earth. Recommended that drains should be lined and otherwise improved; nothing done. At the end of the monsoon the drains were choked up with vegetation. Recommended that they should be cleaned out; this was accordingly done.

Nuisances.—The latrine is so small for the requirements of the hospital, that it is almost impossible to keep it free from offensive smell. An application has gone in for a new latrine to be built for the hospital. There are no latrines for the men except one, about half a mile from the lines, under the municipal authorities. The Commanding Officer is in communication with the civil authorities with a view to the erection of suitable latrines for the men.

Water-supply.—During the dry weather there was a scarcity of water in the lines, and temporary wells had to be sunk; for the remainder of the year the supply was abundant, quality good.

Sanitary arrangements.—The sanitary arrangements in the lines are as well attended to as is possible under the circumstances; but until they are removed to some favorable site, the amount of sickness in the regiment will always be higher than it should.

Diet.—Average compensation for dearness of rice was Rupees 2-0-1 per mensem; vegetables good and abundant.

Clothing.—Clothing sufficient and adapted to climate.

Foot-soreness. *Foot-soreness.*—Ten men were admitted for blistered feet. From May to December 168 men were "excused boots" for periods varying from three to six days.

Duty and exercises.—There have been no unusual duties to be performed by the troops; they have consisted of the ordinary parades, out-post duties, ball-practice.

Lock-up rooms and cells.—The sanitary condition of lock-up rooms has been satis-

Vaccination. *Vaccination.*—All unprotected recruits are vaccinated on joining. One case of modified small-pox occurred in a sepoy bearing marks of vaccination. Fourteen recruits were revaccinated with a failure in every case; 33 cases occurred amongst the families with two deaths—both children—one vaccinated, the other not. Thirty cases of revaccination amongst the families; fifteen were successful. Total number of cases vaccinated 19 recruits and 95 families and followers; of these 75 were successful.

Ventilation and accommodation.—Ventilation good; the hospital has been much improved by the taking away of a wall dividing two small wards from each other, and thus converting them into one large ward.

During the last two quarters of the year the hospital has on a few occasions been overcrowded.

General conclusions.—The health of the regiment has not been satisfactory during the past year, the ratio of admissions to strength being far too high. One-third of the entire number of admissions was due to ague; conjunctivitis gave 50 admissions, dysentery and diarrhoea gave but 27 admissions, rheumatism 27. So far as regards the climate, water-supply, duties, &c., of the troops, there is no reason whatever why the ratio of sickness should be so high; but so long as the lines continue to occupy their present unhealthy site, I fear there is no prospect of improvement.

Deputy Surgeon-General Tribe inspected this corps on the 10th October 1874, and reports as follows:—

Barracks.—Much has been said and written about these lines which are certainly not likely to improve. They occupy an insufficient space, so that they are ill-ventilated, while the drainage—but it is absurd to speak of what does not exist. When these lines were originally sanctioned in the place which they now occupy, it was with the understanding that it was to be drained. This has never been done, nor has it ever been attempted. At the meeting of a committee held in May 1873, it was recommended that the lines should be removed to sloping ground towards the west. The subject of building lines having been referred to the Department Public Works I gave up all expectation of the removal of the lines on account of the expense, and recommended for that reason, and from doubts as to the healthiness of the spot selected, that the original intention of draining the lines into the Jummah tank should be carried out, as the Executive Engineer who attended the committee was of opinion that it could be drained to a depth of five feet. In England thorough drainage to a less depth exerts a marvellous effect upon health. Nothing has been done. I should add that everything has been and is done that can be done by the regimental authorities.

Hospital.—*Hospital*.—Clean, well-ventilated, and drained; accommodates 22 patients; water from the same source as the lines. I have always regretted the existence of a wall which made what should have been one good-sized ward into two small rooms, but the advisability of removing it never crossed my mind until a few months since. This has now been done and has converted two small dark rooms into a cheerful looking ward, which accommodates two more patients than did the two rooms.

22nd Regiment Native Infantry.

STATION—HOOSHUNGABAD.

Arrived from Palamcottah 20th January 1873.

Average strength	...	...	...	...	...	...	712
Do. do. present...	...	...	...	...	...	...	688
Admissions	...	...	...	...	...	...	517
Daily sick...	...	...	...	...	...	...	14
Deaths in hospital	...	...	...	...	...	...	7
Do. out of hospital	...	...	...	...	...	...	...
Pensioned...	...	...	...	...	...	...	24
Sick leave	...	...	...	...	...	...	5

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871...	Palamcottah ...	43.60	1.63	1.16	4.31	...
1872...	Do. ...	34.89	1.16	.58	5.40	.43
1873...	Hooshungabad ...	111.22	2.27	.84	.28	.14
	Average ...	63.23	1.68	.86	3.33	.19
1874...	Hooshungabad ...	75.14	2.03	.98	3.37	.70

The following medical officers were in charge during the year:—

Surgeon-Major J. J. Heffernan.

Surgeon A. A. Thomas.

The last-named reports as follows:—

Climate.—The climate during the past year has differed but little from that of previous years. The rains commenced somewhat later than last year, and the rainfall has been slightly heavier. The cold season set in rather earlier than usual; the mornings are invariably very cool, often very cold, and the nights even during the hot weather and rains are cool. The most feverish months have been March, April, October, November, and December. Immediately on the setting in of the cold season, the number of sick in hospital and lines began rapidly to increase; this increase has been entirely due to an increase in the number of cases of intermittent fever, chiefly of the quotidian type. Climate, however, in my opinion, plays but a secondary part in causing this increase in intermittent fevers. The exciting causes are—

- (1). Want of proper warm personal clothing.
- (2). Insufficient and non-nutritive food.
- (3). The fact that the greater number of sepoy and their families sleep on thin mats spread on the cold ground instead of on charpoys.

Huts.—The huts are old and frail looking, the walls consisting simply of bamboo mattings plastered with mud and cow-dung. They are arranged in eight blocks on each side of the main street, the Hindus occupying the blocks on one side, the Mahomedans those on the other side. Each block consists of two rows of houses placed back to back with an interval of five feet between the adjacent backs; the blocks are separated by bye-streets about 21 feet wide.

Nuisances.—Conservancy has been well attended to during the year.

Water-supply.—An abundant supply of water is derived from three wells in the neighbourhood of the lines. The quality of the water is very good; no representation has been made regarding this subject.

Sanitary arrangements.—On the whole the sanitary arrangements in the lines have been properly attended to. There are no special local causes of disease requiring removal.

Clothing.—The clothing is the same as that worn by all Native regiments, and has been found sufficient and adapted to the climate. The thin flimsy private clothing of the men, however, is totally unsuited to the cold season of the year; and is, in my opinion, one of the great predisposing causes of the fever.

Foot-soreness.—Sepoys provide themselves with the ordinary ankle boots of native manufacture. These boots are invariably ill-fitting and hard, and, to make matters worse, the men never wear socks. 101 reported cases of foot-soreness from defective boots, &c., occurred during the year; the average duration of treatment of each case was three days.

Duty and exercises.—About three morning parades a week, lasting for an hour. Adjutant's drill daily for an hour morning and evening, Sundays and holidays excepted.

The above duties have not been in the least detrimental to the health of the men; average number of nights per week in bed 4.

Lock-up-rooms and cells.—The sanitary condition of the guard-rooms and prison cells has been satisfactory as regards cubic space, ventilation, and cleanliness. No defects observed.

Vaccination.—Vaccination is systematically carried out. Every recruit on enlistment is vaccinated whether he has or has not had small-pox or been previously vaccinated. Of twenty-five cases of attempted revaccination, three cases have been successful. One case of modified small-pox occurred in February; the subject of the attack had been five times unsuccessfully vaccinated. No death from small-pox.

Ventilation.	<i>Ventilation.</i> —The ventilation of the hospital has been perfect; no representation regarding it has been made.
Accommodation.	<i>Accommodation.</i> —Never any overcrowding.
Hospital water-supply.	<i>Hospital water-supply.</i> —Good and abundant.
General conclusions.	<i>General conclusions.</i> —The health of the head-quarters and left wing of the 22nd Regiment M.N.I. has been fairly good during the past year. No forms of epidemic disease have broken out or spread in hospital or in the lines. Only one death occurred during the year, the result of general debility. Fevers were exceedingly prevalent during the months of October, November, and December, about 90 per cent. of the cases being ague of the quotidian type. The marked feature of these fevers was the great prostration and debility that followed even the very slightest attack. No death occurred from fever. Troops newly stationed here invariably suffer during the first year or two from fevers, but the climate on the whole is thought favorable for native troops. The cantonment occupies a healthy site, and the natural drainage is good, and there are no physical features of the country to render the station unhealthy. The men's duties are not excessive, or in any way detrimental to good health.
Deputy Surgeon-General Tribe inspected this corps on the 24th October 1874, and reports as follows:—	
Barracks.	<i>Barracks.</i> —The lines are clean, well ventilated as regards the outsides of the huts, and apparently well drained, but from all I hear nothing but thorough subsoil drainage would really drain these lines, for, though situated on high ground sloping both north and south to lower ground, the subsoil is saturated with moisture during the monsoon, and the floors of the huts are excessively damp. The huts too are more damp than they would otherwise be from the walls being built, not as usual of mud, but of date and wattle.
Sanitary condition of all buildings.	<i>Sanitary condition of all buildings.</i> —All in good sanitary condition; there are no cesspools or foul drains, and all excreta are removed to a distance. There are two latrines at some distance to the south of the lines.
Hospital.	<i>Hospital.</i> —Clean, well ventilated, and well drained. The large ward accommodates 28, and the small ward 14 patients. Although the hospital was rebuilt not three years since, the walls are already cracked in some places. The latrine is clean to look at, but is offensive. I have directed more dry earth to be used.
Surgeon H. Allison, M.D., has been in charge of the Right Wing, 22nd Regiment Native Infantry, at Kamptee, and reports as follows:—	
Climate.	<i>Climate.</i> —The climate during the past year has been favorable to the native troops; the heat during the months of April and May was not excessive; the monsoon began in the early part of June and continued until the middle of October, the rainfall slightly exceeding that of previous years. Towards the end of the rainy season the number of ague cases slightly increased, but otherwise the climate does not appear to have been injurious to health.
Lines, sepoy huts, and guard-rooms.	<i>Lines, sepoy huts, and guard-rooms.</i> —The barracks are used only for arms and accoutrements. The men live in huts, which I believe are of regulation size, but, owing to the small number of apertures, the interchange of air must be very small. Although the huts are very favorably situated, yet, from the small number of openings in the huts, free ventilation cannot possibly take place; the drainage has been good, and no nuisance exists in the vicinity of the lines. The ventilation and drainage of the guard-rooms have been sufficient.
The walls of the barracks limewashed, &c.	<i>The walls of the barracks limewashed, &c.</i> —The walls and ceilings of the barrack-rooms have been limewashed twice during the year, and it has not been necessary to make any representation on the subject.
Sanitary arrangements.	<i>Sanitary arrangements.</i> —Sanitary arrangements have been carefully attended to, and there have been no apparent causes of diseases requiring removal.
Diet.	<i>Diet.</i> —Provisions have been plentiful during the past year, although considered high in price. Vegetables have been abundant at the station. Troops received compensation on account of provisions every month.
Foot-soreness.	<i>Foot-soreness.</i> —Sepoys have very often appeared at hospital on account of foot-soreness by defective boots; they were generally recommended to be excused from wearing boots for two or three days.
Drill.	<i>Drill.</i> —Mornings parade from 5-30 A.M. to 7 A.M., evenings parade from 5 P.M. to 6 P.M.; the hours of parade vary slightly according to the season. The amount of drill has not had an injurious influence on health.
Vaccination.	<i>Vaccination.</i> —Vaccination had been properly kept up among the children of the regiment. No cases of small-pox have occurred during the past year.
Ventilation and accommodation.	<i>Ventilation and accommodation.</i> —The doors and windows of the hospital being constantly kept open, the ventilation has been excellent, and there has been no overcrowding.
Hospital whitewashing.	<i>Hospital whitewashing.</i> —The hospital wards have been regularly and properly lime-washed during the year in accordance with the regulation.

General conclusions.—The health of the Right Wing of the 22nd Regiment M.N.I. during the past year has been good; no epidemic disease has prevailed during the year; the mortality has been rather above the average, two deaths having occurred, the result of dysentery—one death from phthisis pulmonalis, one from extravasation of urine, one from febricula, and one from apoplexy, which is entered under the head of sudden death. General conclusions.

The climate has been favorable for native troops; the amount of duty has not been excessive. The wing has remained in cantonment during the whole year.

Deputy Surgeon-General Tribe inspected this wing on the 22nd September 1874, and reports as follows:—

Barracks.—The lines are in a good sanitary condition, being clean, well ventilated outside the houses, though unfortunately not ventilated at all inside, and thoroughly well drained, both naturally and artificially. Barracks.

Sanitary condition of all buildings.—The sanitary condition of all subsidiary buildings is good; there are no cess-pools or foul drains, and all excreta are removed daily. Sanitary condition of all buildings.

Conservancy.—The conservancy is every thing that could be desired. Conservancy.

Hospital.—The hospital is clean, well drained, both naturally and by art, well ventilated; accommodates sixteen patients, and is supplied with water from the wells in the lines. Hospital.

31st Regiment Light Infantry.

STATION—RAIPORE.

Arrived from Berhampore 1st March 1873.

Average strength...	...	...	...	...	...	...	...	677
Do. do. present	...	...	...	...	...	...	...	662
Admissions	...	...	...	...	...	...	...	599
Daily sick	...	...	...	...	...	...	...	14
Deaths in hospital	...	...	...	...	...	...	...	6
Do. out of hospital	...	...	...	...	...	...	...	3
Pensioned	...	...	...	...	...	...	...	33
Sick leave	...	...	...	...	...	...	...	3

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	{ Right Wing, Berhampore. Left Wing, Sumbulpore. }	62.20	2.33	1.08	3.55	1.85
1872 ...	{ Right Wing, Berhampore. Left Wing, Sumbulpore. }	117.88	3.23	1.26	.70	.98
1873 ...	Raipore ...	70.27	1.87	1.42	3.98	.42
	Average ...	83.45	2.47	1.25	2.74	1.08
1874 ...	Raipore ...	90.48	2.11	1.31	4.87	.44

Surgeon E. M. Murphy, M.D., has been in charge during the year, and reports as follows:—

Condition of sepoy huts.—The sepoy huts are of a good description, fairly ventilated, not overcrowded, and are healthy. Condition of sepoy huts.

Guard-rooms.—The guard-rooms are large, well ventilated buildings. The system of drainage throughout the whole lines is kutcha, but the drains are nevertheless always kept very clean. Drainage and ventilation are on the whole good. Guard-rooms.

Nuisance.	<i>Nuisance.</i> —No nuisance existed. The entire station, including the lines, are swept daily, and all sewage, &c., removed to a distance.
Water-supply.	<i>Water-supply.</i> —Water is obtained from several wells and tanks in the vicinity. The supply is good and abundant at all times except towards the end of the hot weather. It then becomes very scarce and some of it bad. People remain up all night round a well waiting for the appearance of water. This will always be the case unless a supply of water be brought artificially into the station. Nearest river is five miles off.
Sanitary arrangements.	<i>Sanitary arrangements.</i> —On the whole sanitary arrangements have been properly attended to, and there are no local causes of disease, excepting occasional scanty supply of water requiring removal.
Diet.	<i>Diet.</i> —Provisions of all kinds, including vegetables, were cheap and abundant. The troops, consequently received no compensation.
Condition of the men with reference to the above.	<i>Condition of the men with reference to the above.</i> —I have noticed several cases of anæmia and what might almost be called emaciation, but not more than is observable in most other sepoy regiments, caused by the defective poor diet taken by men who have several relatives and hangers on to support. With these exceptions, the men are well nourished.
Foot-soreness.	<i>Foot-soreness.</i> —Native-made slippers were worn. No foot-soreness resulted therefrom. The duties do not seem to have exercised an unfavorable influence on health. Average number of nights per week in bed 3.5.
Lock-up rooms and cells.	<i>Lock-up rooms and cells.</i> —The lock-up rooms and cells are sufficiently large, are fairly ventilated, and are kept very clean. They have had no injurious effects on the health of the prisoners.
Vaccination.	<i>Vaccination.</i> —Every man in the regiment has been vaccinated. The whole regiment was revaccinated in 1873. One very mild case of small-pox occurred in the hot season in the person of a man previously successfully vaccinated. All the children in the lines, with the exception of the very young ones, have been vaccinated.
Phthisis pulmonalis.	<i>Phthisis pulmonalis.</i> —There was only one admission for disease of the lungs, viz., a case of phthisis pulmonalis, which quickly terminated fatally. It could not be clearly ascertained whether the disease was hereditary or not.
Hospital ventilation.	<i>Hospital ventilation.</i> —The hospital has excellent ventilation, viz., by ridge and opposite doors, also by ventilators. It is a very lofty and spacious building.
Hospital accommodation.	<i>Hospital accommodation.</i> —There has been no overcrowding in the wards.
Drainage of hospital and latrines.	<i>Drainage of hospital and latrines.</i> —There is no system of hospital drainage. The entire place is nevertheless kept very clean. The dry-earth system is efficiently carried out in the latrines, which are furnished each with a short drain leading to and overlooking a chatty. This is constantly cleaned.
Hospital water-supply.	<i>Hospital water-supply.</i> —The water-supply for hospital use is good and abundant.
General conclusions.	<i>General conclusions.</i> —The health of the regiment was on the whole good during the year. The admissions to hospital were greater than in 1873, but the deaths were less, viz.:—

	1873.	1874.
Admissions ...	497	599
Deaths ...	9	7

The increased number of admissions was due to the greater prevalence of malarious fever in 1874, viz., 361 cases, being 168 more than in the preceding year. 361 admissions for malarious fever in a regiment at this station are, however, rather below the yearly average, the comparative exemption from this disease in 1873 being due to partial failure of the monsoon. The chief diseases were—

	Cases.
Ague ...	336
Remittent ...	25
Dysentery ...	28
Ulcers ...	18

Deputy Surgeon-General Tribe inspected this corps on the 23rd December 1874, and reports as follows:—

Barracks.	<i>Barracks.</i> —The sepoy's lines are clean, well ventilated as regards the exterior of the huts, and appear to be in good repair. They are well drained both naturally and artificially.
Sanitary condition of all buildings.	<i>Sanitary condition of all buildings.</i> —The sanitary condition of all subsidiary buildings is good; there are no cess-pools or foul drains, the excreta being conveyed to a distance and buried. There are, however, three Havildars' guards, viz., the quarter-guard, the treasury guard, and the jail guard, besides the hospital and the dhobies' guards, amounting in all to (?) men, for none of whom are there any cots, and the sepoy's have

to sleep upon a stone or chunam floor in a climate where every one sleeps on a charpoy. The prisoners are much better cared for, as they have well raised mud chabutras.

Hospital.—The hospital, built on the old standard plan, is clean and well drained; Hospital. accommodation, ventilation, &c., being of course in accordance with the standard plan. The neighbourhood is clean and well drained.

35th Regiment Native Infantry.

STATION—KAMPTEE.

Arrived from Madras 14th January 1872.

Average strength	...	...	...	...	...	...	...	678
Do. do present	...	...	...	...	...	...	...	663
Admissions	...	...	...	...	...	...	...	352
Daily sick	...	...	...	...	...	...	...	14
Deaths in hospital	...	...	...	...	...	...	...	2
Do. out of hospital	...	...	...	...	...	...	...	1
Pensioned	...	...	...	...	...	...	...	19
Sick leave	...	...	...	...	...	...	...	7

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Madras ...	34.75	1.62	1.15	3.03	1.87
1872 ...	Kamptee ...	100.14	3.11	2.13	2.41	1.84
1873 ...	Do. ...	106.81	3.47	1.88	1.88	1.88
	Average ...	80.56	2.73	1.72	2.44	1.86
1874 ...	Kamptee ...	53.09	2.11	.44	2.80	1.03

The following medical officers were in charge during the year :—

Surgeon J. A. Laing, M.D.

Do. W. E. Johnson.

The last-named reports as follows :—

Admissions.—The total number of admissions during the year was 352, of which 127 Admissions. were cases of ague and 39 of catarrhal ophthalmia.

Deaths.—Only three deaths occurred amongst the men during the year, two in hospital Deaths. from heart disease, and one in Bangalore from ague. No unusual sickness prevailed amongst the families of the men.

Climate.—During the first two months the climate was as usual marked by a low Climate. temperature in the mornings, evenings, and at night, and by a considerable rise in the thermometer in the day time, the diurnal variation amounting to from 20° to 30° Fahrenheit. The heat in the hot weather was not so intense as is usual in Kamptee, and was followed by an average rainfall, in consequence of which the health of the station was very satisfactory.

Sepoy huts.—The men and their families live in mud huts built by themselves, or bought Sepoy huts. from the previous occupants. Their huts are in every respect similar to those occupied by the civil members of the native community of decent class.

Ventilation and drainage for the men's barrack-rooms, huts, guard-rooms, &c.—The Ventilation means of ventilation are as good as can be insisted on with natives, but the drainage is very and drainage defective, owing to the roads intersecting the elevated ground on which the huts stand, for the men's having been sunk to a level with the surrounding ground. This is an evil of long standing, barrack-rooms, huts, and, as the ground has therefore become thoroughly saturated with fluid refuse, it has been guard-rooms, yearly recommended that the lines should be removed to another site, but this recommend- &c. ation it is greatly to be regretted has not been carried out.

Nuisance.—There has been no nuisance during the year.

Nuisance.

Water-supply.	<i>Water-supply.</i> —Water-supply was abundant. That for cooking and ablution is obtained from the Kanhan river and wells in the lines. The latter is liable to contamination from soakage. The well especially set apart for drinking purposes is situated at a considerable distance from all habitations, and is not liable to contamination from any source.
Sanitary arrangements.	<i>Sanitary arrangements.</i> —The sanitary arrangements in the lines have been well attended to, and I am not aware of the existence of any local cause of disease, excepting that mentioned in paragraph 5, to remove which the lines must be abandoned.
Diet.	<i>Diet.</i> —Animal food and dry grain have been cheap; but rice, the staple article of food of the Madras sepoy, is scarce and dear in this district, in consequence of which the men receive rice compensation. Vegetables were plentiful and cheap during the rains and cold season, but scarce and dear during the hot.
Clothing.	<i>Clothing.</i> —The clothing of the men has been sufficient and well adapted to the climate of the station.
Foot-soreness.	<i>Foot-soreness.</i> —In all cases of foot-soreness, a good number of which came before me, I excused the wearing of boots on every duty for a period varying from two to four days as required.
Duty and exercises.	<i>Duty and exercises.</i> —The duty in general has consisted of the ordinary drills, mounting guards, &c., and has not, in my opinion, been of a nature or extent to injure the health of the men. Towards the end of the year, however, a number of men who unavoidably had to proceed on escort duty to some of the smaller stations in the Central Provinces suffered from a very severe form of ague. Average number of nights in bed 3½.
Drill.	<i>Drill.</i> —The regiment goes out for parade twice a week in hot weather, three times a week in wet weather, and five times a week in cold season for about 1½ hours morning and evening. <i>Recruits drill morning and evening for one hour. These drills have not in any way influenced the health of the regiment.</i>
Lock-up rooms and cells.	<i>Lock-up rooms and cells.</i> —The sanitary conditions have been very satisfactory in every way, and I have not been called upon to make any recommendations regarding them.
Vaccination.	<i>Vaccination.</i> —Vaccination has been carried on as far as practicable among the men and their families. No death from small-pox occurred among the men.
Ventilation.	<i>Ventilation.</i> —There was sufficient ventilation through doors, windows, and along centre of roof above.
Accommodation.	<i>Accommodation.</i> —No overcrowding of hospital wards.
Drainage of hospital and latrines.	<i>Drainage of hospital and latrines.</i> —The hospital is situated on low ground at the foot of the elevation on which the lines are built, and during the rains the drainage is very bad. The latrine is built on the old principle, with a cess-pool, and, as far as the limited establishment will admit, the dry-earth system of conservancy is carried out.
Hospital water-supply.	<i>Hospital water-supply.</i> —The water-supply for the hospital is the same as that for the lines.
Hospital whitewashing.	<i>Hospital whitewashing.</i> —The hospital wards have been lime washed according to regulation.
General conclusions.	<i>General conclusions.</i> —The health of the men was very satisfactory during the year under report, the number of admissions for ague was less than during the previous two years 1872 and 1873. A number of men were admitted for general debility brought on by starvation, and this will always be the case amongst the Madras sepoys so long as they insist on supporting a host of relatives besides the members of their own household.

