

Sketch of the medical history of the native army of Bombay, for the year 1873. : Extracted from the annual returns, from the reports of regimental medical officers and from the inspection reports of deputy surgeons general. Compiled in the office of the surgeon general, Indian Medical Department, Bombay.

Contributors

Bombay (Presidency). Military Department.
London School of Hygiene and Tropical Medicine

Publication/Creation

Bombay : Printed at the Government Central Press, 1874.

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SKETCH

THE INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH,
OF THE

MEDICAL HISTORY OF THE NATIVE ARMY OF BOMBAY,

FOR THE

YEAR 1873.

EXTRACTED FROM THE ANNUAL RETURNS, FROM THE REPORTS OF REGIMENTAL MEDICAL OFFICERS,
AND FROM THE INSPECTION REPORTS OF DEPUTY SURGEONS GENERAL.

COMPILED IN THE OFFICE OF THE SURGEON GENERAL, INDIAN MEDICAL DEPARTMENT, BOMBAY.

Bombay:

PRINTED AT THE GOVERNMENT CENTRAL PRESS.

1874.

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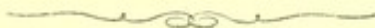
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FROM

THE SURGEON GENERAL,

Indian Medical Department,

TO

THE SECRETARY TO GOVERNMENT,

Military Department.

Bombay, 8th July 1874.

SIR,

I have the honour to forward, for submission to His Excellency the Governor in Council, the Medical History of the Native Army for the year 1873.

Years.	Strength.	Deaths.	Average Daily Sick per cent. to daily average strength.	Admissions.
1872.....	22,903	226	4.54	36,209
1873.....	22,967	165	3.82	29,055

2. The strength of the army during 1873 is found to be nearly the same as in 1872, the actual difference amounting to 64 men only.

3. The admissions have been 7,154 less, the number of deaths 61 less, and the daily average number of sick per cent. to daily average strength 0.72 less in 1873 than in the previous year, all these figures pointing to an improved state of the health of the army during the past year.

PRESIDENCY DIVISION AND ADEN.

Years.	Average Strength.	Average Daily Sick.	Number of Admissions.	Number of Deaths.
1872.....	3,297	144.0	4,731	33
1873.....	3,358	140.2	4,513	28

4. The table in the margin compares 1873 favourably with 1872. Admissions and deaths were both fewer than in the previous year.

5. The health of the 26th Regiment Native Infantry at Surat has continued to improve during the past year, the admissions and deaths being 1,214 and 7 respectively, against 1,590 and 10 in the previous year. This regiment has still, however, the largest number of admissions in the circle—1,214; the next in number, the 19th N. I., following with 952, the strength of both regiments being about the same. The largest number of daily sick (31 per cent. of strength) was in the 19th Regiment N. I.

POONA DIVISION.

6. There has been considerable improvement in the health of the Native

Years.	Average Strength.	Average Daily Sick.	Admissions.	Deaths.
1872.....	8,577	319.7	10,703	51
1873.....	8,209	250.4	7,334	35

Troops in the Poona Division, both the admissions and deaths showing a large decrease over the preceding year. The improvement is most marked in the regiments stationed at Poona

and in the 28th N. I. at Sholapur; the largest number of daily sick was 24.9 per cent. of the strength in the 8th N. I., Poona.

NORTHERN AND MHOW DIVISIONS.

7. The change for the better is also well marked in the troops in the

Years.	Average Strength.	Average Daily Sick.	Admissions.	Deaths.
1872.....	8,054	427.4	15,735	68
1873.....	8,450	392.9	13,498	52

Northern and Mhow Divisions, especially noticeable in the 24th N. I. at Disa, the admissions being about half those of 1872 (1,034 to 2,086), and the deaths 7 to 12. In the Mhow Divi-

sion the 10th N. I. at Mhow had a good deal of sickness; but the most unhealthy corps was the 25th N. I., Mehidpur, which, with a strength of 337, had 1,435 admissions and an average daily sick of 44 per cent. of strength. The mortality was small for so large a sick list, being only 2.

8. And Sind has shared in the generally improved condition of health of

Years.	Average Strength.	Average Daily Sick.	Admissions.	Deaths.
1872.....	2,975	148.0	5,040	74
1873.....	2,950	92.7	3,690	50

the army at large, the strength being about the same; in both years the admissions and deaths were 1,350 and 24 less, respectively, than in 1872.

9. Separating the two Beluch regiments from the Jacobabad Garrison, it is found that there has been an improved health status both in Lower and Upper Sind. The two Beluch regiments had together, during the past year, 1,320 admissions and 16 deaths, the corresponding numbers in 1872 being 2,118 admissions and 20 deaths, the strength in both years being about the same. The troops at Jacobabad gave last year 2,370 admissions with 35 deaths, in 1872 2,922 admissions and 54 deaths, so that the improvement has been considerable. The death-rate, both to treated and to strength, is larger in Sind than in any other division, but it has been reduced during the past year, although still the highest rate in the army.

10. The diseases which affect the soldier are much of the same kind year by year. Appendix No. 1 contains an elaborate statement of them, arranged according to the new nomenclature.

11. *Malarious Fever* as usual contributes the largest number of sick, 46.7 per cent. of the total treated, and 18 per cent. of the total mortality; the average of the past three years being 46.3 per cent. of the treated, and 21.8 per cent. of the number of deaths.

12. *Small-pox* as a destructive epidemic is not much known in the army, where the disease is kept well under control. There were 162 cases treated with one death, the total cases during the past three years being 800 with 4 deaths. The disease for some time past has been rarely altogether absent from the neighbourhood of some one or more of our cantonments, amongst the civil population.

13. *Cholera* has been entirely absent during the year under report.

14. *Syphilis*.—There have been 492 cases treated, 15 less than in 1872, with one death; the average of the last three years being 514 cases and $1\frac{2}{3}$ deaths.

15. *Gonorrhœa*.—376 cases were treated.

16. *Diarrhœa* and *Dysentery* have been less prevalent than in the previous year, whilst diseases of the lungs have been more numerous.

17. Whilst studying the various reports and returns of Native Troops for 1873, the points principally deserving attention appeared to me to be the following:—

18. In this, it will, I believe, be admitted, sepoy are generally wanting, and this is, perhaps, in part due to the early age at which they are enlisted. Ill-fed boys are taken from their native villages, who are quite unfitted for the army, and who are never likely to possess either the mental or physical qualities requisite for military service.

19. Hammond says, such men only should be chosen as are fit to undergo the hardships incident to a campaign. Recruits should be vigorous and well made; they should, in addition, be of that age at which they have acquired all their strength. The growing age is not that at which the best soldiers are formed.

20. Sir George Ballingall writes, by enlisting boys before their growth is completed, and their constitutions formed, it is quite impossible to foresee whether they will ever obtain those physical powers necessary to capacitate them for the duties of a soldier.

21. Statistics showing the number and ages of recruits enlisted and of the same and of sepoy discharged yearly, with their periods of service, would afford valuable information on these points.

22. I am of opinion that greater care in the selection of men for the ranks, as suggested by Surgeon-Major Murray, would result in lesser numbers in hospital, and fewer discharges, and save many gratuities and pensions to Government.

23. Any system, however good it may be, must be at fault if it tends to lead to malingering, which, I think, the present system of pensioning does, and of which every regimental Medical Officer has but too ample proof in the full wards for some weeks prior to the assembling of the Invaliding Committees.

24. To prepare for these, there is, first, semistarvation in the lines, followed by the invariable rheumatic pains in the loins and limbs. Would it not tend to greater efficiency, and at least offer no inducement to malingering, were the system, advocated by Surgeons-Major Mills and Sexton, of shorter terms of enlistment and pension adopted? Commanding Officers would be able to get rid of inefficient men and malingerers, retaining the well-behaved and efficient. It is very common to meet with sepoy who are too old to render effective service. It would be true economy for the State to get rid of such men who do but little beyond helping to fill the roll of sick.

25. Many sepoy are admitted into hospital with ailments, the result of insufficient food, or of food of bad quality. It would be well could some means be adopted to compel the sepoy, who is known to be underfeeding himself merely for the sake of hoarding his money, to purchase and make use of a proper quantity of food of good quality. Great care is taken both as to quantity and quality of the food of the European soldier, and the same is bestowed upon the diet of the inmates of our asylums and jails, and why should not this be carried out for sepoy?

26. I believe the sepoy would be improved morally as well as physically were he, in place of remaining idle or asleep in his lines the greater part of the day, to be employed in the improvement of the cantonment or in some useful work. There is a great want of occupation for soldiers in this country, which might be remedied with advantage to themselves and to the State.

27. One can scarcely imagine a greater difference than that which exists between the loose dress of the sepoy when off duty and the tight-fitting uniform, so utterly unsuited to him.

A sepoy would be much more at his ease were he clad in loose pyjamas, or, in the Hindu, some substitute for these, with loose coat, cut somewhat after the Native fashion, and the useful native head-dress, such as I remember worn in the Beluch regiments, and might, I believe, be made to look as soldier-like, if not more so, than he does in the present style of uniform.

28. The number of cases admitted into hospital from so-called "shoe-bites" point to the necessity of substituting the Native sandal for the hard and always ill-fitting boot of the English fashion. This has been strongly brought to notice by Dr. Sexton, in medical charge of the 8th Regiment. Might not this change be carried out, not only with advantage to the sepoy and in regard to his greater efficiency, but also with a saving to the State? The Medical Officer of the 1st Beluch Regiment calls attention to the number of men admitted with abrasions caused by wearing gaiters. If these render men unfit for duty, how much more must the hard and ill-made boot do so?

29. To any Medical Officer fond of his profession there must almost always be a want of sufficient work in the hospital of a Native regiment to interest him, and to enable him to keep up his professional knowledge. The establishment of station hospitals is very desirable. I believe the work in one hospital of this kind could be done with equal efficiency and greater economy than under the present system, which allows a separate hospital for each regiment; and as, in stations where two corps are located, one Medical Officer would be able to accomplish the hospital work, the other might be usefully employed in attending to sanitation, the analysis of water, and any other subject connected therewith.

30. Sepoys should be encouraged to bring their women and children to hospital when sick, and with this view I would recommend that a Native female nurse be attached to each. These might be instructed by the Medical Officers in the art of nursing and attending the sick, in which they could be made very useful. In time possibly some knowledge of midwifery might also be imparted to them.

31. These have been carefully attended to, and carried out with success. Medical Officers are specially enjoined at all times to bestow great attention to the subject.

32. Generally of good quality and sufficient in quantity, but a scarcity is apprehended at Mhow from deficient rain-fall.

33. I am glad to be able to report the past year has been free from these. Some few cases of small-pox have occurred in regiments (as set forth in para. 12 *ante*). The cases amongst the camp followers have been all of a mild character, and chiefly confined to children. At Nasirabad there was a rather serious outbreak in the bazaar; but as dispensaries are about to be, if they have not been, established there both by Government and the Mission, it is to be hoped this will prove the last of the kind.

34. Generally the trench has been adopted and with success, but no one system can be adapted to every locality, and at all seasons, as is evinced by the report from Mhow. Medical Officers, with the concurrence of their Commanding Officers, should

adopt that most suited to the time and place. The want of a proper system at Jacobabad is most unsatisfactory. There the Medical Officers report that no vessels are used, and the soil consequently is impregnated with filth. In the 3rd Regiment Sind Horse the latrines have cess-pits (about to be removed), saturating the surrounding ground. In many instances it is feared the well water becomes contaminated from the soakage.

35. So far as regards the health of the sepoys, we have undoubted proof of the benefit of change from the monotony of cantonment life. During a march men rarely fall sick, and I think there can be no doubt the Camp of Exercise at Chinchwad contributed in a marked degree to improve the health and general physique of the men engaged in it. The Medical Officer of the 26th Regiment N. I. reports a considerable improvement in the general health of the men of that corps as the result of their having taken part in the manœuvres, and the Deputy Surgeon General in Sind points out a marked improvement in the health of the men of the 3rd Regiment Sind Horse, consequent on their marching out.

36. It would appear to be highly desirable that regiments, instead of being allowed to remain in cantonments during the whole of the cold season, should be camped out in suitable localities for short periods for drill and other exercises, and while in cantonment should have marching as well as other parades. In all camps of exercise various methods of carrying sick and wounded should be practised by the men of the band and others attached to the hospital, under the immediate superintendence of the Medical Officers, who may have in time of war to improvise various methods adapted to each case, where dhulies are neither suitable nor available.

37. Though Surgeon Major Style reports a diminution of disease since their establishment, especially amongst Europeans, and the Medical Officer of the 1st Beluch the same regarding the sepoys of this regiment, yet if the general regimental returns are to be taken as the true criterion of success, I fear we cannot look upon them altogether as satisfactory. At Kirkee the disease rose from 13.7 to 26 per cent., but is said to have been contracted at other stations. This probably is due partly to the limiting the Act to cantonments. Soldiers will wander beyond limits, and it is sometimes difficult to ascertain where and when the disease was contracted. At one station all the women who were apprehended were found to be diseased; at another those accused by the soldiers of having infected them, were found to be free from disease. In the bazaars clandestine prostitution is, no doubt, extensively practised, and is so difficult of detection that only great vigilance on the part of the detective police can succeed. Prostitution being a recognized calling in the East, the allotment of particular localities for residence of persons practising it is undesirable, being likely to encourage attempts to evade the Act and clandestine prostitution also, as noted by Surgeon Major McDowall. The imposition of fines and the granting certificates should cease in my opinion, our object being to show these women that, in all we do, we are acting for their benefit, as well as for the protection of our soldiers, and that the wish is to induce voluntary attendance for examination.

I conclude this report by an enumeration of the figured statements accompanying it:—

1. A general statement of sickness and mortality arranged by divisions.
2. A summary of the statistics of the year 1873 compared with the three preceding years.

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Appendix 1.

Classification of diseases according to the new nomenclature, comparing 1873 with 1872. The "Grand Totals" give a comparison of three years.

Appendix 2.

The health of the troops at the various stations, comparing 1873 with 1872.

Appendix 3.

An abstract comparative statement, showing the statistics of divisions.

I have the honour to be,

Sir,

Your most obedient Servant,

W. THOM,

Surgeon General, Indian Medical Department.

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The Regiments are placed as they stood in the Army List on the 1st July 1873.

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A SKETCH

OF THE

MEDICAL HISTORY OF THE NATIVE ARMY OF BOMBAY

FOR THE

YEAR 1873.

[The Regiments are placed as they stood in the Army List on the 1st July 1873.]

PRESIDENCY DIVISION, ADEN, AND BOMBAY MARINE.

Average strength present during the year, Infantry.....	3,358
Average daily sick per cent. to the average strength.....	4.16
Ratio of mortality per cent. to the average strength.....	0.83

H. M.'s 21st Regiment N. I.

BOMBAY.—In Medical Charge—Surgeon-Major J. MILLS; Strength 588.

The amount of sickness in the regiment has been somewhat less than in 1872, the number treated having been 473 from an average strength of 588 (or 80.4 per cent.) against 502 from a strength of 563 (or 89.1 per cent.), but the daily average has been rather higher, being 20.66 against 19.

2. The deaths from disease have been only 2 or 0.34 per cent. of strength and 0.42 of the treated; but one other death occurred, a gun-shot wound in the chest (suicidal), which raises the percentage to 0.51 and 0.63 respectively. In 1872 they were 0.53 and 0.60.

3. Of the 473 treated, 15 were remaining in hospital on 31st December 1872, and 458 were admitted. 422 were discharged to duty, 27 were sent on sick certificate or otherwise discharged, 3 died, and 21 remained under treatment.

4. The prevailing diseases have been—ague 172 admissions, rheumatism 22, bronchitis 21, dysentery 19, diarrhoea 12, scurvy 8, contusions and sprains 35, boils 20.

5. Of this disease, 172 cases have been admitted, or 37.5 per cent. of the whole, a larger proportion than in 1872, when they were 30.4 per cent. but less than in 1871, when they were 42.5. The disease has been for the most part of a mild character, without complications, and speedily yielding to treatment; occasionally more obstinate cases have occurred, defying for a time all modes of treatment, and apparently at length yielding to time rather than to medicine. Subcutaneous injections of quinine have been used much more frequently than in 1872, and subsequent ulceration at the seat of puncture has but seldom occurred,—a fact which is, perhaps, to be attributed to the use of acetic acid as a solvent for the quinine instead of sulphuric acid. I mention this, because in my report for the last year I supported the opinion of Surgeon-Major Gilbert, expressed in his report on the regiment for 1871, that this tendency to the production of ulcers was a decided objection to the use of injections, and it would be unfortunate that any needless prejudice should be felt against a mode of treatment which is undoubtedly most useful in many cases. Beberine has not been used, as I have but little faith in its anti-periodic qualities. Quinine, both in large and small doses, the former given both before the paroxysm and in the sweating stage, has of course been the chief medicine used. Liquor potassæ arsenitis has occasionally been useful, whether from any true anti-periodic powers or simply from its alterative action seems doubtful; besides these medicines

ordinarily employed in the treatment of ague, the liquor iodi, as recommended by Professor Willebrand of Helsingfors, has been freely used, but I cannot report any marked success from it. Mild cases have recovered under it, but they would probably have done equally well if left to the "*vis medicatrix naturæ*", and the property claimed for it of preventing relapses has not been noticed.

6. In 16 cases there has been recurrence of the disease: one man has suffered from seven attacks during the year, one from four, five from three, and nine from two.
- Recurrence of Fever.

7. One man died in January who was admitted for fever, and the death is entered under that disease; but the real cause, as found on autopsy, was disease of the heart and lungs.

8. Rheumatism has not been nearly so prevalent as in 1872, there having been only 22 admissions against 35. The most noticeable point under this head is the obstinate character that the disease has shown in several young Mahomedan recruits who came two years ago from Hindustan. It has generally affected the lower extremities, and though not exhibiting the ordinary symptoms of general rheumatism, the general health has been seriously affected at the same time that the local affection has been most persistent. In most of these cases change of air has been necessary when all other means had been tried without success.
- Rheumatism.

9. 21 cases of bronchitis have been admitted, chiefly in elderly enfeebled men in whom it had become chronic, recurring after any exposure or severe exercise. It is a frequent cause of invaliding; while difficulty of breathing is, next to rheumatism, the affection most commonly feigned by men who wish to get off duty, or to establish a claim to appear before the Invaliding Committee.
- Bronchitis.

10. 19 cases of dysentery and 12 of diarrhoea were admitted: those of the former were considerably in excess of 1872; those of the latter were less; neither presented any points of special interest.
- Dysentery and Diarrhoea.

11. Only 8 cases of scurvy were admitted into hospital against 17 in 1872. In the month of January the whole regiment was submitted to a strict inspection for this disease. No cases sufficiently severe to require treatment in hospital were found, but 18 were selected, who attended as out-patients while continuing to do their duty. The scorbutic taint has not appeared to exert as much influence on the course of other diseases as I believed it to do in 1872.
- Scurvy.

12. As usual, contusions and sprains form a large item in the admissions, embracing, as the former class does, shoe-bite, so common among sepoys.
- Contusions and Sprains.

13. Boils were less numerous than usual, only 20 having been admitted against 36 in 1872. There have been but few of the axillary boils that I have hitherto found so troublesome amongst sepoys.
- Boils.

14. Ulcers are particularized, not on account of a large number of admissions, but in consequence of one somewhat remarkable case. A man was admitted for what appeared to be an ordinary indolent ulcer just above the left knee; it seemed at first to be healing favourably, but after a few days tetanus supervened and the man died. He stated that the ulcer was caused by the bite of a musk rat, which he had received some days before. The Natives believe the bite of this animal to be very dangerous.
- Ulcers.

15. There were only six admissions for guinea-worm, of which two were re-admissions. There is no reason to believe that any of these cases were originated in Bombay.
- Guinea-worm.

16. Six cases of leprosy were admitted into hospital. The modes of treatment adopted were—chalmogra oil and carbolic acid given internally, cashew-nut oil externally, and fumigation with carbolic acid as recommended by Deputy Surgeon General W. Johnstone in Madras. Of these the cashew-nut oil alone appeared to have any marked effect, and it does seem to have
- Leprosy.

considerable power in reducing the tubercular deposit, and also some in restoring sensibility in the anæsthetic patches.

Cholera. 17. There has been no case of cholera in the regiment, either among sepoys, families or followers; the last case that occurred was in 1865.

Small-pox. 18. One child was treated in the Esplanade Pendalls in the month of March, and recovered.

Deaths. 19. Three deaths occurred during the year, all of which have been noticed in detail in paras. 2, 7 and 14.

20. Has been carefully carried on throughout the year, except during the height of the rainy season. All children born in the Lines, or brought from their native country without having been previously vaccinated, have been primarily operated on, and all others as well as all recruits, whether bearing marks of vaccination or small-pox, have been revaccinated with the following result:—

	Successful.	Unsuccessful.	Total.
Primary vaccinations.....	106	24	130
Do. do. of followers.....	3	...	3
Revaccinations	24	86	110
Total...	133	110	243

The lymph, which was renewed when required from the Town Vaccinator, was generally good.

21. From the annexed table it will be seen that the health of the regiment, as shown by the admissions and deaths, has been much above the average of the last 10 years.

22. During the year, 21 men were sent on sick certificate. Of these one is known to have died; 11, on return from leave, were brought before the Annual Invaliding Committee and passed for pension.

Invaliding. 23. 47 men were invalided. Of these, 27 were hospital cases the remainder were brought forward by the Commandant on account of old age and debility.

Rain-fall. 24. The rain-fall during the year was 86 inches 16 cents, and the number of days on which rain fell was 108, both being considerably above the average.

25. One great change has been made in the Lines of the Battalion during the year under review: the whole system of house drainage has been remodelled. Formerly the sewage water from each hut was conveyed into a tub sunk below the surface and covered over so as to be out of sight. These were believed to form sources of deleterious exhalation. They have been entirely removed, and in lieu of them a complete system of surface drains of cut stone with cemented joints has been laid down. In every hut a small sink of cut stone has been constructed for bathing purposes, and these are put in connexion with the drains outside. Thus the inside of the hut may be kept dry, while saturation of the soil by sewage water is effectually prevented, all defects of cleanliness at once become apparent, and the general surface drainage of the Lines during the rainy season is greatly improved.

26. The other circumstances affecting the sanitary condition of the Lines have been so fully reported on by Surgeon-Major Gilbert and myself in 1871 and 1872 that there is nothing left for me to add now, except that the nuisance caused by the Sonapore drain remains unabated, and that, in spite of constant representations on the subject, no steps have yet been taken towards its removal.

Water-supply

27. From the Vehar Lake for drinking, and from wells for washing.

Alterations and additions to the Hospital.

28. The bath-room and covered way to latrines, mentioned in last year's report, have been completed, and a cloth ceiling has replaced in the dispensary the old mat ceiling which was a constant source of dirt and untidiness.

Disinfectants.

29. The reduced scale of disinfectants introduced for trial last year, viz. 40 lbs. McDougall's powder and 40 lbs. carbolic acid for a Native Regiment, has been in use during the greater part of the year. As, in consequence of the regimental hospital being used also for lascars of the Ordnance and Gun Carriage Departments and details, the quantity drawn is double the above scale, it has been found sufficient. The use of the liquid carbolic acid seems to be more economical than, and quite as effective as, the powder.

30. While the general health of the regiment, shown by the admissions and deaths, would appear to be good, I am unable to give a satisfactory account of the general physical condition of the men; for, although 47 men have been invalided within the last three months, there are nearly double that number remaining, who, if the regiment were ordered on active service, would have to be left behind as unfit. This is shown by constant falling out on parade on account of giddiness, shortness of breath, and weakness in the loins, arms, and legs, the two latter conditions being constantly pleaded as a reason for coming into hospital. One of the chief causes of this state of things is the tendency of the Purwarees, who form by far the larger portion of the regiment, to live on very bad food, consisting, as their diet does, of much stale fish, very little fresh vegetables, and hardly any meat. Then many of these men spend, what they save by eating such bad and cheap food, in drink, which is itself of a very deleterious quality; but beyond all other causes is, I believe, the present system of pensioning. The sepoy enlists for life; but, if he is invalided by a Medical Committee, after 15 years' service he becomes entitled to a pension of Rs. 4 per mensem, and what is the result of this? Why, that every man who has not got his promotion, or who is tired of, or from any cause disgusted with, military service, on entering his 15th year begins to use every means in his power to ensure his being brought before the next Invaliding Committee. The rheumatic affections, the pains in loins and legs, the difficulty of breathing become more frequent; and getting a blister on the chest or side, or cupping glasses on the loins, are greatly desired objects, as forming certificates for exhibition to the Committee. As it is only through the Invaliding Committee that men, however useless, can be got rid of, it becomes the medium for removing men, not for physical disability, but for intellectual deficiency; and the Commanding Officer and Adjutant have to look to its good offices to relieve them from men of whom they can make nothing whatever in drill or on parade, but who may have hardly ever been in hospital, and who show no physical disability. It may hardly seem to be the proper place, in the Annual Report on the health of the regiment, for offering any suggestions for alteration in the pension system; but I have felt so strongly on the subject since I have had medical charge of Native Troops that I cannot help expressing my opinions, coinciding, as I believe they do, with those of most regimental Medical Officers, and as I know they do with those of many Commanding Officers and others whose experience far exceeds my own. I believe that the present system tends to demoralize the men themselves, that it throws the greatest obstacle in the way of getting rid of bad or useless men, and that it cannot but re-act on the Medical Officer by engendering suspicion which may in some cases lead to hardship to really good men. I am convinced that the condition of the Native Army would be greatly improved if a much smaller pension might be taken absolutely at the expiration of 10 or 12 years' service, with the option of serving for further periods of 5 years with increasing pensions, with the consent of the Commanding Officer, and a certificate of physical fitness from either the Medical Officer of the regiment or a Medical Committee. In this way the worthless men would be got rid of, while the good men would, I feel assured, serve on with the hopes of promotion and the certainty of higher pension.

31. I have omitted to mention how much, since the introduction of the new musketry drill, weakness of vision has been pleaded as disability; but fortunately the ophthalmoscope here comes to the aid of the Medical Officer, and I take this opportunity of acknowledging the great assistance I have received from the Ophthalmic Surgeon, whose skill and the resources of whose establishment I have freely availed myself of.

TABLE showing the Number of Treated, Deaths, Strength, and Daily Average of Sick in Hospital of H. M.'s 21st Regiment N. I., or Marine Battalion, during the 10 years from 1864 to 1873.

	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	Average.
Strength ...	581	625	568	569	625	658	633	55	563	588	598
Average daily sick ...	28	37	24	24	23	15	15	20	19	20	22
Treated { Cholera ...	21	13	...	...	...	...	...	...	...	...	3.4
Other diseases ...	798	938	758	755	787	515	408	465	502	473	640
Total ...	819	951	...	...	...	...	...	...	...	...	643
to Strength... { Cholera ...	3.6	2.4	...	...	...	...	...	...	...	...	6
Other diseases ...	137.2	150	133.4	132.7	125.9	78.3	64.4	80.8	89.1	80.4	107.7
Total ...	140	152.4	...	...	...	...	...	...	...	...	107.7
Deaths..... { Cholera ...	15	4	...	...	...	...	...	...	...	...	1.9
Other diseases ...	8	19	8	1	9	2	5	8	3	3	6.6
Total ...	23	23	...	...	...	...	...	...	...	...	8.6
to Strength... { Cholera ...	2.6	0.7	...	...	...	...	...	...	...	...	3.3
Other diseases ...	1.4	3.6	1.4	0.1	1.4	0.3	0.8	1.4	0.5	0.5	1.1
Total ...	4	4.3	...	...	...	...	...	...	...	...	1.4
to Treated ... { Cholera ...	71.4	30.7	...	...	...	...	...	...	...	...	56
Other diseases ...	1	2	1	6.1	1.1	0.4	1.2	1.7	0.6	0.6	97
Total ...	2.8	2.4	...	...	...	...	...	...	...	...	1.3

General Health.

The health of the detachment has been very good during the year.

7 cases of conjunctivitis occurred in the detachment in the months of March and September, the cause of the above disease being on account of the

Conjunctivitis.

men being placed on board to guard the wretched S. S. "Arabia" at Perim; their eyes were affected by the ammoniac gas produced from the putrified hides, horns, rice, linseed, &c. &c.

Cholera.

No cases of cholera occurred in the detachment during the year.

Scurvy.

There was no admission of scurvy during the year.

Water.

The supply of water was condensed, and from the Vehar Lake.

Food.

Fresh rations are always supplied while in harbour, and at sea are provided with sea rations; the rations supplied are of a good quality.

Principal Diseases.

Principal diseases have been chiefly conjunctivitis, diarrhoea, rheumatic affections, and local injuries.

Detachment H. M.'s 21st Regiment N. I.

BASSADORE, PERSIAN GULF.—In Medical Charge—Sub-Assistant Surgeon A. R. HAKEEM, L.M.; Strength 12.

During the year under report 140 patients were treated; of these 138 were fresh admissions and 2 had remained from the year 1872. Of the fresh admissions 102 were cases of

ague, 3 chronic rheumatism, 1 syphilis, 1 scurvy, 1 sciatica, 5 bronchitis, 2 dysentery, 5 diarrhoea, 2 debility, and the remaining 16 were furnished by other minor affections.

The admissions from fevers were nearly three times the number furnished by other diseases put together, and were nearly twice the cases of fevers treated in 1872. The fevers were of a quotidian type, and a few of them had two paroxysms during the 24 hours. The generality of the cases were of an asthenic nature, and required careful tending during the cold and sweating stages. Meat, lime-juice and stimulants were, as far as means allowed, issued to the patients during their illness. These fevers prevailed most during May, June, July, August, September, November and December, 90 cases being admitted within these months, while only 12 were treated during the remaining 5 months; in April there was not a single case of fever under treatment. The men of the present detachment remained free from attacks of fevers for about four weeks after their arrival at this station, but subsequently they suffered from repeated attacks of fever.

A few of the fever cases suffered from bilious derangements, with vomiting and a sensation of heat in the abdomen. In these cases a mixture, consisting of moderate doses of quinine, extract of taraxacum, and carbonate of soda in water, was administered with good effect. Then the irritability of the stomach was so great that no food could be retained on the stomach. When a large mustard poultice was ordered to the epigastric region, and while the sinapism was taking its effect, stimulants and food were given to the patients lying in a recumbent position. During the year under report a great deal of fever prevailed all over the Persian Gulf, and this will explain why admissions from fevers in 1873 were nearly double those in 1872. It is certainly in a generality of cases difficult to explain why certain diseases should prevail much more during one year than in another; but the fact is so, and it is difficult to ascertain the real cause of the change in most cases.

I have observed that, about the change of seasons (especially the summer and winter) fevers prevail most in malarious districts. This may be attributed to an unsettled state of the weather, during which men are more liable to sudden chills than when the season has become duly established.

It is satisfactory to note that there were only two cases of scurvy under treatment during the year, and that these were furnished by one and the same man of the old detachment, while not a single case was furnished by the men of the present detachment. This patient was admitted about the close of December 1872, and continued under treatment up to 15th January 1873. Under use of a generous diet and stimulant, antiscorbutic mixtures, the patient made a fair recovery and was discharged. But unfortunately he was re-admitted the same day with ague, and was discharged well in about a week. But at the end of January he was again admitted with scorbutic symptoms and a severe attack of fever, which is subsiding; the patient was found in an extremely weak and sinking condition, and he passed the following night in a delirious state. But, however, as alcoholic and saline stimulants were persevered in, no unpleasant results followed. But the patient continued in a weak state with scorbutic symptoms; and as he seemed to make no marked improvement, but, on the contrary, in addition he began to suffer from irregular rheumatic attacks, a change of climate was deemed advisable, and he was sent down to Bombay on sick certificate, as the only path to his recovery.

The two cases of debility were furnished by one and the same patient. He was a thin and sparely-built man in a weak state, and bearing a phthisical physiognomy; but there were no physical signs in the respiratory sounds to lead to such a belief. The patient often suffered from a hacking dry cough with an elongated uvula, which kept up an irritation and by reflex action the resulting harassing cough. The patient was, besides, an inveterate smoker of tobacco, and as smoking always increased his cough, he was advised to restrict himself to two or three "chillims" a day. Stimulant mixtures and cod-liver oil were administered, under which he made a fair recovery.

Since I have already given a full topographical description of the Bassadore Station in my report for the year commencing 1st April 1871 and ending 31st March 1872, as well as a description of its neighbourhood, in my report for the year 1872, I have nothing new to add on this occasion.

Details attached to 21st Regiment N. I.

BOMBAY.—In Medical Charge—Surgeon-Major J. MILLS; Strength 43.

The average strength during the year has been 43; but the numbers have been most irregularly distributed, there having been only 3 men in April and 2 in June, while there were 172 in December. One remained in hospital and 44 were admitted, making a total treated of

General Health.

45, or 100·05 per cent. of the strength. Of these, 32 were discharged to duty, 2 were sent on sick certificate, and 3 otherwise discharged, 5 died, and 3 remained in hospital on the 31st December. The greater number of the details were men sent to appear before the Annual Invaliding Committee and remaining until finally discharged; from this cause the average number in October, November, and December were 134.

2. 5 deaths occurred: 3 from dysentery—one of these was a sepoy of the 2nd Grenadier Regiment N. I. sent on sick certificate from Aden, another a man from the 10th Regiment N. I. sent sick from Mhow, and a third an unfit of the 26th Regiment N. I.; 1 from remittent fever, a man of the 11th Regiment N. I. left behind when the detachment went to the Camp of Exercise; 1 from disease of the heart, a sepoy of the 25th Regiment N. I., who was staying in Bombay on furlough.

Principal Diseases.

3. The principal diseases have been—dysentery 9, ague 7, rheumatism 6, bronchitis 5, scurvy 3.

Sick Certificate.

4. Two men were sent on sick certificate.

Lines.

5. Of the lines occupied by the Details, it need only be remarked that they are the Esplanade Pendalls, in an open, well ventilated situation.

6. In conclusion I have to notice that it would be well if every man sent from an out-station on sick certificate were furnished with a summary of his case for the guidance of the Medical Officer under whose

Summaries of Cases.

care he may fall. As sick men from all parts of the presidency pass through Bombay, I find by experience that the practice of sending such summaries appears to be the exception rather than the rule, as reported in my letter No. 50 of 9th October 1873 to the address of the Deputy Surgeon General, Indian Medical Department, P. D., Aden, Perim, and B. M.

H. M.'s 19th Regiment N. I.

BOMBAY.—In Medical Charge—Surgeon-Major J. C. TRESTRAIL; Strength 650.

Having taken charge of the regiment on the 27th March 1873 I can only give a partial report of it.

The average strength since the 1st of January has been 644, admissions 765; of these

684 have been discharged,

18 have been sent away on sick certificate,

28 have been invalided.

Daily average of sick 30·7, being an increase of the previous year of 10·1; 4 deaths have taken place amongst the men, being 2 less than the previous year; and one officer died immediately on his return from the Neilgherry Hills, where he had gone on privilege leave.

There have been 98 admissions in excess of the previous year, whilst last year they were 206 less than the previous one, thus proving the very unhealthy state of the regiment.

The admissions from fever have been 248; of these none died. Many of them were of a low continued type, for which I gave quinine, ipecacuanha, and blue pill, which is a most efficacious remedy for the intermittent type. I have in nearly every instance used the hypodermic injection of quinine, which I find a most efficacious way of administering it, besides its being much more economical, 2½ grains being the quantity used. It has been given in 85 cases; all were cured—with the first injection 40, with the second 20, third 25. In not a single instance has it caused ulceration of the part, and in only two or three has there been any pain or swelling after. Some few cases have had 10 grains of quinine, but this has only been in very obstinate cases. Many of the men have been very much reduced, and their recovery was very slow, which was caused from the very debilitated state in which they were in on admission, arising from the excessively unhealthy site of the Lines, as also from the stench which permeate the atmosphere around the hospital.

No less than 14 cases have been admitted from brow ague; these have been all successfully treated with hypodermic injections of quinine.

Small-pox first showed itself in March, and continued to the end of May. Two men were admitted, two women and eight children; one child only died in which the confluent form occurred.

It was not found necessary to remove the men from their Lines, the patients being sent to the Pendalls on the Esplanade.

There have been 11 cases of mumps, to which I have applied the extract of belladonna with the most beneficial results.

Chronic rheumatism has amounted to 42; primary syphilis 16; secondary, 1 case, for which I have used calomel fumigations, which I believe to be the only remedy to be relied on,—an opinion in which T. W. Paget concurs.

20 cases have been admitted from scurvy: some have proved very obstinate, but all yielded to treatment.

Only 3 cases have been admitted from conjunctivitis.

52 cases have been admitted from bronchitis, being an excess of 39 over the previous year; 2 cases were admitted from pneumonia, both recovered by giving ammonia and stimulants.

Only one case of phthisis; he was sent to his country, but returned with a large cavity in his lung, for which he was invalided.

25 cases from dysentery; all treated with ipecacuanha and opium, and all recovered.

20 cases from diarrhoea: my usual treatment is to give a purge, followed by half-drachm doses of dilute sulphuric acid and opium, which generally cures; if not, I give bismuth and bicarbonate of soda and opium, and at times gallic acid. There has been nothing peculiar about the symptoms as reported on last year, and all have recovered or are doing so.

18 cases from gonorrhoea: some proved very obstinate in the inflammatory stage.

26 cases from abscess; all slight cases.

11 cases from Guinea-worm.

55 cases from contusions and shoe-bites. Of the latter there has been a greater number than I have ever seen, caused by the badly fitting shoes, the hardness of the leather and number of parades; a number of men have also been admitted from having their feet cut and bruised in the lines, caused from the unevenness of the ground.

191 cases from psoriasis, 11 of which were only admitted into hospital. At first I tried acid acetic fort., which did not prove very efficacious; after this a strong solution of carbolic acid, four applications of which, as a rule, cured the disease, and ointment composed of sulphur, acid sulphuric, creasote and blue ointment was equally good. 25 cases of itch have been treated with carbolic acid, four to six applications of which cure.

The regiment has been very unhealthy since April, caused by the polluted state of the atmosphere in the Lines; as a proof of which the admissions to strength have been 1187, whereas in the 11th Regiment, where the Lines are dry and situated on the Esplanade, the admissions to strength were 345.

Sanitary Report of the Senior Medical Officer on the Health of the Native Troops in the Bombay Garrison during the Year 1873.

The Native Troops in Garrison have been as follows:—

Her M.'s 19th Regiment	N. I., until November 23rd;	average strength	645
" 20th "	N. I. from November 20th;	" "	523
" 21st "	N. I. or M. B.	" "	588
Detachment H. M.'s 11th Regt.	N. I., until Nov. 22nd;	" "	172
" 4th Regt. Rifles	from Dec. 24th;	" "	159
Total average Strength 1,374.			

The health of the troops generally has been slightly better than in 1872. The number treated has been 1,370 from a strength of 1,374, or 100 per cent. The deaths have been 9, or 0.66 per cent. both to treated and strength, against 0.74 in 1872. The health of the 19th

Regiment has been much worse than in 1872, the number treated having been 780 in 10 months (or at the rate of 933 in the year) from a strength of 645 against 702 from a strength

of 630, whilst the daily average has risen from 20·6 to 30·7. On the other hand the health of the detachment of H. M.'s 11th Regt. N. I. has very much improved, the treated having been 60 in 10 months, or at the rate of 70 in the year from a strength of 170, against 143 from a strength of 158 in 1872, while the daily average has fallen from 5·9 to 2·7. The health of the 21st Regiment has also slightly improved, the treated having been 473 from a strength of 588 against 502 from a strength of 563 in 1872.

2. I am unable to account for the great increase of sickness in the 19th Regiment, there having been no change in their circumstances during the year under review, and no special cause being assigned by the regimental Surgeon: but for the marked improvement in the health of the detachment of the 11th Regiment, sufficient explanation is easily found. Up to July 1873 they were placed in the most unfavourable condition, occupying the lines between those of the 19th Regiment and the sweepers' lines, the state of which has so often been reported on. There their health was so bad that, in the month stated, they were removed into the Esplanade Pendalls, after which there was a steady improvement in their condition.

Cholera. 3. There has been no cholera among the Native Troops during 1873.

4. Two cases of small-pox occurred in the 19th Regiment in the month of March, both of which recovered. 2 women and 8 children were also attacked, and one of the latter died. The disease has not appeared amongst the other regiments or detachments, with the exception of one child in the 21st Regiment, who recovered; all were treated in the Pendalls.

5. In the early part of the year scurvy was prevalent in some degree among the troops: 34 cases were treated in hospital, and one man died in the 19th Regiment. The whole of the 21st Regiment was examined for the disease in January, but there were not many cases found; none were admitted into hospital; 18 were treated as out-patients, coming daily for medicines, but continuing to do their duty.

6. The principal diseases have been, as usual in Bombay, ague, rheumatism, diarrhoea, and dysentery. Of the former 451 cases have occurred, or nearly one-third of the whole number treated, of rheumatism 72 cases, dysentery 48, and diarrhoea 36.

7. Nine deaths have occurred from the following causes:—from fever 2, pneumonia 2, scurvy 1, jaundice 1, tetanus 1, oedema of glottis 1, gunshot (suicidal) 1. One other death occurred from fever in the case of one of the sick left behind by the detachment of the 11th Regiment on its departure for the camp of exercise, but he did not form a part of the strength of the Garrison.

8. Vaccination has been regularly carried on both among the children and recruits. All children born in the Lines, or brought from their native country without having been previously vaccinated, have been primarily operated on; while all others, and all recruits, whether bearing marks of vaccination or small-pox, have been revaccinated. The result has been—

	Total.	Successful.
Primary vaccinations ...	207	170
Revaccinations.....	402	131

9. No change has been made in the Lines of the 19th Regiment (now occupied by the 20th Regiment N. I.). In the Lines of the 21st Regiment there has been a complete change in the system of house drainage.

The plans recommended by the committee that sat in November 1872 have been carried out. The sunken tubs, which formerly received the drainage from each house, and which were so unfavourably reported on in the able report of Surgeon-Major Seward in September 1872, have been removed, and surface drains of cut stone with cemented joints have been substituted, whereby saturation of the soil by sewage water is entirely prevented, all defects of cleanliness at once become apparent, and the general surface drainage of the Lines during the rainy season is greatly improved.

10. The water-supply is, as stated in previous reports, good in quantity and quality.

Water-supply.