Deputy Surgeon-General Tribe inspected this corps on the 24th September 1874, and reports as follows:—

Barracks.	<i>Barracks.</i> —The lines though in appearance tumble-down and rickety, are clean, well ventilated outside the houses, the huts themselves not being ventilated at all, well drained so far as surface drainage is concerned, though, from the undulating surface of the ground and from the rows of huts being built in straight lines without reference to the configuration of the ground I think that the subsoil must be ill-drained.
Sanitary condition of all buildings.	<i>Sanitary condition of all buildings.</i> —All subsidiary buildings are in a fair sanitary state. There are no cess-pools or foul drains. All excreta are removed daily. Coal-tar is not used.
Conservancy.	<i>Conservancy.</i> —The conservancy is in every respect excellent.
Hospital.	<i>Hospital.</i> —The hospital is an old building somewhat narrow, but in practice I believe it to be quite as good as the standard plans and much cheaper. In case of necessity it can accommodate about 36 patients. It is well ventilated and well drained. Water from the same sources as the lines.

BRITISH BURMAH DIVISION.

Average strength	...	...	...	...	...	...	...	2,646
Do. do. present	...	...	...	...	...	...	...	2,452
Total admissions	...	...	...	...	...	...	...	2,181
Daily sick	...	...	...	...	...	...	...	80
Deaths in hospital	...	...	...	...	...	...	...	20
Do. out of hospital	...	...	...	...	...	...	...	25
Pensioned	...	...	...	...	...	...	...	15
Sick leave	...	...	...	...	...	...	...	130

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Rate per Cent. of				
	Average Strength Present.		Average Strength.		
	Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	93.53	3.48	1.94	...	3.44
1872 ...	151.01	4.92	2.13	...	5.88
1873 ...	103.22	3.58	2.04	.07	3.63
Average ...	115.92	3.99	2.03	.02	4.31
1874 ...	88.94	3.26	1.70	.56	4.91

The following corps were serving in the division on the 31st December 1874:—

39th Regiment Native Infantry.		
1st	do.	do.
10th	do.	do.
27th	do.	do.

Deputy Surgeon-General Duff was in charge of this division up to the time of his death, *i.e.*, 21st September 1874. He was succeeded by Deputy Surgeon-General Young, who reports as follows:—

Alleged causes of sickness and mortality.—With the exception of rainfall having been considerably less than the last year, and less than the average fall at this station, there has been but little change in the climate of Rangoon. The seasons have followed each other with their accustomed regularity—the cold extending from November to February, the hot from March to middle or end of May, and the rainy from this period to the end of October. Eighty-nine inches of rain were registered in the station, against 125 of the previous year.

At Tonghoo the climate was rendered pleasant by the absence of the damp muggy weather peculiar to that station during the rains, and by a comparatively mild cold season.

At Thyetmyo the rainfall was greater than that of the previous year, and rain fell for a greater number of days than it had been known to do for thirteen years previously. There has been no alteration in any of the barracks occupied by the troops in the division. They are all wooden buildings well raised from the ground, and roofed either with shingles as in most of the stations, or with leaves as at Shoaygheen. They are kept clean and neat, and the spaces below are also carefully looked after. The ventilation is good, being secured by doors and windows, as well as openings between the walls and roof. The latrines are all carefully conserved on the dry-earth system, and no nuisance has been represented as having arisen from any of them. The accommodation afforded by the barracks has been ample, and there has been no overcrowding anywhere.

The rations supplied to the men are for the most part good, though complaints of the quality of the ghee issued appear to have been made at Thyetmyo and Tonghoo. The Medical officer of the 10th Regiment Native Infantry reports the waste that takes place in the process of cleaning the rice supplied, and this fact is also noticed by the medical officer in charge of the Staff and Details at Rangoon, who gives twenty-five per cent. as the amount of loss sustained by pounding and sifting.

The daily ration issued to the troops is sufficient in quantity, but scarcely sufficiently nutritive.

Vegetables are procurable in the bazaar in abundance, and no doubt the men vary their diet by having recourse to them; but it is extremely doubtful whether they supplement their rations by animal food; and, indeed, considering the high prices at which beef and mutton

are sold, it is impossible that they can procure it often, or in any but very small quantities. Fowl and fish are also so expensive as to be beyond the reach of the sepoy.

A good deal of the sickness occurring in the sepoy in Burmah is either brought on or aggravated by insufficient food, or food of little nutritive value.

The water-supply is good and abundant, and obtained mostly from wells.

No epidemic disease occurred among the troops during the year. On the whole their health may be said to have been good. The men have suffered chiefly from diseases which may fairly be attributed to climatic and seasonal influences, such as ague, rheumatism, dysentery, diarrhœa, and bronchitis.

The vicissitudes of temperature in most of the stations are great, and probably favor the induction of disease, and this is assisted to some extent by the unsuitable nature of the private clothing worn by the men.

Many admissions are recorded under the head of general debility and anæmia, and most Medical officers are of opinion that these are induced by insufficient food. There is a strong suspicion that the sepoy in Burmah sells a portion of his rations, and the consequence is that he soon becomes unfit for duty from impoverishment of the blood. He is admitted into hospital with general debility or anæmia, and this sooner or later leads to dropsy and death.

Hundred and thirty-nine men of the various corps serving in the division recommended by their respective Medical officers for change to their native countries, appeared before the Standing Monthly Medical Board at Rangoon, and were disposed of as follows:—

Hundred and twenty-eight were recommended for transfer to the coast for change of air.

Nine were remanded to their regiments for duty, and two were transferred to the Lunatic Asylum at Madras.

1st Regiment Native Infantry.

STATION—THYETMYO.

Arrived from Kamptee 31st January and 13th February 1872.

Average strength	...	...	...	...	...	...	...	675
Do. do. present	...	...	...	...	...	...	...	634
Admissions	...	...	...	...	...	...	...	350
Daily sick	...	...	...	...	...	...	...	12
Deaths in hospital	...	...	...	...	...	...	...	2
Do. out of hospital	...	...	...	...	...	...	...	2
Pensioned	...	...	...	...	...	...	...	5
Sick leave	...	...	...	...	...	...	...	21

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	Kamptee	95.84	4.15	.68	5.10	2.89
1872	Thyetmyo	112.25	2.36	.59	...	2.20
1873	Do.	42.72	1.87	1.19	...	.44
	Average	83.60	2.79	.82	1.70	1.84
1874	Thyetmyo	55.36	1.89	2.07	.74	3.11

The following medical officers were in charge during the year:—

Surgeon W. J. Butler.

Do. W. Hanks.

The last-named reports as follows:—

Climate.

Climate.—The climate of this station is marked by considerable vicissitudes, the range of temperature in the month sometimes being as great as 50°. The average rainfall is about 45 inches, but that of the last year amounted to 52 inches 37 cents. rain fell on 104 days,

being more than is common. In other respects the climate of the past twelve months presented nothing unusual.

Lines, sepoy's huts, guard-rooms.—The barracks are placed on sloping ground somewhat higher than the rest of the station, and situated to the westward of the lines occupied by the European troops, and further from the bank of the Irrawaddie. The site may be considered as about the best in the cantonment. Lines, sepoy's huts, guard-rooms.

The barracks are constructed of wood supported on posts, being raised a few feet from the ground, and with regard to their construction no particular fault is to be found.

The guard-rooms are pukka built, and being distinct from the barracks, situated on raised ground, the access of air to them is good. The drainage may be considered as being good, being effected by the natural raised and sloping ground on which they stand, as also by means of nullahs, pukka built around the buildings of one wing, but simply dug drains around those of the other wing, the drainage of the latter consequently not being so good as that of the first mentioned.

A system of drainage is much needed around the cook-houses; as they now stand, the drain which runs their whole length, at a distance of some ten yards, is generally in an offensive state both to the eye and nose; brick nullahs around them should be built to remove the evil, and with this desirable object, the subject has been frequently brought to notice, but the sanction for the same not having been received, nothing has been done.

Water-supply.—The water has been obtained from four wells in the lines and one in the hospital compound, and has been abundant in quantity, as well as good in quality; it, however, contains an excess of salts and nitric acid. Water-supply.

Foot-soreness.—There have been but few cases of foot-soreness, and these in nearly all cases have been cured by simply excusing the men from wearing their boots for a few days. Foot-soreness.

Vaccination.—There were 45 men vaccinated, but only in 8 did the operation prove successful, but the want of success was no doubt due to its being doubtful whether many of the men had been previously vaccinated or not. There was no case of small-pox. Vaccination.

Phthisis pulmonalis.—None.

Ventilation.—The ventilation has been very good.

Accommodation.—No overcrowding.

Phthisis
pulmonalis.
Ventilation.
Accommoda-
tion.
Drainage of
hospital and
latrines.

Drainage of hospital and latrines.—The drainage of the hospital is very good, being effected through the natural configuration of the ground as well as by a brick nullah, which runs round the building. The latrines have been kept clean, the dry-earth system of conservancy has been in force, and the night soil has been carted away nightly.

General conclusions.—As the returns show the admissions into hospital, with an average strength of 649 men, have been 359, being at the rate of 553 per 1,000. There were admitted for ague 106, for general debility 38, and for dysentery 35; all other diseases occurring in much less numbers. There were three deaths, one a Subadar from albuminuria, one from dysentery, and one from beri-beri. During the year 21 men were sent on sick leave, two of whom died. The health of the men, as will be seen from the return of admissions, has been good, but it cannot be denied that the regiment contains many weakly and worn-out men, who, until they are weeded out and invalided, will always keep up the returns. When the regiment arrived at this station three years ago, the health of the men was most unsatisfactory, and now that it is about to return to India, after a residence of three years in this country, although, as has just been stated, there are many weakly and infirm men in the corps, there can, I think, be but little doubt that the condition of the sepoy has materially improved with their tour of foreign service, and they will return to India in a certainly much better condition than when they left that country. General conclusions.

Deputy Surgeon-General Young inspected this corps on the 18th January 1875, and reports as follows:—

Barracks.—The natural drainage is good from the configuration of the ground on which the barracks are built; but the artificial drainage is imperfect, particularly of the smaller blocks. The drains around these are simply dug in the soil, they are very uneven, and form receptacles for dirt and filth. The drains of the larger blocks are pukka built, and are perfectly clean. Barracks

Sanitary condition of all buildings.—The cook-rooms, 32 in number for various castes, are good pukka buildings, but they require to be thoroughly cleaned and whitewashed. The drains, being merely nullahs dug in the soil, are not only inefficient, but refuse of all kinds collect in them, and they present a very unsightly and dirty appearance. The latrines are two in number; the large one, measuring 72 × 21, is divided into 44 compartments, the small one, 24 × 16, contains six compartments. Each is provided with a high seat and iron pail, and to every four there are a basket of earth and a scoop. On each side of the entrance is a recess for storing dry earth. The latrines are good buildings in themselves, but the conservancy is defective. It is difficult to induce sepoy to make use of the dry earth, and as a consequence the latrines are very offensive. The excreta are removed daily to beyond cantonment limits, and buried in pits; coal tar is freely used. The guard-room is a pukka building, clean and in good order, and the cells, which are in close proximity to it, are clean and well ventilated. Sanitary condition of all buildings.

Hospital.

Hospital.—The hospital is a lofty building, situated on a high ridge north-west of the lines, and well raised on piles. It consists of two large wards, one occupied by the Native Infantry and the other used for details. The offices are excellent, and the building is in good repair, well kept, and very clean. Ventilation exceedingly good, both ridge and eave and by means of doors and windows. There are fourteen doors in each ward measuring 7·2 × 4 each.

The accommodation is ample, each ward being capable of containing twenty-four beds.

The drainage is excellent, both from nature of ground and by pukka drains, which carry off all surface water. The water-supply is good and abundant, and obtained from a well in the compound, which never fails.

The conservancy of the hospital is well attended to, all rubbish, &c., being carried to the jungle and there deposited.

The dry-earth system is carried out in the hospital. The latrine is a good building. The seats are constructed of masonry, and each is provided with a pan. In front of each seat is a small gutter, along which the urine passes to a pukka reservoir provided with a lid. The urine is removed twice daily. I have not seen any of these drains intended for urine act well, or that can be kept free of stench; coal-tar is freely used. The night-soil is carried away to a mile or more from the cantonment and there buried.

The office and dispensary are very neatly kept.

10th Regiment Native Infantry.

STATION—YONKTHWA.

Arrived from Tonghoo *en route* to Madras.

Average strength	...	...	...	...	...	...	...	661
Do. do. present	...	...	...	...	...	...	...	577
Admissions	...	...	...	...	...	...	...	579
Daily sick	...	...	...	...	...	...	...	20
Deaths in hospital	...	...	...	...	...	...	...	9
Do. out of hospital	...	...	...	...	...	...	...	10
Pensioned	...	...	...	...	...	...	...	5
Sick leave	...	...	...	...	...	...	...	22

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Dorundah ...	62·09	3·27	·88	2·64	·14
1872 ...	Tonghoo ...	155·75	5·75	1·09	...	2·66
1873 ...	Do. ...	126·42	4·43	1·89	·14	5·83
	Average ...	114·75	4·48	1·28	·92	2·87
1874 ...	Yonkthwa ...	100·34	3·46	2·87	·75	3·32

Surgeon W. Price, M.D., has been in charge during the year, and reports as follows:—

Climate.

Climate.—The climate of the year 1874, as compared with that of 1872 and 1873, was remarkably pleasant and healthy.

A few heavy showers in the early part of May prevented the hot season from being oppressive. During the rains there were very few wet days, and none of that damp, muggy weather usual during this season.

Lines, sepoy huts, and guard-rooms.

Lines, sepoy huts, and guard-rooms.—In Tonghoo the sepoys live in barracks built by Government. The barracks are built entirely of wood, and are raised 6½ feet from the ground. The windows and doors are numerous, the rooms lofty, and general construction such as to be conducive to health.

Nuisances.

Nuisances.—There has been no nuisance during the year.

Sanitary arrangements.—The sanitary arrangements in the barracks have been properly attended to, and there are no local causes of disease requiring removal. Sanitary arrangements.

Diet.—Some of the men supplement their rations by fish and goat flesh, in which case their diet is sufficiently nutritive and varied to preserve health. On the other hand some cases have come under my notice in the hospital in which the diseases appeared to me to have been augmented, if not originated, by an insufficient diet. Of course they all denied having sold any of their rations, but I have little doubt but that many of the sepoys do sell part of their rations, especially their ghee, for which they can always get a large price in Tonghoo. Diet.

Foot-soreness.—The men wear boots of a European pattern when on duty, except during the rainy months, when they wear sandals. As scarcely any of the men wear stockings, and never wear boots when off duty, there have been numerous cases of foot-soreness. Foot-soreness.

When the case is slight the man is "excused boots" four days and returned to duty; severe cases are admitted into hospital.

During the year 148 cases were excused boots and three admitted into hospital

Vaccination.—No deaths from small-pox. All the children with the regiments at Tonghoo requiring it were vaccinated successfully. There were also 76 cases of revaccination among the men. Of these 28 were successful. Vaccination.

Epidemic diseases.—The year 1874 was remarkably healthy. There was no epidemic disease of any description. Epidemic diseases.

General conclusions.—Among European Commissioned Officers there were four admissions; the European Non-commissioned Officer was admitted once. General conclusions.

There were three admissions among Native Commissioned Officers.

289 were admitted from the rank and file, of whom nine died in hospital.

The average daily sick was 12.32.

The greatest number of admissions were caused by ague, chronic rheumatism, anæmia, dysentery, diarrhoea, and accidents.

The deaths were caused by ague 1, anæmia 2, dysentery 3, diarrhoea 1, gonorrhæa 1, and nephritis 1.

27th Regiment Native Infantry.

STATION—MOULMEIN.

Arrived from Bangalore 5th March 1872.

Average strength	...	...	...	...	...	...	...	631
Do. do. present	...	...	...	...	...	...	...	606
Admissions	...	...	...	...	...	...	...	802
Daily sick	...	...	...	...	...	...	...	28
Deaths in hospital	...	...	...	...	...	...	...	3
Do. out of hospital	...	...	...	...	...	...	...	4
Pensioned	...	...	...	...	...	...	...	4
Sick leave	...	...	...	...	...	...	...	62

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Bangalore...	71.21	2.27	.58	2.58	2.00
1872 ...	Moulmein ...	220.94	8.16	5.53	...	13.43
1873 ...	Do. ...	190.68	4.92	3.07	.17	3.58
...	Average ...	160.94	5.11	3.06	.91	6.33
1874 ...	Moulmein ...	132.34	4.62	1.10	.63	9.82

Surgeon P. R. Martin, M.D., has been in charge during the year, and reports as follows:—

Climate. *Climate.*—The climate of Moulmein is considered very healthy by the residents. The extremes of temperature are never experienced. The monsoon lasts from about the 1st May to November, and is a dreary period, yet it is popularly considered the most healthy time of the year, and the cold season—the end of December and month of January—the least so. The seasonal phenomena exhibited nothing of an exceptional character during the past year. The rainfall reached almost to the maximum amount, and the number of rainy days nearly the same as the previous year.

Water-supply. *Water-supply.*—The water is obtained from wells in the lines, of which there are seven. They are sunk in laterite, are all kutchas, vary in depth from 20 feet to 40 feet, are covered with planks, and have a platform and drain. The water is thought good, and has been sufficient in quantity.

Foot-soreness. *Foot-soreness.*—The men wear wooden shoes (chepuls) on duty, which seem a very good substitute for boots in a wet climate such as this, where the leather is so liable to get hard and cause foot-soreness. Such cases are now of rare occurrence.

Vaccination. *Vaccination.*—Fifty-six cases were vaccinated in February and March last, and of which twenty-nine were successful. There has been no case of small-pox.

General conclusions. *General conclusions.*—Reviewing the medical history of the regiment for last year, the conclusions scarcely vary from those of the previous year. Ague, rheumatism, and dysentery were the prevailing diseases affording respectively 143, 68, and 34 admissions. The average number of sick was in excess of the previous year, being 15.86 per strength, against 14.48 for 1873. Sixty-three men were recommended sick leave to India, their complaints being principally rheumatism, ague, and general debility. Several of the men who had contracted complaints in Arakan were liable to repeated attacks, and though such cases were gradually picked out and sent on sick leave to India, the sick list still maintained too high a proportion compared with the strength. The rheumatic cases were often severe and peculiar, there being a degree of functional paralysis of the nerves of the extremities as evidenced by muscular weakness and wasting, and sometimes cutaneous anæsthesia.

The cases of ague were generally mild, and, when uncomplicated by disorganization of the abdominal viscera, or deterioration of the general health, were of short duration. Dysentery, though frequently severe, was in every instance amenable to its appropriate treatment.

One man died from general debility. No epidemic disease occurred during the year. The sanitary condition of the lines and vicinity was satisfactory.

Deputy Surgeon-General Young inspected this corps on the 5th December 1874, and reports as follows:—

Barracks. *Barracks.*—The barracks are lofty and airy, and are built of wood and shingle roofed. They are clean and well ventilated. The ventilation is effected by doors and windows; of the former there are eight on each side and one at each end, and of the latter there are sixteen on each side of each block; besides these each block is ventilated by an open space between the walls and roof.

Each block is sufficiently lighted by day by the above mentioned doors and windows; at nights oil lights are burned in lanterns suspended from the roof.

The buildings occupied by the corps afford ample accommodation. Each block measures 260 feet in length, 20 feet in breadth, and 12½ feet in height, affording a superficial space of 5,200 feet and a cubic area of 63,700 feet. During the past year each man has had 1,048 feet of cubic and 69 feet of superficial space.

From the configuration of the ground on which the barracks are built the natural drainage is very good; besides this pukka drains are built round each block.

Sanitary condition of all buildings. *Sanitary condition of all buildings.*—The sanitary condition of all the buildings connected with the barracks is good. The latrine is a spacious, lofty, and well-ventilated building, in which the dry-earth system of conservancy is thoroughly and efficiently carried out. The pits are closed by wooden covers, and all excreta are removed daily to a distance and buried in suitable pits. There are no cess-pools or foul drains connected with the latrines. Coal-tar is plentifully used.

Conservancy. *Conservancy.*—Conservancy of the neighbourhood of barracks and station satisfactory.

Hospital. *Hospital.*—The sanitary condition of the hospital and its neighbourhood is good.

Health. *Health.*—The general health of the men of this regiment appears to have much improved of late, and the sepoys are now to all appearance in possession of tolerably fair health. I did not make a formal and individual inspection of the men on parade, as the Commanding Officer was of opinion that it would have an undesirable effect. A rumour had got abroad among the men that my visit was made solely on their account, and

an inspection parade was likely, it was thought, to be followed by an attempt on the part of the men to make the most of their past ailments.

The arrangements for the burial of the dead are satisfactory and properly attended to. Previous to burial the body is kept in a small side room. No injury to the health of the occupants is likely to occur from this.

39th Regiment Native Infantry.

STATION—RANGOON.

Arrived from Palaveram on the 15th January 1874.

Average strength	...	...	...	...	...	...	...	679
Do. do. present	...	...	...	...	...	...	...	635
Admissions	...	...	...	...	...	...	...	450
Daily sick	...	...	...	...	...	...	...	20
Deaths in hospital	...	...	...	...	...	...	...	6
Do. out of hospital	...	...	...	...	...	...	...	9
Pensioned	...	...	...	...	...	...	...	1
Sick leave	...	...	...	...	...	...	...	25

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Bangalore ...	67.52	1.71	.68	4.79	2.05
1872 ...	Do. ...	104.84	1.81	.86	2.87	2.73
1873 ...	Palaveram ...	80.91	2.81	.29	3.77	4.06
	Average ...	84.42	2.11	.61	3.81	2.94
1874 ...	Rangoon ...	70.86	3.14	2.20	.14	3.68

Surgeon P. N. Mookerjee has been in medical charge during the year, and reports as follows:—

Water-supply.—There are four wells about 80 yards to the south of the barracks. They are 5½ feet in diameter and about 47 feet deep, and lined with bricks. They all supply water of good quality and sufficient in quantity for the greater portion of the year. Though during the hot weather the supply is deficient, yet it never fails altogether.

Sanitary arrangements.—The conservancy cart supplied by the Commissariat Department removes the sweepings from the barracks, which are kept clean by the regimental sweepers. The latrines are situated about 50 yards on the lee side of the barracks, and have the dry-earth system of conservancy. The poudrette is removed every night by the regimental sweepers in a cart kept for the purpose. There are no local causes of disease requiring removal.

Diet.—Though provisions are plentiful in Rangoon, they are dearer in comparison to the prices of the Madras Presidency. Vegetables are always abundant. The price of meat is almost prohibitory to the sepoys. Each sepoy on foreign service receives 2 lbs. rice, 3 oz. dholl, 2 oz. ghee, 1½ oz. of tobacco, 12 drs. salt, and 2 drs. turmeric. Some at least vary their diet by using mutton, fowl, fish, and vegetables from their own pay; others live on the above ration, which is by no means sufficiently nutritious and varied. Great many suffer from anæmia and debility from want of good nourishing food.

Foot-soreness.—Good many men suffer from sore-foot owing to badly-fitting boots and not using stockings. The slight cases are excused wearing boots, and the aggravated ones are admitted into hospital.

General conclusions.—There were 450 admissions during the year, and including 10 remaining gives a total of 460 treated. Out of this number 25 men were sent to the coast for change, 6 died in hospital, 8 were discharged otherwise: 27 remained on the last day of the year, leaving 394 who were discharged cured, the average daily sick being 20.5. The following were the principal diseases which caused admissions:—Ague 63, ulcers, boils,

and abscesses 60, itch 41, rheumatism 38, dysentery 26, bronchitis 15, diarrhoea 9, and beri-beri, dropsy, anæmia, and debility 51. One died from renal dropsy, 1 beri-beri, 1 anæmia, 1 extravasation of urine, 1 pulmonary extravasation, 1 debility. Besides these one native officer died from remittent fever and pneumonia, 1 native officer, 25 men, and 1 recruit boy were sent to the coast for change.

Out of the men who were sent to the coast 7 died either in hospital or at their homes: 2 from bronchitis, 1 beri-beri, 1 anæmia, 1 pneumonia, 1 mania, 1 rheumatism.

Besides the above 2 men died out of hospital, 1 at the arsenal guard from rupture of the aorta, and the other while embarking for Rangoon from heart disease.

Deputy Surgeon-General Young inspected this corps on the 8th February 1875, and reports as follows:—

Barracks.	<i>Barracks.</i> —The drainage is from natural configuration of ground very good during the monsoon weather, but the open surface drains around each barrack do not act efficiently in carrying away soiled water in the dry weather, and the greatest care is necessary to maintain cleanliness.
Sanitary condition of all buildings.	<i>Sanitary condition of all buildings.</i> —The buildings attached to the barracks, viz., latrines, cook-rooms, guard-rooms, and cells, are all in good sanitary condition. The latrines, four in number, are wooden structures, situated about 300 yards to the north of the barracks, and divided each into four compartments. Each of these is provided with a wooden seat and pan. The urine passes into a drain, by which it is conveyed to a bucket outside. The dry-earth system of conservancy is fairly carried out and coal-tar is used. The excreta are daily removed to a distance and buried. There are no cess-pools or foul drains connected with the latrines.
Bath.	<i>Bath.</i> —The men are permitted to bathe near the wells. The soiled water is absorbed by the soil. There are no baths or lavatories.
Water-supply.	<i>Water-supply.</i> —The water-supply is derived from four wells in the vicinity of the lines; it is good and plentiful.
Conservancy.	<i>Conservancy.</i> —The conservancy of the neighbourhood of the barracks is carefully attended to, and no suggestions are called for.

SAUGOR DIVISION.

Average strength	...	...	...	...	...	...	...	...	3,002
Do. do. present	...	...	...	...	...	...	...	...	2,873
Total admissions	...	...	...	...	...	...	...	...	3,378
Daily sick	...	...	...	...	...	...	...	...	101
Deaths in hospital	...	...	...	...	...	...	...	...	24
Do. out of hospital	...	...	...	...	...	...	...	...	3
Pensioned	...	...	...	...	...	...	...	...	88
Sick leave	...	...	...	...	...	...	...	...	29

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Rate per Cent. of				
	Average Strength Present.		Average Strength.		
	Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	101.22	3.83	.75	1.07	.68
1872	65.70	2.33	1.25	1.43	.95
1873	100.33	3.66	.64	2.35	1.61
Average	89.08	3.27	.88	1.61	1.08
1874	117.57	3.51	.89	2.93	.96

The following corps were serving in the division on the 31st December 1874:—

3rd Regiment	Light Cavalry.
5th do.	Native Infantry.
11th do.	do.
16th do.	do.
20th do.	Head-Quarters and Left Wing.
20th do.	Right Wing.

The troops in this circle are under the administrative charge of the Deputy Surgeon-General of the Bengal Service, who does not submit any annual report to this office as to the results of his inspection of the Madras Corps.

3rd Regiment Light Cavalry.

STATION—SAUGOR.

Arrived from Kamptee 19th January 1869.

Average strength...	...	...	...	...	...	...	...	292
Do. do. present	...	...	...	...	...	...	...	252
Admissions	...	...	...	...	...	...	...	295
Daily sick	...	...	...	...	...	...	...	9
Deaths in hospital	...	...	...	...	...	...	...	3
Do. out of hospital	...	...	...	...	...	...	...	1
Pensioned	...	...	...	...	...	...	...	6
Sick leave	...	...	...	...	...	...	...	2

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Saugor ...	84.61	2.56	.69	2.09	1.39
1872 ...	Do. ...	73.23	2.23	1.44	1.08	.36
1873 ...	Do. ...	61.68	1.53	1.68	.67	.67
	Average ...	73.17	2.10	1.27	1.28	.80
1874 ...	Saugor ...	117.06	3.57	1.36	2.05	.68

The following medical officers were in charge during the year:—

Surgeon-Major C. Cooper, M.D.
Surgeon E. Fawcett.

The last-named reports as follows:—

Rainfall.—The rainfall during the past year was an unusually heavy one; it commenced about the middle of June, and continued till the middle of September. The rainfall in 1872 was 49 inches 66 cents, in 1873 was 41 inches and 31 cents, and this year it was 68 inches and 81 cents. The alterations in temperature are at times very sudden, especially in the months of November and December, and very frequently give rise to affections of the lungs.

Intermittent fever is present all the year round, but is most prevalent after the rains and the setting in of the cold weather.

Affections of the lungs are common in the month of December, and are due to the sudden changes of temperature which occur at that season of the year.

From the elevated position of the lines and nature of the soil, the drainage is naturally very good.

In the drains in front of each hut large earthenware vessels are placed to receive the surface and waste water. These are cleaned morning and evening by the sweepers.

Lines.—The regimental lines and latrines are inspected by me once a week, and a report to this effect goes in weekly to the Officer Commanding. There is a private latrine in each courtyard for the use of the female occupants of the hut, and these are cleaned out twice daily, as the refuse of the horse lines is invariably burned, the ashes are used instead of dry earth, and I must say it is an admirable substitute. The latrines are clean and free from smell. The night-soil is removed twice daily and buried in trenches about 500 yards north of the lines.

- Water-supply.** *Water-supply.*—Water for all purposes is obtained from two wells near the lines; is of good quality, and abundant at all seasons.
- Sanitary condition of the lines.** *Sanitary condition of the lines.*—On the whole I consider the sanitary condition of the lines satisfactory, and there are no local causes of disease requiring removal.
- Foot-soreness.** *Foot-soreness.*—There were only a few cases of foot-sores, and these were caused more from the men not wearing socks than from ill-fitting boots.
As a rule two or three days' rest was sufficient to effect a cure and permit the men returning to their duty.
- Vaccination.** *Vaccination.*—In 1872 all who had not marks of small-pox or previous vaccination were vaccinated, since then it has been regularly kept up, and this year 43 children were successfully operated on at head-quarters. Two cases of small-pox occurred in the detachment at Jubbulpore; both made a good recovery. At this out-post 149 individuals were vaccinated, 110 successful, and 39 unsuccessful.
- Diseases.** *Diseases.*—Intermittent fever of a rather severe type was very prevalent after the rains, and was attributable to the drying up of the surrounding country at that season of the year.

5th Regiment Native Infantry.

STATION—SAUGOR.

Arrived from Secunderabad 10th January 1873.

Average strength	...	...	...	...	...	...	...	715
Do. do. present	...	...	...	...	...	...	...	683
Admissions	...	...	...	...	...	...	...	838
Daily sick	...	...	...	...	...	...	...	26
Deaths in hospital	...	...	...	...	...	...	...	8
Do. out of hospital	...	...	...	...	...	...	...	1
Pensioned	...	...	...	...	...	...	...	22
Sick leave	...	...	...	...	...	...	...	17

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Secunderabad ...	39.33	1.29	.86	2.44	1.58
1872 ...	Do. ...	53.45	2.30	1.58	3.45	.86
1873 ...	Saugor ...	107.12	2.76	.57	2.86	.85
	Average ...	66.63	2.11	1.00	2.91	1.09
1874 ...	Saugor ...	122.69	3.80	1.25	3.07	2.37

The following medical officers were in charge during the year :—

Surgeon-Major A. A. Renton.

Surgeon F. H. Blenkinsop.

The last-named reports as follows :—

- Climate.** *Climate.*—The first part of the year was very cold and tried the men a good deal, as most of them were quite unused to such weather. The hot season was mild, and, as usual, was the healthiest part of the year. The rains were very heavy, but not particularly unhealthy. The last part of the year sickness greatly increased, so much so that all drills had to be put a stop to.
- Lines.** *Lines.*—The position of the lines is about as bad as could possibly have been selected. It is low, damp, and was formerly the site of a burial and burning ground. It has always been an unhealthy spot. Every one who saw it has condemned it, but nothing is to be done.

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871	Raipore	98.97	3.21	1.02	2.77	.87
1872	Nagode	87.15	2.77	2.16	1.44	.86
1873	Do.	61.34	2.04	.42	3.57	3.29
	Average	82.48	2.67	1.20	2.59	1.67
1874	Nagode	60.36	2.10	.58	5.82	.87

The following medical officers were in charge during the year :—

Surgeon C. Sibthorpe.
Do. A. A. Thomas.
Do. C. A. Harvey.

The last-named reports as follows :—

Prevailing diseases.

Prevailing diseases.—The diseases of most common occurrence among the surrounding population are malarious fevers of different types, often very low in character, and not unfrequently giving rise to splenic enlargements and extreme anæmia. Rheumatic affections even in the cold weather are not frequent. Syphilis and other venereal diseases are often seen. A form of paraplegia affects the poorer classes, and is attributed to using the muttar dhol (*Lathyrus sativus*) as the principal article of their diet.

Water-supply.

Water-supply.—A plentiful supply of water was obtained from wells during the year. The quality of the water is good. It is perhaps a little hard from superabundance of salts of lime, but is suitable for drinking and cooking purposes. It is not liable to contamination with organic matter or any other impurities. Most of the wells are surrounded by parapets of masonry and covered over by cross-beams and provided with pulleys to assist in drawing the water.

Conservancy.

Conservancy.—The conservancy arrangements are carried out under the orders of the Quartermaster of the regiment.

Vaccination.

Vaccination.—Vaccination has been well attended to this year, the medical subordinates of the regiment displaying a most praiseworthy energy and zeal in this important matter. Almost every child in the lines and all the recruits have had the operation performed, and a large number of the men have been revaccinated. The work is still in progress, and will be continued, if necessary, to the end of the cold season. Every case was submitted for my inspection before the result was recorded.

Total vaccinated or revaccinated	...	...	...	...	...	...	379
Successful	...	...	...	...	...	...	313
Unsuccessful	...	...	...	...	...	...	30
Doubtful	...	...	...	...	...	...	36

Total ... 379

Sickness.

Sickness.—As before remarked, the year under consideration has been very favorable to the health of the regiment. October and November show the largest number of admissions, viz., 133 in the former and 55 in the latter month. During these months malarious fevers were rather prevalent, but in the great majority of instances the disease was of a very mild and tractable character, and usually assumed the form of quotidian ague. Of the 237 cases of ague treated during the year, 192 were of the quotidian variety, the remaining 45 being of the tertian and other forms. Splenic enlargements and anæmia are not unfrequent sequelæ to the fever of this country. Three cases of remittent fever occurred, but all recovered.

Venercal diseases.—Next to malarious fevers diseases of this class caused the largest number of admissions during the year. They were as follows :—

Primary syphilis ...	10
Secondary do. ...	2
Gonorrhœa... ..	6
Total ...	18

Phthisis pulmonalis.—The patient who died of this affection was a young sepoy aged twenty-three years. There was no doubt a hereditary tendency to the disease, as it had proved fatal to several members of his family.

16th Regiment Native Infantry.

STATION—JUBBULPORE.

Arrived from Bellary—Head-Quarters and Right Wing 20th November 1873,
Left Wing 10th December 1873.

Average strength ...	700
Do. do. present...	674
Admissions ...	516
Daily sick ...	16
Deaths in hospital ...	3
Do. out of hospital ...	...
Pensioned ...	1
Sick leave ...	...

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Bellary ...	42.96	1.21	.43	1.29	.86
1872 ...	Do. ...	54.48	1.46	1.07	3.06	1.22
1873 ...	Jubbulpore ...	43.08	1.74	.72	4.36	1.74
	Average ...	46.84	1.47	.74	2.90	1.27
1874 ...	Jubbulpore ...	76.55	2.37	.42	.14	...

Surgeon-Major J. R. Theobalds has been in medical charge during the year, and reports as follows :—

Climate.—Throughout the year the climate has been very pleasant and favourable to health; the monsoon commenced early 6th July, terminated 13th September. The rainfall amounted to nearly 87 inches, about 30 inches more than the average; nearly 81 inches fell during June, July, and August, nearly double the amount of rain that fell during these months last year. October and November were cold, and some days in December very cold.

Foot-soreness.—Forty cases of blisters of the feet, caused by wearing no socks, and boots much too large for the men, made generally of hard country leather. Recommended that the boots be greased once a week, and that the men be made to show the greased boots every week.

Hospital water-supply.—Good and abundant. Dr. Hutchinson tested the water from the well near the regimental hospital, and found it contained 9.87 grains solid matter in 70,000 grains, 63 volatile matter, 9.24 mineral, .546 per gallon organic. Recommended all the regimental wells to be cleaned out before the rains.

General conclusions.—Malaria has been the chief cause of sickness. There have been 248 admissions from ague out of a total of 516 cases admitted during the year. The disease was generally of a mild type and amenable to the usual treatment. One case proved fatal in

a weak, emaciated sepoy, complicated with congestion of the liver, of right lung, diarrhoea, and prostration of strength. There were two other deaths in hospital, one from dysentery of the hæmorrhagic form and the other from pneumonia; this man was admitted in a weak, emaciated condition.

20th Regiment Native Infantry.

HEAD-QUARTERS AND LEFT WING—STATION—BANDA.

Arrived from Seetabuldee on the 15th January 1874.

RIGHT WING—STATION—NOWGONG.

Arrived from Seetabuldee in January 1874.

Average strength	...	...	...	...	...	...	...	608
Do. do. present	...	...	...	...	...	...	...	598
Admissions	...	...	...	...	...	...	...	1,327
Daily sick	...	...	...	...	...	...	...	36
Deaths in hospital	...	...	...	...	...	...	...	7
Do. out of hospital	...	...	...	...	...	...	...	...
Pensioned,	...	...	...	...	...	...	...	19
Sick leave	...	...	...	...	...	...	...	4

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years:—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Seetabuldee ...	132.21	3.66	.59	.44	1.77
1872 ...	Do. ...	160.45	4.69	1.01	1.15	1.29
1873 ...	Near Banda ...	214.58	9.93	.71	3.73	3.43
	Average ...	169.08	6.09	.77	1.77	2.16
1874 ...	Banda ...	221.90	6.02	1.15	3.12	.65

The following medical officers were in charge during the year:—

Surgeon Hastings.

Do. Thomas.

Do. C. Sibthorpe.

The last-named reports as follows:—

Climate.	<i>Climate.</i> —The climate of Banda was favourable to the health of the troops until after the monsoon broke, when fevers of a malarious character commenced to prevail.
Water-supply.	<i>Water-supply.</i> —Water-supply good and sufficient.
Sanitary arrangements.	<i>Sanitary arrangements.</i> —The sanitary arrangements of the lines have been properly attended to.
Foot-soreness.	<i>Foot-soreness.</i> —There has been very little foot-soreness from bad boots.
Vaccination.	<i>Vaccination.</i> —Most of the men bear marks of having suffered from small-pox, or have been either inoculated or vaccinated. There were three cases of small-pox in men who bore marks of vaccination. They all recovered. There has been no occasion to revaccinate any of the corps.
Location and movements.	<i>Location and movements.</i> —The head-quarters and five companies left Seetabuldee on the 10th and 11th December 1873, arrived by train at Jubbulpore on the 15th December 1873, and thence by road <i>viâ</i> Nowgong, where it arrived on the 9th January, and left two companies, the remainder marching to Banda, where they arrived on the 15th January 1874. The company garrisoning Chanda (Central Provinces) left that station on the 22nd December 1873, marched into Seetabuldee on the 1st of January 1874, remained there until joined by the two companies from Seroncha (Central Provinces) which marched from that station on the 1st January 1874, and arrived at Seetabuldee on the 28th January 1874. The three companies, with some details, proceeded by rail on the 10th February to Jubbulpore, thence by road to Nowgong, which they marched into on the 10th March; the two Seroncha

companies remaining there to complete the right wing and the Chanda one came on to Banda, where they arrived on the 18th March 1874.

Lines and huts.—The lines are those built lately by the 15th Regiment M.N.I. There have been 373 huts occupied during the year, and the average population has been 1,055, allowing 2·8 persons to each hut. Lines and huts.

Marches and service.—There was no record kept of the march of the three companies mentioned above, as they were under the medical charge of a Third-class Hospital Assistant. Marches and service.

Hospital.—The hospital is the same as was used by the 15th Regiment M.N.I. It is a good building, and well suited for the purpose. Its cubic capacity allows of 35·4 beds at 1,500 cubic feet per man, and its superficial area of 41·5 at 99 superficial feet per man. It has never been overcrowded, not more than forty being allowed to sleep in it at a time. The maximum number under treatment was eighty-three on the 1st November, when four tents were pitched to supplement the accommodation. The bedding and clothing is good, though the regulation standard is scarcely sufficient for an unhealthy station like Banda. Hospital

Principal causes of sickness.—Fever of an intermittent type have thus in former years caused the largest number of admission, viz., 522. This is scarcely to be wondered at. The regiment having served five years in three very feverish stations, viz., Seetabuldee Chanda, and Seroncha, moved to quite a different climate, and, if anything, a more feverish one. Bundelkund has been noted for the virulence of the fever amongst the people located upon its black cotton soil, and in the case of the head-quarters and left wing which suffered so severely, the site of the lines is on this very soil, and to increase the amount of subsoil saturation there is a large tank at either end of the lines. The following factors appear to have been the principal ones in causing the great sickness: first, want of acclimatization; second, a bad site for the lines; third, the site rendered more feverish by the two large reservoirs of water at either end of it—the five men who were admitted for general debility had suffered from repeated attacks of fever; closely connected with the same cause were the two cases of neuralgia; rheumatic affections were the cause of twenty-seven admissions; they were simple cases, and yielded readily to treatment. The admissions from diseases of the bowels were of a mild nature, and all recovered with the exception of the case of chronic ulcer of the stomach, which was sent on sick leave. The thirty-three cases of catarrhal ophthalmia and conjunctivitis occurred principally during the monsoon; most of them appear to be the result of cold, and yielded to hot fomentations and astringents. The fourteen cases of itch have appeared in men who were considerably below par, having suffered from repeated attacks of ague. Principal causes of sickness.

There were twenty-four men on sick leave on the 1st January 1874; of these, fourteen have rejoined, the remainder have had their leave extended for various reasons.

Principal causes of mortality.—There have been five deaths in hospital: two from general debility, one from remittent fever, one from ague, and one from acute Bright's disease following a prolonged attack of ague complicated with subacute cystitis. Both the cases of general debility were traceable to prolonged attacks of ague. Principal causes of mortality.

Remarks.—During the past year there were only fifty-two admissions and one death from fever up to the end of June, but towards the end of July this disease assumed an epidemic character, which reached its maximum in October, and decreased steadily in November and December, or with the setting in of the dry cold weather. There were altogether 522 admissions, and all the deaths (five) were either directly or indirectly traceable to this cause. The number of men who were actually under treatment was only 288, though there is good reason to believe that scarcely a man with the regiment escaped an attack, many of them not feeling ill enough to report sick. Remarks.

Right Wing 20th Regiment Native Infantry.

STATION—NOWGONG.

Arrived in January 1874.

Average strength present 251

Surgeon J. Backhouse has been in medical charge during the year, and reports as follows:—

Meteorology.—Rainfall 48 inches.

Lines.—The lines are very good; were previously occupied by the Left Wing, 15th Madras Native Infantry, and are the best I have ever seen; have been kept in proper repair during the year, also have been whitewashed. Meteorology.
Lines.

Water-supply.	<i>Water-supply.</i> —From five pukka wells in the lines; quality always good and wholesome; quantity sufficient at all times of the year.
Sanitation.	<i>Sanitation.</i> —The sanitary work of the lines is carried on by thirteen sweepers, who clean away once a day the excreta from the small latrines in the courtyards of the huts, and sweep up the lines in general. The sanitation of the lines has been good and rigidly carried out during the year.
Clothing.	<i>Clothing.</i> —The clothing is good, and is suitable to the country the men are serving in. More warm blankets are required for the hospital for the cold weather.
Foot-soreness.	<i>Foot-soreness.</i> —There were forty-seven cases of shoe-bites treated during the year, caused by the bad shape of the boots, and extremely bad quality of the country leather entering into the manufacture of the same. It lessened very much towards the end of the year.
Drainage.	<i>Drainage.</i> —The drainage of the hospital and lines, both being situated on gently rising grounds, is sufficient to prevent dampness.
Water-supply.	<i>Water-supply.</i> —The hospital water is well known for its pure and wholesome qualities.

BENGAL.

The only regiment stationed in Bengal during the year is the 33rd Madras Native Infantry. The statistical and sanitary details of this corps are as follows :—

33rd Regiment Madras Native Infantry.

STATION—DORUNDIAH.

Arrived from Vizianagrum 30th December 1871.

Average strength	...	...	...	...	...	...	...	...	702
Do. do. present	...	...	...	...	...	...	...	...	546
Admissions	...	...	...	...	...	...	...	...	270
Daily sick	...	...	...	...	...	...	...	...	9
Deaths in hospital	...	...	...	...	...	...	...	...	3
Do. out of hospital	...	...	...	...	...	...	...	...	4
Pensioned	...	...	...	...	...	...	...	...	...
Sick leave	...	...	...	...	...	...	...	...	3

The following return shows the rates of sickness, deaths, and invaliding as contrasted with previous years :—

Years.	Stations.	Rate per Cent. of				
		Average Strength Present.		Average Strength.		
		Admissions.	Daily Sick.	All Deaths.	Pensioned.	Sick Leave.
1871 ...	Dorundah ...	19.77	.83	1.24	...	...
1872 ...	Do. ...	22.57	.90	1.15	...	...
1873 ...	Do. ...	20.91	.88	.98	3.36	...
	Average ...	21.08	.87	1.12	1.12	...
1874...	Dorundah ...	49.45	1.64	.96	...	.42

Surgeon C. Lloyd has been in medical charge, and reports as follows :—

Ventilation.	<i>Ventilation.</i> —Owing to the construction of the sepoys' huts the ventilation is necessarily very defective. The drainage of the lines is anything but satisfactory, and much needs a proper system of drains being laid down. Cess-pools have been discovered in not a few of the men's compounds, and the necessary steps taken to have them removed and the offenders punished.
Limewash.	<i>Limewash.</i> —All public buildings in the cantonment have been limewashed when required; it has not been found requisite to make any representations on the subject.
Nuisance.	<i>Nuisance.</i> —There have been several cases of nuisance occurring from neglected cess-pools in the lines from time to time, which on discovery were reported and removed, and steps taken to prevent a recurrence of the nuisance.

Water-supply.—There has been an abundant supply of good water obtained from several wells in the vicinity of the lines, hospital, and barracks. Water-supply.

Sanitation.—The sanitary arrangements have been carefully attended to. No local cause of disease exists. Sanitation.

Provisions.—Provisions, supplied from the bazaar, have been plentiful, mainly consisting of rice, fowls, mutton, and vegetables of fair quality. Rice has been sold at the average of 12½ Madras measures to the rupee. The average amount of compensation per month for dearness of rice has been Rupees 1-5-10. Provisions.

Diet.—The diet of the single men has been sufficiently nutritive and varied to preserve them in good health, but amongst the married men with large families and dependents it is only too patent that the pay is not sufficient to obtain enough of nutritive food. Diet.

Delirium tremens.—One case admitted for delirium tremens, brought on by too frequent indulgence in “moma.” Delirium tremens.

Foot-soreness.—There have been a good many cases of foot-soreness from defective boots, but few requiring treatment in hospital; a few days' excuse from wearing boots generally suffices to cure. Foot-soreness.

Exercises.—No provision has been made by the State or regimentally to provide games or amusements for the men. A cricket club exists at the station, mainly supported by the officers; a few of the men sometimes avail themselves of this sport. Exercises.

Lock-up rooms.—The sanitary condition of the lock-up rooms (conjee-houses) was satisfactory as regards cubic space, ventilation, and cleanliness during the year. Lock-up rooms.