11. The condition of the lines of both regiments, as concerns the probable production of malaria, has been so frequently and fully reported on by Surgeon-Major Gilbert and myself, that it seems unnecessary to repeat the statements already made. I shall, therefore, only say

Causes of Malaria. that the one abominable nuisance in the neighbourhood of the Marine Lines, the Sonapore drain, remains in full force. Were I to pass it over in silence, it might be supposed that the constant representations that have been made on the subject had at last produced some effect, and that curative measures had been adopted; but such, I regret to say, is not the case.

No change or addition has been made to the hospital occupied by the 19th Regiment.

Hospitals. The necessity for new latrines and a bath-room has been urged by both the military and medical authorities, but their erection has not yet been sanctioned. In the hospital of the 21st Regiment the bath-room and covered way to the latrines, mentioned in last year's report as being in course of construction, have been completed.

Wing of H. M.'s 7th Regiment N. I.

TANNA.—In Medical Charge—Surgeon-Major H. ATKINS; Strength 275.

The average strength of the wing has been 275 sepoy, with 2 European officers.

The number of admissions have been 448, the ratio of the admissions to strength being 162.90 against 223.72 last year, caused by the non-prevalence of dengue.

The months in which there were the fewest admissions were January, February, August, and September 1873, and those in which they were most frequent were April, May, November and December 1873, caused by Guinea-worm during the months of April and May, and by ague in November and December.

The lines of the Native Infantry are about to be altered; they are all to be re-built on the same plan as before, one-half of them (those nearest to the Creek) being removed to the north of the lines, as will be seen

Regimental Lines. in the plans forwarded in my letter No. 61 of 1873. It is greatly to be regretted that, as it is settled that new lines are to be built, that disregard of the commonest principles of sanitation should have been exhibited by their being placed so as to soil the water of the wells used by the men for drinking purposes. Each sepoy's hut will be 13½ feet long, by 9 feet broad, and 6½ feet in height, thus giving 119½ feet superficial span and 745½ cubic feet for himself and family.

They appear to have no arrangements for the water to flow away from the huts after being used in bathing. The result will be that, if the floors are

General Sanitary Condition. such as will retain moisture, there will be a constant exhalation of noxious vapours highly provocative of disease, besides which it is most probable that the bathing places will be used also for the purposes of nature. Under these circumstances I consider that it is absolutely necessary to have them provided with cut drains to carry away the water after being used. Another omission I consider consists in the want of a stone cut drain running down each line, into which all the drains from the sepoy's huts should converge.

The water has been analysed since last report, and the Analyser to Government reports as follows:—“I regret that I am unable to speak in favourable

Water-supply of the Lines. terms of the quality of any of the five samples of drinking water; all five show such evidence of deleterious organic contaminations that it is impossible for me to point out one of the five as a good potable water.” I consider one great cause in the wells No. 1 and 4 being so impure is from the lines being within soakage distance of the well—in fact, a subedar's necessary is within six feet of it, if not less; the same cause affects well No. 4 used for washing; and No. 2 well will be affected in the same manner, as the new lines approach the well by 10 feet, besides which the soil is of a friable nature so that the refuse water will easily percolate into the well.

As regards the sediments found in the wells, three of them, I see, are reported as containing filaria, which I consider, if it is the cause of Guinea-worm, should always have produced it amongst the sepoy, but which from my own experience of nearly six years they have been unusually free from Guinea-worm in comparison with the jail and police till this year, when the wing came from Dharwar, and soon after it became endemic.

Statement of the Result of the Examination of 1, 2, 3 and 4 Wells' Samples of Water used by the Sepoys of H. M.'s 7th Regiment N. I. at Tanna.

Grains per Gallon.	Drinking Water.			Washing Water.
	Purwarees.	Moches.	Quarter Guard.	
	1	2	3	4
Total solids	35.28	33.32	61.60	160.44
Less on ignition	1.68	1.68	.....	14.84
Chlorine	5.46	3.97	20.76	65.20
Sulphuric acid	1.34	0.47	2.21	2.59
Silica	4.20	7.00	4.76	5.04
Lime	8.30	6.42	8.30	19.95
Magnesia... ..	3.52	3.43	4.23	17.85
Hardness total by calculation	23.44	20.05	25.45	90.98
Permanent by soap test... ..	5.25	4.55	9.45	.....
Ammonia determination (after Wanklyn) free ...	.0035	.0052	.0049	.0052
Albumenoid ... ..	.0157	.0157	.0128	.0235
Of nitrates and nitrites ... ..	.042	.063	.630	.588
Oxygen total required at 140 F. in presence of acid ... ..	.0595	.0735	.0840	.1050

Ammonia and Oxygen Determination in Milligrammes per Litre, i.e. parts per million (1,000,000)

Ammonia, free ... ..	.05	.075	.07	.075
Albumenoid ... ..	.224	.224	.183	.336
Of nitrates and nitrites... ..	.60	.90	9.0	8.4
Oxygen total required ... ..	.85	1.05	1.20	1.50

Physical characters of the clear water drawn off after standing over 24 hours —

No. 1. Odour earthy; re-action neutral; taste nil; faint green and somewhat milky.

No. 2. Odour nil; re-action neutral; taste nil; colourless and clear.

No. 3. Odour nil; re-action faint; yellowish green and slightly milky.

No. 4. Odour nil; very faint; green tinge clear.

Sediments—

No. 1. Abundant, black and offensive; contains diatoms, rotifers, and filaria.

No. 2. Do. black diatoms, rotifers abundant.

No. 3. Do. do. diatoms and filaria.

No. 4. Do. do. do. do.

The regimental latrines were reported on so fully in 1871 that there is no need of my referring to them again. The floors were repaired last year and mentioned in last year's report; no alterations have taken place this year.

Regimental Line Latrines.

The hospital is in good repair, and can accommodate 16 patients in the building and 12 in the verandahs, allowing 1,242 cubic feet for each patient.

Hospital Building. I think it would be advisable to enlarge it so as to hold at least 8 per cent. of sick.

The 1st and 2nd class subordinates' houses have been rebuilt during the last year.

Pendalls are required for the doolyvallas, who are obliged to live in the town.

A well is greatly wanted for the use of the regimental hospital, as well as for the police and civil hospital, to be so placed as to be equally useful to all.

Hospital Water-supply. At present the water is supplied from wells in the police lines, which are reported on by the Chemical Analyser to Government in the same terms as those of the regimental lines, viz. "that I am unable to speak in favourable terms of any of the samples of drinking water; all show such evidence of deleterious organic contaminations that it is impossible for me to point out one as a good potable water." I am sure no greater proof of the necessity of a well for the use of the hospitals is required than the analysis below—

Analysis of the Water from the Wells used both by the Police and Military Hospitals.

Drinking Water. Grains per Gallon.	Police Lines.	
	Well No. 6.	Well No. 7.
Total solids	32.20	46.20
Less on ignition... ..	.....	.....
Chlorine	2.73	8.19
Sulphuric acid	1.53	.38
Silica	5.60	6.44
Hardness total by calculation... ..	20.44	32.48
Permanent by soap test... ..	7.00	7.35
Ammonia determination (after Wanklyn) free ... ..	.007	.0098
Albumenoid ... ..	.0196	.238
Of nitrates and nitrites... ..	.630	.735
Oxygen total required at 140 F. in presence of acid ... ..	.0560	.2240
Ammonia and oxygen determinations in milligrammes per litre, i. e. parts per million	(1,000,000)	
Ammonia, free ... ..	.11	.14
Albumenoid ... ..	.28	.34
Of nitrates and nitrites	9.0	10.5
Oxygen total required ... ..	.80	3.20

No. 6. Odour nil; re-action neutral; taste nil; faint greenish yellow.

No. 7. Odour nil; do. do. do.

Sediments—

No. 6. Abundant, black, and offensive; contains monads and rotifers.

No. 7. Small in quantity; light brown in colour; contains entomostraca.

The latrines are built on the same plan as the regimental ones, and are equally offensive, especially to the Judge and Assistant Judge, their compounds being quite close, so that McDougall's powder has to be freely used.

The prevailing diseases during the year have been ague and guinea-worm. As the former has been commented on in my hospital report, there is no occasion to refer to it here, beyond stating that it was most prevalent during the months of November and December, but of a very mild type with no deaths.

Prevailing diseases—Guinea-worm. The monthly number of admissions from guinea-worm is shown in the table below:—

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
3	3	12	20	32	12	5	...	1	2	1	...	91

As regards guinea-worm, as it has almost ceased since last August, only a stray case or two coming into hospital, it requires but few remarks.

In the table annexed are shown the parts affected in each admission, the summary of which is as follows:—

Arm.....	3	Thighs.....	16
Hands.....	1	Legs.....	28
Chest.....	0	Feet.....	43
Abdomen.....	0		

The death registered under guinea-worm happened as follows:—The man was admitted with guinea-worm, and whilst in hospital was seized with collapse, and died in three hours. After death a large portion of his intestines was found incarcerated and bound down at the root of the mesentery.

During the past year the rains began to fall slightly on the 29th of May, and it continued cloudy till the 15th of June, falling mildly at first till the beginning of July, when it may be said that the monsoon had thoroughly set in. During the months of July and August it was characterized by a medium fall with but few breaks, so that by the end of September the monsoon was over.

The fall of rain itself does not appear to have influenced the sickness of the Wing more than by the moisture drying up a month earlier than usual.

The following table shows the temperature and rain-fall during the year:—

1873.	Temperature.			Rain-fall.		Winds and State of the Atmosphere.
	Maximum.	Minimum.	Mean.	Inches.	Cents.	
January	86.7	61.2	73.9	.....	.....	N. and N.E.
February	89.39	64.28	76.83	.....	.....	N.E.
March	90.3	70.6	80.4	.....	.....	N.E.
April	91.5	77.0	84.2	.....	.....	S. and S.E.
May	94.1	85.1	87.7	1	21	N.N.E. and S.E.
June... ..	87.86	80.13	83.99	20	29	S.W. and S.E.
July... ..	83.22	72.76	77.99	32	26	S.E.
August	83.38	70.35	76.86	27	60	S.W. and S.E.
September	85.0	75.16	80.8	14	58	S.W.
October	90.64	71.83	81.23	.....	.....	N.E. and S.W.
November	88.03	68.73	78.83	.....	3	N.E. and S.E.
December	86.0	63.2	64.6	.....	.....	N.E. and N.
Total ... ..	...	...	...	95	97	

During the past year the 1st and 2nd class servants' houses have been rebuilt, the regimental cesspools have been filled up, and a cut stone drain has been made running from the well on the southern side of the lines to the Creek, all of which have been in accordance with Deputy Surgeon General's recommendations of last year.

The diets of the sepoys having been so fully entered into in my annual reports for 1871-72 of the 10th Regiment N. L. I., nothing is needed this year. I was in hopes that something might have been done as regards dieting the sepoys whilst in hospital, in order to prevent the inherent malingering that prevails so largely amongst the Native sepoys.

In conclusion, I would strongly urge the necessity of a well being built in the hospital compound, so as to be equally useful for the police and civil hospitals.

2nd.—To have the sepoys' huts quite free from the drinking wells, so as to prevent their being contaminated by bathing water, urine, &c., soaking through the soil and percolating into the wells.

3rd.—To have the bathing rooms floored with an imperishable material, and cut stone drains leading from each house to a main drain made of cut stone running between each line of houses.

H. M.'s 26th Regiment N. I.

SURAT.—In Medical Charge—Surgeon W. McCONAGY; Strength 653.

The average strength of the regiment during the past year has been 653.

Number of admissions from all causes	1,214
Number remaining on 1st January 1873.....	25
Daily average number of sick	27.3
Percentage treated to strength	189.7
Deaths to treated	0.5

The regiment was stationed at Surat during the past year until the 23rd November, when it proceeded to the Camp of Exercise at Chinchwad, being relieved by a detachment of the 9th Regiment N. I. from Ahmedabad. The general health of the regiment has considerably improved during the year, and though the daily average number of sick is still high—27.3, yet it will compare most favourably with the previous year, when it was 40.6. The prevailing diseases have been ague, rheumatism, boils, conjunctivitis, bowel complaints and bronchitis.

750 cases of ague were admitted, showing an increase of two on the previous year. Although the number of admissions may seem large, yet, when the re-admissions are taken into consideration, it will be seen that the number of sepoys under treatment for this disease amounted only to 373, the remaining 377 being made up by re-admissions, as shown in the following table:—

Admitted once	176	...	Total admissions	176
" twice	101	...	" "	202
" three times	54	...	" "	162
" four "	26	...	" "	104
" five "	7	...	" "	35
" six "	1	...	" "	6
" seven "	2	...	" "	14
" eight "	4	...	" "	32
" nine "	1	...	" "	9
" ten "	1	...	" "	10

Number of men under treatment 373. Number of admissions 750.

The disease was generally of a mild type, and as a rule yielded readily to treatment; however some of the cases were of a more severe character, and in some instances associated with troublesome diarrhoea, which greatly exhausted the patients. The treatment usually adopted was the administration of quinine and liquor arsenicalis in the ordinary way. The hypodermic injection of quinine was also frequently used, and with much greater success than in the previous year, the site of the injection being seldom followed by sloughing.

The admissions from rheumatism, with the exception of one case, were of a chronic nature, and generally in old sepoys, a number of whom have since been invalided.

58 cases were admitted with boils; some of these were of a severe nature and required a long course of treatment before they entirely disappeared. This disease is probably in a great measure to be attributed to the brackish character of the water acting in an injurious manner on persons already much debilitated from repeated attacks of ague.

Conjunctivitis furnished 33 admissions; they were all of a mild character, and successfully treated by astringent lotions, blisters, and leeching. 26 cases of diarrhoea were under treatment; some of these were of an obstinate nature, and necessitated the patients remaining in hospital for several days. This disease, besides, formed a troublesome complication in several of the cases of ague, and greatly retarded their recovery.

Dysentery gave 17 admissions; one of these proved fatal. The patient was a tall, thin, delicate man, had previously suffered severely from ague complicated with splenitis, and had not sufficiently recovered from its debilitating effects to enable him to withstand any severe illness. He became very quickly exhausted, and died on the third day after admission.

36 cases of bronchitis were admitted; they were generally of a chronic character, and require no special remarks.

Admissions from syphilis have been steadily on the increase during the past year; some of them were of a severe character and required lengthened treatment. 27 were admitted with this disease, showing an increase of 22 on the previous year.

11 cases of scurvy were under treatment during the year; two of these died; one case proved fatal on the 19th of January. The patient was admitted with scurvy on the 13th December 1872, and had previously been frequently under treatment with chronic rheumatism. The other fatal case occurred in a man of broken-down constitution, aged 36 years, who had been admitted into hospital on the 31st July with ague, but on the 26th August following, as symptoms of scurvy became evident, he was re-admitted with that disease. He was treated with lime-juice, fresh vegetables, stimulants, and nourishing diet; but notwithstanding he became gradually emaciated, and died from exhaustion complicated with dyspnoea on the 30th September.

In January, February and March three cases of small-pox were under treatment: one case occurred in a sepoy who had previously had an attack of small-pox, the marks of which were evident on his face and body when he presented himself at the hospital. For the first few days he was treated for ague; for, though he was suffering from strong fever complicated with severe

pains in the back, the nature of the disease was obscure (owing to his having suffered from small-pox previously), until a papular eruption slightly elevated above the skin and hard to the touch made its appearance on his forehead and face. The disease ran through its course without being modified to any extent by the former attack. The recovery of the patient was retarded by the disease becoming complicated with bronchitis, which greatly reduced his strength.

The remaining two cases were followers; one of these died on the third day after removal from the Lines. When the disease made its appearance the greatest care was taken to segregate the patients. The cases were removed about three-quarters of a mile from Camp and treated in grass huts prepared for their reception. The houses in which the disease made its appearance were carefully disinfected with carbolic acid and sulphur and lime-washed before being re-occupied, and all articles of clothing, &c., belonging to the patients and those attending on them were burned before they were permitted to return to the Lines.

7 fatal cases occurred during the year, viz. two from scurvy, one from asthma complicated with scurvy. The patient was a weak, debilitated man, and had frequently been under treatment in hospital. He had been sent before the general Invaliding Committee in the previous year, but not passed. A fourth case occurred from pneumonia: the patient was a strong, well-built man who had been in the enjoyment of good health previously. When admitted on the 19th May the disease was confined to the left side; but on the night of the 24th the right side also became implicated, and from this time the patient rapidly sank and died from exhaustion and suffocation on the morning of the 26th. During the course of the disease the temperature on three or four occasions rose above 104° , and the respirations varied from 50 to 60 in the minute. One death occurred from each of the following diseases:—paralysis, dysentery, and remittent fever. The remaining diseases were generally of a slight character, and require no particular remarks.

No cases of cholera occurred in Camp during the year. In last year's report it was suggested that either a temporary or permanent building with raised foundation should be erected for the reception of persons suffering from infectious diseases, but up to the present time this has not been carried out.

29 were invalided, and 96 recruits joined the regiment during the year.

The Lines and subsidiary buildings are in a good state of repair, and the huts, as a rule, afford ample accommodation for the inmates. The general sanitary condition of the Lines and regimental latrines is good: all refuse matter in the Cantonment is collected every morning and evening, and deposited at a short distance in the rear of latrines. The regimental hospital is situated in a good position to the western side of Lines, it is in good repair, and affords sufficient accommodation for 35 or 36 patients, exclusive of the verandahs; these are large and roomy, and, if necessary, a number of patients can comfortably be located in them. The out-buildings are also in good repair, but a cook-room is much required for the patients. The latrine is in a good sanitary state. During the past year the dry-earth system has been adopted: the chief difficulty experienced in the working of this system is owing to the nature of the earth, which becomes very sticky if any water gets mixed with it, and generally adheres to the sides of the pans, so that in most instances it requires to be washed off; however this can be obviated to a great extent by mixing the earth with an equal proportion of sand.

The rain-fall during the year has been about 56 inches; this, though less than the preceding year, is considerably in excess of the average rain-fall. During the month of May the thermometer registered highest; on several occasions it was over 100° at 2 P.M. in the hospital verandah.

The greatest temperature was obtained on the 27th May, when the thermometer registered 103° . The lowest temperature was on January the 8th, when 49° were registered at 6 A.M.

Water is obtained from wells in Camp in sufficient quantity, but of an inferior quality and brackish; however good water is obtained at some distance outside Camp.

Vaccination has been regularly and successfully performed during the year; revaccination has also been carefully attended to. All recruits joining the regiment have been re-vaccinated, but in the majority of instances unsuccessfully.

H. M.'s 2nd Grenadier Regiment N. I.

ADEN.—In Medical Charge—Surgeon J. T. WELSH; Strength 654.

For the topography, &c., of the station, reference is made to the annual report for 1872 on the 5th Regiment N. L. I., at page 17 of the "Sketch of the Medical History of the Native Army of Bombay" for that year.

Topography.

2. During the past year cook-rooms have been erected, latrines for the Native officers have been built, and a gymnasium has been started. Of these three "improvements" the last is the only one that can be considered of any benefit to the men, and few have taken advantage of it. The cook-rooms are quite unsuited for the purpose, the heat in them for about six months of the year being so intense that it is unsafe to allow the men to use them; and as for the unsightly latrines for Native officers, they simply represent an unnecessary expenditure of stone, lime, and space. The regimental latrines have neither been improved nor altered since last report, disinfectants have not been sanctioned, and the surface drains recommended by the Deputy Surgeon General for the lines have not as yet been adopted. The pendalls are never cleaned inside, the expense not being sanctioned by Government.

3. The rain-fall for the year, amounting to 3 inches 90 cents., was registered in the following months:—March 1 inch 77 cents., May 4 cents., July 4 cents., August 17 cents., September 1 inch 67 cents., November 2 cents., and December 19 cents.

4. For the first four months of the year Surgeon Plumptre was in medical charge of the regiment, and from 1st May to 9th July Surgeon Hay officiated; the former, on his departure for England, left the following remarks, dated 1st May, on record:—

At the commencement of the year the regiment was stationed at Poona, occupying the same lines it had done since their arrival in November 1870.

On the 11th of January the right wing left Poona, and on the 12th left Bombay for Aden in S. S. 'Neera', taking also the 5th Company of Sappers and Miners; and as this company from that date forms a part of the medical charge of the 2nd Grenadier Regiment, the two in this report are conveniently considered together.

The voyage to Aden occupied eight days. The ordinary regulations only were enforced to maintain the sanitary condition of the vessel; and the whole strength, consisting—all told—of 464 men, 149 women and 123 children, were landed, with only some two or three cases of ordinary sickness, and one severe case of remittent fever complicated with pneumonia. The man was a feeble delicate man, and the disease proved fatal a few days after his arrival.

An interval of about a month elapsed between the arrival of the right wing and that of the left wing, the latter landing here on the 16th of February, and bringing with them two serious cases, one of iritis and one of pneumonia. The latter for some time gave but little hope of recovery, but eventually did well, and has returned to duty. The case of iritis has been followed with loss of vision.

The months of February and March require no particular notice, only ordinary cases of illness occurring. In April, from about the 10th, the hospital began rapidly to fill with men suffering from a species of febricula, continued and intermittent. It attacked the youngest and healthiest men, lasting upon an average two to four days, and about the fifth or sixth day most of the men were able to return to duty. The treatment adopted was at first aperients followed by salines or camphor mixture—quinine, as a rule, being restricted to those cases which were decidedly intermittent and attended with well-marked cold stage. I am perfectly unable to account for the prevalence of this fever, and cannot assign it to any excessive work, or drill, or exposure to the sun; and it is remarkable that the Sappers, whose lines are in close proximity to the 2nd Grenadier Regiment, may be said to have entirely escaped it, and yet the men were working some six hours a day in the sun.