Vaccination.—Vaccination has been regularly practised during the year. 374 cases were vaccinated, of which 305 were successful, 69 unsuccessful. Small-pox occurred in 170 cases amongst the families of the men; of these, 31 occurred amongst the women, and 139 amongst the children. Deaths took place in women two, children nine, total eleven deaths. No cases occurred amongst the sepoy themselves. Vaccination.

Epidemic diseases.—There have been no epidemic diseases during the year. The principal diseases during the current year were—fevers, chiefly of an intermittent type—122 cases admitted—rheumatism twenty-three cases, bronchitis fifteen, and diarrhoea eleven. Many of the cases of fever may be traced partly to insufficient clothing of men in the cold season when not in uniform and at nights. Epidemic diseases.

Hospital.—The hospital is large and the accommodation ample. Ventilation, which is by ridge, doors, and windows, is most free and good. The building contains about 43·925 cubic feet of available air space. There has been no overcrowding. Hospital.

Drainage.—The drainage about the hospital has been good. Dry earth has been used in the latrine, and although it is difficult to make the sepoy use the dry earth as it ought to be used, still by constant attention the latrine has been kept clean. Drainage.

Health.—The general health of the regiment seems to have been good since last annual report. The admissions for the year were 270, showing an increase of 128 in excess of the previous year. Intermittent fever and rheumatism were the prevalent diseases. On the 15th March Surgeon T. Mayne assumed medical charge from Surgeon D. J. McCarthy, M.D., who continued in charge until the 17th November 1874. Health.

There have been in hospital three deaths: from (one) diarrhoea, (one) Bright's disease, and (one) pneumonia. Out of hospital four deaths occurred—two on command, one on recruiting service, and one on furlough, all from fever. Small-pox was prevalent amongst the families, but not amongst the men of the regiment.

CANTONMENTS—NATIVE LINES.

Read the following papers:—

From Colonel H. K. BURNE, Secretary to the Government of India, Military Department, to Colonel A. C. SILVER, Secretary to Government, Military Department, Madras, dated Fort William, 21st September 1874, No. 1,130.

With reference to your communication, No. 2,340, dated the 23rd July 1874, on the subject of the removal of the lines occupied by the 3rd Regiment of Madras Native Infantry at Secunderabad to another site, I am directed to state that the Government of India consider it desirable, before deciding on the question, that the views of the Resident at Hyderabad should be laid before the Right Honorable the Governor in Council.

2. I am therefore to forward, for such remarks as His Excellency in Council may see fit, the accompanying copy of a letter from the Secretary to the Resident, No. 145-M.W., dated the 3rd September 1874.

3. The two plans received with your docket are returned as requested.

From Lieutenant-Colonel G. O. MAYNE, R.E., Secretary to Resident, Hyderabad, Public Works Department, to Colonel H. K. BURNE, Secretary to the Government of India, Military Department, Calcutta, dated Bolarum, 3rd September 1874, No. 145-M.W.

I have been desired, in reply to your letter No. 605, of the 12th ultimo, with enclosure, regarding the proposed abandonment, on sanitary grounds, of the lines occupied at present by the 3rd Madras Native Infantry at Secunderabad, to submit, for the information of the Government of India, the Resident's opinion on the suggestion.

2. A similar proposal was formerly made and disposed of in correspondence as per

From Government of India, to Resident, No. 1,427, dated 23rd January 1873.

Reply to Government of India, No. 95-G.W., dated 27th February 1873.

From Government of India, to Resident, No. 717, dated 11th March 1873.

Reply to Government of India, No. 122-G.W., dated 20th March 1873.

From Government of India, to Resident, No. 616, dated 26th May 1873.

margin. In that correspondence Mr. Saunders stated his reasons for not concurring in the suggestion then made; but, under the circumstances now brought to notice, the removal being urgently recommended solely on sanitary grounds, and, as he presumes that the new site marked B in sketch plan accompanying, selected by the military authorities with the concurrence of the Chief Medical Officers, has been chosen after full consideration of the relative advantages and disadvantages of the position, he does not feel prepared to offer any further opposition to the proposed measure, and especially as, as far as strategical considerations are concerned, the new site does not appear to him to be otherwise than unobjectionable—his only hesitation in recording his full concurrence in the proposal being that the proposed site of the lines is very close to a high ridge of granite rock from which the heat will radiate with much intensity, and that it is also situated in close proximity to the condemned Lancer Barracks and to the old disused graveyard in its vicinity, to the propinquity of which the unhealthiness of the former has not unfrequently been attributed. The drainage from the graveyard will, however, not pass through the proposed lines, the aspect of which, as compared with the Lancer Barracks relatively to the burial-ground, will also be different, though perhaps not very materially better. The Resident is, however, not prepared to recommend any other site as in all respects superior to the above.

Enclosures two.

3. The two plans forwarded with your letter under reply are returned herewith as requested.

Referred to His Excellency the Commander-in-Chief, with advertence to the Quartermaster-General's letter, dated 29th June 1874, No. 146-4583.

1st October 1874.

From Surgeon-General E. BALFOUR, Surgeon-General, Indian Medical Department, to Colonel A. C. SILVER, Secretary to Government, Military Department, dated Fort St. George, 3rd October 1874, No. 453.

I have the honor to report to the Right Honorable the Governor in Council that, while at Secunderabad from the 17th to the 22nd ultimo, I acted on the Order of Government, No. 2,770, of 25th August, and repeatedly visited the regimental lines, being accompanied on one day to all of them by Lieutenant-Colonel Dawson, Assistant Quartermaster-General, Hyderabad Subsidiary Force; and Surgeon-Major Wilkins and Surgeon McNally attended me through the lines of the 29th and 3rd Regiments, of which, respectively, they are the medical officers. And I have now the honor to submit as the result of my inspection that, in my opinion, the exciting cause of the sickness that has, year after year, been prevailing there is the inclement weather to which the native soldiers are exposed during the prevalence of the south-west monsoon; that the only possible protection that can be afforded is to shelter the lines by trees or walls, and if these cannot be applied, to move the huts to less exposed localities.

2. Of the several regiments and other native military bodies now in that

* 1st Regiment	M.L.C.,	Bowenpilly	Lines.
3rd do.	M.L.I.,	Chilkalgoodum	do.
6th do.	M.N.I.,	Maredpilly	do.
29th do.	do.	Begumpet	do.
40th do.	do.	Tarban	do.
Sappers and Miners,	Sappers'	do.	do.
Karkhana Establishment,	Karkhana	do.	do.
Bearers,	Bearers'	do.	do.

cantonment,* the 3rd and 29th Regiments and the Sappers have been very sickly during the current year, and the 6th and 40th Regiments only less so. But the Sappers have been in a sickly condition every year since they have occupied their present lines: the 3rd

Light Infantry and every regiment that has hitherto been lodged in the Chilkalgoodum lines have suffered from fever in successive years, and the ground on which the lines of the 29th Native Infantry have been erected was found, until 1866, to be so unhealthy a site that the B Battery 23rd Brigade Royal Artillery was marched from it to Bellary, and their barracks remained unoccupied until the 29th Native Infantry arrived (Appendix A).

3. On the other hand, the Native Cavalry stationed about a mile to the north, at *Bowenpilly*, have always had good health; the Native Regiments in the Maredpilly Lines have rarely been sickly; in the Karkhana and Bearers' lines there has not been any annually recurring sickness, but in the Tarban lines, now occupied by the 40th Native Infantry, the number of sickly years and the number of healthy years recur in about an equal proportion. A return prepared for me by Deputy Surgeon-General Barclay shows that in the eleven years, 1864 to 1874 inclusive, during which the Chilkalgoodum lines have been occupied by three regiments, the 19th, 4th, and 3rd Madras Native Infantry, there have been eight sickly years, one year of average health, and two healthy years.

4. The Maredpilly lines have, in the same time, been occupied by four regiments of Native Infantry, the 32nd, 29th, 5th, and 6th, and during their residence there have been ten healthy years and one (1874) of sickliness.

5. The Tarban lines in those eleven years have had three corps (38th, 24th, and 40th Madras Native Infantry), during which there have been six healthy and five sickly years.

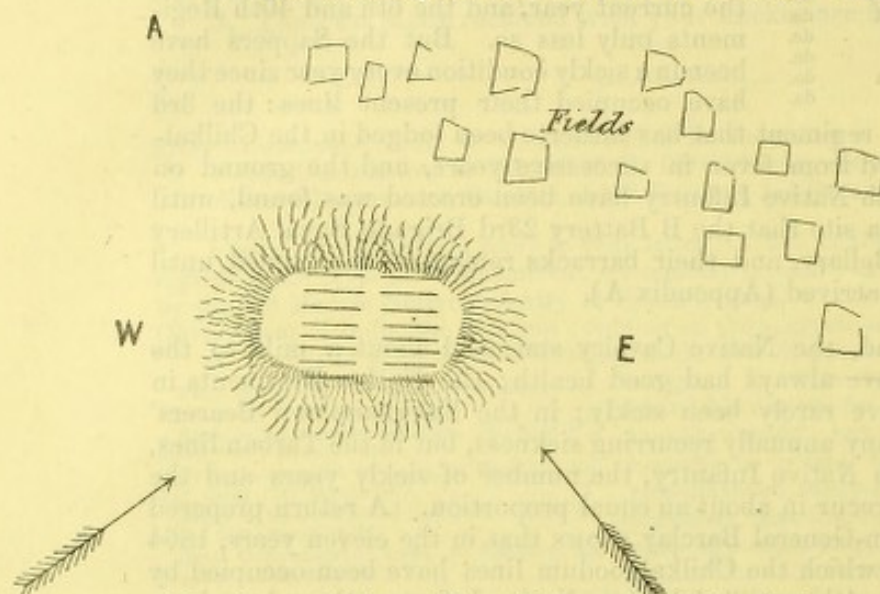
In all countries, the health-state of the inhabitants varies one year with another, but in tropical countries the variations are more marked and admit of the preparation of the following diagram:—

Years.	Chilkalgoodum.		Maredpilly.		Tarban.		Begumpet.	
	Healthy.	Sickly.	Healthy.	Sickly.	Healthy.	Sickly.	Healthy.	Sickly.
1864 ...	...	19th M.N.I.	32nd M.N.I.	...	38th M.N.I.	...	...	...
1865 ...	...	4th do.	32nd do.	...	38th do.	...	...	...
1866 ...	...	4th do.	29th do.	...	38th do.	...	...	...
1867 ...	...	4th do.	29th do.	...	...	24th M.N.I.	...	...
1868 ...	Average.		5th do.	...	...	24th do.	...	...
1869 ...	4th M.N.I.	...	5th do.	...	...	24th do.	...	...
1870 ...	4th do.	...	5th do.	...	24th M.N.I.	...	...	...
1871 ...	...	3rd P.L.I.	5th do.	...	24th do.	...	29th M.N.I.	...
1872 ...	...	3rd do.	5th do.	...	24th do.	...	29th do.	...
1873 ...	...	3rd do.	6th do.	...	...	40th M.N.I.	29th do.	...
1874 ...	...	3rd do.	...	6th M.N.I.	...	40th do.	...	29th M.N.I.
11 years.	2 years (Average) 8 years.		10 years.	1 year.	6 years.	5 years.	3 years.	1 year.

6. *Alleged causes of sickness.*—The lines of all these regiments and military followers were scrupulously clean, but the sickliness of the corps stationed in them has, in former times, as also now, been attributed to the neighbouring valleys being kept under wet cultivation; to ordure being used there as manure; to proximity and mal-odours from the soil pits; to impure drinking water; to the sepoys' courtyards being impregnated with impurities, and to weakened health the result of insufficient nutrition; but though each and all of these would have a deteriorating effect on the health of those exposed to them, there may not, in my opinion, be any doubt that the cause of the unhealthiness of the sickly regiments is their exposure to the cold, boisterous, rainy weather of the south-

west monsoon, and I have equally no doubt that if shelter can be provided, the general health will be preserved.

7. The Chilkalgoodum lines, in which the 3rd P. Light Infantry are



located, are built on a hummock of granite with one valley running from it south-west to the Hoosain Saugor tank, and another, south-east, to the Musa river, and the winds blowing along these valleys impinge, with their fullest force, on those lines.

The sickliness in the 3rd Regiment Madras Light Infantry has been general, and on the 17th and 19th ultimo, there were sixty-two men, forty-eight women, and

thirty-four children ill = 54.3 per 1,000 of the regiment and its followers. (Appendix A.) This sickly condition has been of frequent recurrence amongst the regiments that have occupied the Chilkalgoodum lines, and has invariably commenced as the south-west monsoon has set in.

8. In illustration of these points, it may be mentioned (Appendix B) that

Return showing the monthly number of admissions into hospital in the 3rd Regiment Light Infantry since its arrival at Secunderabad.

Months.	1871.	1872.	1873.	1874.
January ...	...	89	56	90
February ...	46	54	36	89
March ...	27	62	57	89
April ...	28	72	66	92
May ...	28	72	34	75
June ...	15	36	56	84
July ...	75	227	164	125
August ...	199	287	184	83
September ...	90	210	136	...
October ...	130	103	126	...
November ...	137	76	113	...
December ...	94	57	103	...

from January till some time after the middle of June, the prevailing winds are easterly, veering to the north-east and south-east, occasionally, though rarely, blowing lightly from the west, and with occasional showers. About the 20th June, however, the south-west monsoon usually breaks; and in the latter part of June or in July, sickness appears and lasts till the dry north-east winds of November and December begin. These points are observable in the statements on the margin, showing, for the 3rd Light Infantry, the admissions in each month of the past four years, and the average rainfall and prevailing winds of the

Statement showing the Average Rainfall and the Prevailing Winds at Secunderabad in 1870 to 1874.

Months.	Rain.		Winds.												
	Total.	Average.	E. by S.	S. E.	S. E. by S.	S. E. by E.	N. E.	N.	S.	S. W.	W.	N. W.	N. W. by W.	S. W. by W.	S. S. W.
5 years, 1870 to 1874.	January ...	15	0.03	3	1	2	...	...	...	...	...	...	...	...	...
	February ...	...	...	3	1	1	1	...	...	...	1	...	...	...	...
	March ...	1.16	0.23	2	2	...	1	...	1	...	...	...	...	...	...
	April ...	2.35	0.47	3	1	...	...	1	1	1	1	...	...	...	...
	May ...	2.81	0.56	1	...	...	...	1	...	...	2	3	1	...	...
	June ...	15.95	3.19	...	...	...	...	...	...	...	3	...	1	2	1
	July ...	29.14	5.82	...	...	...	...	...	...	1	3	2	...	2	...
	August ...	23.97	4.79	...	...	...	...	...	...	...	2	3	2	...	...
	September.	37.58	7.51	...	...	...	...	1	1	...	1	2	...	...	...
	October ...	13.76	3.44	...	...	...	...	2	2	...	...	1	...	...	...
	November..	2.96	0.74	2	...	...	...	3	...	...	...	...	...	1	...
	December..	3.47	0.87	4	...	2	...	...	...	...	...	...	...	...	...

past five years.

9. The statement and diagram here given will also show how regularly every year sickness has set in with the wind and rain of the south-west monsoon.

10. The 3rd Light Infantry arrived in February 1871. In the first six months of that year, February to July inclusive, there were only 219 admissions, but in the four months, August to November inclusive, the admissions were 656.

In the six months, January to June inclusive, of 1872, there were 385 admissions, but in four months of July to October, 827 men reported sick.

In the year 1873, in the six months, January to June inclusive, there were 305 admissions, but in the other six months the number placed on the sick list was 826, and since then, the soldiers of the 3rd Light Infantry have not recovered but have carried their sickness all through the current year 1874, their monthly admissions ranging from 75 to 92, and in August rising to 125.

11. The 4th Madras Native Infantry occupied the Chikalgoodum lines

Years.	Admitted.	Died.	Average Strength.	Average Sick.
13th March 1865 ...	368	5	682	19.4
1866 ...	1,134	10	712	70.5
1867 ...	740	3	707	74
1868 ...	696	6	680	16
1869 ...	327	6	695	14.1
1870 ...	213	4	693	15.6
to 17th Feb. 1871 ...	...	...	...	...

from 1865 to 1871 prior to the 3rd Madras Native Infantry. The 4th Regiment arrived from Madras on the 13th March 1865, having suffered on the march from a severe outbreak of cholera, during which 103 cases had occurred, of whom 44 died. But in the following year the regiment was one and a half times in hospital, and

it continued sickly all through 1867 and 1868. The monthly admissions will show how much the monsoon weather affected this corps; therefore,

I place on the margin the monthly admissions into hospital of the soldiers

Months.	1865.	1866.	1867.	1868.	1869.	1870.	1871.
Jan. ...	...	38	39	65	19	11	27
Feb. ...	...	42	36	35	25	19	4
Mar. ...	40	60	54	28	39	15	...
April ...	20	53	55	39	30	23	...
May ...	20	48	52	36	32	17	...
June ...	33	20	49	22	30	16	...
July ...	17	118	133	101	44	19	...
Aug. ...	32	231	70	109	26	23	...
Sept. ...	46	227	78	79	32	22	...
Oct. ...	50	167	58	88	21	19	...
Nov. ...	58	90	64	48	13	21	...
Dec. ...	52	40	52	46	16	8	...
Total ...	368	1,134	740	696	327	213	31

of the 4th Madras Native Infantry during their stay in Secunderabad, which shows that their sickly months were July to November, but that they had no sickness in their first year of stay nor in their fifth or sixth years' residence. This varying state of health from year to year was very marked in this corps, though in the three years that sickness did appear, its coming was still in the monsoon months. It is quite possible, therefore, that the soldiers of the

3rd Regiment P.L.I., who succeeded the 4th Madras Native Infantry in these lines, may next year have a period of health.

Her Majesty's 24th Regiment Madras Native Infantry in the Tarban Lines.

Months.	1867.	1868.	1869.	1870.	1871.
January ...	32	18	32	13	16
February ...	40	32	33	33	23
March ...	31	64	110	17	21
April ...	22	61	79	22	22
May ...	21	76	28	21	16
June ...	21	53	24	13	19
July ...	75	269	167	47	42
August ...	131	281	213	76	39
September ...	188	167	66	31	50
October ...	140	135	44	33	38
November ...	84	76	46	20	36
December ...	38	36	19	17	18
Total ...	823	1,268	861	343	340

12. *Tarban lines.*—The 24th Regiment Madras Native Infantry was stationed in the Tarban lines from the 27th January 1867 to the 16th December 1871. The admissions in 1867 continued small up till the falling of the rains in July when they suddenly rose and continued high through August, September, October, and November. In 1868, they again became very numerous from July to October, in 1869 again high in July and August, but in 1870 and 1871 this regiment was healthy.

13. *Begumpet*.—Similarly with the 29th Madras Native Infantry as regards

Her Majesty's 29th Madras Native Infantry, Begumpet.

Months.	1871.	1872.	1873.	1874.
January ...	...	27	30	28
February ...	...	44	18	20
March ...	15	30	24	25
April ...	22	34	24	55
May ...	21	19	7	33
June ...	41	21	12	106
July ...	46	22	31	226
August ...	51	33	54	179
September ...	42	26	63	79
October ...	24	6	82	till 15th Sept.
November ...	41	25	39	...
December ...	41	20	28	...
Total ...	344	303	412	...

the period of the year at which their sickness has occurred. This regiment has been located at Begumpet since 18th February 1871, at first, in barracks, but in their own lines since the close of 1872. In 1871 and 1872 there was no sickness, but August, September, and October 1873 saw a considerable increase of admissions into hospital. In the current year sickness began with the wind and rain of the south-west monsoon, and, as will be seen, has continued to prevail until the date of my inspection, there

having been 590 admissions in the three and half months ending 15th September.

14. These variations from health to sickness and from sickness to health have occurred similarly in other corps, all being free from illness in the non-monsoon months, but some of them suffering during the prevalence of the south-west monsoon.

15. *Sappers' lines*.—The companies in Secunderabad of the Sappers and

Sappers and Miners.

Months.	1870 G and H.	1871 G and H.	1872 G and H.	1873 H and K.	1874 H and K.
January ...	13	18	18	22	38
February ...	5	15	13	23	37
March ...	14	12	23	26	29
April ...	13	13	37	17	21
May ...	14	11	28	33	22
June ...	10	18	33	30	24
July ...	9	15	66	44	39
August ...	14	162	116	84	52
September ...	22	81	73	55	...
October ...	30	37	30	78	...
November ...	38	35	14	43	...
December ...	17	22	11	43	...
Total Admissions.	199	439	462	498	262

Miners were for long very uncomfortably located near and in the village of Bal Amrai, and new huts (Appendix C) were built for them in 1868 on ground, of which I approved, to the north of the post office and travellers' bungalow. Since the year 1870, the new lines have been occupied by the G, H, and K Companies, and it will be observed that there has been little sickness in the non-monsoon months, but from July through August, and September into October of the past four years, there have been in each month many admissions into hospital.

16. *Tarban. Maredpilly*.—The regiments that have been stationed in the

Months.	6th Regiment M. N. I. Maredpilly lines.		40th Regiment Tarban lines.		Months.	Weather.	
	1873.	1874.	1873.	1874.		Rain in cents.	Winds.
January ...	40	33	17	73	January ...	...	E.
February ...	22	29	57	55	February ...	...	E. and W.
March ...	17	35	32	50	March ...	01	E.
April ...	21	55	28	32	April ...	46	E. and N. E.
May ...	39	38	22	21	May ...	96	E. and W.
June ...	30	57	34	63	June ...	3.62	S. W. by W. W. S. W.
July ...	39	122	51	90	July ...	6.27	W.
August ...	56	132	50	103	August ...	5.49	N. W., N. W. by W. S. W.
September ...	36	73	107	...	September ...	7.88	N. W., W.
October ...	42	till 15th Sept.	161	...	October ...	3.44	N., N. E., N. W.
November ...	49	...	127	...	November ...	0.76	N. E., E.
December ...	34	...	84	...	December ...	0.86	E., S. E.

Tarban lines wherein the 40th Native Infantry are now placed have also suffered similarly, but those in the Maredpilly lines where the 6th Madras Native Infantry now are, are only occasionally sickly. I place on the margin the experience

of two corps now there, from which will be seen that, though their sick list has not been such as to attract much attention, the increase of admissions has been marked the instant that the south-west monsoon has appeared.

17. *Fever*.—The ailment which thus makes its appearance is fever, and it

Months.	29th M.N.I.		Total.	Months.	Weather.	
	Fever.	Other diseases.			Rain.	Winds.
January ...	11	17	28	January ...	...	E.
February ...	12	8	20	February ...	...	E and W.
March ...	15	10	25	March ...	01	E.
April ...	40	15	55	April ...	46	E and N. E.
May ...	19	14	33	May ...	96	E. and W.
June ...	86	20	106	June ...	3-62	S.W. by W. and S.S.W.
July ...	213	13	226	July ...	6-27	S. W. by W. and W.
August ...	164	15	179	August ...	5-49	W.
Sept. to 15th ...	72	7	79	September ...	7-88	N. W., W.

is general in the lines, no one, man, woman, or child, escaping. The tabular statement on the margin showing the condition of the 29th Native Infantry in 1874 will explain that the

increased number of admissions are caused solely by the augmented number of fever cases.

Sappers.—The admissions into hospital in 1871 and 1872 from the G and

Months.	1871.			1872.		
	Fever.	Other diseases.	Total.	Fever.	Other diseases.	Total.
Jan. ...	2	16	18	5	13	18
Feb. ...	5	10	15	3	10	13
March ...	4	8	12	9	14	23
April ...	7	6	13	16	21	37
May ...	1	10	11	12	16	28
June ...	9	9	18	10	23	33
July ...	46	4	50	52	14	66
Aug. ...	148	14	162	97	19	116
Sept. ...	63	18	81	51	22	73
Oct. ...	21	16	37	11	19	30
Nov. ...	23	12	35	8	6	14
Dec. ...	8	14	22	5	6	11
Total ...	337	137	474	279	183	462

H Companies of Sappers and Miners show similarly that fevers cause the rise in the numbers of them admitted in the south-west monsoon months.

18. *Shelter needed*.—In the above remarks and statements and diagrams, I have shown that the tendency in the Secunderabad Cantonment is for fever to recur every year on the appearance of the south-west monsoon, but though incapacitating many men from duty it is not of a severe type, and I will now show that the native lines which are the most sheltered from

the monsoon are the least liable to be attacked with fever.