Vaccination has been so thoroughly carried out at the time of my giving over charge, only one young infant remained unprotected.

5. The average strength of the regiment during the year was 654, of which number 542 were stationed at head-quarters within the Crater, 112 at the Isthmus position, and 51 at Perim out-post. During November and December a detachment, averaging 193 in strength, was on field service at Lahej.

6. The returns for the regiment include the men at the Isthmus, as that position is only about a mile distant from Camp, and men of that detachment requiring hospital treatment resort to the head-quarters hospital. Separate returns for the Perim detachment are forwarded by the Assistant Apothecary in charge, and for the Lahej detachment by Surgeon Anderson, of the 105th Light Infantry.

7. The admissions and deaths according to caste were as follows :—

Denomination.						Strength.	Admissions.	Deaths.
Christians	{ Europeans					6	3	.....
	{ Natives					8	3	.....
Mussalmans	...	...	...	...	...	72	67	2
Hindus	...	...	...	...	...	554	597	10
Jews	...	...	...	...	...	20	5	.....
Total						660	675	12

8. From the following statement, showing the number and average length of service of the Native Commissioned officers and privates, a guess may be made at the ages of the men :—

Rank.	Number.	Length of Service.	
		Years.	Days.
Native Commissioned Officers	16	30	90
Non do. do.	79	20	182
Privates and Buglers	607	10	60

9. The health of the men throughout the year has been very fair indeed, and in reality was better than appears in the following statement, as the men of the detachment on field service at Lahej during November and December suffered severely from ague, sending no less than 78 men to hospital between the date of their return to Camp (20th December) and the close of the year. The figures during the past year contrast favourably with those of the preceding year, when the regiment was at Poona. Aden, if not the healthiest station in Bombay for Europeans, is certainly one of the healthiest, and were it not for scurvy, from which Europeans do not suffer, the same remark would apply to Natives. As it is, although actual sickness is not excessive, still scurvy gradually undermines the health of many Natives :—

	Stationed at Poona.	Stationed at Aden.	Increase.	Decrease.
	1872	1873		
Average strength	668	654	.....	14
Admissions to hospital	1,020	672	.....	348
Discharged from hospital	1,044	616	.....	428
Died in hospital	7	4	.....	3
Invalided...	26	20	.....	6
Average daily sick	28.2	21.2	.....	7.0
Proceeded on sick leave...	20	23	3	.....
Treated to strength per cent.	158.9	104.4	.....	54.5
Deaths to treated do.	0.6	0.5	.....	0.1
Do. to strength do.	1.0	0.6	.....	0.4
Proportion of sick to strength per cent.	4.2	3.2	.....	1.0

10. In the following statement the admissions to hospital during the past two years are compared according to disease:—

						Admissions.		Increase.	Decrease.
						1872.	1873.		
<i>General Diseases.</i>									
A.	Ague	...	...	...	...	277	194	.....	83
	Dengue	...	...	...	...	237	1	.....	236
	Other diseases	...	...	...	...	11	49	38	.....
	Rheumatism	...	...	...	...	90	34	.....	56
B.	Syphilis, primary	...	...	...	...	3	5	2	.....
	Do. constitutional	...	...	...	...	1	.....	.....	1
	Leprosy	...	...	...	...	1	.....	.....	1
	Scurvy	...	...	...	...	6	52	46	.....
	Other diseases	...	...	...	...	1	7	6	.....
<i>Local Diseases.</i>									
Nervous system						18	9	.....	9
Eye, ear, and nose						14	9	.....	5
Circulatory system						3	.....	.....	3
Absorbent do.						.....	2	2	.....
Respiratory do.						33	51	18	.....
Digestive do.						115	70	.....	45
Urinary do.						4	9	5	.....
Generative do.						7	6	.....	1
Organs of locomotion						.....	2	2	.....
Cellular tissue...						35	13	.....	22
Cutaneous system						97	86	.....	11
Other conditions, debility						8	25	17	.....
<i>Poison.</i>									
Stings						.....	10	10	.....
<i>Injuries.</i>									
Burns, contusions, sprains, &c...						59	37	.....	.....
Punitus						.....	1	1	.....
Total						1,020	672	.....	.....

11. The decrease in the number of ague cases would have been much greater, had it not been for the return of the men from detachment duty at Hota and Zaida in the province of Lahej. Zaida has long been known as intensely malarious and inimical to the health both of Europeans and Natives of India. The men of the Aden Troop have oftener than once been there on duty, and after each visit suffered from ague almost without exception.

12. The strength of the detachment which left Aden on the 27th October was 139, and it remained at Hota until 11th December, when it proceeded to Zaida (say 100 strong), where it camped for about six days, returning to Aden on the 20th December. A reinforcement of 103 men left Aden for Hota on the 10th December and returned on the 18th.

13. Between the date of their return and the close of the year, 52 of the men who had been at Zaida were admitted with ague, 3 with dysentery, and 1 with ulcer. Of those who had only been at Lahej, 20 were admitted for ague, 1 for debility (after ague), and 1 for dysentery.

14. The ague was of the quotidian type, very severe, with all three stages well marked, confining the patient to hospital several days, and leaving him in a very debilitated condition. In many, bilious vomiting and muscular pains were persistent; but the head symptoms, from which Europeans suffered, were absent.

15. Dengue, which was epidemic at Poona in 1872, sent one man only to hospital in 1873; but, in the opinion of all three Medical Officers who held charge during the year, many of the cases admitted as ague and febricula were mild and obscure cases of dengue.

In October four typical and severe cases occurred amongst the Europeans with the regiment; three of the four had suffered from the disease in the previous year.

Rheumatism.

16. The decrease in the admissions for this disease is so far due to the absence of epidemic dengue.

17. The admissions for primary syphilis took place in the early part of the year, and as there are no remarks on the record it may be taken for granted that they were all cases of soft chancre. There has not

Syphilis.

been a single case of constitutional syphilis.

18. As is invariably the case at Aden, scurvy was the cause of a large number of admissions, and was not limited to any particular class, but occurred

Scurvy.

in all castes, married and single, alike. The disease is not altogether a dietetic one, as the sepoys certainly live as well at Aden as they do in India, and have lighter duties to perform; yet to a great extent it is dietetic, and if the sepoys could be induced to believe that something more than a little rice flour and dhal is necessary to maintain health at Aden, the change of climate would not be attended with a rise in the number of scorbutic cases from 6 to 52 in one year. Good and cheap food, both animal and vegetable, can generally be obtained in abundance; but the sepoy appears to think that he is at Aden solely for the purpose of saving money, so he hoards all his pay, and not unfrequently lives on half, or less than half, the rations allowed him by Government. When in hospital he continues to draw his rations, though very often unable to use them, and he must either be fed on hospital extras, or sent on sick leave to India. The Commanding Officer declines to interfere with the rations of the men, and holds that all the extras required by scorbutic patients should be supplied at the expense of Government.

19. The admissions for scurvy, according to months, were as follows:—January 2, February 2, March 1, April 1, May 3, June 6, July 12, August 9, September 6, October 6, November 2, and December 2. The hot weather lasts from May until the middle of October. Besides the men admitted to hospital there were others slightly affected, who continued to perform their duties, and were in receipt of an allowance of lime-juice daily. Thus in July there were 38 on the lime-juice list, in August 13, September 26, October 24, November 8, and in December 9.

20. The average period passed by scorbutic patients in hospital was high, and 14 of them had to be sent on sick leave to India.

21. The increase in the diseases of the respiratory system is chiefly due to bronchial catarrh and chronic bronchitis. There were, however, two

Respiratory System.

admissions for pneumonia and four for phthisis. Cold and bronchitis are not uncommon at Aden, as during the hot weather the men sleep in the open air, exposed to heavy dews and occasional cold winds.

22. There has been a marked decrease in all diseases of this system: dysentery caused

Digestive System.

56 admissions in 1872, and only 22 in 1873; diarrhoea 20 in 1872 and 11 in 1873; and colic 21 in the former and 10 in the latter year. Of liver disease there were only 4 admissions: 2 for jaundice, 1 for inflammation, and 1 for congestion during 1873.

23. 23 men were granted leave to India on sick certificate; and of that number one was

Sick Leave.

invalided by the annual committee before he left, 4 were invalided in Bombay, and 6 died. Of the 23 men 1 suffered from bronchitis, 1 from carbuncle, 1 from diarrhoea, 3 from debility, 1 from leprosy, 1 from asthma, 1 from anæmia, and 14 from scurvy.

24. Of the invalids, 20 in number, one only was a short-service man, and he suffered from monomania. The following table shows the average age,

Invalids.

service, and cause of disability of those who were invalided on pension:—

Cause of Disability.	Number.	Average Age.		Average Service.	
		Years.	Months.	Years.	Months.
Asthma...	1	35	.....	16	2
Double cataract...	1	53	2	35	24½
Insanity...	1	35	.....	16	10
Leprosy...	2	43	9	25	7
Broken-down constitution...	6	35	5	16	3
Worn-out constitution...	8	47	6	28	6

25. During the year there were 12 deaths: 4 died in hospital, 1 in the lines, and 7 on sick leave. The causes of death and the age and length of service of those who died were as follows:—

Rank.	Cause of Death.	Place of Death.	Age.		Service.	
			Years.	Months.	Years.	Months.
Private.	Ague	Hospital.	34	.....	15	.....
Do.	Necrosis of femur	Do.	20	6	.....	6
Do.	Phthisis	Do.	26	.....	6	.....
Do.	Bronchitis	Do.	35	1	17	1
Do.	Gun-shot wound (suicidal)	Lines.	25	2	5	2
Naique.	Diarrhoea	India.	21	4	5	4
Private.	Bronchitis	Do.	32	9	14	9
Do.	Dysentery	Do.	29	5	9	5
o.	Scurvy	Do.	35	5	15	5
Do.	Do.	Do.	22	3	5	3
Do.	Do.	Do.	35	7	15	7
Do.	Do.	Do.	33	10	15	10

26. The Government rations remained as in previous years, viz.—for fighting men, dhall 4 ozs., flour 1 lb., ghee 2 ozs., rice 12 ozs., salt $\frac{2}{3}$ oz., firewood 3 lbs., cokum $\frac{1}{2}$ oz., curry-stuff $\frac{1}{2}$ oz., vegetables (pumpkins, radish, brinjalls, bendeas and bajee) 7 ozs., condensed water 2 gallons, and sweet well water 3 gallons.

27. The primary vaccinations during the year were 31 in number, and the subjoined table shows the result of revaccination:—

Previously protected by		Number.	RESULT.		
			Successful.	Unsuccessful.	Percentage of Success.
Vaccination	... ..	17	9	8	52.9
Small-pox	... ..	11	4	7	36.3
Inoculation	... ..	13	3	10	23.0

H. M.'s 1st Company Native Artillery.

ADEN.—In Medical Charge— Surgeon-Major J. GRANT; Strength 86.

1. The company has been generally healthy during the year, the total number of admissions having been 65, which is equivalent to the admissions of little more than three-fourths of the company during the year. The disease which gave the greatest number of admissions was ague, as shown in Table A herewith appended, and dengue appeared in a mild form in May and June, producing 2 admissions, or 3.07 per cent. of the total admissions, or 2.32 per cent. of strength. None of the cases had in them anything worthy of special notice.

2. There was only one death throughout the year, and that was from lingering pulmonary phthisis. The case was a remnant from 1872, and corresponds with the greatest number of days in hospital in Table A, viz. 206.

3. The remark which was made last year as to the scorbutic taint appearing in most of the diseases of Natives in Aden, applies still. There is no deficiency in quantity or quality of the soldiers' rations, and I can only account for its presence amongst the soldiers by the high price of provisions coupled with the necessity for feeding the number of dependants which the sepoy usually has. I have even observed it in Native Officers, though not of this corps.

4. The barrack accommodation has been adequate, the latrines kept in good order, the clothing suitable, and the duties never too heavy.

5. The hospital accommodation is not very good, but there has been no overcrowding throughout the year.

H. M.'s 5th Company Sappers and Miners.

ADEN.—In Medical Charge—Surgeon J. T. WELSH; Strength 94.

The company left Kirkee on the 11th, embarked at Bombay on the 12th, and arrived at Aden on the 20th January 1873.

The average strength during the year was 94, the admissions to hospital 71, the average daily sick 2.1, the percentage of treated to strength 75.5, and the percentage of deaths to strength 2.1, the number of deaths being two.

From the 27th October to 20th December the company gave a detachment of 60 men to the Lahej Expedition, of which they were the only active members, having been engaged in improving roads, &c. The health of the men on this duty continued good until about the 12th December, when they, in common with the other Native arms, began to suffer from severe attacks of ague. From the date of their return (20th December) until the close of the year, 29 were admitted for ague and 1 for debility, thus accounting for nearly one-half the total admissions of the year.

Of the 71 admissions ague was the cause of 33, febricula 4, rheumatism 5, constitutional syphilis 2, scurvy 6, dropsy 1, disease of the nervous system 3, of the eye 2, pneumonia 1, scalp wound and spinal injury 1, and the remaining admissions were for trifling ailments.

There were two deaths—one from scurvy, and the other from lacerated scalp wounds and spinal injury. The latter was a carpenter who fell on his head from a height of upwards of 30 feet; all the wounds healed, but paralysis supervened, and he died exhausted 12 days after the accident.

Two men were invalided during the year—one a man of 5 years' service for mania, and the other a man of 31 years' service for worn-out constitution.

The number of children successfully vaccinated during the year was seven.

For remarks on hospital arrangements, lines, latrines and clothing, reference is made to the reports on 2nd Company for 1872, at page 23 of the "Sketch of the Medical History of the Native Army of Bombay" for that year.

Her Majesty's Aden Troop.

In Medical Charge—1st Class Hospital Assistant JOSTERAM NANABHOY; Strength 87.

The number treated of men Aden Troop amounted to 228, being 83 cases less than in the preceding year, thus giving a ratio of 259.7 per cent. treated to strength. There were no deaths during the year.

Having only received charge of this hospital recently (October 1873) I am not well acquainted regarding the sickness which has prevailed amongst the men of the Aden Troop; but from the records I find under the head of General Diseases, Class A, there were 137 admissions from fever, which compared with last year shows a small decrease.

Under B, 20 cases were admitted—9 from rheumatism, chronic; 4 from lumbago; 1 from syphilis, primary; 2 from syphilis, secondary; and 4 scurvy cases of a simple nature.

These were cured by administering the usual febrifuge and antiperiodic mixtures, colchicum mixture, pulv. Doveri, purgatives, liniments, potassii iodidum, Plummer's pills, antiscorbutic mixtures, gargles, and vegetable diets, &c.

Under the head of Diseases of Nervous System 2 cases were admitted, one from neuralgia and the other from mania. The latter case I think may be of a simple nature, treated by purgatives, emetics, cold *douche*, anodyne, and tonics, &c., &c., and discharged to duty.

Diseases of the Respiratory System.—Under this class 3 cases were treated—one from bronchitis, one from asthma, and one from bronchial catarrh of a simple nature.

Treated by stimulants, expectorants, counterirritants and blisters, and were successful.

Diseases of Digestive System.—In this class of disease the admissions were 13 cases—3 from gums and alveola, 1 from quinsy, 4 from dysentery, 4 from diarrhoea, and 1 from spleen—all successfully treated by the usual treatment, except one dysentery case.

Of diseases of the generative system and organs of locomotion 2 cases were admitted—1 from orchitis and 1 from acute synovitis.

Treated by application of cold lotion, suspensary bandage, fomentation, iodine paint, mistura saline, blisters, and tonic internally.

Diseases of the Cutaneous System.—2 from ulcers, 16 from boil, and 3 from scabies. These were also cured by simple surgical treatment, &c., &c., and discharged to duty.

Injuries.—There are two classes in injuries, one general and the other local; under general none, and under local 23 cases, admitted from contusion on different parts of the body, viz. 1 injury of the eye, 1 chest, 4 upper extremities, and 17 lower extremities.

Treated by cold application, resina plaster, poultice, carbolic-oil dressing, simple ointment, &c., and tonics internally.

Vaccination.—Vaccination was performed by my predecessor Hurree Bawoo on three children only, and five recruits who were enlisted during the last year.

Drinking Water.—Government supply two sorts of water to the men for their use, one condensed and the other from Shaik Oosman, a place about four miles from Kore Muxa, where the troop is stationed; the latter water is brackish.

There are no latrines, and the sick suffer much inconvenience in consequence.

A hospital and quarters for medical subordinates are urgently required. Sick men are treated in their huts (which are very confined), and no supervision can, therefore, be exercised over them.

I beg to express my regret for the delay in forwarding this return, but I have been suffering greatly from fever since my return from the interior.

REPORT ON THE PRESIDENCY DIVISION AND ADEN FOR THE YEAR 1873.

Bombay, 1st February 1874.

I.—PRESIDENCY.

The Presidency Division of medical superintendence in the Military Department includes the Native Troops quartered in Bombay, Tanna, Surat, and the detachment at Jinjira, the Persian Gulf, and on board vessels of Her Majesty's Bombay Marine; the troops were during the year 1873—

- H. M.'s 4th Rifles N.I. Detachment
- „ 7th Regiment N.I. Wing.
- „ 11th Regiment N.I. Detachment.
- „ 15th Regiment N.I. Wing.
- „ 19th Regiment N.I.
- „ 19th Regiment N.I. Detachment.
- „ 20th Regiment N.I.
- „ 20th Regiment N.I. Detachment.
- „ 21st Regiment N.I.
- „ 21st Regiment N.I. Detachment.
- „ 26th Regiment N.I.

Staff and Details.

Corps of Lascars.

These troops the returns of sickness of those only which were in Bombay on the 31st December 1873 are here considered.

The detachment of the 4th Rifles arrived in Bombay on the 25th December 1873 to relieve the detachment of the 11th Regiment N.I. The wing of the 7th Regiment N.I. has been stationed at Tanna since the early part of February, when it completed its journey from Dharwar *via* Vingorla to Tanna, and relieved the wing of H. M.'s 15th Regiment N.I. The detachment of the 11th Regiment N.I. was quartered in Bombay until the 22nd November, when it marched to join the head-quarters of the regiment at the Camp of Exercise. The Right Wing of the 15th Regiment N.I. was stationed at Tanna until the early part of February, when, being relieved by the wing of the 7th Regiment, it proceeded to join head-quarters at Maligam. The 19th Regiment N.I., after a stay in Bombay of nearly three years, marched to join the Camp of Exercise at Chinchwad *en route* to Sholapur, and was relieved by the 20th Regiment N.I. from Bhuj. This latter regiment left Bhuj on the 13th

November for Bombay, a detachment remaining at Mandvi, and arrived on the 20th idem. The 21st Regiment N.I. (Marine Battalion) remained in Bombay during the year. The 26th Regiment N.I. was stationed at Surat until the 23rd November, when it moved by rail to Kalian, and from thence marched to the Camp of Exercise; the regiment returned to Surat on the 4th January; while absent from Surat it was relieved by a detachment of the 9th Regiment N.I. from Ahmedabad. The 19th Regiment N.I. gave a detachment to the Political Agency at Muria; this was relieved by one from the 20th Regiment, the latter taking the place of the former regiment at Bombay. The 21st Regiment N.I. supplied the vessels of the Bombay Marine with small detachments; it also supplied the residencies of Baghdad, Bushire, and station of Bassadore.

The annual returns herewith submitted do not include those of the regiments and detachments which have left Bombay in the year 1873.

The staff and details comprised chiefly men sent from various corps in the Division and from Bhuj to the annual Invaliding Committee at Bombay; at that period of the year they averaged 134 strong.

The lascars are always stationed in Bombay.

The average strength of fighting men included in the returns is shown to be as follows and as it stood on the 31st December:—

Table I.

		Average.	31st December.
H. M.'s 4th Rifles	N.I. Detachment	156	156
" 7th Regiment	" Wing	275	276
" 20th	" Regiment	618	523
" "	" Detachment	17	17
" 21st	" Regiment	588	617
" "	" Detachment	87	88
" 26th	" Regiment	653	586
Staff and Details	...	43	172
		<u>2,437</u>	<u>2,435</u>

In the return of the Medical Officer of the 21st Regiment N.I. the strength of detachments is entered at 95; this is in consequence of the relieving and relieved detachment being sometimes counted.

The strength of European commissioned officers, shown as attached to regiments in the Division, was 21—

Table II.

4th Regiment N.I.	Detachment	...	1
7th	" Wing	...	2
20th	" Regiment	...	5
21st	" "	...	6
26th	" "	...	7

against 25 of the year 1872.

At the close of the year 1873 there remained on the returns in the Presidency Division 98 sick; the chief disease in hospital was ague, the number being 86.

The admissions into hospital during the year were 3,080, the number in the previous year being 3,753, and in 1871 2,820.

The deaths during the year, recorded in hospital, amounted to 21, against 25 and 26 of the two previous periods; there were transferred to other hospitals 62.

The admissions of European officers on the sick report appear to have been only 12; in the previous year there were 26, and 11 in 1871.

Two of the admissions were in the same officer. One officer was sent on medical certificate to Europe for chronic rheumatism, and one for hepatitis chronica; both these cases were in officers serving in Bombay.

The admissions into hospital were made from the following corps, &c.—

Table III.