19. *Chilkalgoodum lines*.—I have already explained the position of the Chilkalgoodum lines which the 3rd P. L. I. at present occupy, and I will here add that they are exposed to the full force of the winds of the south-west monsoon, for their site is higher than all the surrounding ground, and they have but few trees. The sickness in this corps has been general, but the hospital records show that the centre and more sheltered companies have had the fewer sick. If these lines continue to be occupied, every effort should be made to shelter them by fast growing trees, a high wall should be erected on the south and south-west of each flank, and other partition walls raised at different parts of the line.

20. *The Begumpet lines* in which the 29th Madras Native Infantry are located are drawn from east to west across a hummock of granite which separates the village of Rassulpur on the east from those of Bhagwantpur and Begumpet on the west, being the very ground on which were located the barracks of the B Battery 23rd Brigade Royal Artillery, and which, indeed, are now in process of removal. As has already been mentioned, there was no fever in the 29th Native Infantry in the years 1871 and 1872, but a marked increase of sickness during the monsoon months of 1873, and numerous admissions during the same period of the current year. As the lines are but newly built, and it is desirable that Government should be in possession of all information regarding them, I may mention that the huts have been built E and W, in parallel lines, across the granite hummock, that there are some trees at the

north-west corner of the lines, and some on the eastern slope, but the lines generally are destitute of shelter, and exposed to the full power of the south-west monsoon. Up to the end of 1872, whilst the huts were under construction, the soldiers occupied the vacant Artillery barracks, but during the current year these have been removed, or are now being thrown down, and the shelter which they afforded is indicated by Lieutenant-Colonel Dawson as a possible cause of the immunity from fever enjoyed in the past three years.

21. Poverty of blood from deficient nutriment is likewise supposed by Lieutenant-Colonel Dawson to have been a possible cause of the fever in this regiment. This is the opinion also of the medical officer, who mentions that the men returned in robust health from China where they were well nourished, and that they continued well for two years, but, as they fell into weakened health from insufficient food, they became susceptible to the influence of the winds, and fever arose.

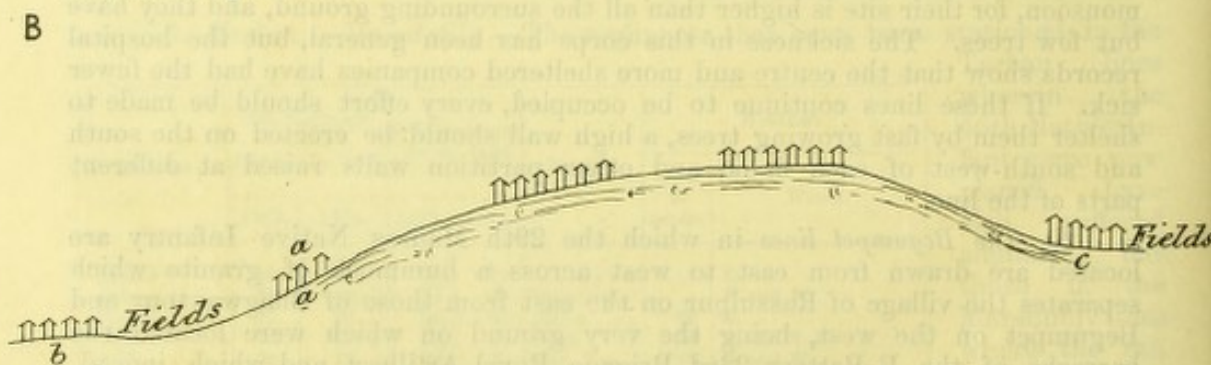
22. On this point of defective nutrition, the Assistant Quartermaster-General drew my attention to the circumstances that 200 men are detailed weekly from Secunderabad for a tour of escort duty at the Residency, that while absent from their families, their meals are less comfortable, and whilst absent the remaining part of the crops from which the escort is furnished supply the usual guards, and they feel the extra duty. These are points meriting attention.

23. Captain Prendergast, the Adjutant of the Regiment, tells me that he obtained a return showing the state of health in the men who sleep on the ground, and compared it with that of the soldiers who sleep on cots, but that he did not find any difference between the two classes.

24. The Subadar-Major thinks that the season has been exceptional, and that the cold winds have been the cause of the fever.

25. Regarding these opinions, it is scarcely necessary to observe that imperfect nourishment with extra work must, at all times, predispose to disease, and the prevailing prices of food articles and amounts of rice batta issued (Appendix E) show that the Secunderabad native soldiers, with families, must, during the past years, have been somewhat pinched, but there remains no doubt on my mind that the unsheltered condition of the Begumpet lines is a great defect, and has this year led to the sickness of their occupants. If the 3rd and 29th lines be viewed from the west or south-west, their similarly exposed appearance is at once apparent, and I have not any doubt that, unless protected against the inclemency of the weather, fever will reappear in the Begumpet lines from year to year as it has always been recurring in the 3rd lines at Chilkalgoodum.

26. There are three considerable villages and one hamlet near the Begumpet lines. One of these (a), Bhagwantpur, has forty houses, four of which are tiled, the rest being thatched



and are occupied by poor laboring people; but Begumpet (b) and Rassulpur (c) are both of considerable size and are both on the sheltered east side of ridges and embowered in trees. The villagers declared that they never have fever, and that there has not been any fever amongst them this year. If their condition be examined to ascertain if they present any difference from the 29th lines, they are found to be on the eastern or sheltered slope of the granite ridges and to be, like all Indian towns, embowered in trees (Appendix D).

27. *Bowenpilly*.—The Native Cavalry lines at Bowenpilly have, since 1861,

Regiments.	Years.	Average Strength.	Average Daily Sick.	Ratio per 1,000 of Mean Strength.	
				Admitted.	Died.
2nd Regt. M.L.C...	6 years 1861 to 1866.	355.1	8.3	464	8.4
4th do. do. ...	6 do. 1867 to 1872.	322.3	8.6	441	6.7
1st do. do. ...	1873	228.9	5.26	572	...
	1874 (incomplete) ...	60	3.79	...	...

Months.	4th L.C.						1st L.C.	
	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
January	36	10	12	13	6	6	...	14
February	33	11	12	9	6	8	27	7
March	29	23	4	7	7	5	14	19
April	30	5	3	15	11	14	17	20
May	17	8	12	5	9	7	22	8
June	17	10	12	7	10	5	21	14
July	30	14	13	10	9	5	16	17
August	23	12	17	11	10	11	13	15
September	16	6	13	7	11	7	19	5
October	20	13	4	11	13	17	22	...
November	18	16	6	8	9	11	16	...
December	12	12	1	7	2	14	17	...

risers close to the west of the lines abruptly to heights of fifty feet, and they are further protected by a considerable number of trees interspersed through the lines.

28. *The Maredpilly lines*, also, have numerous trees and lie below on the north of, and are protected by the E. and W. granite ridge, on which the cantonment was originally built. Fever has rarely appeared in these lines.

29. *The Tarban lines* have healthy and unhealthy years in nearly equal proportions. They were originally, as their name indicates, constructed on the side of a palmyra grove, with a gentle slope to the south. Many palmyra trees are still growing on the south of the lines, and a few with other trees in the lines, but after a severe outbreak of fever in these lines in the year 1868, the seeds of the *Inga dulcis* were planted in that year, to form a hedge round the south-west and west of the regiment, and so protect its people against the south-west winds; but when I went to see what progress the hedge had made, it was with regret to find only a few straggling stems.

30. The healthy state, during the past years, of the dhooly bearers and of the Karkhana establishment show that the natives of the races from whom the regiments are recruited can be maintained in good health in Secunderabad.

The Dhooly Bearers, since the year 1870, have been very healthy. In all that time of $4\frac{1}{2}$ years, out of 282 of average strength, only 284 have reported sick. Their lines are on the south of the old cantonment on ground elevated considerably above the valley leading from the Hoossain Saugor tank to the Chilkalgoodum lines, and they escape the violence of the south-west monsoon, by the wind following the line of the valley.

The Karkhana Department have had in the same period an average strength of 378, but of them only 15 individuals have reported sick in that time. Their lines are built on the lower part of a granite elevation which slopes to the east.

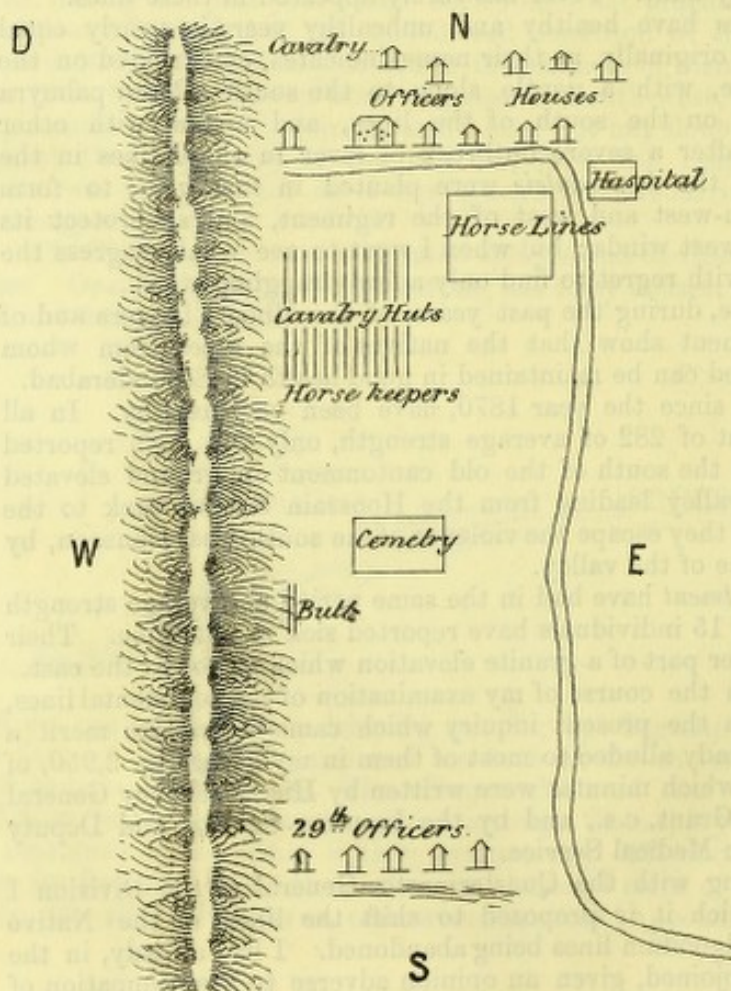
31. *Other points*.—In the course of my examination of the regimental lines, other matters bearing on the present inquiry which came before me merit a notice here, as I have already alluded to most of them in my letter No. 2,950, of 26th December 1866, on which minutes were written by His Excellency General McCleverty, by General Grant, C.B., and by the Inspector-General and Deputy Inspector-General, British Medical Service.

32. *New Sites*.—Along with the Quartermaster-General of the Division I examined the site to which it is proposed to shift the lines of the Native Regiment, on the Chilkalgoodum lines being abandoned. I had already, in the letter of which copy is subjoined, given an opinion adverse to the occupation of

what I supposed to be the proposed locality, but I was informed in reply that the selected site was further to the west than I had supposed. I now went over the proposed site, and am of opinion that it is even worse than that now occupied by the 3rd Light Infantry, in the Chilkalgoodum lines. It is at the north-west end of the Cul-de-sac of the valley in which the Chilkalgoodum lines and the European lines have been found so unhealthy. It has little soil, is quite bare of trees, and lies underneath the Cheetah Rocks, and the water in the west experimental well was at my visit only eight feet below the surface of the ground.

The only favorable point which it presents is its gentle slope to the east, so that if trees were growing on the western sides of the lines of huts, there would be shelter from the westerly winds of the south-west monsoon. But the European barracks lower down in the valley had all the shelter from the westerly winds which the houses of the bazaar could afford, and still they have been so unhealthy as to require to be abandoned.

33. There is a quartz dyke running from north of Bolarum village south to



the Hoossain Saugor tank, and rising to various heights—at two places near the Cavalry lines at Bowenpilly, up to 50 feet—and the houses and mess-house of the officers of the 29th Regiment, the butts, the Christian burial-ground, the troopers' lines, and the officers' houses of the Native Cavalry, are all built on the eastern slope. If strategic or other reasons do not prohibit, I have not any doubt but that a Regiment of Native Infantry would retain good health on the eastern slope of the ground from the Begumpet officers' houses inclusive up to the Cavalry lines, moving the butts and closing the cemetery, to give room.

34. *Drainage, Wet cultivation, Manure.*—At pages 7 and 21 of my report of 26th December 1866, I said “there can be no doubt whatever, in my opinion, that all the tank bunds which coop up the surface drainage in and near Trimulgherry should even on that account be entirely removed, and the natural drains of the country restored to their proper purpose; and equally without doubt all manuring of the lands intervening between the barracks either by refuse or ordure should wholly cease, and garden cultivation with decayed manure alone be permitted” (page 7) “Manure of every kind is used; the people know the value of ordure manure as well as the Chinese and Burmese” (page 21.)

The small tanks to which I then alluded are in the dips lying between the hummocks of granite on which the cantonment is built—one running from the west of the South Trimulgherry barracks, one on the south of the Tarban lines, one on the east of Bowenpilly and Rassulpur, and one between the Begumpet lines and Begumpet, all dammed up at intervals and their waters used for wet cultivation—are all, as I found them in 1865 and left them in 1870, though His Excellency General McCleverty who minuted upon my report urged the discontinuance of the wet cultivation. General McCleverty said “the discontinuance of wet cultivation in the neighbourhood of Trimulgherry I strongly advocate and also the prohibition of augmentation in the number of villages.”

Deputy Inspector-General Marlow also said (page 19) “no expense should be spared in doing away with wet cultivation, which in the dry season means the saturation of highly manured land with water, at least once in the twenty-four hours.”

35. *Soil pits, Ordure manure.*—My attention was now drawn by residents of the place to the soil pits on the west of Begumpet. These are about one mile distant from the hospital, one and a quarter mile from the sepoys’ lines, and one and a half mile from the officers’ houses. I found them clean and tidy, and free from all odour; it seemed to me impossible that any bad smell could reach the sepoys’ lines from these, as they now are. They receive the night-soil from the Bowenpilly Cavalry and from the Begumpet Infantry. A soil cart was driven there whilst I was present, but the duty of covering it is left to another person, and that person was not present. I asked the driver of the soil cart if he could cover it, and he replied “certainly, if a shovel were allowed me,” and I recommend that to each soil cart a shovel be attached, and the cartman have the duty of covering in the night-soil. Between the hospital and the cultivation, I came upon several cart loads of refuse thrown on the ground, and it is possible that the bad smell complained of may have been given forth from these heaps when they were fresh.

The Medical Officer of the 3rd Light Infantry complained of the noisome smell from the soil pits in the valley leading from the Chilkalgoodum lines to the Hoossain Saugor tank. Other residents pointed to the soil pits west of Begumpet, and every one complained of the annoyance from the use of ordure as manure.

The cantonment soil pits on the south of the old cantonment and all the neighbouring ground lying between the gallows and the tower of silence were in a *very nasty* condition. There were great open pits for the reception of the refuse, but there were not visible any heaps of earth which could be used for covering in the deposits, and all efforts failed to obtain from the lads who were there information as to the source of the earth supply. If, indeed, the deposits in these pits be not covered over with earth, there need not be any doubt that the annoyance to the sepoys’ lines and officers’ houses in the Chilkalgoodum location must be intense whenever a westerly wind blows. I consider it indispensably necessary, no matter what the difficulties may be, that immediate attention be given to the subject of these cantonment pits. Their present site is very unsuitable, over near human habitations, and blocking up the egress from the town. And I consider that the daily deposits should be carefully covered over. The pits in their present form, large square openings, do not admit of

this. But one great advantage of covering all over would be in preventing the cultivators abstracting the ordure. It is the smell from this that is so annoying to all who come within its range. The cultivators spread it out in cakes on rocks to dry, and the smell to a distance is disgusting. There can only be two modes of obtaining it, namely, either by bribing the conveyors to sell it to them, or re-obtaining it from the pits.

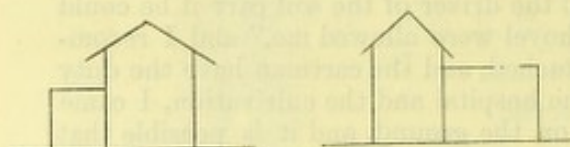
I saw the soil pits north-east of Chilkalgoodum, but did not go near to them.

36. *New Lines.*—The removal of regimental lines from one site to another, however carefully carried out, is, under any circumstances, a change attended with considerable expense, and as, while there, several points came under my notice connected with the sanitary condition of the cantonment, the Right Honorable the Governor in Council may wish that I should notice them.

37. *Shelter by trees needed.*—In paragraphs 1 to 15 I have noticed the absence in the Begumpet and Chilkalgoodum lines of all shelter, and have recommended that trees be planted and walls raised to shield the occupants of those lines from the inclement weather of the south-west monsoon. But the inmates of the huts in all the other lines would all be benefited by the provision of additional shelter. The villages of the people of this country are embowered in trees, and in building the barracks for the soldiers at Trimulgherry, the planting of trees for shade and shelter has been one of the most constant recommendations and great progress has been made. The trees that have been planted on the Trimulgherry side are growing well, but much can still be done for all the corps in that neighbourhood.

38. *Courtyards.*—Each of the sepoy's huts has a small courtyard in front, and used as these have been for many years by the families, the possibility was mentioned of the saturated earth so near their dwellings being a cause of sickness. But all have courtyards, and as the sickness only appears in the lines of

E



some regiments, it does not seem correct to attribute the seasonal attacks of fever to the courtyard earth. It will, however, be an easy and inexpensive matter to change the fronts of the huts, and bring the courtyards on new ground. The medical officer of the 3rd Light Infantry complains of the difficulty of keeping the courtyards clean.

39. *Strangers in the lines.*—The varying strengths of regiments have required from time to time increases and diminutions of the number of huts needed for the native soldiers and their relatives, and when reductions have occurred, the vacated huts have not always been destroyed. In such case, strangers, in no way connected with the soldiers, have taken the huts, thereby interfering with the family arrangement which is the characteristic and valuable formation of the native regiments of the Madras Army, and strangers are not under that control which is so necessary for the health and discipline of regiments. I obtained

	Inhabitants of Bazaar, Pen- sioners and outsiders.
Chilkalgoodum, 3rd Light Infantry...	157
Sappers	45
Tarban, 40th Madras Native Infantry	387
Begumpet, 29th do.	180
Maredpilly, 6th do.	222
Bowenpilly, 40th do.	198

returns of non-regimental people. The returns are not in the same form however, and cannot well be tabulated, but I place the numbers on the margin, by which it will be seen that there are many persons who ought not to be there. During the long occupation of the Bowenpilly site the bazaar has grown to quite a village, consisting of 114

huts and 633 occupants, and is larger than the rural village of Bowenpilly itself.

All strangers should, in my opinion, be removed from amongst the soldiers'

Lines.	Bazar Peo- ple.	Out- siders.	Pension- ers.	Sepoys' Relatives other than Wives and Children.	Total.
Chilkalgoodem...	154	...	3	...	157
Sappers...	32	13	...	184	229
Tarban ...	256	...	131	...	387
Begumpet ...	122	...	58	...	180
Maredpilly ...	202	20	...	...	222
Bowenpilly ...	...	...	...	...	...

houses, and the bazaar should contain bazaar men only. I marched to Poonah with the 21st Bombay Native Infantry, and afterwards was for three years Staff Surgeon of Ahmednugger, and my recollection is that in the Bombay Army strangers are rigidly excluded. In this presidency, on each regiment leaving a station, the lines which they have occupied are supposed to

be vacated, but such emptying never occurs.

40. *Squatters*.—Connected with this point, I would draw attention to the great increase of squatters immediately outside the boundary on the west, on the ground lying between the Bolarum road and the Gun-rock hill. In paragraph 26, page 14 of my report of 1866, I urged the need for care on this point. The Sanitary Commissioner subsequently, in paragraphs 3 and 4 of his letter of 21st August 1871, urged the importance of attention to the state of things at this spot, but substantially-built houses are now appearing there which it will cost much to buy up, if their removal ever be needed. Cantonment needs a constant care, and though still known as the Cantonment of Secunderabad, fresh ground is being so fast taken up for new barracks, new lines, fortifications, &c., that the

Villages. future possible wants of the station must ever be kept in mind. At page 14 of my 1866 report, I represented "as regards Trimulgherry that full military control is needed to be obtained over the villages of Trimulgherry, Kakagoodem, Madagagoodem, Maredpilly and Chota Mulkapore, and that the Cantonment boundary should be extended to Lotkonta and Nairanett," and the Sanitary Commissioner, in paragraph 3 of his letter of 1871, further urged this point adding the villages of Dairah and Chilkalgoodem. I am under the impression that most of the hamlets in and near the Cantonment are on jaghir lands, and the negotiations to obtain control over them would be with individuals through the Resident and Minister. I would now add the villages of Bal-Amrai, Rassulpur, Bhagwantpur, Bowenpilly, and, in particular, that of Trimulgherry.

Bhagwantpur.—The small hamlet of Bhagwantpur is so close to the Begumpet lines, its people are so poor, and, as seemed to me, the huts are so likely to be used for smuggling spirits, I recommend that the hamlet be removed across the valley, into the village of Begumpet, whose people are evidently all well to do. And I would observe as regards the squatters in and near the Cantonment and particularly as regards those near the Gun-rock hill that while striving to obtain control over villages long in existence, it is advisable to prevent the formation of new villages such as that now in progress there.

41. Before leaving, I communicated to Major-General Blake (Appendix G) my opinion as to the causes of the sickness in the 3rd Light Infantry and 29th Native Infantry, and I attach, in the form of Appendix F, notes on water-supply and other points which may be useful in future references.

APPENDICES.

- A1.—On the ill-health of the B Battery, 23rd Brigade, while on the Begumpet site now occupied by the 29th Madras Native Infantry, in letter dated 22nd December 1865, from Deputy Inspector-General Inglis, c.B.
 Inspection Report of 1865, by Deputy Inspector-General Inglis, c.B.
 Extract from remarks by Sanitary Commissioner, 1865.
 Deputy Inspector-General Balfour's 1866 Report.
- A2.—*Return* showing the numbers of each Company of the 3rd P.L.I. sick in hospital on the 19th September 1874.
Return showing the number of admissions from each Company of the 3rd P.L.I. in 1874.
Return showing the followers of the 3rd P.L.I. sick on the 17th September 1874.
- B.—Monthly rainfall in Secunderabad in 1870 to 1874.
- C.—Note on the Sappers' Lines.
- D.—Do. do. 29th Madras Native Infantry.
- E.—*Return* showing rice money paid to Native soldiers, 1872—74, and cost of food grain in Secunderabad in 1871 to 1874.
- F.—Water-supply of regiments.
- G.—Letter to Major-General Blake, Commanding Hyderabad Subsidiary Force.

APPENDIX A 1.

Showing former unhealthy character of site called Begumpet, on which the Lines of Her Majesty's 29th Madras Native Infantry have since been constructed.

Letter from Deputy Inspector-General of Hospitals J. G. INGLIS, M.D., to Quartermaster-General, Madras, dated Bangalore, 22nd December 1865, No. 120.

Since my return yesterday from tour of inspection, Secunderabad, I received a telegram from the Officer Commanding Hyderabad Subsidiary Force requesting me to forward to you my opinion as to the advisability of removing the B Battery, 23rd Brigade, Royal Artillery, from that station, which I have now the honor of doing. I hoped to have been able to forward my inspection reports of the hospitals and sanitary conditions of the Royal Artillery, and the other troops at the stations I have visited, but as the Christmas holidays commence immediately, I cannot complete the transcription of so much work at present in my office.

With reference to the removal of B Battery, 23rd Brigade, I certainly consider a change is necessary to some other station.