4th Rifles N.I. Detachment	...
7th Regiment N.I. Wing	448
20th " " Regiment	637
21st " " "	458
26th " " "	1,214
20th " " Detachment	7
21st " " "	272
Staff and Details...	44
	<hr/>
	3,080

The admissions from the detachments of the 21st Regiment were as follows:—

Bassadore ...	138	" Hugh Rose "	1
Baghdad ...	1	" Quangtung "	4
Bushire ...	85	" Constance "	27
" Dalhousie " ...	16		
			<hr/>
			272

As in the previous two years the proportion of admissions per cent. to strength have been tabulated, I will continue to so show them—

Table IV.

4th Regiment N.I. (Rifles)	1 month in Bombay—no sick.
7th " "	162.90 Tanna.
20th " "	103.07 Bombay.
20th " " Detachment	0.41 Muria.
21st " "	77.89 Bombay.
26th " "	185.94 Surat.
21st " " Detachment	1,150. Bassadore.
" " " "	10. Baghdad.
" " " "	531.25 Bushire.
" " " "	200. " Dalhousie."
" " " "	10. " Hugh Rose."
" " " "	50. " Quangtung."
" " " "	385.71 " Constance."
Staff and Details, ...	102.32.

The strength of the detachment of the 21st Regiment N.I. being small, and in some cases the admissions and re-admissions for fever, especially at Bassadore and Bushire, being many, have rendered the proportion, as shown above, very high.

The average daily sick of each corps, wing, or detachment was as follows in 1873, and where comparison can be effected it is shown with that of the preceding two years:—

Table V.

		1873.	1872.	1871.
* H. M.'s 4th Rifles,	Detachment	...	...	...
† " 7th Regiment	Wing	18.	23.	32.
‡ " 20th " "	Regiment	31.1	53.7	28.6
§ " 21st " "	"	20.	19.	20.
" 26th " "	"	27.3	40.6	77.2
" 20th " "	Detachment	1.4		
Bassadore...	21st " "	2.02	2.41	
Baghdad ...	" " "	0.6	0.37	
Bushire ...	" " "	1.65		
" Dalhousie "	" " "	0.12	0.14	
" Hugh Rose "	" " "	6.06		
" Quangtung "	" " "	3.11	0.36	
" Constance "	" " "	0.45		
	Staff and Details	3.		

The total average daily sick was 108.81 against 115.76 of 1872, and 93.9 of 1871.

The percentage of daily sick to strength in the year appears in the following table, and where possible comparisons are made with previous years:—

* One month at the Presidency; no sick.

† In 1871 and 1872 the regiment was at Dharwar; for these years the figures are taken from the returns.

‡ In 1871-72 the regiment was at Bhuj.

§ In 1871 the regiment was at Nasirabad.

Table VI.

				1873.	1872.	1871.
	H. M.'s 4th Rifles N.I.		Detachment	...	...	...
	" 7th Regiment N.I.		Wing	6.54	3.6	5.3
	" 20th	"	"	5.03	8.5	4.4
	" 21st	"	"	3.40	3.4	3.5
	" 26th	"	"	4.18	6.3	10.9
	" 20th	"	Detachment	8.20	0.7	7.1
Bassadore	" 21st	"	"	16.83	16.70	
Baghdad	"	"	"	0.6	0.6	
Bushire	"	"	"	10.31	12.51	
" Dalhousie "	"	"	"	0.15	12.54	
" Hugh Rose "	"	"	"	0.06		
" Quangtung "	"	"	"	38.8	12.51	
" Constance "	"	"	"	0.06		

The entire 20th Regiment was at Bhuj in 1871 and 1872 and greater part of 1873.

The entire 7th Regiment was at Dharwar in 1871-72.

There were discharged from hospital to duty 2,897, 111 were otherwise discharged, and 21 died in hospital. Of the discharged otherwise 49 were granted sick leave, concerning which the Table VII. is a *resume*—

[Statement.

TABLE VII.

PRESIDENCY DIVISION.

Diseases.	Sick Leave.										From what Regiment.												Total.				
	Number.	Average duration of Dis- ease in Hospital.		Greatest Number of Days in Hospital.	Least Number of Days in Hospital.	Deaths on Sick Leave.	Least amount of Leave granted.		Greatest amount of Leave granted.		Detachment 4th Rifles N.I.	Rt. Wg. 7th Regt. N.I.	H. M.'s 20th Regt. N. I.	Detachment 20th Regt. N.I., Jinjira.	H. M.'s 21st Regt. N. I.	Detachment 21st Regt. N.I., Str. "Dalhousie".	Detachment 21st Regt. N.I., Str. "Hugh Rose".	Detachment 21st Regt. N.I., Str. "Quangtung".	Detachment 21st Regt., Bassadore.	Detachment 21st Regt., Str. "Constance".	Detachment 21st Regt. N.I., Bushire.	Detachment 21st Regt. N.I., Baghdad.		H.M.'s 26th Regt. N. I.	Staff and Details.		
		Months.	Days.				Months.	Days.																			
Ague ...	14	1	21	136	15	2	3	2	12	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14
Asthma ...	2	1	6	30	30	...	3	15	5	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Bronchitis ...	5	1	...	160	30	1	3	15	12	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Contusion ...	1	1	...	30	30	...	4	15	4	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Debility ...	1	9	28	298	298	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lambago ...	1	4	...	120	120	...	3	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Leprosy ...	2	1	...	45	15	...	4	4	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pneumonia ...	1	2	6	66	66	...	12	...	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phthisis pulmonalis ...	1	3	7	97	97	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phagedena ...	1	7	6	216	216	1	4	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rheumatism, acute ...	2	2	18	113	44	...	4	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rheumatism, chronic ...	5	2	17	195	30	...	3	15	11	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Splenitis ...	1	1	...	24	24	...	4	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scurvy ...	5	1	25	117	15	...	4	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Syphilis, primary ...	1	6	...	180	180	...	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Syphilis, secondary ...	1	1	2	32	32	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Soft chancre ...	2	1	14	63	15	1	6	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tumour ...	2	2	27	114	60	...	3	...	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ulcer ...	1	1	...	30	30	...	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total.....	49	...	...	...	...	...	...	...	...	...	...	4	11	...	21	...	...	...	1	...	...	...	10	2	...	49	

This number gave a percentage to strength on sick leave of 2.01; there were 82 sent on sick certificate in 1872 and 85 in 1871.

In the year under report the chief diseases for which sick leave was granted, were ague, chest disease, rheumatism and scurvy, these four constituting more than 70 per cent. The greatest amount of leave granted was for 12 months, in four cases, all from the 20th Regiment N.I.

The longest periods in hospital, previous to sending on sick certificate, were in ten cases, the duration of disease while in hospital being—

298	days, debility—26th Regiment N.I.
216	" phagedæna "
195	" chronic rheumatism—R. W. 7th Regiment N.I.
180	" syphilis, primary—21st Regiment N.I.
136	" ague—21st Regiment N.I., detachment, Bassadore.
160	" bronchitis—20th Regiment N.I.
120	" lumbago, 21st Regiment N.I.
117	" scurvy—20th Regiment N.I.
113	" rheumatism, acute—Right Wing 7th Regiment N.I.

In some of these cases, judging from the names of the disease given, it would have been perhaps better had sick leave been earlier resorted to.

The total treated in the circle was—

Table VIII.

	4th Rifle N.I. Detachment	...	...
	7th Regiment N.I. Wing	...	454
	20th " " "	...	685
	21st " " "	...	473
	26th " " "	...	1,239
	20th " " Detachment		7
Bassadore	21st " " "		140
Baghdad	" " " "		2
Bushire	" " " "		85
"Dalhousie"	" " " "		16
"Hugh Rose"	" " " "		1
"Quangtung"	" " " "		4
"Constance"	" " " "		27
	Staff and Details	...	45
			3,178

against 3,910 of the preceding period, showing a difference of 732 cases less treated in hospital, chiefly accounted for by the increased healthiness of the 25th Regiment N.I., which had 422 less treated in the year under report than in the previous year. The wing of the 7th Regiment N.I. had also a smaller number treated than the wing of the 15th Regiment, which in 1872 suffered so much from dengue. Other charges had fewer sick than in 1872.

The percentage of treated to strength in the two regiments that have been quartered in Bombay and Surat for the preceding three and two years is—

Table IX.

	1873.	1872.	1871.
21st Regiment N.I. ...	80.44	89.16	80.86
26th " " ...	189.73	259.5	

Of intermittent fever the admissions into hospital were as follows, comparisons being made where available:—

Table X.

	1873.	1872.	1871.
4th Rifles N.I. ...	...	...	...
7th Regiment N.I. Detachment...	270	317	238 15th Regt.
20th " " "	210	...	...
21st " " "	172	144	192
26th " " "	750	748	1,281

				1873.	1872
	20th Regt.	N.I.	Detachment ...	5	...
Bassadore	21st	"	"	102	56
Baghdad	"	"	"	...	...
Bushire	"	"	"	38	...
" Dalhousie "	"	"	"	...	2
" Hugh Rose "	"	"	"	...	...
" Quangtung "	"	"	"	2	2
" Constance "	"	"	"	...	...
	Staff and Details ...		...	7	7

In the 26th Regiment N.I. the admissions are almost the same as in the previous year. In the 21st Regiment and at the Bassadore station they are increased.

The percentage of admissions to strength and to treated of this disease it is important to observe, as it continues to point out that at Tanna, Surat, and Bassadore the influences giving rise to intermittent fever still exist; it at the same time points out the considerable proportion it bears to admissions from all other diseases.

Table XI.

			1873.	1872.		
			To Str.	To Treat.	To Str.	To Treat.
7th Regiment N.I.	Wing		98.18...	60.26	107.4	48.03
20th	"	"	33.98...	30.46	...	...
21st	"	"	28.08...	36.36	25.57...	41.2
26th	"	"	114.85...	60.53	116.85...	45.63
20th	"	Detachment	29.41...	71.42		
Bassadore	21st	"	850	72.85		
Bushire	"	"	237.5	44.7		
" Quangtung "	"	"	25	50		

The detachment at Bassadore is so unhealthy, the fever from which the men suffer so frequently recurring, that I am disposed to consider it advisable that this detachment should, if possible, be relieved oftener than it is at present.

No deaths have been recorded amongst European officers during the year.

The mortality during the year in hospital was 21, against 25 of the previous, and 26 of the year 1871; the deaths recorded as having occurred out of hospital are 21. How many of these died on sick leave I am unable to say.

The death-rate per cent. to total treated was 0.66 and 0.84 to strength in hospital; adding the out of hospital deaths thereto, of mortality known to have occurred, it would be 1.32 to treated and 1.68 to strength.

The deaths occurred in the hospital of the following charges:—

Table XII.

7th Regiment N.I.	Wing, 1	strangulated hernia.
20th	"	" 4 { 1 diarrhoea, 2 pneumonia.
	"	" { 1 phthisis.
21st	"	" 3 { 1 ague, 1 gun-shot injury.
	"	" { 1 tetanus.
26th	"	" 7 { 2 scurvy, 1 asthma.
	"	" { 1 pneumonia, 1 paralysis.
	"	" { 1 dysentery, 1 remittent fever.
Staff and Details ...	...	5 { 3 dysentery, 1 remittent fever.
		" { 1 heart disease.

Baghdad, 21st Regiment N.I. detachment 1

21

Out of hospital the returns show the following deaths:—

Table XIII.

7th Regiment N.I.	1	disease of lungs.
20th	"	" 10 { 3 scurvy, 2 injuries, 3 unknown, 1 nerve disease.
	"	" { 1 disease of heart.
21st	"	" 6 { 2 malarious fever, 2 disease of lungs, 1 dysentery.
	"	" { 1 injuries.
26th	"	" 4 2 malarious fever, 2 old age and debility.

21

GENERAL OBSERVATIONS.

7th Regiment N. I. Wing.—The Medical Officer in charge points out the frequent admissions for ague at Tanna in the months of October, November and December; in the latter two months the percentage of admissions to strength appears to have been 75·6. Surgeon-Major Atkins' remarks go to show, as a rule, the inutility of other medicines than quinine, which, though they may have a certain reputation in the cure of the disease, in these cases trial has not proved the correctness of. The wing arrived at Tanna from Dharwar on the 4th February, and men and families soon after began to attend the hospital for guinea-worm (*Filaria Medinensis*). It appears, from inquiries made, that the parasite has always been, more or less, Surgeon-Major Atkins states, "prevalent at Dharwar, so much so that the sepoys were prevented from using certain tanks on that account", and this agrees with the history of the disease. There does not appear to have been any great amount of it in the wing previous to its leaving Dharwar; this, however, is attributable to its periodic appearance, for, as stated in the account given of it by Dr. Aitken, all records "agree in assigning to it an annual periodic appearance". About the middle of January 1873 3 cases in the men were admitted on the march, and 3 more in February; in March there were 12, in April 20, in May 32, in June 13, in July 5. It is stated that the whole of the wells from Dharwar to Vengurla are known to be productive of this disease, and the Medical Officer considers that, though it was to a certain extent contracted at Dharwar, it was as much so on the march. During Surgeon Major Atkins' residence at Tanna, since 1866, he does not recollect many instances of sepoys suffering from guinea-worm. In the men treated in hospital the worm made its appearance in the following positions:—Upper extremity 7. Trunk 2. Thigh and knee-joint 35. Leg and foot 142. The greatest number of worms appearing in one person was 8; there were many with 6 and lower numbers. The incubation of this worm is a point of much uncertainty, but in Dr. Aitken's excellent history of the disease he considers 12 months to be the period, and instances proving this are given. If this is really the case, the men and families must have laid the foundation of their trouble in Dharwar alone, and it is not improbable but that the men may again be afflicted after a certain time.

Vaccination was carried on successfully in the wing, and a large number of the revaccinations were successful.

There were no cases of small-pox during the year.

The analysis of the various waters has been submitted. At my inspection and visits to the hospital of the wing, during the year, I have found it in good condition, and the duties carried on satisfactorily.

Surgeon Major Atkins concludes his report with certain sanitary suggestions—1st, for a well to be sunk in the hospital compound, 2nd for bathing places in each sepoy's hut to be floored with impermeable material, and, 3rdly, for cut-stone drains to be laid from each house to a main street drain; the 2nd and 3rd have already been adopted in the lines of the 21st Regiment N. I. in Bombay with success, and might be adopted at Tanna. In regard to the 1st, if a well is sunk in the hospital compound, care should be taken that there is no likelihood of soakage impurity. It is unnecessary to go over the somewhat lengthened remarks of the Officer in medical charge on the hospital assistants and Native medical pupils. The real source of the defect, "ignorance", alluded to, lies with the Medical Officer himself: there has been, not particularly in the present case, undoubtedly, as far as my observation goes, a minimum tuition by Medical Officers in charge generally, and too much has always been expected from the young and really self-educated, but much under-educated, subordinate, who, unaided, is unable to do what is somewhat unreasonably, in my opinion, expected from him. Except in the process of working off a remainder of the old class, the only portal through which a supply of medical subordinates can now approach the service is that of the Grant Medical College, whence youths, fairly educated, will pass out and be distributed. When I inspected the lines at Tanna the new portion had not been commenced, and not being consulted on the subject, I was not aware that there were defects in the plans which were subsequently brought to notice.

20th Regiment N. I.—The Medical Officer's annual report shows the movements of the corps. The regiment now occupies the Boree Bunder Lines, concerning which I have nothing to add to what has been said in former reports.

The state of the hospital latrine and the want of a bathing room have already been brought to the notice of the Brigadier-General, under whose authority estimates were prepared, and the work will probably be carried out before long.

There has been no small-pox and no cholera during the year.

Vaccination has been successfully carried on in the regiment, and revaccinations were successful on 82 cases out of 95 operated on. At my visits to the hospital I have invariably been satisfied with the attention paid to the sick, and with the general state of the arrangements. The detachment of this regiment at Muria arrived there on the 21st November; there were some cases of mild fever amongst the men. The water of the place was analysed. At my inspection I found that sufficient care was not taken with the small amount of stores; this was set right before I left.

21st Regiment N. I.—The annual report has not many points of interest. Surgeon-Major Mills' trial of iodine and iodide of potassium, as antiperiodic in fever, was not followed by any marked success; this is much the same result as others have met with from its trial in ague.

In Mr. Mills' hands the cashew-nut oil (*Anacardium Occidentale*) in leprosy has proved of more benefit than the chaulmogra oil (*Gynocardia odorata*), or carbolic acid. The greatest success in the case of this disease that I have as yet noticed, is in the use of a butter obtained by mixing and agitating "Gurjon oil", *Dipterocarpus Lævis* (?) with lime water. This butter is employed, as related in the report of Surgeon-Major Dougall, M.D., Acting Principal Medical Officer at the Andamans, both internally and externally. The oil is well known, and the results of cases treated carefully by Dr. Dougall would appear to call for a more extended trial, wherever this can be carried out with regularity and attention.

There have been no cases of cholera, and only one isolated case of small-pox occurred during the year, treated in the Pendall hospital.

The sanitary condition of the lines and hospital were much improved by the new drainage system, and at my inspection of the hospital I was satisfied with the care and attention shown in its management and in the performance of the duties devolving on the Medical Officer.

Should the subject of recasting the pension regulations for the Native Army be brought forward, the experience of Medical Officers will doubtless be availed of. Surgeon-Major Mills' remarks contain much that is correct and suggestive: the transition from the activity of the young soldier of the first ten years to its declension is apparent as the pension point at the end of the next five gradually approaches. This does not, of course, apply to all; though the desire at the first period to reap the reward of service is apparently strong in very many, and probably induces to preparation for the Invaliding Board. Shorter periods of service with small commencing gratuities, a pension gradually increasing, would probably have the desired effect of keeping men worth any thing in the service up to certain periods. Many men, no doubt, should be removed from their regiments when evidently unfit for the occupation at early dates of service, irrespective of pension, and annual inspections should be made to weed regiments of unprofitable soldiers.

Vaccination has been carried on successfully in the regiment; revaccinations have not been followed by so large a number of successful results as in the other corps; out of 110 revaccinated, 24 were successful.

The physical condition of the men of the regiment is not favourably reported on, and much of this Surgeon-Major Mills ascribes to the present system of pensioning; I would attribute it more to the dieting system of the men who compose the bulk of the regiment. The new musketry drill seems to have brought to light eye disability; but at the Invaliding Committees I have observed more brought forward for inability to "double" under the present system of drills.

The medical histories of the *Detachments of the 21st Regiment*, employed in the Persian Gulf and on board vessels of the Bombay Marine, do not contain many points requiring notice. My attention, however, has been attracted to a mode of treating guinea-worm, which, as far as I am aware, has not before been practised—at any rate not made public. The passed apprentice in medical charge of H. M.'s Steamer "Hugh Rose" while at Bushire was applied to by a Native calassie for treatment (the apprentice says "*Filaria Medinensis*" is endemic at Bushire). After preliminary poulticing for two days the calassie came back, the worm having appeared; chloroform was, drop by drop, applied to the exposed portions of the worm; after a few minutes an inch was withdrawn, and in a few minutes more, by gentle traction, the worm, 25 inches long, was removed, the patient expressing his astonishment. The removal of the worm so easily led the calassie to bring a relative afflicted in the same manner, and

similar treatment resulted in a worm 20 inches in length being removed in "8 minutes". I have requested the Civil Surgeon, Tanna, to try the chloroform in the jail hospital. While kept on board ship the sepoys have not shown signs of much sickness, but the men of the detachment on shore at Bushire have suffered from fever; in two of the cases the relapses were so frequent, deteriorating the health so much as to require the men to be transferred to Bombay. Generally, however, Surgeon Waters observes, the fever seldom presents a serious aspect.

At Bassadore, where the detachment is 12 strong, the admissions have been numerous 138 altogether, of which 102 were from ague, the cause of which has been much more active this year throughout the Gulf than in the previous period. The fever period lasts from May to September and November and December; in these seven months 90 of the 102 cases occurred. The re-admissions were numerous. Assistant-Surgeon Hakim states that the men of the present detachment remained free from fever for about four weeks after arrival, and then began to suffer, and subsequently suffered from repeated attacks: I have elsewhere suggested that, if it could be arranged, the earlier relief of the detachment at this place would be beneficial.

On board the "Dalhousie" the sepoys suffered from conjunctivitis caused by the exposure to the gases evolved from the cargo of hides, &c., of the steam ship "Azalea", wrecked at Perim, on board of which ship the sepoys were sent as guard. The nuisance was so great to the garrison at Perim that I believe an endeavour was made to blow up the ship; she, however, remains a wreck fast bound in the rock below the fortified enclosure.

There has been no vaccination carried on in the detachment on the vessels of the Bombay Marine during the year, the men being all protected, and no small-pox or cholera has occurred.

The 26th Regiment N. I. took part in the Camp of Exercise at Chinchwad, where the health of the men was good. The regiment has become more healthy, as will be seen from Tables V., VI., IX.

The admissions from fever were 61.7 of the total, or 750 cases. This number of men was not admitted, the re-admissions being numerous. 373 persons is the number in whom the disease showed itself out of a strength of 653, being a percentage of 57.12. I am glad to observe that Surgeon McConaghy speaks so favourably of the hypodermic injection of quinine, which has not come into use as generally as could be desired.

When inspecting the hospital on two occasions I was sorry to observe that syphilis was on the increase, and it is now reported on by the Medical Officer as being in several cases of severe character.