I found thirty-nine men composing the collective sick of the Royal Artillery at Secunderabad (Royal Artillery, Trimulgherry, not included), *via*, Head-Quarters B Battery, 23rd Brigade, and B Battery, D Brigade, Royal Artillery, occupying the temporary barracks, and No. 5 Battery, 20th (Garrison) quartered in the bombproof buildings, and of the total number as stated in hospital, twenty-seven men alone were from the battery under special reference, *viz.*, B Battery, 23rd Brigade or with regard to the strength of that battery alone, eighteen per cent. of the strength were under medical treatment. This marked difference in the health of the respective batteries is caused by the large number of cases of relapses of dysentery, periodic fever, and hepatic disease in B Battery 23rd Brigade, and though, with one exception, none were in a positively dangerous condition, still considering the large proportion of such cases requiring changes of climate, the peculiarities of the climate of Secunderabad itself in predisposing to hepatic and dysenteric ailments combined with the malign influences at work in the neighbourhood of that portion of the temporary barracks occupied by the particular battery alluded to, and regarding which more will come to notice in my inspection report, I am of opinion a change to another station will prove highly beneficial to the health of the men. I believe the battery has been stationed at Secunderabad since February 1863, having for some time previously been at Jaulna, and under all the circumstances combined, including long residence in inland stations together with a proclivity to types of diseases induced and aggravated thereby, my opinion further is that a change to the neighbourhood of the sea (Saint Thomas' Mount, if practicable) would prove most efficacious.

When at Secunderabad, I had an interview with Brigadier-General Grant, Commanding Hyderabad Subsidiary Force, and Brigadier-General Brice, who also considers a change advisable.

I may mention that I found the battery under canvas, General Grant having judiciously moved the men from their objectionable barrack before my arrival, General Grant also proposed a change likely to be productive of much temporary relief, *viz.*, to move the B Battery, 23rd Brigade, to the Artillery Barracks, Trimulgherry, during the period the D Battery of the same Brigade is absent from the station for practice with the Armstrong guns.

In conclusion, I would quote from my inspection report that six men of this battery died from the beginning of the year to date of inspection, 9th December 1865, which gives a very high mortality rate, *viz.*, 39.73 to 1,000 of strength, much above the rate of the other troops at Secunderabad.

(Signed) J. G. INGLIS, M.D.,
Dy. Inspr.-Genl. of Hospitals, and
P.M.O. British Troops.

Inspection Report by Deputy Inspector-General INGLIS.

Batteries.	Head-quarters and B Battery, 23rd Brigade, Royal Artillery.	B Battery, D Brigade, Royal Horse Artillery.	No. 5 Battery, 20th Brigade, Royal Artillery.
Average strength during the year ...	151.38	131.28	79.65
Strength on day of inspection ...	151	120	78
Average sick for the year ...	14.95	7.76	2.68
Number in hospital on day of inspection ...	27	4	8
Percentage of sick to strength for the year ...	9.87	5.90	3.37
Do. deaths do. do. ...	3.96	75	1.25
Do. do. to sick treated ...	1.86	43	1.02
Number of cases registered during the year ...	42	27	23
Do. under registration on day of inspection ...	3	2	1
Total number of deaths during the year...	Hepatitis ac. 1	Insolatio 1	Dysentery ac. 1
	Do. ch... 1	(died out of Hospital.)	
	Dysent. ac. 2		
	Feb. Int. 1		
	Feb. Remit. 1		
	6		
Strength of women ...	24	20	18
Do. children ...	37	26	34
Deaths of women ...	1	None.	None.
Do. children ...	4	None.	3
Proportion of enthetic to all other diseases, since last inspection ...	1.07 to 8	1.13 to 13	1.02 to 10
<i>Station.</i>			
SECUNDERABAD.			
<i>Names of Medical Officers.</i>			
Assistant-Surgeon W. B. Ramsbotham, M.D.			
Do. R. W. Berkley.			
Time of inspection—9th December 1865.			

* * * I found the collective sick of the three batteries under medical treatment to be thirty-nine, twenty-seven cases alone being furnished by the head-quarters and B Battery, 23rd Brigade, or with reference to the strength of that battery nearly 18 per cent. in hospital. This marked difference in the health of the respective batteries is caused by a large number of cases of relapses of dysentery, periodic fever, and hepatic ailments being under medical treatment, but all, with one exception, improving, or at all events not exhibiting symptoms of any severity. I desired the Medical Officer after careful observation of each case, in regard to the peculiar benefit likely to be derived by change to the sea coast or hills, as may be indicated by symptoms, to submit his selections with the usual abstracts of causes for my examination and approval in view to removal. It would appear the average daily sick of this battery for the year has approximated fifteen, and the admission and discharge register shows collectively from the 1st of January to date, 321 admissions more than twice the strength of the battery. It is evident, however, that much of this has been occasioned by the relapses in the cases I have alluded to, for I have found in most of the instances adduced, men who had each four and five separate admissions throughout the year. The sickness I consider depends much on the insanitary site of the temporary blocks occupied by this battery, which are situated on the sloping ground in the vicinity of a stagnant tank rendered otherwise impure by being the receptacle for all the drainage of a filthy native neighbourhood. In my last inspection report, I mentioned my objections to this position for troops on sanitary grounds, and I need not repeat them. I may mention, however, that the Medical Officer in charge impressed with the same opinion, apparently, and, considering the sickness in the battery under review dependent on sick causes, has prudently taken the precaution of recommending the building to be abandoned. This has been done, and I found a large portion of the battery in a sanitary camp with five men in each tent, which I hope may be attended with happy result. By reference to the detail inspection report it will be noticed the sickness in the other batteries at Secunderabad has been so moderate as to render remark unnecessary."

REPORT OF THE SANITARY COMMISSION IN 1865.

B Battery, 23rd Brigade, Royal Artillery.

Site.—These barracks are situated at the western extremity of the cantonment directly adjoining and to the north of the horse artillery barracks, on the site previously occupied by the native corps alluded to. The road from the cantonment to Sholapore runs immediately in front of the lines.

The barracks run due east and west on ground which is slightly lower than that of the adjoining site, and the eastern block approaches very close to low swampy ground under wet cultivation and to Rassulpur tank, which presents an extensive surface, is very shallow, and flooding a large area in the rains, rapidly evaporates in the dry season and pollutes the neighbourhood with bad odours and miasms very detrimental to health.

The horse artillery lines have, as before stated, a belt of trees to protect the barracks from ground of this nature, but here all is quite open, and the close proximity of such is quite sufficient to condemn the site in a sanitary point of view.

The great prevalence of diseases of the miasmatic class amongst the Europeans of this battery, as compared with those occupying other sites together with the greater prevalence of sickness amongst the families residing in one of the bungalows adjoining, coupled with the very inferior barrack accommodation, are grounds for urging the speedy removal of the Europeans located here to the proposed site at Trimulgherry.

Low swampy ground.—The east end of these barracks approaches very close to some low ground made marshy and swampy by the neighbouring wet cultivation, and the Rassulpur shallow tank which receives all the surface drainage from the valley as far north as Bowenpilly.

This low swampy ground has been observed to have decided influence upon the health of the men living in No. 1 barrack, as it has been for some time past noted by Commanding and Medical Officers that by far the greater proportion of men suffer from miasmatic diseases who live in this part of the barrack than in any of the other rooms. The same may be said of a bungalow taken up by Government for the families in proximity to this ground where the inmates suffer much from the same class of diseases.

These statements could be verified by returns of the men of this battery, showing the admissions from the different parts of the barrack, and attention was drawn to these facts by Dr. Ranking when in charge of the battery in his annual report as follows:—

"I have shown that the B Battery, 23rd Brigade, is located upon the slope of a gently rising ground elevated not more than from 15 to 20 feet above the level of a large sheet of water with marshy edges and from land irrigated from it, while the right division barrack is within, at certain periods of the year, 180 yards of the edge of the tank and without the slightest protection from any intervening belt of trees. Moreover the admissions from the different division barracks have been in direct ratio to proximity to this low ground.

"Further, that the batteries generally at this end of the cantonment are influenced by malarious exhalations to an extent not experienced by other European troops at the station is proved by the following figures, contrasting the rate of prevalence of diseases of malarious origin in the different batteries under my medical charge with the troops located on the high ground of the new Cantonment of Trimulgherry.

—	Regiments and Batteries.	Admissions by Miasmatic Diseases.	Remarks.
Secunderabad	B Battery, 23rd Brigade ...	1,340 per 1,000	Means } Located near swamp.
	B do. D. do. ...	603 do.	
	No. 5 do. 17th do. ...	523 do.	
Trimulgherry	Her Majesty's 18th Royal Infantry.	307 per 1,000	Means } On high ground away from swamp except two barracks of Her Majesty's 108th Foot not occupied during the year.
	Do. 108th do.	311 do.	
	14th Brigade Royal Arty.	343 do.	

We have no doubt that the proximity of this swamp does exercise a pernicious effect upon the health of the men of this battery, and it adds one more reason for speedily abandoning this portion of the cantonment as proposed by Mr. Yule.

Since the above was written, the Officer Commanding, in letter to the Secretary of this Commission, dated December 12th, writes as follows:—"As regards the 'Barracks of my Battery,' it is unnecessary I should make any remark as they have so lately been visited by you. But since then the men have been more unhealthy than at any period since the same time last year, and year before last; the regularity with which sickness (chiefly dysentery and liver complaints) culminates and waves according to season is remarkable; a fortnight ago there were twenty-eight, now there are twenty-two men sick out of 146 present. The cubical space averages more than 2,100 cubic feet, and the superficial more than 180 per man.

The following is a summary of remarks on this battery:—

1st.—Site of barracks bad; west end of barracks too close to low swampy ground. Most of the cases of miasmatic diseases admitted into hospital come from these blocks.

2nd.—The barracks are of bad construction, but no overcrowding.

3rd.—Three Serjeants sleep in No. 1 Serjeants' room, and four orderlies in the Serjeants' quarters of No. 2 barrack; both overcrowded—air close and foul.

4th.—The bath-rooms are open to the same objections as the Royal Horse Artillery.

DEPUTY INSPECTOR-GENERAL BALFOUR'S REPORT OF 26TH DECEMBER 1866.

"There never has been any mention of sickness in the Native cavalry lines at Bowenpilly. Dysentery, diarrhoea, and hepatic diseases have been constantly noticed in the Battery of Artillery west of the Rassulpur tank, and for one year fever in the Native Infantry Regiments on the east of that valley. The lines of the Native Infantry Regiment on the western side of the dip or valley which runs from the European Cavalry to the Musa river have, however, repeatedly been unhealthy, this year particularly so; and the occupants of the barracks in which the European Cavalry now reside have been so through a long series of years. The Foot Artillery Barracks have always been healthy.

APPENDIX A2.

Showing the influence on Her Majesty's 3rd P.L.I. of exposure to, and shelter from, the wind.

Return showing the Number of Men belonging to each Company sick in the Hospital of 3rd P. Light Infantry on 19th September 1874.

Companies.	A.	B.	C.	D.	E.	F.	G.	H.	Total.
Number sick ...	10	6	7	2	8	6	12	8	59

Return showing Number of Admissions for Fever from each Company of the 3rd P. Light Infantry during the Years 1871, 1872, and 1873. Copied from Report on Fever in the 3rd P.L.I.

Companies.	A.	B.	C.	D.	E.	F.	G.	H.	Total.
1871* ...	65	106	89	89	100	71	83	100	703
1872 ...	159	148	163	96	141	133	110	130	1,080
1873 ...	111	108	100	68	66	103	80	88	724
Total ...	335	362	352	253	307	307	273	318	2,507

Return showing the Number of Admissions in each Company of the 3rd Regiment P.L.I. from January 1874 to 31st August 1874.

Companies.	Number of Admissions.	Companies.	Number of Admissions.
A ...	92	F ...	95
B ...	95	G ...	101
C ...	94	H ...	89
D ...	88		
E ...	73	Total ...	727

* 1871 from date of arrival at Secunderabad.

Return showing the Number of Women and Children and Followers of the 3rd Regiment P. Light Infantry who were sick on the 17th September 1874.

Strength.	Women.	Children.	Men.	Total.	Remarks.
	813.	924.	182.	1,919.	
A Company	8	4	...	12	4 Native Commissioned Officers sick on same date. 58 Non-commissioned Officers and men same date.
B do.	2	6	...	8	
C do.	2	1	1	4	
D do.	7	8	...	15	
E do.	1	3	1	5	
F do.	4	...	...	4
G do.	16	4	...	20	
H do.	5	5	...	10	
Adjutant's Department	2	1	...	3	
Quartermaster's do. ... ..	...	...	...	...
Bazaar	1	2	1	4	
Total ...	48	34	3	85	

SECUNDERABAD,
18th September 1874.

(Signed) C. McNALLY, M.D.,
Surgeon, 3rd Regt. P.L.I.

APPENDIX B.

Monthly Rainfall and Prevailing Wind at Secunderabad for the Years 1870 up to 20th September 1874.

	1870.		1871.		1872.		1873.		1874.	
	Inches and Cents.	Wind.	Inches and Cents.	Wind.	Inches and Cents.	Wind.	Inches and Cents.	Wind.	Inches and Cents.	Wind.
January	15	E. and S. E.	...	E. by S.	...	S. E. and S. E. by E.	...	E.	...	E.
February	...	E.	...	S. E. by S.	...	S. E.	...	E.	...	E. and W.
March	75	S. E. by E.	30	S. and S. E.	...	S. E.	10	E.	01	E.
April...	...	E.	36	S. and S. W.	52	S. E.	01	W. and E.	46	E. and N. E.
May	71	W. and N.	04	N. W.	05	N. W. and N. W. by W.	05	N. W.	96	E. and W.
June	138	W.	220	W. and N. W. by W.	09	S. W. by W.	66	W.	62	S. W. by W. and S. S. W.
July	723	W. N. W. by W. and N. W. by N.	416	W. and N. W.	41	S. W. and N. W.	07	S. W. by W.	27	W.
August	603	N. W. by N.	262	N. W.	76	W. and N. W.	07	N. W. by W.	49	From 1st to 20th September.
September	660	N. W. and N.	974	N. E.	19	N. W.	17	W.	88	...
October	579	N. W. and N.	89	N. E.	67	N.	41	N. E.	...	...
November	227	E. and N. E.	14	N. E. and S. W. by W.	39	N. E.	26	E.	...	...
December	...	E. and S. E.	...	E. and S. E.	44	E.	03	E.	...	...
Total Rain ...	3091	...	2045	...	3552	...	2183	...	2469	...

SECUNDERABAD,
20th September 1874.

(Signed) E. LEVINGE, Surgeon,
In charge of Meteorological Observatory.

APPENDIX C.

NOTE ON THE LINES OF THE SAPPERS AND MINERS.

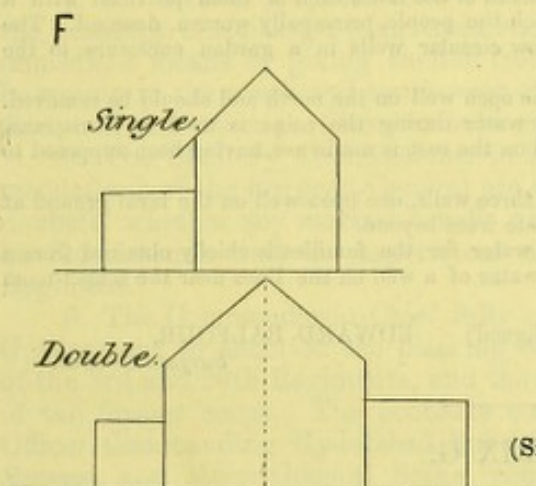
The lines of the Sappers and Miners are erected on the north of the travellers' bungalow, on a hummock of granite of considerable extent, on which, a little to the north-east, is the cantonment hospital and the line of bombproof barracks hitherto occupied by the artillery. The particular part of the hummock occupied by the lines of the Sappers has two slopes, one from south to north, the other from east to west, and the lines are drawn from north to south. At one part, therefore, on the west, they cross the drainage, but this was unavoidable unless the lines had been drawn in different directions. The little courtyards, however, might have been made to face down hill to the west, so as to keep the backs of the houses up the slope. As it is, in a heavy fall of water, the floors of the huts might be flooded from the courtyards.

The drains may be a little deepened. The water for drinking used by the Hindus is obtained chiefly from a large open well, in the grounds of a chattrum to the west of the Sappers' lines. It has a small round well outside somewhat puddled. There is another small well at the edge of the Rassulpur tank to which the Pariahs resort. It has no masonry coping.

(Signed) EDWARD BALFOUR,
Surgeon-General.

APPENDIX D.

NOTE ON THE LINES OF HER MAJESTY'S 29TH REGIMENT, MADRAS NATIVE INFANTRY.



The houses in the lines are tiled. In dimensions they are in strict accordance with regulations, and are higher in the ridge than in any other lines I have observed. They are, however, in two forms—as single houses, each with its own roof tree, and double houses, with the roof ridge supported by a partition wall. The latter form is not liked by native soldiers who prefer to have their huts separate, and it utterly prevents all perfilation.

The wood used in supporting the roofs has been green, and the roofs are bent and wavy. The huts are in number such as are needed for the strength.

The bazaar huts and the drummers' huts are single.

(Signed) EDWARD BALFOUR,
Surgeon-General.

APPENDIX E.

COST OF FOOD IN SECUNDERABAD.

Table showing the Monthly Amount of Rice-money drawn by the Sepoys of the 3rd P. Light Infantry during their residence in Secunderabad.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
1871...	4 8 10	5 0 7	4 14 0	5 0 7	4 14 0	5 0 7	5 0 7	5 0 7	6 4 6	6 7 4	6 4 0	6 7 4
1872...	6 7 4	4 11 5	6 7 4	6 4 0	6 7 4	6 4 0	5 0 7	5 0 7	4 14 0	6 7 4	4 14 0	4 0 4
1873...	3 4 2	1 15 9	2 10 9	2 9 4	2 3 2	2 9 4	2 10 9	2 10 9	2 9 4	2 3 2	2 9 4	2 10 9
1874...	3 4 2	2 15 2	3 4 2	3 14 3	4 0 4	3 14 3	4 0 4	3 4 2	...	...	...	...

(Signed) A. ANDERSON, Captain,
Adjutant, 3rd Light Infantry.

Price Current of the following Articles sold at Secunderabad during the Years 1872, 1873 and 1874:—

		1872.	1873.	1874.
		For Govt. Rupee.	For Govt. Rupee.	For Govt. Rupee.
Rice	lbs.	16½	24	22½
Wheat	„	18½	30	33½
Raggy	„	35	48	50
Jawara	„	30	40	42
Ghee	„	2½	3	3½
SECUNDERABAD,		(Signed)		
22nd September 1874.			Assistant Cantonment Magistrate.	

APPENDIX F.

NOTE ON THE WATER-SUPPLY OF SECUNDERABAD.

There has been no change since 1866 as to the wells from which the drinking water of the several native corps is obtained.

3rd Light Infantry, Chilkalgoodum.—The water is obtained from three wells. Two of these are on the north of the lines and one on the south. The waters of all three are used for drinking, and are considered by the people to be pure. Of the two wells on the north, one is small and circular, with a considerable coping wall, and is crossed by bars of stone, on which pakhalies were standing over the water and drawing it up with their leather buckets. The other is a large open well to which the people descend by a flight of steps.

6th Madras Native Infantry, Maredpilly.—The water is drawn from a large open well on the east of the lines, from another similar well on the north of the lines, each of them provided with a broad flight of steps down to the water to which the people, principally women, descend. The pakhalies who draw water obtain it from two narrow circular wells in a garden enclosure to the north of the lines.

Many trees were growing out of the wall of the open well on the north and should be removed.

The southern open well is exposed, but its water during the rains is used by Christians. There are seven wells in all. The large open well on the east is not in use, having been supposed to have been a source of Guinea-worm.

29th Native Infantry, Begumpet.—There are three wells, one open well on the level ground at the bottom of the western slope, another among date trees beyond.

40th Madras Native Infantry, Tarban.—The water for the families is chiefly obtained from a well at the north-west angle of the lines, but the water of a well on the lines near the school-room is also used.

(Signed) EDWARD BALFOUR,
Surgeon-General.

APPENDIX G.

Letter sent to Major-General Commanding Hyderabad Subsidiary Force.

Sir,—I have the honor to report my intended departure to-morrow morning.

2. I beg to mention as the result of my examination of the lines of the Native Regiments and of other Native Military bodies which I have examined here under the order of the Right Honorable the Governor in Council in G.O., No. 2,770, of 25th August 1874, that their annually recurring sickness in my opinion is caused by their exposure to the cold damp winds and weather of the south-west monsoon, and every protection that can be given to the lines where sickness is present year by year should be so. In the Chilkalgoodum lines, almost every year, in the Sapper lines since they were occupied, and in the Begumpet lines in the current year, fever has broken out, and these are the least sheltered of all the lines.

In Begumpet, in the Sappers and in the Chilkalgoodum lines, trees might be very largely grown.

I will submit this and other subjects to Government.

(Signed) EDWARD BALFOUR,
Surgeon-General.

Referred for the observations of the Sanitary Commissioner—to be submitted through His Excellency the Commander-in-Chief, (Quartermaster-General's Department).

9th October 1874.

From Brigadier-General A. HOWLETT, C.B., Quartermaster-General, to Colonel A. C. SILVER, Secretary to Government, Military Department, dated Fort St. George, 19th December 1874, No. 8,663.

I have the honor, by order, to forward the papers, as per margin, having

1. Letter No. 1,130, from Secretary to Government of India, dated 21st September 1874, referred to His Excellency the Commander-in-Chief in docket of 1st October 1874.
2. Report by Surgeon-General, Indian Medical Service, referred to Sanitary Commissioner in docket of 9th October 1874.
3. Letter on the above report from Sanitary Commissioner, No. 14, dated 19th November 1874.
4. Letter No. 118, dated 9th December 1874, from Officer Commanding Hyderabad Subsidiary Force.

reference to the proposal made in this office letter of the 24th June last, No. 146-4,583, to make a change in the hutting site of the 3rd Regiment L.I. at Secunderabad, in consequence of the long continued unhealthy state of that regiment.

2. After careful consideration of the question, with reference to the report from the Surgeon-General, Indian Medical Department, the Commander-in-Chief decides that, for the present at all events, the proposal to move this regiment should be abandoned.

3. From the Surgeon-General's report the great cause of sickness (fever), especially in the 3rd and 29th Regiments, is attributed to the unsheltered state of the lines of both regiments from the malarious winds which prevail during south-west monsoon. Those of the 3rd Regiment are stated to be on a higher site than the surrounding ground and fully exposed to the full force of those winds, and in reference to the site to which it was proposed to move the Regiment, Dr. Balfour observes that it is in his opinion worse than that of the present lines at Chilkalgoodum.

4. Dr. Balfour proposes that, with a view of affording the necessary shelter, the planting of quick-growing trees should be taken in hand, and, as a more immediate means of giving shelter from the winds, that high mud walls should be run up in the south and south-west of each flank of the lines at Chilkalgoodum, and that other partition walls be erected as required.

5. The Sanitary Commissioner in his observations remarks that the recommendations of the Surgeon-General are sound and judicious, and although he is doubtful whether any marked benefit will be derived from the screen walls, still he recommends that the experiment should be tried in the lines of the 3rd Regiment.

6. The Commander-in-Chief fully concurs in the view, and recommends to Government to sanction the planting of belts of trees to shelter the lines both of the 3rd and 29th Regiments, and the erection of the screen walls in the lines of the former corps. The probable cost for these walls, as reported by the Officer Commanding Hyderabad Subsidiary Force, will be between 3 and 4,000 Rupees, and Major-General Blake recommends that the work should be taken up by the Public Works Department. If Government is pleased to approve of this proposal for screen walls, the work should be carried out immediately, in order to allow of the walls becoming thoroughly dry and consolidated before the south-west monsoon sets in, and also that the regiment may have the benefit of the experiment through the entire season.

7. The Sanitary Commissioner, in paragraph 7 of his letter, further states his opinion that quinine might be used as a prophylactic during the prevalence of the south-west monsoon with the native troops at Secunderabad, and His Excellency commends this proposal for the favorable consideration of Government.

From Surgeon-Major W. R. CORNISH, F.R.C.S., Sanitary Commissioner for Madras, to Brigadier-General A. HOWLETT, C.B., Quartermaster-General, Fort St. George, dated Ootacamund, 19th November 1874, No. 14.

I have the honor to submit, for the consideration of His Excellency the Commander-in-Chief and Government, in reference to endorsement on letter No. 4,646, of 3rd October 1874, from the Surgeon-General, Indian Medical Department, the following observations in regard to the prevalence of fever amongst the native corps stationed at Secunderabad.

2. The Surgeon-General has pointed out that the hospital admissions at Secunderabad are largely influenced by seasonal causes, and that the sick season is always more or less

connected with the appearance of the south-west monsoon, which is the chief rainy season in that part of the country. He observes, moreover, that the native lines, which from their geographical position are most exposed to south-west monsoon winds, are the localities in which the sepoys are most liable to fever, while the lines which are naturally sheltered from prevailing winds are always the healthiest.

3. There is nothing new in this observation. The facts have been long established that certain localities in the cantonment, from their exposure, are more liable to malarious action than others, and the marked deterioration of the health of European troops at this station, during the south-west monsoon months, which shows itself in the form of dysentery and hepatic disease, rather than in the form of intermittent fever, points clearly to the fact that the causes are of a general nature, though influenced to some extent by site and locality.

4. The recommendations of the Surgeon-General in regard to the shelter of native lines by planting trees are, in my opinion, sound and judicious. I am not so clear that any marked benefit would be derived from the erection of screen walls as suggested, but the experiment might be tried in the lines of the 3rd Regiment Native Infantry, which are I think the most persistently unhealthy of any. Experience has demonstrated that in the choice of new lines in this locality, we should not select sites that are naturally exposed to the high bleak winds of the south-west monsoon, but situations that are sheltered from their violence. I am aware, however, that the choice of sites is limited, and that these conditions are not always attainable.

5. The essential point to be borne in mind is that the climate of Secunderabad is especially a malarious one during the prevalence of the south-west monsoon. The winds of this monsoon coming up from the Indian seas have to cross a long stretch of country that is but scantily inhabited, and badly cultivated; exposed alternately to rain and sunshine, to wetting and drying, conditions which are known to be powerful in the generation of malaria. The malarious influences are general at this season, but they show themselves more markedly in the native troops, who are but imperfectly protected in their houses from damp, cold, and high winds, and who perhaps are but scantily or indifferently fed. Amongst the European troops and residents this is the season of bowel disorders, and derangements of the liver.

6. The type of fever which usually affects the native troops is generally mild, and it does not occasion any great loss of life. But I have myself noticed during a residence of two and a half years at the station in charge of a Native Regiment that there is a great tendency for these fevers to recur in the same individual man coming into hospital every fortnight, or month, with a recurrence of his fever, while the malarious season lasts. As a rule these fevers are readily amenable to medical treatment. Amongst the European troops, however, the type of dysentery which prevails during this malarious season of the year is usually of a very serious character, and attended by a higher mortality than is common at most stations.

7. Taking into account the general character of the diseases in Secunderabad during the south-west monsoon months, I am of opinion that the use of quinine as a prophylactic might be generally encouraged, in addition to the sanitary measures considered practicable and advisable. About two grains of quinine, or the cheaper salts of cinchonidine, or cichonine, per man, given three times a week throughout the months of June, July, August and September, would probably have an excellent effect in protecting those who used it from the malarious influences which prevail. The expenditure of a few lbs. of cinchona alkaloids for a purpose of this kind is a matter of no moment, now that the Government have large supplies of these valuable remedies in its own plantations.

8. The Sepoy huts at Secunderabad and elsewhere are mere temporary buildings, and naturally have all the defects of such buildings; but in this respect they are no better and no worse than the habitations of about $\frac{1}{10}$ ths of the population of India, whose homes are simply mud built huts. The sepoys' huts are subjected to regimental and sanitary supervision, and cleanliness in and about them is enforced, and in this respect the military are better off than the inhabitants of rural villages; but as I have stated on former occasions I think there are good grounds for recommending that the house accommodation of the Native Army should be made of a more substantial and permanent character in those stations which are in permanent military occupation.

9. Contrasts are frequently drawn between the health condition of natives of a locality and of troops to the disadvantage of the latter, and it is often inferred that the sanitary surroundings of the troops must be primarily in fault, forgetful of the fact that all natives of India are most susceptible to changes of climate, and that persons born and bred in a locality will enjoy fair health under conditions which are extremely obnoxious to strangers.

10. The Native Army is of necessity exposed to frequent changes of scene and climate. At one time in the forests of Burmah, at another on the sea coasts of the Carnatic or Malabar, and again on the table-lands of Mysore, Deccan, or Central India. In these different localities the troops are not only exposed to great vicissitudes of climate, but to changes in food, water, &c., and it is, therefore, the more necessary that, in these several

localities, every care should be given to the adequate housing and clothing of the men, to guard as much as possible against the natural tendency which is inherent in the native of India to suffer in health from removal from his own country. Wherever there are permanent stations for Native troops, substantial lines should be constructed for them, duly protected and sheltered by trees, and supplied with good drainage and all other accessories necessary for the preservation of health.

11. In this way only can the State be said to make adequate arrangements for the protection of the health of the Native Army. I am aware that the consideration of these questions involve a remodelling of the system of Government advances for hutting money, but I believe the time has come when this important matter should be reconsidered, and when efforts should be made to do for the native soldier what has already been done for the European, *viz.*, provide him with house accommodation that shall efficiently protect him from undue exposure to heat, cold, damp and other climatic changes likely to impair his efficiency in a military point of view.

From Major-General H. W. BLAKE, Commanding Hyderabad Subsidiary Force, to Brigadier-General A. HOWLETT, C.B., Quartermaster-General, Fort St. George, dated Secunderabad, 9th December 1874, No. 118.

I have the honor to acknowledge the receipt of your letter No. 8,022, dated 25th

* 1. Surgeon-General, Indian Medical Department, Report No. 453, dated 3rd October 1874.

2. Letter No. 1,130, dated 21st September 1874, from Secretary to the Government of India, with one enclosure.

3. Two plans.

November 1874, accompanied by the correspondence as per margin* herewith returned as requested, relating to the lines occupied by the 3rd Regiment Light Infantry, and calling for a final expression of my views relative to the transfer of those lines to the

site marked A in the plan, or to some other more eligible site in another locality.

2. I have minutely examined the site A, and am of opinion that it possesses considerable advantages over any other that could be found; those advantages, as compared with another site B marked on the plan, have already been described in my letter No. 45, dated 20th March 1874, so that any recapitulation of them would be superfluous.

3. The only doubt I had regarding the site A was that the drainage from it might run into the lines lately vacated by the 6th Regiment Native Infantry, known as the Mahareddipully lines; but since the receipt of your letter under reply, I caused the Executive Engineer to be addressed on the subject, and he has informed me that, without taking a series of levels, which would take a considerable time in doing, he is not prepared to say whether the whole of the drainage from site A can be diverted from the 6th lines. At present the whole of the drainage passes along the north end of those lines, and if this drain was lined with stone in lime, he does not think the drainage would in any way affect the lines.

4. Under these circumstances, I am of opinion that the site A is the best that could be selected for new lines if it be decided that the 3rd Regiment Light Infantry are to be removed from the lines they at present occupy.

5. With reference to paragraph 2 of your letter regarding Dr. Balfour's suggestion of building walls at the south end of each flank, and other partition walls at different parts of the lines to shelter them from the wind, the Executive Engineer reports that such constructions would cost from 3,000 to 4,000 Rupees. As to carrying out the work, I consider it would be advisable to have it done by the Department Public Works.

Order thereon, 18th February 1875, No. 814.

The Right Honorable the Governor in Council approves His Excellency the Commander-in-Chief's decision, not to press at present for a new site for the lines of the 3rd Regiment Light Infantry at Secunderabad.

2. The proposals that quickly-growing trees should be planted to screen the lines of both 3rd and 4th Regiments from the winds of the south-west monsoon, and that high mud walls should be built with the same object in the lines of the former corps, will be referred to the Government of India, with the request that, if approved, the necessary orders on the subject may be issued, without delay, to the Public Works Department for early attention.

3. The use of quinine, recommended by the Sanitary Commissioner, is a question for the medical authorities. The Surgeon-General, Indian Medical Department, will, if he concur in opinion with Mr. Cornish, adopt measures accordingly.

(True Extract.)

(Signed) A. C. SILVER, Colonel,

Secretary to Government.

STATISTICS

TABLE

Statement showing the Sickness, Mortality, and Invaliding

Divisions.	Regiments.	Stations.	Movements in the Year.	1	2			3			Deaths		6	7
				Average Daily Sick.	A.	B.	C.	Remained.	Admitted.	Total Treated.	4	5	Average Daily Sick per Cent. to Average Strength.	Ratio per Cent. of the Total Treated to Average Strength.
Presidency.	Body Guard.....	Madras	None	3	127	3	130	5	62	67	...	...	2.36	52.75
	13th Regt. N.I....	Do.	Do.	22	766	7	773	24	370	394	8	2	2.87	51.43
	14th do. do....	Vellore	Arrived 26th & 28th Jan.	11	693	17	710	17	277	294	4	6	1.58	42.42
	15th do. do....	Palaveram	Arrived 17th Feb. & 1st March.	9	427	30	457	12	369	381	5	1	2.10	89.22
	17th do. do....	Madras	None	13	712	5	717	14	328	342	...	2	1.82	48.03
	37th do. do....	Do.	Do.	19	669	20	689	31	501	532	8	2	2.84	79.52
	Totals, Ratio per Cent. to Totals, and Average of Presidency Division.			77	3,394	82	3,476	103	1,907	2,010	25	13	2.26	59.22
Northern.	2nd Regt. N.I. & Hd.-Qrs. & R.W.	Berhampore	None	11	358	9	367	16	278	294	3	2	3.07	82.12
	Do. Left Wing...	Sumbulpore...	Do.	10	326	...	326	18	282	300	9	...	3.06	92.02
	6th Regt. N.I.	Cocanada en route to Thyetmyo.	Left for Thyetmyo, 2nd Dec.	22	664	70	734	14	812	826	3	3	3.31	124.39
	7th do. do....	Vizagapatam.	None	69	657	45	702	40	563	603	7	3	10.50	91.78
	12th do. do....	Vizianagrum.	Do.	18	676	33	709	31	385	416	4	...	2.66	61.53
	41st do. do....	Cuttack	Do.	31	671	26	697	32	843	875	3	1	4.61	130.40
	Totals, Ratio per Cent. to Totals, and Average of Northern District.			161	3,352	183	3,535	151	3,163	3,314	29	9	4.80	98.86
Southern.	19th Regt. N.I.	Trichinopoly.	None	18	649	44	693	7	1,061	1,068	8	4	2.77	164.56
	32nd do. do....	Do.	Do.	13	692	...	692	19	299	318	...	4	1.87	45.95
	38th do. do....	Do.	Do.	9	661	37	698	9	487	496	2	3	1.36	75.03
	24th do. do....	Palamcottah.	Do.	16	568	123	691	14	285	299	4	3	2.81	52.64
	26th do. do....	Quilon	Do.	9	707	...	707	10	304	314	2	4	1.27	44.41
Malabar & Canara.	Totals, Ratio per Cent. to Totals, and Average of Southern District.			65	3,277	204	3,481	59	2,436	2,495	16	18	1.98	76.13
	9th Regt. N.I.	Cannanore	None	9	631	54	685	9	153	162	1	2	1.42	25.67
	25th do. do....	Do.	Do.	12	661	33	694	12	283	295	4	2	1.81	44.62
	34th do. do....	Mangalore	Do.	10	668	49	717	12	261	273	1	...	1.49	40.86
	Totals, Ratio per Cent. to Totals, and Average of Malabar and Canara.			31	1,960	136	2,096	33	697	730	6	4	1.58	37.24
Mysore.	Hd.-Qrs. Sappers & Miners.	Bangalore	None	14	949	...	949	15	447	462	2	3	2.00	48.68
	23rd Regt. L.I.	Do.	Do.	13	664	35	699	...	393	393	4	2	1.95	59.18
	36th do. N.I.	Do.	Do.	13	641	48	689	9	293	302	5	2	2.02	47.11
	28th do. do.	Mercara	Arrived 17th February.	40	611	66	677	20	864	884	9	1	6.54	144.68
	30th do. do.	French Rocks	None	7	611	101	712	...	209	209	2	...	1.14	34.20
Ceded Dist.	Totals, Ratio per Cent. to Totals, and Average of Mysore Division.			87	3,476	250	3,726	44	2,206	2,250	22	8	2.64	64.72
	4th Regt. L.C.	Bellary	None	3	252	60	312	2	119	121	...	...	1.19	48.01
	4th do. N.I.	Palasanna-drum en route to Rangoon.	Left for Rangoon, 19th December	11	659	38	697	6	312	318	2	3	1.66	48.25
	21st do. do....	Bellary	None	12	691	30	721	14	282	296	4	1	1.73	42.83
	Totals, Ratio per Cent. to Totals, and Average of Ceded Districts.			26	1,602	128	1,730	22	713	735	6	4	1.62	45.88

OF THE ARMY.

I.

in the Native Army of Madras for the Year 1874.

Ratio of Deaths per Cent.			Invalid-ed.		Constitution of the Regiments.						Strength borne on the Rolls of the Regiment on 31st December 1874.	Regiments.	Average Number of Consecutive Nights in Bed.	Remarks.
8	9	10	11	12	Hindus.		Mussul-mans.		Christi-ans.					
In Hospital to Treated.	In Hospital to Average Strength present.	Of Total Deaths, Columns 4 & 5, to Average Strength present.	For Discharge the Service.	For Temporary Change of Climate in India.	Strength.	Died during the Year.	Strength.	Died during the Year.	Strength.	Died during the Year.				
2-03	1-04	1-30	...	5	11	...	111	...	7	...	129	Body Guard ...	3-00	Detachment at Saint Thomas' Mount.
1-36	0-57	1-44	31	13	380	5	272	3	64	2	716	13th Regt. N.I....	3-44	
			18	17	412	8	250	2	48	...	710	14th do. do....	6-00	
1-31	1-17	1-40	55	...	175	3	156	3	38	...	369	15th do. do....	5-00	
...	...	0-28	18	14	333	2	293	...	53	...	679	17th do. do....	3-30	
1-50	1-19	1-49	11	19	465	7	187	1	48	2	700	37th do. do....	3-13	
1-24	0-73	1-11	133	68	1,776	25	1,269	9	258	4	3,303		3-97	
1-02	0-83	1-39	16	3	228	4	161	1	19	...	408	2nd Regt. N.I. and Hd.-Qrs. and R. W.	4-25	
3-00	2-76	2-76	15	3	189	9	115	...	21	...	325	Do. Left Wing.	4-00	
0-36	0-45	0-90	30	8	224	2	419	2	57	2	700	6th Regt. N.I....	4-48	
1-16	6-06	1-52	22	26	379	7	274	2	55	1	708	7th do. do. ...	5-75	Det. at Trevandrum. Do. at Trichoor.
0-96	0-59	0-59	5	25	379	2	295	2	39	...	713	12th do. do. ...	8-00	
0-34	0-44	0-59	35	7	445	3	204	1	45	...	694	41st do. do. ...	5-25	
0-87	0-86	1-13	123	72	1,844	27	1,468	8	236	3	3,548		5-28	
0-74	1-23	1-84	33	20	417	8	231	2	39	2	687	19th Regt. N.I....	6-00	
...	...	0-57	39	44	374	4	266	...	55	...	695	32nd do. do....	4-75	
0-40	0-30	0-75	27	24	385	1	280	3	46	1	711	38th do. do....	5-31	
1-33	0-70	1-23	6	7	378	4	277	2	56	1	711	24th do. do....	5-50	
0-63	0-28	0-85	21	9	435	5	218	1	58	...	711	26th do. do....	5-00	
0-64	0-84	1-03	126	104	1,989	22	1,272	8	254	4	3,515		5-31	
0-61	0-15	0-47	2	13	368	3	216	...	62	...	646	9th Regt. N.I....	5-00	One company at Rangoon.
1-35	0-60	0-90	24	13	401	4	207	2	68	...	676	25th do. do....	6-20	
0-36	0-14	0-14	30	20	463	1	170	...	38	...	671	34th do. do....	10-50	
0-82	0-30	0-51	56	46	1,232	8	593	2	168	...	1,993		7-23	
0-43	0-21	0-52	38	14	665	4	72	1	212	...	949	Hd.-Qrs. Sappers and Miners.	5-00	
1-01	0-60	0-90	31	14	405	5	211	1	86	...	702	23rd Regt. L.I....	3-16	
1-65	0-78	1-09	29	10	363	5	309	2	32	...	704	36th Regt. N.I....	3-30	
1-01	1-47	1-63	12	27	376	8	219	2	59	...	654	28th do. do....	4-13	
0-95	0-32	0-32	...	...	323	1	342	1	49	...	714	30th do. do....	6-00
0-97	0-63	0-86	110	65	2,132	23	1,153	7	438	...	3,723		4-31	
...	11	5	45	...	203	...	13	...	261	4th Regt. L.C....	5-03	Det. at Mysore.
0-62	0-30	0-75	5	17	354	2	271	3	62	...	677	4th do. N.I. ...	5-60	
1-35	0-59	0-72	24	19	383	3	271	2	54	...	708	21st Regt. N.I....	3-75	
0-81	0-37	0-62	40	41	782	5	745	5	119	...	1,646		4-79	

TABLE

Statement showing the Sickness, Mortality, and Invaliding

Divisions.	Regiments.	Stations.	Movements in the Year.	1	2			3			Deaths.		6	7
				Average Daily Sick.	Average Daily Strength present during the Year.	Absent during the Year.	Total.	Remained.	Admitted.	Total Treated.	In Hospital.	Out of Hospital, i.e., in the Station, on Guard, on Com-mand, on Leave or Furlough.	Average Daily Sick per Cent. to Average Strength.	Ratio per Cent. of the Total Treated to Average Strength.
H. S. Force.	1st Regt. L.C.	Secunderabad	None ...	4	204	8	212	8	94	102	...	2	1-96	50-00
	3rd do. L.I.	Do. ...	Do. ...	70	658	...	658	60	1,037	1,097	9	1	10-63	166-71
	29th do. N.I.	Do. ...	Do. ...	74	666	29	695	24	963	987	5	4	5-10	148-19
	40th do. do.	Do. ...	Do. ...	28	644	34	678	36	805	841	9	1	4-34	130-59
	Det. S. and M.	Do. ...	Do. ...	23	326	38	364	30	701	731	2	...	7-05	224-23
	Totals, Ratio per Cent. to Totals, and Average of Hyderabad Subsidiary Force.			159	2,498	109	2,607	158	3,600	3,758	25	8	6-36	150-44
Nagpore Force.	2nd Regt. L.C.	Kamptee ...	None ...	6	214	27	241	5	139	144	2	1	2-80	67-29
	35th do. N.I.	Do. ...	Do. ...	14	663	15	678	10	352	362	2	1	2-11	54-60
	8th do. do.	Seetabuldee.	Do. ...	23	644	11	655	26	823	849	2	1	3-57	131-83
	22nd do. do.	Hooshungabad.	Do. ...	14	688	24	712	15	517	532	7	...	2-03	77-32
	31st do. L.I.	Raipore ...	Do. ...	14	662	15	677	11	599	610	6	3	2-11	92-14
	Totals, Ratio per Cent. to Totals, and Average of Nagpore Force ...			71	2,871	92	2,963	67	2,430	2,497	19	6	2-47	86-97
B. B. Division.	39th Regt. N.I.	Rangoon ...	Arrived on 15th Jan.	20	635	44	679	10	450	460	6	9	3-14	72-44
	1st do. do.	Thyetmyo ...	None ...	12	634	41	675	4	350	354	2	2	1-89	55-83
	10th do. do.	Youkthwa en route to Madras.	Left for Madras 30th Dec.	20	577	84	661	18	579	597	9	10	3-46	103-46
	27th do. do.	Moulmein ...	None ...	28	606	25	631	23	802	825	3	4	4-62	136-13
	Totals, Ratio per Cent. to Totals, and Average of British Burmah Division...			80	2,452	194	2,646	55	2,181	2,236	20	25	3-26	91-19
Saugor Circle.	3rd Regt. L. C.	Saugor ...	None ...	9	252	40	292	4	295	299	3	1	3-57	118-65
	5th do. N. I.	Do. ...	Do. ...	26	683	32	715	22	838	860	8	1	3-80	125-91
	11th do. do.	Nagode ...	Do. ...	14	666	21	687	18	402	420	3	1	2-10	63-06
	16th do. do.	Jubbulpore.	Do. ...	16	674	26	700	11	516	527	3	...	2-37	78-18
	20th do. do.	Banda ...	Arrived 15th Jan. 1874.	21	347	10	357	20	714	734	5	...	6-05	211-52
	Head-Quarters & Left Wing.													
Bengal.	20th Regt. N. I.	Nowgong ...	Arrived Jan. 1874.	15	251	...	251	...	613	613	2	...	5-97	244-22
	Right Wing.													
	Totals, Ratio per Cent. to Totals, and Average of Saugor Circle ...			101	2,873	129	3,002	75	3,378	3,453	24	3	3-51	120-19
Bengal.	33rd Regt. N.I.	Dorundah ...	None ...	9	546	156	702	6	270	276	3	4	1-64	50-54
	Total, Ratio per Cent. to Totals, and Average of the whole Army ...			867	28,301	1663	29,964	773	22,981	23,754	195	102	3-06	83-93

I.—(Continued.)

in the Native Army of Madras for the Year 1874.

Ratio of Deaths per Cent.			Invalid- ed.		Constitution of the Regiments.						Strength borne on the Rolls of the Regiment on 31st December 1874.	Regiments.	Average Number of Consecutive Nights in Bed.	Remarks.
8	9	10	11	12	Hindus.		Musul- mans.		Christi- ans.					
In Hospital to Treated.	In Hospital to Average Strength present.	Of Total Deaths Columns 4 & 5, to Average Strength Present.	For Discharge the Service.	For Temporary Change of Climate in India.	Strength.	Died during the Year.	Strength.	Died during the Year.	Strength.	Died during the Year.				
...	...	0.98	4	3	28	...	177	2	17	...	222	1st Regt. L.C.	3.25	
0.82	1.36	1.51	57	21	375	5	236	4	63	1	674	3rd do. L.I.	3.82	
0.50	0.75	1.35	35	19	387	3	245	5	50	1	682	29th do. N.I.	5.00	
1.07	1.39	1.55	1	6	379	4	288	3	58	3	725	40th do. do.	4.00	
0.27	0.61	0.61	10	3	249	2	20	...	62	...	331	Det. S. & M.	6.00	
0.66	1.00	1.32	107	52	1,418	14	966	14	250	5	2,634		4.41	
1.38	0.93	1.40	2	3	42	1	197	1	13	1	252	2nd Regt. L.C.	4.25	
0.55	0.30	0.45	19	7	374	2	240	1	73	...	687	35th do. N.I.	3.80	
0.23	0.31	0.46	9	8	443	1	227	1	35	1	705	8th do. do.	4.75	Detachments at
1.31	1.01	1.01	24	5	346	6	297	1	55	...	698	22nd do. do.	4.00	Chandah and
0.98	1.90	1.35	33	3	372	6	265	2	46	1	683	31st do. L.I.	3.50	Seroncha.
0.76	0.66	0.87	87	26	1,577	16	1,226	6	222	3	3,025		4.06	Wing at Kamptec.
1.30	0.94	2.36	1	25	402	11	226	2	54	2	682	39th Regt. N.I.	4.66	
0.56	0.31	0.63	5	21	366	4	256	...	67	...	689	1st do. do.	3.00	Detachment at
1.50	1.55	3.29	5	22	376	12	225	6	52	1	653	10th do. do.	4.75	Shoayghoon.
0.36	0.49	1.15	4	62	359	4	300	3	44	...	703	27th do. do.	4.00	Detachments at
0.88	0.81	1.83	15	130	1,503	31	1,007	11	217	3	2,727		4.10	Port Blair and
1.00	1.19	1.58	6	2	20	...	249	4	19	...	288	3rd Regt. L.C.	9.66	Nicobars.
0.90	1.17	1.31	22	17	405	4	221	3	53	2	679	5th do. N.I.	5.34	One Squadron at
0.71	0.45	0.60	40	6	399	3	247	1	44	...	690	11th do. N.I.	7.01	Jubbulpore.
0.56	0.44	0.41	1	...	348	...	266	2	83	1	697	16th do. N.I.	4.00	
0.68	1.44	1.44	11	4	125	1	212	3	117	1	454	20th do. Hd- Qrs. & Left Wing.	5.60	
0.32	0.79	0.79	8	...	188	2	125	...	42	...	355	20th Regt. Right Wing.	3.31	
0.69	0.83	0.94	88	29	1,485	10	1,320	13	358	4	3,163		5.72	
1.08	0.54	1.28	...	3	383	3	295	3	31	1	709	33rd Regt. N.I.	5.00	
0.82	0.68	1.04	885	636	16,121	184	11,314	86	2,551	27	29,986		4.92	

TABLE II.—(Continued.)
Statement showing the Relative Ratios per Cent. of Treated and Deaths under the different Diseases in the several Divisions and Districts of the Army for the Year 1874.