There is nothing further particular to notice in the report, except that there were three cases of small-pox, one of which was in a sepoy; the case was peculiar in so far that three was evidence of previous small-pox.

I brought to the notice of the Major-General Commanding the Division, in my letter No. 583 of 1873, the want of hut-wards for contagious diseases of the regiment. The subject was taken up by the Major-General; but it appears that a site for them has not been as yet provided, as the Medical Officer, Staff Officer, and Commanding Officer at Surat considered that to place the hut-wards near the hospital would be in the line of the prevailing winds upon the camp, and that no other site was obtainable, except at a considerable, and perhaps inconvenient, distance.

I am of opinion, however, that the Resolution of Government should be carried out, as the hospital of the regiment is not well adapted for the segregation of contagious diseases, nor for the admission of women and children who may suffer from small-pox especially, and be obliged to be removed from camp.

A cook-room, separate from the dwellings of the servants, appears to be also required, though at my visit the cook-house was shown to me, and no mention made of its being a dwelling-house of one of the servants.

Vaccination has been successfully carried on, and revaccination also; but in this regiment the latter has not, in the majority of the cases, been successful.

The water of the camp has not, as far as I am aware, been analysed; it is generally brackish, though good water is obtainable from wells a little outside camp.

The sanitary arrangements in camp and hospital were satisfactory, with the exception of the hut-wards for contagious disease, above noticed.

The "*Staff and Details*" are very irregular in strength. They are composed mainly of the details sent down to Bombay to appear before the Invaliding Committee from Surat and Bhuj, and of sick men passing to and from the regiment. Surgeon-Major Mills states that men sent on sick furlough do not, as a rule, have abstracts of their cases sent with them. This was brought to notice by me in August 1872, and it would be most useful if the attention of Medical Officers was called to the requirement. To those in the Presidency Division instructions have been issued on the subject.

Corps of Lascars.—The health of this body of men, of an average strength of 448, was better than during the year 1872.

There has been no cholera nor small-pox in the corps during the year, and vaccination has been carried on.

Deolali Lock Hospital.—The lock hospital, as before reported, is a hut building with a roof of "chupper": it is in too close proximity to the bazaar, and is generally ill situated. There is room for 10 beds in the large ward, which occupies the greater part of the building. The north end is partitioned off as an examination and Surgeon's room; but not fulfilling in any way this requirement, it is not used for the purpose, a temporary examination place being made by hanging up sheets in the corner of the ward.

In the remarks made last year in forwarding the lock hospital statements, according to standing orders in the Quarter Master General's Department, 1870, Art. III., p. 25, I suggested the necessity there was for a stout railing with wicket, to prevent intrusion on the premises; this was not supplied. At my recent visit I found that the bazaar street had encroached on the space in front so as to be within a few feet of the hut.

A new building on a suitable spot appears to be necessary; the present hut is in bad position, is rickety in condition, and dangerous from the inflammable character of its materials and from its proximity to the bazaar, and perhaps occupies space which might otherwise be utilized.

There is very little done in this hospital. 14 females have been the largest number at any time on the register, and 3 in hospital.

There are two women, called detective Daies, employed, whose services appear, from the report of the Medical Officer in charge, to be repressive of prostitution. The fluctuating strength of the dépôt—at one time full of men, at other and longer periods with few—does not give sufficient inducement to prostitutes to remain in Deolali: so the number varies somewhat, never being many.

In the sanitary report on the health of the Native Troops in the Bombay Garrison during 1873, it is stated by Surgeon-Major Mills that the health of the 19th Regiment N. I. was much worse than it was in 1872, the number treated in 10 months having been 780, while in the previous year the total treated of this regiment was 702; nor is he able to account for the same. I have gone carefully over the monthly returns of this regiment, and find that it was due to increase of ague, which in 11 months gave 78 more admissions than there had been in the 12 months of the previous year. To what circumstances this increase owed its origin I am unable to state, except that the constant inhalation of the sewer gases from the nightsoil dépôt may have affected the men injuriously.

In the above report of the garrison there is, beyond the above, little to call for particular attention, except to remark on the drainage of the 21st Regiment N. I., which I believe has been a very successful change from the old system; some such system, where water is moderately plentiful, or public lavatories or bathing rooms where it is not, might be brought into general use where lines are being newly built. There is no doubt that the present plan of bathing, &c., in the interior of houses having no open outlet for the applied water is one that ought not to be adopted.

II.—ADEN.

The Native Troops at Aden and Perim during the year 1873 were—

H. M.'s 2nd Company Sappers and Miners.
" 5th do. do.
" 1st Company Native Artillery.
" Aden Troop of Horse.
" 5th Regiment N.L.I.
" 2nd Grenadier Regiment N.I.
" Detachments at Perim.

The 2nd Company of Sappers and Miners left Aden on the 22nd January 1873, and was relieved by the 5th Company, which left Bombay on the 12th January 1874, and arrived at Aden on the 20th idem. The 1st Company Native Artillery was quartered at Aden during the year, having arrived there from Bombay in February 1872. The Aden Troop of Horse was stationary during the year, except for the period when it was at Lahej and Zaida at the end of the year. The 5th Regiment N. L. I. moved from Aden by wings on the 20th December 1872 and the 22nd January 1873, and was relieved by the 2nd Grenadier Regiment, which arrived by wings respectively on the 20th January and 16th February. The detachment of the 5th Regiment at Perim was relieved by one from the 2nd Grenadiers, and is, as usual, changed every two months.

The returns, from which the annual reports are prepared, do not include those troops which were not in Aden at the end of the year 1873,—for instance those of the 2nd Company Sappers and Miners and of the 5th Regiment N. L. I. The following table gives the average strength of the fighting men :—

Table I.

5th Company Sappers and Miners	...	...	...	...	94
For 53 days, do.	Detachment at Lahej...	...	...	...	60
1st Company Native Artillery	...	...	...	...	86.5
Aden Troop	...	...	...	...	87
2nd Grenadier Regiment	...	...	...	...	654
Do.	Detachment, Perim	...	...	...	55
For 53 days, do.	do. Lahej	...	...	...	157

The average strength 993.

At the end of the year detachments were sent out from Aden, from the various arms to Lahej, part of which moved on as far as Zaida.

Of European commissioned officers attached to the regiments and companies the strength was—

Table II.

5th Company Sappers and Miners	...	...	...	...	1
1st Company Native Artillery	...	...	...	...	1
Aden Troop	...	...	...	...	1
2nd Grenadier Regiment N. I.	...	...	...	...	6
Detachment at Perim	...	...	...	...	1
					<hr/> 10

At the end of the year 1872 there remained sick in hospital 23 cases; in 1871, 34.

The admissions in 1873 were 1,126, in 1872 they were 1,085, and in 1871 1,412.

The mortality in hospital amounted to 11, in 1872 there were 8 deaths, and in 1871 twenty.

At the end of the year 1873 there were remaining 106 sick, being 83 more than in the previous year.

There were 5 admissions amongst European officers recorded: 2 from ague, 1 from diarrhoea, 1 from dyspepsia, 1 from inflammation of the leg. The two latter occurred in the same individual, and one case of ague was obliged to be sent to Europe on medical certificate. The disease was contracted at Kore Muxee.

The total of admissions, as above mentioned, was 1,126, and was made up from the various charges, as follows:—

Table III.

5th Company Sappers and Miners	...	...	...	...	71
Do.	do.	Detachment, Lahej	...	...	7
1st Company Native Artillery	...	...	...	...	65
Aden Troop	...	...	...	...	226
2nd Grenadier N. I.	...	...	...	...	672
Do.	Detachment at Perim	...	...	...	51
Do.	do.	Lahej	...	...	34
					<hr/> 1,126 <hr/>

The proportion of admissions per cent. to strength was—

Table IV.

5th Company Sappers and Miners	...	...	...	...	75.53
Do.	do.	Detachment, Lahej	...	...	11.16
1st do.	Native Artillery	...	...	...	75.58
Aden Troop	...	...	...	...	257.40
2nd Grenadier Regiment N. I.	...	...	...	...	102.75
Do.	Detachment, Lahej	...	...	...	21.65
Do.	do.	Perim	...	...	92.72

The average daily sick from each corps was—

Table V.

5th Company Sappers and Miners	...	...	...	...	2.1
Do.	do.	Detachment	...	...	0.55
1st do.	Native Artillery	...	...	...	2.68
Aden Troop	...	...	...	...	5.
2nd Grenadier Regiment N. I.	...	...	...	...	21.2
Do.	Detachment at Perim	...	...	...	0.92
Do.	do.	Lahej	...	...	6.

being 38.57; in 1872 it was 35.43, and in 1871 50.5

The percentage of daily sick to strength of the above corps and detachments shows—

Table VI.

5th Company Sappers and Miners	...	...	...	...	2.23
Do.	do.	Detachment	...	...	.91
1st do.	Native Artillery	...	...	...	3.11
Aden Troop	...	...	...	...	5.74
2nd Grenadier Regiment N. I.	...	...	...	...	3.24
Do.	Detachment, Perim	...	...	...	1.60
Do.	do.	Lahej	...	...	3.8

There were discharged from hospital 973 cases to duty; 57 otherwise, of whom 27 were granted sick leave; and 11 died in hospital.

The following table shows the causes for which medical certificates were granted from Aden, the average number of days under treatment, and the hospital from which sent. It will be observed from the table that out of these 27, 15 were cases of scurvy, and 3 of debility, probably also scorbutic:—

Table VII.

DISEASES.	SICK LEAVE.										FROM WHAT REGIMENT.										
	Number.		Average Duration of Disease in Hospital.		Greatest Number of Days in Hospital.	Least Number of Days in Hospital.	Deaths on Sick Leave.	Least Amount of Leave granted.		Greatest Amount of Leave granted.		Her Majesty's 2nd Grenadier Regiment N. I.	Aden Troop.	Native Military General Hospital.	1st Co. Native Artillery.	5th Co. Sappers and Miners.	Detachment 2nd Gr. Regiment N. I., Perim.	Detachment 5th Co. Sappers and Miners at Lahej.	Detachment 2nd Grenadier Regiment N. I. at Lahej.	Total.	
			Months.	Days.				Months.	Days.	Months.	Days.										
			Months.	Days.																	
Ague ...	1	1	10	40	40	...	6	...	6	...	...	1	...	...	...	...	...	...	...	...	1
Anaemia ...	1	1	23	53	53	...	6	...	6	...	1	...	...	...	...	...	...	...	...	...	1
Asthma ...	1	1	15	45	45	...	4	...	4	...	1	...	...	...	...	...	...	...	...	...	1
Bronchitis ...	1	...	20	20	20	1	4	...	4	...	1	...	...	...	...	...	...	...	...	...	1
Carbuncle ...	1	...	17	17	17	...	6	...	6	...	1	...	...	...	...	...	...	...	...	...	1
Diarrhoea... 1	1	...	24	24	24	1	12	...	12	...	1	...	...	...	...	...	...	...	...	...	1
Debility ...	3	...	29	42	16	...	4	...	10	...	3	...	...	...	...	...	...	...	...	...	3
Leprosy ...	1	...	...	...	...	...	4	...	4	...	1	...	...	...	...	...	...	...	...	...	1
Rheumatism, Chronic.	2	2	7	88	47	...	6	...	6	...	...	2	...	...	...	...	...	...	...	...	2
Scurvy ...	15	1	17	102	16	4	2	...	4	...	14	...	1	...	...	...	...	...	...	...	15
Total...	27	...	...	...	...	...	...	...	...	...	23	3	1	...	...	...	...	...	...	...	27

The total treated at Aden, Perim and Lahej was made up from—

Table VIII.

5th Company Sappers and Miners ...	...	...	...	71
Do. do. Detachment ...	...	...	...	7
1st do. Native Artillery ...	...	...	...	67
Aden Troop ...	...	...	...	228
2nd Grenadier Regiment N. I. ...	...	...	...	683
Do. Detachment, Perim...	...	...	...	59
Do. do. Lahej...	...	...	...	34
				1,149

In the above charges the percentage of treated to strength was—

Table IX.

5th Company Sappers and Miners ...	...	...	...	75.53
Do. do. Detachment ...	...	...	...	11.16
1st do. Native Artillery ...	...	...	...	77.90
Aden Troop ...	...	...	...	259.68
2nd Grenadier Regiment N. I. ...	...	...	...	104.43
Do. Detachment, Perim ...	...	...	...	107.27
Do. do. Lahej ...	...	...	...	21.65

Intermittent fever gave the following number of admissions in the year—

Table X.

5th Company Sappers and Miners ...	...	...	...	33
Do. do. Detachment, Lahej ...	...	...	...	5
1st Company Native Artillery ...	...	...	...	14
Aden Troop ...	...	...	...	137
2nd Grenadier Regiment N. I. ...	...	...	...	194
Do. Detachment, Perim...	...	...	...	7
Do. do. Lahej ...	...	...	...	30
Total...				420

There were in the force during the year 1872 only 287 cases of ague admitted to hospital, giving a difference of 133 in excess in 1873.

The percentage of admissions to treated, and secondly to strength, of intermittent fever is shown in the following table:—

Table XI.

			Treated.	Strength.
Camp ...	5th Company Sappers and Miners ...		35.10	46.48
Lahej ...	Do. Detachment, Lahej		8.33	8.33
Steamer Point. 1st	do. Native Artillery		16.27	20.89
Kore Muxee. Aden Troop			157.40	60.09
Camp ...	2nd Grenadier Regiment N. I.		39.66	28.4
Perim ...	Do. Detachment do.		12.78	12.00
Lahej and Zaida	Do. do. do.		19.10	88.23

The greatest number of admissions per cent. to strength was in the Aden Troop; it was also in this charge greatest to treated. The Sappers and Miners Company had a much larger number sick from this disease than the previous company, and the Native regiment more than the regiment in the preceding year.

There have been no deaths amongst the European officers attached to the corps brought forward in the report. The mortality amongst the troops amounted to 11. Out of hospital there were 8 deaths.

The death-rate to strength during the year was 1.10; add to this the deaths occurring out of hospital, 0.80. The death-rate would be 1.90.

The deaths occurred in the undermentioned corps—

5th Company Sappers and Miners...	2—scurvy, spinal injury.
1st do. Native Artillery	1—phthisis
2nd Grenadier Regiment N. I.	4—ague, diseased bone, phthisis, bronchitis.
Do. Detachment at Perim...	4—2 bronchitis, 2 dysentery.

The average strength of the men treated in the *Native Military Hospital* at Aden in the year 1873 was 633, against 835 of the previous year, and includes the lascars and followers of the Ordnance and Commissariat departments. It is stated in the report that there are 5 European Officers and 26 Warrant or Non-Commissioned Officers; the details are not given. This charge is under the Surgeon of the Native regiment at Aden.

The admissions into hospital were—

1873. 272	1872. 236	} difference excess in the year under report 36.
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There was an increase in admissions of 54 from ague over the previous year. Dengue gave only 1 case. In other diseases some gave a few more and some less than in the previous year, but taking the strength of the year 1872 and that of 1873 the percentage of admissions was—

1873. 44.12	1872. 28.26
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The Medical Officer reports that there was no unusual sickness in this charge, though the above two statements show that it was considerably higher than in the previous year. The state of the lines, which are huts of a most inferior character, at the Isthmus, and put up by the men themselves, has no doubt some influence in keeping alive the tendency to such diseases as ague, rheumatism, &c. There were 97 cases of ague admitted, and a large number of them occurred in men who had been at Lahej; this tended to swell the number in the year. The Brigadier-General and Resident has the subject of these lines under his consideration.

Some of the European Warrant Officers occupy houses at the Isthmus, and when sick are treated by the Medical Officer, British Troops, in charge of the European department there.

Three Europeans were treated by the Medical Officer in charge of the Native Regiment, of whom 1 died from a self-inflicted gun-shot wound; of others treated at the Isthmus no returns are forwarded.

The out-post at Perim in the Straits of Babel-Mandeb was visited by me on the 6th December 1873. I proceeded there with the relieving detachment of the 2nd Grenadiers. There was not a case of sickness, and the men looked extremely healthy. Throughout the year only 5 cases of intermittent fever were admitted out of a strength of 55, changed every two months. In 1871 there were 14 and in 1870 5 cases. 4 deaths occurred. Under the system of short reliefs the sepahis keep in good health and condition, and the monotony of dwelling long on so isolated a place is not allowed to have the mal-influence it otherwise would have on the men.

The Assistant Apothecary is changed every six months.

On the island there is a condenser for drinking water; and brackish water, for common purposes, is brought in bugalows from the opposite Arabian coast. The supplies of the place are provided by a Commissariat agent on the island. All the persons, except the Contractor and Engineer, live in the fortified enclosure, which is 245 feet above the sea level. In it are situated the light-house, barracks, officers' quarters, which are of most inferior description, and the hospital; this latter is in proximity to the barrack, and consists of two rooms, one sufficient to hold five or six beds, the other is small and used for a dispensary; there is, in addition, a small place for writing in; the whole, in consequence of the strong winds nearly always blowing across, is well ventilated.

In my last year's report I remarked on Aden that it was not considered that intermittent fever was a disease of the place, and that it was the opinion of the late Superintendent, who held the appointment for several years, that fever was generally traceable to India. This year shows a very large increase in the disease, which must be accounted for before we can absolve Aden from having some malarious influence. From Table X. it appears that in the regiment which preceded the 2nd Grenadiers there were only 52 cases of fever in 1872, while in the 2nd Grenadiers there were 194 in 1873; but, if we look at the number of cases of fever in hospital of the 2nd Grenadiers at Poona in 1872, it will be observed that there were no less than 277 cases admitted. So far the health of the regiment on this point was much improved by the change to Aden; but when it is known that a part of the regiment was exposed, at the close of the year 1873, to the powerful malarious influence of a certain part of the Lahej province, particularly at Zaida (as far as which the troops in the late expedition had entered the country), and that on their return to Aden, on the 18th and 20th December, they sent no less than 78 cases to hospital up to the 31st December, it may be fairly reasoned that Aden itself is very free from particular malarious influences. Had not the two detachments of the regiment moved into the interior, it is more than likely that the crops would have been more free from admissions from this disease than the 5th Regiment was in its first year of occupation at Aden. In other diseases, for instance rheumatism, there is also a marked diminution of cases; while it is observable that, contrasting Poona with Aden, more diseases of the respiratory system and scurvy are treated at the latter place.

In the Sappers and Miners the company which was in Aden in 1872 had only 5 admissions from fever, while in the year 1873 the 5th Company had 33, 29 of which were admitted on the return of the company to Aden from service in the interior. A general, but not entire, freedom from ague in Aden may be said to have existed in all the military charges, whilst the same susceptibility to the poison of the malaria took place in all those who contributed to the force sent out.

It is not unlikely that for a time in the following year there may be re-admissions of some of these.

In the Aden Troop the admissions for fever were less than in the preceding year; they were 137 against 182 of 1872. 73 of the 137 cases were admitted in the months of November and December (64 in the latter month), and were, like those of the other corps alluded to, the result of the exposure to the well-known malarious influences of Lahej, Zaida, and Haski, particularly the two latter places.

As before reported, the Troop has no hospital, and the sick are treated in their own huts; it is possible that at Kore Muxee, when men get sick, their complaints, in consequence, are not so amenable to treatment as they would be in hospital. Serious cases, however, are sent into Camp.

Medicines and instruments are kept in the store-room of the Troop, where patients attend daily.

The Brigadier-General has under his consideration the want of a small hospital at Kore Muxee.

The lines and hospitals of the various corps were visited by me, and found generally in good order, and no complaints were made which were not capable of being settled. On such subjects as appeared to me to be necessary I reported to the Brigadier-General.

Vaccination was carried on successfully, and revaccination also. In 24 cases, where the persons showed signs of previous small-pox or inoculation, 7 cases were operated on successfully, and in 17 cases of previous vaccination 9 were successful.

The rations to each sepoy are—

Dhall...	...	...	4 ozs.
Flour...	...	...	1 lb.
Ghee...	...	...	2 ozs.
Vegetables...	...	...	7 "
Rice...	...	...	12 "
Condensed water...	...	...	2 gals.
Sweet water...	...	...	3 "

The water-supply is from the same sources as stated in the last year's report.

Lock Hospital.—Since the last year's report the lock hospital has been removed to a building expressly prepared for the purpose; it is described in the annual report of the hospital by Surgeon Welsh, M.D., in medical charge. The house, or hospital, is made of reeds and matting, and in a climate like Aden is probably sufficient for the purpose. It is situated behind the Civil Hospital, and is well out of the way. 81 cases were treated; and it appears that the European regiments, for which the lock is established, have only had under treatment 39 cases in nine months. Dr. Welsh speaks of the absence of "true syphilis" as satisfactory. It speaks, I think, very favourably for the establishment of the institution (though as many women do not come forward for registration as that officer thinks should) that the number of men diseased should not have been greater.

The diseases of the soldiers correspond with the diseases of the women detected by the Medical Officer; and it is not unlikely, notwithstanding that it is said every other woman may, when opportunities occur, practise prostitution, that the fact of the existence of such an institution may have a deterrent influence on women who do not quite consider themselves in the light of "public women", and that the registered females' residence in general is the place sought for by the soldiers.

The fall of rain in Aden was, for the year, 3 inches and 90 cents, and when I was at Aden the Tank No. 1 had a large supply of excellent water in it.

The monthly returns of the detachments which proceeded to Lahej, and further into the interior, under the medical charge of Surgeon Anderson, H. M.'s British Troops, and Surgeon Hay, Indian Medical Department, show that in the detachment of the 2nd Grenadiers, strength 139, which first went out on the 27th October and remained at Lahej till the 11th December, no cases of intermittent fever were admitted, though slight cases took place in November and up to the 11th December, for which medicine was given; when the detachment advanced on Zaida it was almost intact, a few weakly men only being left behind; it halted at Haski, and reached Zaida on the 13th, 13 miles from Lahej. "Intermittent fever here soon became prevalent, and increased daily up to the 18th, the day of departure from Zaida to Aden."

The second detachment or reinforcement, under Surgeon Hay, reached Lahej on the 11th December, and remained till the 17th; during this time 20 cases of mild ague were admitted.

The camps selected were always on high ground, and well drained.

The Company of Sappers and Miners, 60 strong, had no cases of fever while stationed at Lahej; there were a few mild cases not admitted to hospital. On the 10th December the company left Lahej; a few weak men being left behind, halted at Haski, and were at Zaida on the 12th. Here a few of the men soon suffered from ague, which prevailed up to the 18th; "two of the cases were very sharp."

GENERAL RETURN of the Native Troops, showing the Amount of Sickness, Mortality, Discharges by Invaliding in Aden, during the Year 1873.

Bombay, 1st February 1874.

PRESIDENCY DIVISION, ADEN, AND BOMBAY MARINE.

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ADEN.	Strength and Died to Strength in and out of Hospital and on Leave.					Average Strength.	Average Daily Sick per Cent. to average strength.	Average Daily Number of Sick.	Ratio of Deaths to Treated.	Proportion of Admissions to Strength per Cent.			Proportion of Deaths to Strength per Cent.			Obtained Sick Leave.	Diseases, Admissions, and Deaths.						Increase by		Decrease by																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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Her Majesty's 1st Co. Native Artillery.	1	67	116	...	84	86.5	3.11	2.68	1.49	75.58	75.58	153	153	1.53	4	27	...	34	1	...	4	...	65	1	...	21	...	6	1	4</

POONA DIVISION.

Average strength present during the year	8,209.
Average daily sick per cent. to the average strength.....	3.04.
Ratio of mortality per cent. to the average strength.....	0.42.

H. M.'s 1st Grenadier Regiment N. I.

POONA.—In Medical Charge—Surgeon-Major T. MILLER; Strength 698.

As compared with the previous year the health of the regiment has been very good, the number of cases treated in hospital having been much less, the total number of admissions into hospital having been 655, and with 16 cases remaining from last year, 671 have been under treatment: for the year 1872 the total number treated was 1,225. The chief cause of this decrease has been the almost total absence of any epidemic disease. Dengue was very prevalent in the regiment during last rainy season, and caused a great increase in the admissions.

The most prevalent diseases have been intermittent fevers, of which there were treated 319 cases, including 5 remaining from last annual report; of these 309 have been discharged. The number of cases in which there was any enlargement or congestion of the spleen was very small, and only one case was admitted under that head. Of chronic rheumatic affections there have been 53 treated and 46 discharged—of dysentery 35 treated and 33 discharged—of contusions 58, and 52 discharged. A great number of contusions were caused by the badly fitting boots which are supplied to the sepoys; and as no stockings or other covering is worn, their feet get very often bruised when on parade. Diseases of the eyes have not been prevalent; 15 cases of conjunctivitis have been under treatment. These were all cases of a mild character, and generally owing to irritation from particles of dust or sand, or from cold. At no time was there any thing like an epidemic of this affection: a mild lotion of sulphate of zinc or nitrate of silver, with the application of a leech or small blister, was the usual treatment. There have been only 10 cases of disease of the urinary organs, and 8 discharged. The cases of gonorrhoea have been few and of a mild kind—3 were admitted: of syphilis, primary, 4 cases, and of secondary 4. Only two cases of small-pox occurred, and both recovered.

There have been no admissions from cholera or chronic diarrhoea during the year.

There has been one case of paralysis, apparently from softening of the brain, and which is still under treatment, but will have to be invalided soon, as there is no likelihood of his ever being again fit for duty.

The average strength of the regiment including officers has been 705.9: of these 6.9 were Europeans, 20 Native Christians, 76 Mussulmans, 3 Jews, and 599.5 Hindus.

The total number of sick 655, the average daily sick 19.1, the deaths to strength 0.5, and the deaths to treated 5.5. The treated to strength 96 per cent.

The deaths were 4.1 from dysentery, 2 from fever of a remittent type, and 1 from a cancerous tumour of throat and tonsil. As the tumour seemed to be connected with the base of the skull it was not thought fit for any operation—lotions of nitric acid, carbolic acid, and caustics were used, but the patient ultimately succumbed to the disease.

The dysenteric cases were treated generally with castor oil and opiates, large doses of ipecacuanha, with blue pill, opium and extract of gentian, astringents and tonics. The fevers of an intermittent and remittent type were treated with purgatives—quinine, calomel and antimonials when considered necessary, and stimulants.

The regiment has a good deal of duty in the way of supplying guards to the different jails, and at some seasons to Government House, and a good many of the cases of fever are sent from those on the above duties. The average number of nights in bed has been about 3 per week for the sepoys.

Vaccination has been carried on as carefully as possible; the total number vaccinated was 79, all of which were successful.

The number of cases invalided was 17; they were chiefly men of long service and weakly constitutions, some of whom had suffered from scurvy while the regiment was at Aden a few years ago.

The men enlisted have been chiefly natives of the Concan and Deccan, only two from Upper India; in all 30 recruits have joined.

The rain-fall was considerably greater than during the previous season, the total for 1873 being 36 inches 53 cents, against 21 inches 51 cents for 1872. The largest fall for one

month was 8 inches 44 cents during September, and for one day was 2 inches 94 cents on the 24th of August.

The highest temperature of the year, as taken by a common thermometer inside the verandah of the hospital, and not much exposed to radiation, was 99° at 4 P.M., and the lowest 56° at sunrise. The mean temperature for the twelve months was maximum 84°, medium 76°, minimum 68°. The mean for the three hot months March, April and May was max. 94°, min. 73°.

As the regimental lines have been often reported on, I have nothing particular to notice; they are in very good repair, are kept in good order, and conservancy is well attended to. The drainage is natural but good. The latrines are in very good order and well kept; two of them are rather too near the regimental bazaar and to one of the wells from which the supply of water is drawn; but that will, I believe, be remedied by and bye, as a new site has been fixed on, at a distance from the well, for the building of a latrine. Dry conservancy is not carried on, but the nightsoil, &c., is carried away in carts twice a day and buried in a trench out of camp.

The hospital buildings are in a very good state of repair. A chupper hut was erected during the year for the treatment of small-pox and cholera cases. The house accommodation for the 1st Hospital Assistant is not very good, and some improvement might be done for it. With the conduct and qualifications of the 1st Assistant, Bhowanee Sing, and those under him I am very well satisfied.

H. M.'s 8th Regiment N. I.

POONA.—In Medical Charge—Surgeon-Major E. SEXTON, M.D.; Strength 650.

The average strength of the 8th Regiment during the year was 650, being 10 less than the average strength of the year 1872.

The total number of admissions was 853, showing a considerable decrease as compared with the total number of admissions during the previous year.

The daily average number of sick throughout the year was 24.9 as compared with 33.3 in the previous year.

The following table shows the daily average number of sick for each month during the year 1872 and 1873 :—

Months.	1872.	1873.
January	19.8	19.2
February... ..	17.9	23.5
March	24.1	21.7
April	38.2	21.3
May	44.2	24.5
June	45.6	21.6
July	35.2	19.4
August	29.5	17.2
September	32.5	28.1
October	38.9	43.1
November	43.7	32.0
December... ..	35.4	27.4

From the foregoing it will be perceived that little difference exists in the comparative daily average during the early months of each year; but in the hot-weather months of 1872 the number rose to 45.6 in June, whereas during the corresponding season of 1873 the highest figure attained was 24.5 in May.

The quarter comprised in the months of July, August, and September 1873 also shows a marked decline in the average sick rate as compared with the returns for 1872; but in the last quarter a closer correspondence marks the comparative returns of both years. In 1872 the lowest average daily number of sick—17.9—was in February, and the highest—45.6—occurred in June; whereas in 1873 the lowest number—17.2—was in August, and the highest—43.1—in October.

The prevailing diseases were various forms of intermittent fever (of which no less than 310 cases were admitted into hospital during the year), bronchitis, and bronchial catarrh.

One death only, a case of malignant confluent small-pox, took place during the period under review.

40 recruits were taken on the strength of the regiment during the year.

16 men had sick leave, and 27 were invalided.

The regimental lines have been condemned, and preparations made for the erection of new lines on the eastern side of the present cantonment; but up till now the execution of this most important work has been delayed, pending the sanction of Government, which, it is to be hoped, will be no longer withheld.

My predecessor, Dr. A. Adey, reports "that the situation of the present lines is open and well exposed to the breeze, but the site is too level to make drainage effectual; the nature of the soil, too, tends to the lodgment of water."

Both these objections will, it would appear, be obviated by the construction of new lines on the site already chosen.

The hospital is a well-built, substantial structure, floored with stone, and well suited to the purposes of the building.

A dead-house is urgently required, as also a room for operations, which have now to be performed within sight and hearing of the patients—a very objectionable arrangement, as may be readily conceived; and another want is a separate ward for the accommodation of patients suffering from infectious diseases, or whom for any other reason it may be advisable to keep apart. The consideration of these matters will, however, materially depend upon the larger question as to the desirability of establishing general hospitals at large stations—hospitals fitted with baths, infectious wards, operating theatre, dead-house, ophthalmoscope room, lecture-hall, and other modern appliances of a properly conducted hospital establishment for the treatment and study of disease.

Such a reform has already been tentatively commenced in H. M.'s British Service, and will, it may be presumed, soon acquire an increased development, which cannot but be welcome to every well-wisher of medical and surgical science. But the further consideration of this subject, however interesting, is obviously out of place in these pages.

The conservancy of the lines is effectually carried out. The trench system is in use and the trenches are not more than 300 yards to the north of the lines.

There are two wells for the use of the troops, and the water-supply is ample.

In his last year's report Dr. Adey stated that the water contained in one well had undergone sewage contamination, owing, it was supposed, to the proximity of the trenches.

I am not aware that any serious consequences have resulted from the use of this water; but I hope to be able shortly to make a series of analyses of the water contained in both wells, and to place the subject of sewage contamination beyond the reach of doubt.

In reviewing the sanitary condition of the regiment as a whole it must be conceded that the past year shows a marked improvement in the general health of the troops as compared with the preceding one. One great cause of the unhealthiness of the latter was dengue fever, for which there were 224 admissions in 1872, whereas only two cases occurred during the whole of 1873, so that one great factor in the returns may be said to have been almost entirely eliminated during the past year.

Malarious fevers still prevail to a great extent, but it is a question how far they are to be regarded in the light of a reproduction of disease contracted elsewhere; for it is a special characteristic of this class of affections, that once they establish a footing, so to speak, in the system, though often dormant for considerable periods, a comparatively trifling cause suffices to rouse them into renewed morbid activity.

No case of cholera, I am happy to report, occurred in the regiment during the past year.

32 cases of dysentery and 21 of diarrhoea were admitted during the year, but they appear to have been all of the ordinary type of cases, and do not call for any special remark.

Bronchitis and bronchial catarrh were, as has been stated, prevalent during the year, especially during the colder months; and there were in addition 5 cases of asthma and 4 of pneumonia.

46 cases of contusion of the lower extremity were admitted into hospital during the year; these were nearly all cases of what is commonly called "shoe-bite", and were caused by ill-made and badly-fitting boots.

A large number of cases occurred during the march to Chinchwad and while the troops were under canvas, and the number of men rendered inefficient by sore feet, not only in this but in other Native regiments, was a matter of some surprise and much comment; and I remember having had a similar experience during the Abyssinian Campaign. The whole subject of the booting of the Native army is a very important one, and has not yet received the consideration it deserves. Sepoys all wear Native-made boots of the same pattern as those of the British army, but made of inferior country leather, which wants the softness, pliancy, and ready adaptability to the foot possessed by well-dressed English leather. No doubt the greater cheapness of the Native-made boots, which cost from Rs. 1-8-0 to Rs. 2 per pair, is an element that must not be omitted from our consideration of the subject; but it becomes a question whether a dearer boot would not in the end be the cheaper article of the two.

Good English ammunition boots are manufactured at Weedon on a large scale at a comparatively cheap rate; and, although the price may be more than the sepoy could afford out of his scanty pay, it may be deemed advisable for the State to supplement the difference out of the annual clothing grant to the Native army.

53 cases of chronic rheumatism and 23 of lumbago find a place in the returns. These may, in the majority of cases, be ascribed to the system of life enlistment.

It is known that, although the sepoy enlists for the term of his life, or so long as he may be enabled to perform the duties of a soldier, yet, if disabled by disease or accident, he is entitled to a pension after fifteen years' service. The result of such a rule is, that a large number of men, on the completion of their first term of service, have recourse to the hospital as the readiest means of arriving at the long-wished for haven of the pension list.

They simulate chronic rheumatism, lumbago, or some other form of intangible disease, easy to counterfeit, and difficult to detect; and I may without fear of contradiction aver that five-sixths of the cases of rheumatism, lumbago, sciatica, and other allied affections are cases of malingering, in which the intelligent impostor is enabled to baffle the insight of the doctor, and evade the regulations of the State; and I appeal to the experience of all regimental surgeons who have served with Native troops for confirmation of the above statement. Like causes produce like results, and when the system of unlimited enlistment obtained in the British army, malingering in every shape and form was even more prevalent than it now is amongst Native troops. The evil is a crying one, but the remedy is fortunately not difficult to find; and, without entering into the vexed question of limited enlistment, it may be stated that an effectual remedy for the unsatisfactory system described, alike unjust to the surgeon and demoralizing to the army, may be found in the promise to every sepoy of a pension after a certain period of service, irrespective of the state of his health.

In summing up the present state and condition of H. M.'s 8th Regiment N. I., I may state, for the information of the Surgeon General and medical authorities, that the regiment suffered much, as I am informed, from scurvy during a five years' stay in Guzerat, and many men in the corps are not yet free from scorbutic taint; but the health of the troops and families has undergone a slow, but steadily progressive, improvement since their arrival at Poona, and the regiment, if allowed to remain some time longer in its present quarter, may soon acquire the tone and vigour that ought to be the normal condition of troops destined at a moment's notice for active service in the field.

No important operations, so far as I am aware, have been performed during the year. I had occasion to operate twice in two not very serious cases; both are making good recoveries. The want of an operating table and a suitable apartment is much felt under such circumstances. The carbolic treatment in the form of lotion, injections, and oil for dressings has been tried in a great many instances with satisfactory results; but a regimental hospital, after all, affords but a limited field for scientific investigation of the theories of modern surgery.

I cannot conclude my report without bearing testimony to the support I receive from the Commanding and other officers of the regiment, including the Adjutant, all of whom are earnest in their endeavours to adopt any measures likely to secure the health and comfort of the troops, and prompt to carry out the suggestions of the medical officer; neither ought I to omit mention of the steadiness and good conduct, as well as the zeal and ability, displayed by Babajee Jadow and the other hospital assistant and Native medical pupils attached to the hospital; and my only regret is, that such excellent public servants have not a more fitting opportunity for acquiring a practical knowledge of the duties of their profession.

H. M.'s 17th Regiment N. I.

DHULIA.—In Medical Charge—Surgeon-Major R. DICK ; Strength 690.

The head-quarter wing of the regiment arrived in Poona from Dhulia on 20th December 1872. For six weeks the men lived in tents pitched near the lascar lines; then they entered the lines previously occupied by the 2nd Grenadiers. Two companies of the left wing arrived by rail on the 13th February, and the remaining two companies on 24th November, having marched through Maligam and Ahmadnagar.

The health of the men was good during the first nine months of the year, but less satisfactory afterwards, owing principally to febrile affections of the intermittent type, produced by the malarious influence which is usually most powerful after the rains. The cold weather set in rather early and severe, giving rise to congestions of the lungs and liver, often accompanied with aguish symptoms; and the increased duty and frequent drills and parades obliged men to report themselves sick who would not have done so at a time when duty was lighter.

The total admissions were 755, and those from ague amounted to 334, or nearly one-half of the whole number. These were mostly of the simple character usually met with among Natives, but some of them, especially towards the end of the year, were accompanied with congestion of liver indicated by nausea, vomiting, headache and slight jaundice. Cases of this kind were much benefited by the old method of treatment by emetics, purgatives, and diaphoretics,—in fact, until these were used pretty freely, the use of antiperiodics was often ineffectual. Quinine was injected hypodermically in some cases; but the proportion of patients in whom inflammatory swelling and suppuration followed, leading to protracted detention in hospital, was so large that this method was not approved of. Possibly the neutral sulphate of quinine used in this manner might give more satisfactory results, but it does not seem to be procurable from the Medical Stores.

Rheumatism.—One acute case was admitted, and 35 chronic cases, most of them being old men.

Syphilis.—23 primary cases were admitted, and 8 secondary. Being nearly all tedious cases, their effect on the daily average number of sick was much greater than would appear from the number of admissions, and it may be remarked that the number of men rendered ineffective by venereal diseases seems increasing since the regiment came to Poona.

Conjunctivitis.—25 admissions, most of which occurred in Dhulia in the monsoon this affection being generally prevalent there at that season. They were all discharged to duty.

Diseases of the Respiratory System.—3 cases of laryngitis, 26 of bronchitis, 2 of asthma, and 3 of pneumonia were admitted.

Dysentery.—40 cases were admitted, of whom 34 returned to duty, 3 who did not recover their strength after the dysenteric symptoms had been subdued were granted sick leave, 1 died, and 2 are remaining. The fatal case was an old havildar who had probably neglected to apply for treatment for some days after he was taken ill. The attack commenced in an insidious manner, there was little pain or griping complained of, and the stools at first were merely thin in consistence, but in other respects healthy or accompanied with a little serous fluid, rarely with any excess of mucus. In a few days they became watery, dark-coloured, and fetid; and a portion of the sloughed mucous membrane of the colon, almost the whole circumference of the tube, several inches in length, was seen protruding from the anus. Symptoms of depression became more and more marked, and the sloughing and ulcerative process continued to extend, and he died 14 days after admission.

Inflammation of the Liver.—Six cases were treated, two of them remaining from the previous year. Hydrochlorate of ammonia seemed useful in some of these cases after the acute symptoms had been subdued by leeching, fomentation, salines, &c.

One case was denominated cirrhosis. The man had suffered several attacks of colicky pains in the abdomen, with nausea and vomiting, and slightly jaundiced appearance of the conjunctivæ. His appetite was bad, and he had lost flesh and strength to a great extent, and percussion showed that much diminution in the size of the liver had taken place. He was granted sick leave.

Injuries.—Most of these were trifling bruises, sprains, or blisters of the feet. A few rather severe contusions of the region of the pectoral muscle were received by men at ball practice produced by the violent recoil of the rifles which have been lately supplied to the regiment: one man, when doubling on parade at the Chinchwad Camp of Exercise, sustained a fall, the upper part of the left mammary region coming in contact with a stone. At first he manifested symptoms of severe shock to the system, being cold and pulseless, and unable to

speak for some hours, and up to the present time he complains of pain in the part, and his respiration is short and extremely rapid. Some mucus rales were audible over the upper part of the lung about ten days after the accident, and lately there seems to be a friction sound without dulness on percussion, audible at first over the upper part of the lung and afterwards over the base anteriorly and laterally. There were no febrile symptoms at any time, and it is doubtful what is the exact nature of the injury he has sustained.

Small-pox.—No cases occurred among the men; but in March last, a child which had come from its country a few days before, was admitted with the eruption in an advanced stage, and a few days afterwards its mother was attacked. She had a severe and prolonged attack, and in addition to the disease suffered much from the heat of the weather, which was most oppressive in the tent in which she was kept, although it was a large one with a double fly.

Vaccination was carried on as children were available. The number of revaccinations was not so large as during the previous two or three years,—all the men, with the exception of the last-joined recruits, having been lately revaccinated, and few of the women being willing to submit to the operation.

H. M.'s 1st Regiment N. L. C.

POONA.—In Medical Charge—Surgeon J. McALISTER, M.B.; Strength 448.

In spite of some obvious violations of hygienic principle that have been remarked upon in previous reports, the general sanitary condition of the regiment for the past year has been very satisfactory, the admissions from all causes being 184 less than in the preceding year.

The monthly reports of sick for the past year represent an annual average strength of 448, and the total number of cases of all kinds reported as taken on the sick list was 488, being at the rate of 1,089.3 per 1,000 of strength. Of the whole number taken on the sick report, 428, or 955.4 per 1,000 of strength, were for disease alone, and 60, or 133.9 per 1,000 of strength, were wounds, accidents, and injuries of all kinds. The average number constantly on the sick report during the year was 23.5, or 52.5 per 1,000 of strength; of these 20.6, or 46.0 per 1,000 of strength, were under treatment for disease, and 2.9, or 6.5 per 1,000 of strength, were for wounds, accidents, and injuries. The number of deaths in hospital during the year amounted to 4, an increase over the previous year of 3. The proportion of deaths to cases treated was about 1 death to 112 cases. Two men died while on sick leave—one from cirrhosis of the liver and the other from general debility.

STATEMENT showing Mean Strength, Number of Sick, and Principal Diseases of the 1st Regiment Light Cavalry for the year 1872 and 1873.