Classes of Diseases.—(Continued.)

Local Diseases.—(Continued.)

Divisions and Districts of the Army.	Diseases of the Stomach and Intestines, 449 to 500.												Local Diseases.—(Continued.)												Injuries.												All other Diseases.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	Diarrhoea.						Dysentery.						Other Diseases of this Class.						Diseases of the Liver, 502 to 520.						Diseases of the Spleen, 524 to 530.						Gonorrhoea, 585 to 594.							Abscess, 819, and elsewhere according to site.						Ulcer, 859.						Skin Diseases, 827 to 901.						Other Diseases of this Class.						Old Age and Debility, 904 and 905.						Poisons, 906 to 991.						Injuries, 992 to 1,146, and Blisters of Feet, 1,148.						Punishment.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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N.B.—The numbers quoted are those of the "Nomenclature of Diseases." Column "T" shows the percentage of Treated to the Total Treated under the several Diseases in each Division or District. Column "D" (deaths) shows the percentage to the Total Mortality to the Total Treated of each Disease.

TABLE III.

Statement showing the Remained, Admitted, Discharged, Died, &c., under the different Diseases in the several Divisions and Districts of the Native Army during 1874.

	General Diseases.										Local Diseases.										Injuries.	All other Diseases.	Total.																																																																																																																																																																																																																																																																																																																																																																																																																								
	Sub-Division A.					Sub-Division B.					Diseases of the Stomach and Intestines, 449 to 500.	Dysentery.	Other Diseases of this Class.	Diseases of the Liver, 501 to 520.	Diseases of the Spleen, 524 to 530.	Gonorrhoea, 585 to 594.	Abscesses, 819 and elsewhere according to site.	Ulcer, 859.	Skin Diseases, 827 to 901.	Other Diseases of this Class.				Old Age and Debility, 904 to 905.	Poisons, 906 to 991.																																																																																																																																																																																																																																																																																																																																																																																																																						
	Eruptive, 1 to 5.	Continued, 6 to 14.	Malarious, 15 and 16.	Malignant Cholera, 18.	Other Diseases of this Class.	Rheumatic Affections, 34 to 42.	Syphilitic Affections, 43.	Scorbutic Affections, 54.	Dropsies, 57.	Other Diseases of this Class.																																																																																																																																																																																																																																																																																																																																																																																																																																					
																										Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	Fever.	

Discharged cured during the year	30	43	1,310	5	195	40	...	3	88	28	2	66	4	110	72	61	124	6	1	17	56	55	325	77	67	4	215	1	3,005
Discharged "otherwise" during the year.	2	...	14	...	14	4	...	2	16	2	...	6	1	12	1	...	1	...	...	2	...	...	...	4	5	...	1	...	87
Died in hospital during the year...	...	3	3	...	...	1	...	2	4	...	...	...	...	5	1	3	2	1	...	...	1	...	...	1	2	...	...	...	29
Remaining on 31st December 1874	...	...	70	...	14	2	...	1	23	2	1	4	2	17	1	2	10	1	...	5	2	7	16	2	7	...	4	...	193
Total	32	46	1,397	5	223	47	...	8	131	32	3	76	7	144	75	66	137	8	1	22	61	62	341	84	81	4	220	1	3,314
Invalided during the year...	...	...	2	...	5	...	...	1	17	1	...	2	1	7	...	...	...	1	...	...	...	...	...	5	79	...	2	...	123
Obtained sick leave during the year	...	...	10	...	12	7	...	...	15	2	...	2	...	12	1	...	...	...	...	...	...	...	2	4	4	...	...	...	72
Died out of hospital during the year	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	1	...	...	...	9

Average Daily Sick, 65.

Southern District.

Strength, 3,277.

Remained sick on 1st January 1874	...	...	10	...	...	6	3	...	5	...	...	2	1	1	3	3	...	...	...	...	1	4	10	5	2	...	3	59
Admitted during the year	...	55	1,120	...	114	24	...	25	21	3	66	1	98	76	108	52	7	1	13	41	58	279	82	61	2	99	...	2,436
Total Treated	9	55	1,130	...	120	27	...	30	21	3	68	2	99	79	111	52	7	1	13	42	62	289	87	63	2	102	...	2,495
Discharged cured during the year	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Discharged "otherwise" during the year	...	51	1,080	...	108	20	...	19	17	2	60	2	84	70	101	48	3	1	10	40	53	266	74	39	2	96	...	2,272
Died in hospital during the year	...	4	14	...	6	1	...	8	2	1	4	...	5	5	2	3	...	...	...	...	4	5	8	...	3	...	...	83
Remaining on 31st December 1874	...	...	32	...	...	6	6	...	3	1	...	4	8	3	5	1	4	...	3	2	5	18	8	14	...	...	...	16
Total	9	55	1,130	...	120	27	...	30	21	3	68	2	99	79	111	52	7	1	13	42	62	289	87	63	2	102	...	2,495
Invalid during the year	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Obtained sick leave during the year	...	1	13	...	5	...	...	3	3	...	4	1	2	...	7	...	...	...	...	...	4	1	3	36	...	1	...	126
Died out of hospital during the year	...	...	2	...	1	1	...	...	2	...	...	...	3	1	1	...	...	...	...	...	...	...	...	1	...	...	...	104
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18

Average Daily Sick, 31.

Malabar and Canara.

Strength, 1,960.

Remained sick on 1st January 1874	...	...	1	...	4	1	...	1	1	...	2	...	3	...	25	24	...	...	...	...	1	7	1	2	...	4	...	33
Admitted during the year	...	21	141	...	52	17	...	10	13	3	14	2	25	25	24	24	3	...	6	42	22	135	29	21	4	50	...	697
Total Treated	8	22	142	...	56	18	...	11	14	3	16	2	28	25	24	24	3	...	6	42	23	142	30	23	4	54	...	730
Discharged cured during the year	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Discharged "otherwise" during the year	...	19	127	...	41	15	...	9	9	...	13	2	23	22	23	21	3	...	5	39	20	124	30	11	4	49	...	621
Died in hospital during the year	...	3	9	...	12	1	...	2	2	...	2	...	4	2	1	2	...	...	...	...	1	8	9	...	1	...	...	64
Remaining on 31st December 1874	...	...	4	...	...	3	2	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	6
Total	8	22	142	...	56	18	...	11	14	3	16	2	28	25	24	24	3	...	6	42	23	142	30	23	4	54	...	730

Strength, 1,602.										Ceded Districts.										Average Daily Sick, 26.												
Remained sick on 1st January 1874	13	122	101	3	...	4	3	1	1	...	6	13	3	48	...	25	17	14	33	...	1	3	20	17	43	17	65	1	65	...	22	713
Admitted during the year	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Treated	13	122	104	104	...	76	9	1	3	6	13	3	48	3	25	18	14	33	2	1	3	21	17	44	21	68	1	65	...	1	735	
Discharged cured during the year	13	114	96	4	...	63	6	...	2	5	8	1	48	1	18	16	14	30	2	1	2	19	14	43	18	38	1	63	...	...	636
Discharged "otherwise" during the year	...	8	...	...	...	10	2	...	1	1	3	2	...	2	2	1	...	...	...	...	1	1	1	1	3	29	...	2	...	1	75
Died in hospital during the year	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Remaining on 31st December 1874	...	...	...	4	...	3	1	...	...	...	...	...	...	...	2	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	18
Total	13	122	104	104	...	76	9	1	3	6	13	3	48	3	25	18	14	33	2	1	3	21	17	44	21	68	1	65	...	1	735	
Invalided during the year	...	...	3	...	...	5	1	1	...	...	...	...	1	...	1	1	2	...	...	...	...	...	...	...	...	2	23	...	...	...	40
Obtained sick leave during the year	...	1	1	...	...	10	2	...	...	1	2	...	...	...	1	2	1	...	1	...	...	...	...	...	1	1	16	...	1	...	41
Died out of hospital during the year	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	4

Strength, 2,498.										Hyderabad Subsidiary Force.										Average Daily Sick, 159.													
Remained sick on 1st January 1874	1	8	34	...	...	13	3	...	...	...	3	3	...	1	2	12	1	3	2	2	4	...	68	80	235	99	104	2	392	1	7	3,758
Admitted during the year	7	224	1,825	21	150	18	3	...	22	27	2	57	3	101	32	70	64	18	14	20	64	77	218	81	94	...	13	...	1	6	3,600
Total Treated	8	232	1,859	...	...	21	163	21	3	...	25	30	2	58	5	113	33	73	66	20	18	20	68	80	235	99	104	2	392	1	7	3,758
Discharged cured during the year	8	224	1,779	...	...	19	129	15	3	...	9	24	2	50	3	81	29	69	59	16	10	17	66	69	202	87	64	1	368	1	5	3,409
Discharged "otherwise" during the year	...	5	51	...	...	1	20	5	...	...	8	4	...	5	2	17	3	2	4	...	8	1	...	4	7	8	36	1	4	...	2	198
Died in hospital during the year	...	...	9	...	...	1	1	...	...	...	1	...	...	...	...	4	...	1	1	3	...	2	2	2	2	2	2	...	...	...	25	
Remaining on 31st December 1874	...	3	20	...	...	...	13	1	...	...	7	2	...	3	...	11	...	1	2	1	...	2	2	7	26	2	2	...	20	...	...	126
Total	8	232	1,859	...	...	21	163	21	3	...	25	30	2	58	5	113	33	73	66	20	18	20	68	80	235	99	104	2	392	1	7	3,758
Invalided during the year	...	...	...	...	...	...	...	...	...	...	6	4	1	6	2	8	1	...	1	...	4	...	...	...	4	3	47	...	4	...	...	107
Obtained sick leave during the year	...	1	11	...	...	...	5	1	...	...	1	2	...	...	...	9	1	1	1	1	4	...	...	2	...	2	10	...	...	...	52	
Died out of hospital during the year	...	...	1	...	...	...	...	...	...	...	2	1	...	...	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	

Strength, 2,871.										Nagpore Force.										Average Daily Sick, 71.													
Remained sick on 1st January 1874	1	...	30	...	...	...	3	...	...	...	4	1	...	2	...	1	...	3	1	...	...	...	4	1	7	...	6	...	3	...	...	67	
Admitted during the year	111	79	1,131	...	...	2	111	23	...	...	4	19	17	2	147	6	53	46	61	45	6	4	15	34	63	141	65	69	1	166	1	3	2,430
Total Treated	112	79	1,161	...	...	2	114	23	...	...	4	23	18	2	149	6	54	46	64	46	6	4	15	38	64	148	65	75	6	169	1	3	2,497

TABLE III.—(Continued.)
Statement showing the Remained, Admitted, Discharged, Died, &c., under the Different Diseases in the several Divisions and Districts of the Native Army during 1874.

	General Diseases.										Local Diseases.										Injuries.	Punishment.	All other Diseases.	Total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	Sub-Division A.					Sub-Division B.					Local Diseases.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	Fever.		Malignant Cholera, 18.			Other Diseases of this Class.			Rheumatic Affections, 43.		Scorbutic Affections, 54.		Dropsies, 57.		Other Diseases of this Class.		Diseases of the Nervous System, 59 to 104.		Insanity, 105 to 110.						Diseases of the Eye, 111 to 185.		Diseases of the Heart, 219 to 244 and 250 to 258.		Diseases of the Lungs, 290 to 337.		Diarrhea.		Dysentery.		Other Diseases of the Stomach and Intestines, 449 to 500.		Diseases of the Liver, 501 to 520.		Diseases of the Spleen, 524 to 530.		Gonorrhea, 585 to 594.		Abscess, 819, and elsewhere according to site.		Ulcer, 859.		Skin Diseases, 827 to 901.		Other Diseases of this Class.		Old Age and Debility, 904 and 905.		Poisons, 906 to 991.		Injuries, 992 to 1,146, and Blistered Feet, 1,148.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
	Continued, 6 to 14.		Malarious, 15 and 16.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

Discharged cured during the year	...	3	795	...	1	189	39	...	4	30	18	5	35	2	59	81	140	91	6	5	18	32	77	146	71	85	4	129	...	28	2,093	
Discharged "otherwise" during the year.	...	...	6	...	...	12	1	...	1	12	3	2	...	3	7	...	3	4	...	...	...	1	...	...	5	...	1	...	...	61	
Died in hospital during the year ...	...	...	1	...	...	...	...	...	1	5	...	2	...	...	1	1	4	1	...	...	1	...	...	2	2	1	...	...	...	20	
Remaining on 31st December 1874	...	...	20	...	...	...	6	2	...	4	...	2	...	...	...	1	3	4	...	...	1	4	...	3	3	4	...	...	...	62	
Total	...	3	822	...	1	207	42	...	6	51	21	9	35	5	68	85	150	100	6	5	20	33	82	149	76	96	5	131	...	28	2,236	
Invalided during the year	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	14	...	...	...	...	15
Obtained sick leave during the year	...	...	19	...	...	33	2	...	2	19	3	2	1	2	6	2	6	7	1	...	...	...	...	...	1	23	...	1	...	...	130
Died out of hospital during the year	1	3	...	1	...	2	3	1	1	...	1	12	25

Strength, 2,878.

[illegible]

Strength, 546.

[illegible]

Return of Non-commissioned Officers sent on Sick Certificate during the past four Years ending 31st December 1874 and the Result in each Case.

Corps.	1871.							1872.							1873.							1874.						
	Number sent on Sick Leave.	Returned to Duty.	Leave extended.	Deserted at end of Leave.	Pensioned at end of or during Leave.	Died on Leave.	Discharged Service with- out Pension.	Number sent on Sick Leave.	Returned to Duty.	Leave extended.	Deserted at end of Leave.	Pensioned at end of or during Leave.	Died on Leave.	Discharged Service with- out Pension.	Number sent on Sick Leave.	Returned to Duty.	Leave extended.	Deserted at end of Leave.	Pensioned at end of or during Leave.	Died on Leave.	Discharged Service with- out Pension.	Number sent on Sick Leave.	Returned to Duty.	Leave extended.	Deserted at end of Leave.	Pensioned at end of or during Leave.	Died on Leave.	Discharged Service with- out Pension.
1st Regiment L.C...	5	2		...	...	1	...	6	5	...	...	...	1	...	4	4	...	...	...	...	...	3	...	...	...	...	...	...
2nd do. do. do. ...	4	2		...	...	...	...	...	2	...	...	...	...	...	7	...	...	...	...	...	...	3	...	...	...	...	...	...
3rd do. do. do. ...	1	3		...	...	...	...	2	1	...	...	...	1	...	5	1	...	...	...	...	...	4	...	...	...	...	...	...
4th do. do. do. ...	7	9		...	...	...	...	5	5	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...
Body Guard	18	23		...	...	...	...	14	13	...	...	...	...	...	11	4	...	...	...	...	...	21	...	...	...	...	...	...
1st Regiment N.I.	12	8		...	...	...	...	6	6	...	...	...	...	...	4	5	...	...	...	...	...	6	...	...	...	...	...	...
2nd do. do. do. ...	9	1		...	...	...	...	35	8	...	...	...	3	...	10	30	...	...	...	...	...	17	...	...	...	...	...	...
3rd do. do. do. ...	9	1		...	...	...	...	10	4	...	...	...	...	...	13	10	...	...	...	...	...	16	...	...	...	...	...	...
4th do. do. do. ...	4	7		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5th do. do. do. ...	...	...		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6th do. do. do. ...	13	9		...	...	...	...	14	19	...	...	...	1	...	1	9	...	...	...	...	...	8	...	...	...	...	...	...
7th do. do. do. ...	88	41		...	...	...	...	34	34	...	...	...	7	...	45	30	...	...	...	...	...	25	...	...	...	...	...	...
8th do. do. do. ...	...	...		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9th do. do. do. ...	9	5		...	...	...	...	10	4	...	...	...	...	...	8	7	...	...	...	...	...	8	...	...	...	...	...	...
10th do. do. do. ...	10	14		...	...	...	...	22	9	...	...	...	5	...	41	5	...	...	...	...	...	...	...	...	...	...	...	...
11th do. do. do. ...	...	...		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12th do. do. do. ...	38	2		...	...	...	...	40	46	...	...	...	4	...	19	30	...	...	...	...	...	...	...	...	...	...	...	...
13th do. do. do. ...	12	6		...	...	...	...	26	13	...	...	...	3	...	9	23	...	...	...	...	...	...	...	...	...	...	...	...
14th do. do. do. ...	18	5		...	...	...	...	23	10	...	...	...	7	...	32	14	...	...	...	...	...	...	...	...	...	...	...	...
15th do. do. do. ...	...	...		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16th do. do. do. ...	...	4		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17th do. do. do. ...	...	7		...	...	...	...	1	1	...	...	...	2	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...
18th do. do. do. ...	17	10		...	...	...	...	33	11	...	...	...	1	...	21	27	...	...	...	...	...	15	...	...	...	...	...	...
19th do. do. do. ...	15	7		...	...	...	...	8	12	...	...	...	...	...	27	10	...	...	...	...	...	19	...	...	...	...	...	...
20th do. do. do. ...	...	...		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21st do. do. do. ...	1	7		...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
22nd do. do. do. ...	1	6		...	...	...	...	2	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
23rd do. do. do. ...	4	1		...	...	...	...	8	7	...	...	...	1	...	8	3	...	...	...	...	...	...	...	...	...	...	...	...
24th do. do. do. ...	3	...		...	...	...	...	5	3	...	...	...	...	...	6	2	...	...	...	...	...	...	...	...	...	...	...	...
25th do. do. do. ...	5	11		...	...	...	...	3	4	...	...	...	1	...	16	2	...	...	...	...	...	...	...	...	...	...	...	...
26th do. do. do. ...	7	9		...	...	...	...	7	5	...	...	...	...	...	4	7	...	...	...	...	...	...	...	...	...	...	...	...
27th do. do. do. ...	15	16		...	...	...	...	94	15	...	...	...	1	...	21	35	...	...	...	...	...	62	...	...	...	...	...	...

* Return affords no information beyond number sent.

Return of Non-commissioned Officers sent on Sick Certificate during the past four Years ending 31st December 1874 and the Result in each Case.—(Continued.)

Corps.	1871.								1872.								1873.								1874.										
	Number sent on Sick Leave.	Returned to Duty.	Leave extended.	Deserted at end of Leave.	Pensioned at end of or during Leave.	Died on Leave.	Discharged Service with- out Pension.	Number sent on Sick Leave.	Returned to Duty.	Leave extended.	Deserted at end of Leave.	Pensioned at end of or during Leave.	Died on Leave.	Discharged Service with- out Pension.	Number sent on Sick Leave.	Returned to Duty.	Leave extended.	Deserted at end of Leave.	Pensioned at end of or during Leave.	Died on Leave.	Discharged Service with- out Pension.	Number sent on Sick Leave.	Returned to Duty.	Leave extended.	Deserted at end of Leave.	Pensioned at end of or during Leave.	Died on Leave.	Discharged Service with- out Pension.							
28th Regiment N.I.	15	11	...	1	...	1	...	15	6	...	...	...	1	1	...	9	18	...	...	...	...	27	2	...	...	...	...	...	...
do. do.	18	22	...	...	1	1	...	8	15	...	...	...	1	1	...	4	6	...	...	...	...	19	2	...	...	...	...	...	...
30th do.	23	23	...	...	...	1	...	14	18	...	...	...	...	...	1	9	12	...	...	...	...	...	...	...	...	...	...	...	...
31st do. L.I.	15	22	...	...	...	1	...	21	15	...	...	...	...	...	1	4	10	...	...	...	...	...	...	...	...	...	...	...	...
32nd do. N.I.	5	18	...	...	1	...	...	13	7	...	...	...	...	...	3	22	8	...	...	...	...	44	33	...	...	...	...	...	...
33rd do.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Return not received.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
34th do.	16	5	...	...	...	...	...	8	15	...	...	...	1	3	...	17	6	...	...	...	...	17	5	...	...	...	...	...	...
35th do.	14	21	...	...	...	1	...	13	6	...	...	...	...	3	...	13	8	...	...	...	...	...	...	...	...	...	...	...	...
36th do.	32	10	...	...	...	4	...	37	56	...	...	...	1	1	...	35	35	...	...	...	...	...	...	...	...	...	...	...	...
37th do.	12	3	...	...	...	2	...	33	14	...	...	...	...	1	...	7	29	...	...	...	...	10	2	...	...	...	...	...	...
38th do.	9	33	...	...	1	3	...	8	10	...	...	...	...	3	...	28	7	...	...	...	...	24	1	...	...	...	...	...	...
39th do.	...	...	...	...	...	...	...	...	...	Return not received.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
40th do.	6	1	...	...	...	1	...	6	8	...	...	...	...	3	...	6	...	...	...	...	...	5	1	...	...	...	...	...	...
41st do.	9	4	...	...	1	1	...	8	4	...	...	...	...	2	...	9	3	...	...	...	...	7	...	...	...	...	...	...	...
Sappers & Miners.	24	15	...	...	5	1	...	31	21	...	...	...	...	3	...	14	19	...	...	...	...	17	1	...	...	...	...	...	...
Native Details ...	...	2	...	...	...	...	...	3	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	519	403	...	4	56	58	5	628	435	...	3	36	80	5	498	423	2	3	18	78	4	628	115	1	...	3	45	...	628	115	1	...	3	45	...

Summary of the Army Statistics for the Year 1874.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Average Daily Strength present throughout the Year.	Total Treated in Hospital.	Ratio per Cent. of the Treated to Average Strength.	Average Daily Sick per Cent. to the Average Daily Strength.	Deaths in Hospital.	Ratio of Deaths in Hospital per Cent. to Average Strength.	Ratio of Deaths in Hospital per Cent. to Treated.	Deaths out of Hospital, i.e., in the Station or Guard, on Command, on Leave or Furlough.	Strength of the Army as borne on the Regimental Rolls 31st December 1873. 30,167. 31st December 1874. 29,986. Mean 30,071.	Total Deaths during 1874 in and out of Hospital, Columns 5 and 8.	Of Total Mortality.	Of Invalids and Discharged the Service for Disease.	Of Men sent away from Head-quarters for Change of Climate.	Ratio per Cent. to Strength of Mortality of Hindus in and out of Hospital.	Ratio per Cent. to Strength of Mortality of Mussulmans in and out of Hospital.	Ratio per Cent. to Strength of Mortality of Christians in and out of Hospital.	Average Number of Consecutive Nights in Bed.
Cavalry ... 1,049	733	69.87	2.38	5	0.47	0.68	4	Mean 1173	9	0.76	1.96	1.53	[146]	[937]	[69]	5.03
Infantry ... 27,252	23,021	84.47	3.08	190	0.69	0.82	98	Mean 28,898	288	0.99	2.98	2.13	[15,975] 1.14	[10,377] 0.74	[2,482] 1.44	4.84
Totals and Averages of all ... 28,301	23,754	83.93	3.06	195	0.68	0.82	102	30,071	297	0.98	2.94	2.11	Ratio per Cent. of Deaths to the Strength of	1.14	.76	1.05

N.B.—The figures in brackets represent strength.

FORT SAINT GEORGE,
19th July 1875.EDWARD BALFOUR, Surgeon-General,
Surgeon-General, Indian Medical Department.