Years.	Average Strength.	Whole Number taken Sick.	Malarial Fever.	Dysentery and Diarrhoea.	Contusions.	Bo.	Venereal.	Ulcers.	All other Diseases.	Total.
1872	450	648	293	68	55	50	27	19	136	648
1873	448	464	198	38	46	31	22	19	110	464

In reviewing the diseases which occurred in the regiment during the year it will be observed that a large proportion of the total admissions were from malarial fever in its various forms. The cases of fever admitted during the first six months of the year were unusually mild. Towards the end of July the fever assumed a severe type, and continued to make serious inroads on the health of the men until the month of October. The prevalence of diarrhoea and dysentery during the same months was probably owing, in a great measure, to the causes that gave rise to the malarial fevers. There can be little doubt, I think, that overcrowding to a limited extent and a general want of adequate ventilation, joined to the humidity of the atmosphere and the absence of a drying wind and sun, are the causes which operate unfavourably upon the complaints which the sowars happen to suffer from during the rainy season. With regard to the treatment of malarial fevers, I have endeavoured to be guided in all respects by the general principles laid down and remarked upon in my former reports. Care has been taken not to rely on any particular remedy, but to treat each individual case on its merits. In the month of October Naique Dhun Sing was admitted for ague, from which he had been suffering for more than a year. On admission he presented all the

characteristics of chronic malarial poisoning, chronic enlargement of spleen and liver, intermittent neuralgia; and the paroxysms had been occasionally quartan, tertian, or quotidian, presenting unusual capriciousness in this respect. On the 14th October he was admitted for fever and headache. The headache continued to increase in severity, and on the 19th he began to be slightly delirious, with a tendency to stupor, the headache continuing very severe. He became gradually more oppressed, and after perfect coma of two days' continuance died on the 22nd. It is quite possible that the symptoms, which closed the scene in this case, resulted from the formation of a cerebral abscess. I was most anxious to have a *post mortem*, but the family of the deceased obstinately refused me permission.

During the latter part of the rainy season pulmonary diseases were occasionally met with—catarrh, bronchitis, pneumonia, and pleuropneumonia. Two cases of pleuritis occurred in the month of June, both were complicated with pneumonia, and one of these appears among the fatal cases. There was one case of pneumonia. All these cases were of the asthenic type, and their treatment consisted of diffusible stimulants with quinine in large doses.

During the months of July and August malarial dysentery and diarrhoea were of frequent occurrence. The former disease exhibited more than its usual severity, and in two cases an unusual malignancy; these were very obstinate, and both of them terminated fatally. I treated the cases in the first stages of the disease with large doses of ipecacuanha, and with lime-water and milk to drink. After the primary stage had passed I instituted a supporting plan of treatment in anticipation of the extreme exhaustion which succeeds the active stage of the disease. Many of the cases exhibited signs of periodicity, and demanded liberal doses of quinine in addition to other remedies.

Veneral diseases were occasionally met with, though not so common as might be anticipated from the close proximity of the cavalry lines to the village of Ghorpuri, where the prostitutes are of the most filthy kind. The type varied from the mildest to the most malignant. In all cases of true indurated chancre mercury was the remedy employed to conquer disease. Gonorrhoea furnished three cases.

There were 8 cases of chronic rheumatism, a decrease from the previous year of 9; none of the cases were of a serious nature, and all yielded easily to treatment.

Two cases of guinea-worm have been reported during the year.

Fortunately no serious injuries requiring surgical treatment have occurred in the regiment during the year, and in all the uncomplicated flesh wounds the healing process has gone on rapidly.

Eight men were pensioned during the year—five for debility and old age, one for enlargement of spleen, one for fracture of both bones of left leg of long standing, and one for impaired vision of left eye and convergent squint.

22 recruits were enlisted during the year.

Two sowars were admitted in the month of March for varioloid disease; both stated they had variola in childhood; one had a few doubtful scars to show, the other none. A few cases of mild varioloid occurred amongst the children; all these had scars of successful vaccination.

There has been no case of epidemic cholera during the year.

Vaccination and revaccination have been scrupulously kept up amongst the men and their families during the year.

Marching.—On the 5th of December the regiment under the command of Colonel Ashburner, in obedience to instructions, marched out of Poona to join the Camp of Exercise at Chinchwad. We left Poona at 2 A.M., and reached the encamping ground selected for the cavalry brigade at 7 A.M. We found the Royal Horse Artillery and one squadron of the 3rd Hussars already encamped, with their tents all pitched. The Poona Horse marched in at 8 A.M., and the whole brigade was under canvas by 10 A.M. The situation of the cavalry camp was good, for it was on rising ground facing to the north, $4\frac{1}{2}$ miles distant from the nearest infantry brigade on our right, with a dry soil well exposed to the prevailing winds, and with a river winding round the front from west to east. The water-supply was ample and good. It is pleasing to note that, during the time the camp existed, the sick of the Native cavalry at one time formed less than 1 per cent. of the whole force, and never exceeded 2 per cent. This indicates the complete attention which was given to the general cleanliness of the camp under the able administration of Captain Watts, our energetic Deputy Quarter Master General, assisted and advised by Dr. White, of the Royal Horse Artillery, who was the principal Medical Officer of the cavalry brigade. It was the wish and delight of all to assist these officers in their wise endeavours towards improving the hygienic condition of camp, and adding to the comfort of the men. The regiment returned to Poona on the 23rd December, with only one man on the sick report.

Lines and Subsidiary Buildings.—The lines are still very much in the same condition in which they were at the time when my previous report was written, and have not been added to or altered. So also are the syce lines. I have on several occasions addressed the authorities with regard to the very unsanitary condition of the syce lines, and have urged upon them the importance of erecting news lines,—a proceeding which would undoubtedly be a great boon to the regimental followers, and also calculated to save the cavalry lines from the rapid development of epidemic diseases. Could the military authorities but realize how necessary the erection of new lines is to the health of the cavalry camp, there can be little doubt but that the work would be speedily executed. There have been no epidemics during the year in the cavalry camp; its isolation ought to confer comparative immunity in this respect, and would be an efficient furtherance of quarantine and other sanitary measures.

Parade Ground.—In the early part of the year I was obliged to call the attention of the Officer Commanding to the way in which the air of the cavalry parade ground was at times polluted by a noxious stench generated in the direction of the cantonment manure yard, which is located a few hundred yards to the south-east of the parade ground. The continuance of such a nuisance was of no slight importance, as it touched upon causes imperilling the public health of the cantonment. Immediate action was taken in the matter, and it was found that some of the trenches had been opened with the view of selling the manure before the contents had become sufficiently deodorized. I am glad to state that, under the administration of Captain Trueman, our Assistant Cantonment Magistrate, the nuisance has been effectually put a stop to, and the men engaged in cleaning the cantonment have been educated up to a higher standard of cleanliness.

The Cavalry Hospital.—The hospital still continues to answer its purpose well, and is in excellent order.

Residences of European Officers.—A new bungalow has been erected for the Commandant on the west side of the lines and fronting them. Some of the officers occupy bungalows in the Ghorpuri lines, as a sufficient number have not as yet been built in the cavalry lines.

Water-supply.—We have hailed with delight the wise action of Government that has secured to the city and cantonment of Poona such a thorough supply of water as has lately been introduced by the completion of the Kurruckwask water works. So long as Poona had to depend for its supply of water upon wells and tanks, and a considerable portion of this required to be raised by machinery from the bund water, just so long was the supply of water more or less imperfect. To preserve this ample supply of water from various sources of contamination, it will be necessary for Government to secure possession of both banks of the canal for miles above the point from which the water is taken for supplying the cantonment.

The extreme and mean thermometer, with the amount of rain for the months of the past year, are as follows :—

Months.									Maximum.	Minimum.	Mean.	Rain.	
									Degree.	Degree.	Degree.	Inches.	Cents.
January	...	...	...	...	...	...	...	...	87	52	69	...	...
February	...	...	...	...	...	...	...	...	92	61	76	...	24
March	...	...	...	...	...	...	...	...	100	58	79	...	...
April	...	...	...	...	...	...	...	...	99	60	79	...	11
May	...	...	...	...	...	...	...	...	99	70	84	3	70
June	...	...	...	...	...	...	...	...	89	72	80	5	4
July	...	...	...	...	...	...	...	...	86	71	78	2	18
August	...	...	...	...	...	...	...	...	83	70	76	5	72
September	...	...	...	...	...	...	...	...	86	66	76	7	35
October	...	...	...	...	...	...	...	...	88	62	75	...	45
November	...	...	...	...	...	...	...	...	90	55	72	1	34
December	...	...	...	...	...	...	...	...	83	54	68	...	...
Total.....												26	13

State of the Regiment on the 31st December 1873.

Strength of regiment, excluding European officers	...	...	...	...	...	...	482
European officers	...	...	...	...	...	...	7
Hindus 290, Mussulmans 184, Indo-Britons 2, Christians 6	...	...	...	...	...	...	482
Married men 181, children 302	...	...	...	...	...	...	483
Recruits at riding drill 17, recruits at foot drill 2	...	...	...	...	...	...	19
Men under 2 years' service	...	...	...	...	...	...	30
Court-martials during the year	...	...	...	...	...	...	11
Strength of guards by day 28, by night 31	...	...	...	...	...	...	59
Nights in bed	...	...	...	...	...	...	8
Regimental school	{ Adults	...	...	...	...	...	45
	{ Boys	...	...	...	...	...	50
English class	{ Adults	...	...	...	...	...	7
	{ Boys	...	...	...	...	...	9
Died out of hospital	...	...	...	...	...	...	2
<i>Native Establishment.</i>							
Native Accountant	...	...	...	...	...	...	1
Chowdree	...	...	...	...	...	...	1
Moosudee	...	...	...	...	...	...	1
Peons	...	...	...	...	...	...	6
Syces	...	...	...	...	...	...	200
Grass-cutter	...	...	...	...	...	...	93
Bullock Bhistee, per troop 1	...	...	...	...	...	...	6
<i>Latrine Conservancy.</i>							
Filth cart	...	...	...	...	...	...	1
Sweepers	...	...	...	...	...	...	4
<i>Line Conservancy.</i>							
Sweepers	...	...	...	...	...	...	9

Sanitary Report by Surgeon-Major R. Dick on the Health of the Native Troops forming the Garrison of Poona during the Year 1873.

Average strength—1st Light Cavalry	448
1st Grenadier Regiment	705
8th Regiment N. I.	650
17th Regiment N. I.	499
Staff and Details { Fighting men	250
Followers „	742
Total	3,294

There appears to be some misunderstanding as regards the meaning of the term Strength; in some corps absentees, such as men on furlough, appear to be included in the strength, in others not.

2. *Sickness.*—The health of the Native troops was on the whole good, and the mortality inconsiderable. The following table shows the sickness and mortality of the different regiments:—

	1st Regiment Light Cavalry.	1st Grenadier Regiment N. I.	8th Regiment N. I.	17th Regiment N. I.	Staff and Details.
	448	705	650	499	992
Average daily sick	23.6	19.1	24.9	13.7	20.4
Percentage of average daily sick to strength.....	5.9	2.7	3.8	2.7	2.1
Percentage of treated to strength	108.9	96.3	135.7	134.5	7.5
Percentage of deaths to strength	0.89	0.56	0.2	0.2	0.1

3. State of lines and subsidiary buildings good, with the following exceptions. It is reported that the lines of the 8th N. I. are very bad; that in those of 1st Cavalry the ventilation is insufficient.

4. *General Sanitary Condition.*—Conservancy is carefully attended to; the arrangements are the same as last year. The latrines of the 1st Grenadiers are too near the lines and wells, and those of the 17th N. I. are too directly to windward of the lines.

5. State of hospital buildings good and sufficient in ordinary times, but in sickly seasons tents or other additional accommodation are required. The floors of the hospitals, 1st Grenadiers and 17th N. I., are of earth, so that the somewhat objectionable practice of cow-dunging is necessitated. A shed for contagious diseases has been constructed near the hospital 1st Cavalry and another in the hospital compound 1st Grenadiers, but none in those of 8th or 17th N. I. In my opinion neither tents nor grass sheds afford that protection from the fierce Indian sun which small-pox cases require in the hot season, and I doubt whether such cases are sufficiently isolated when kept in a hospital compound.

6. *Rain-fall and Temperature.*—The rain-fall was on the whole favourable, perhaps above the average; the register of one hospital shows 26.13, and that of another 31.49; perhaps one or other is incorrectly graduated. The maximum temperature was 102° and minimum 52°, the mean maximum for the year being 84° and mean minimum 68°.

7. *Water-supply* from wells, as in former years, of good quality, but rather limited in quantity in the hot season. In future the Kurruckwasla water, lately introduced into Poona, will probably afford an abundant supply.

8. *Prevailing Diseases in Troops and Vicinity.*—Ague, bronchitic affections, and rheumatism caused the largest number of admissions; while dysentery and pneumonia contributed the most severe cases. A few cases of small-pox occurred in the families of all the regiments. In the vicinity the same diseases were prevalent to some extent.

Recommendations made, and Results.—It was urgently recommended by the Officer Commanding 1st Cavalry and the Deputy Surgeon General that syce lines should be built, but without result. A new latrine for 1st Grenadiers was sanctioned. It is reported that new lines for the 8th Regiment N. I. are urgently required.

H. M.'s Bombay Sappers and Miners.

KIRKEE—In Medical Charge—Surgeon-Major W. DAVEY; Strength 391.

Notwithstanding the very considerable increase in the number of sick who have passed through the hospital during the year, the health of the corps has, on the whole, been good, and there has been an entire absence of any thing like serious disease.

2. There have been 525 admissions during the year as compared with 296 in the previous year, and the cause of this large increase is not far to seek: the men have been building their lines, and the hard work and exposure to cold, damp, and sun have made them liable to febrile affections, which, however, have not been of a persistent or complicated nature. A few days' rest in hospital under proper treatment has generally been sufficient to return the men to their work.

3. The corps has been wholly free from cholera, small-pox, or other epidemic disease.

4. The average daily sick shows an increase over the previous year amounting to 2.9 per cent., and the percentages of treated to strength and of admissions to strength have risen from 73.9 and 72.7 for 1872 to 136.0 and 134.2 respectively for 1873.

5. General diseases, as usual, contribute largely to swell the sick list; and during the year the proportion this class bears to admissions is 67.9 per cent.,—ague, febricula, and chronic rheumatism alone contributing 64.0 per cent. of this total.

6. Local diseases also show a considerable increase, just double of what they were in 1872; and the line building, especially the brick and tile making, has had a good deal to do with the increase.

7. Injuries, local and general, show an excess of 16 over the previous year; the duties which have fallen on the Sapper Corps during the year is more than sufficient to account for the number of admissions, 48. Besides building their lines, the regiment was called on to pull down the bridge over the Moota River at the Sungum, and to erect a trestle bridge for temporary use higher up the stream, during which occupations a good many accidents and injuries of a minor kind were received.

8. 11 men, or 2.8 per cent., were invalided during the year.

9. No death occurred during the year.

10. 105 vaccinations were effected, of which 77 were successful.

Detachment, Poona Horse.

DHULIA.—In Medical Charge—Surgeon G. BAINBRIDGE; Strength 131.

69 men of this detachment were treated, of whom 48 were admitted into hospital during the year. One death occurred, and 67 cases were discharged, two of these being sent upon sick leave.

Few instances of important diseases have presented themselves in the past twelve months. 41 of the whole were fevers, viz. 30 of ague and 11 of febricula; the remainder were chiefly trivial local affections and injuries.

Only one man suffered from dysentery, and one from diarrhoea.

The general health of the corps may, therefore, be characterized as excellent.

The following are the only cases I consider it necessary to notice:—

Bargur Mirza Myboob Allee was admitted with ague on October 1st. The fever was not severe, or accompanied by any complication, but he was low and feeble, and took but little food; his constitution was, moreover, decidedly weak, and he had always been extremely nervous

and of feeble habit. He did not complain of being very ill, or of having any other ailment besides fever, and he seemed to improve a little after his admission. He went to sleep as usual on the night of the 3rd, and was seen moving about towards midnight; about 3 A.M. on the 4th he was found to be dying, and shortly expired. I can only attribute his death to syncope, or to general failure of the heart from nervous exhaustion. I could not make a *post-mortem* examination.

The only other severe case of fever was that of Imaum Shere Khan, a robust and rather plethoric young sowar, who came in from the Shahda outpost on the 23rd October. The fever was high and accompanied by very severe headache, constant vomiting, some bilious diarrhoea, and a bounding pulse. Antimony and diaphoretics, emetics, calomel, and purgatives did not in any way relieve the pain in the head; I, therefore, applied eight leeches to the temples with much benefit, and under the administration of quinine and salines he rapidly convalesced.

This was a case, I think, in which early venesection would have been very appropriate; and probably have cut short the attacks, or rather have shortened the convalescence; the patient could well have borne the loss of from six to ten ounces of blood.

In January I extracted three No. 4 shot from beneath the integuments in different parts of the hand of a sowar who had suffered considerable inconvenience from their presence since an accident some months previously. After marking with ink the points beneath which the pellets were imbedded, I cut down upon them, and removed them without much difficulty with the aid of a probe and spring forceps. Two or three remained, which I could not feel distinctly enough to justify my cutting down upon them. No bad result followed the operation.

An unusually troublesome case of this affection occurred. The patient was discharged from hospital on the 10th November after suffering from severe

Conjunctivitis.

acute conjunctivitis of both eyes, which yielded, however, to treatment by fomentations, poultices, astringent lotions, purgatives, &c. On the 3rd December he was re-admitted with a similar affection of the right eye in a severe form, which has not been benefited by the usual remedies so rapidly as could be wished. There was no gonorrhœa or other apparent constitutional ailments, and the only complication was great chemosis, which was treated by scarification with good effect.

The man was still in hospital at the close of the year, and all acute inflammation had subsided, but the eye was still weak and the membrane injected.

The entire absence of proper house accommodation for the men of this detachment has been specially noticed in several past annual reports, and was the subject of a special communication on the subject addressed to the Deputy Surgeon General, P. D. A., under my No. 286 of the 18th November last.

Lines of the Detachment.

Detachment of H. M.'s 17th Regiment N. I.

DHULIA.—In Medical Charge—Surgeon-Major R. Dick; Strength 210.

The detachment 17th Regiment N. I. at Dhulia was under the charge of the Civil Surgeon from 1st January to 1st November, when they marched *via* Ahmadnagar to Poona to rejoin the head-quarters of the regiment.

The general health of the men appears to have been indifferent, and the number of admissions rather high, although few of the cases were severe.

Ague.—Under this head there were 139 admissions, most of them having occurred in the months of July to October.

Dysentery was less prevalent than during the previous year, when the whole regiment was stationed at Dhulia.

Conjunctivitis caused 19 admissions, 5 of them in January, and the others from July to October.

The following remarks on the more interesting cases are extracted from the monthly returns by Dr. Bainbridge:—

January 1873.

Since my joining the wing no cases requiring remarks have been treated.

February 1873.

26 men were treated in hospital. Of these 16 were newly admitted, 20 were discharged cured, and 6 remained in hospital at the end of February.

The only case of importance is one of jaundice, the sufferer being a young Purdasee of rather feeble constitution; there are no signs of obstruction of the biliary ducts, or at least of complete obstruction, and I am at a loss to account for the origin of the malady. He makes no progress. He has been treated by sulphate of magnesia, with acid sulph. and quinine, nitro-muriatic acid and taraxacum, &c., until the other day when I found a patch of psoriasis on each shin of a suspicious appearance; since which I have put him on syrup of iodide of iron with infusion of calumba, thinking there might be a syphilitic taint.

A rather acute case of hepatitis has been almost cured by leeching, fomentations, and sulphate of magnesia, and is now being treated by the dilute nitro-muriatic acid with taraxacum.

March 1873.

The health of the detachment is satisfactory. There were 19 sick of the detachment in hospital, 13 of whom were newly admitted.

Four men remained in hospital at the close of the month.

None of the cases were of any importance. The only case which gave trouble was that of jaundice, mentioned in my last return as being probably connected with a syphilitic cachexia; he has recovered under the use of iodides of iron and potassium and mild mercurials.

April 1873.

Fifteen men were treated, of whom eleven were newly admitted.

12 were discharged, and 3 remained in hospital at the close of the month.

14 MED

One sepoy was sent on sick leave to the Concan, for nine months, on account of chronic rheumatism and general debility. The case of jaundice, referred to in my last report, recovered under the use of iodide of iron, and owing partly I think to a reduction in his daily consumption of ghee, of which I found he was taking a considerable quantity.

A sepoy (Hindustani) was admitted on the night of the 16th, having been unable to stand at roll-call owing to excessive smoking of bhang. He was only slightly affected when admitted into hospital, and was discharged on the following day.

There were a few slight cases of fever, dysentery and diarrhoea, but none of importance.

May 1873. 12 men were treated, of whom nine were newly admitted. All the cases were of an unimportant and slight nature, and there were no deaths.

Four sick remained in hospital at the close of the month.

June 1873. 32 men of the detachment were treated, of whom 28 were newly admitted. 7 remained in hospital at the close of the month. The health of the corps was good, and there were no cases of serious nature.

The only case of interest was that of a Punjabee (Hindu) naique, aged 28, who has been very frequently in hospital during the past year with fever and gastric derangement. He is a robust, strong man, and for some time the cause of his malady could not be determined. I found, however, that he was suffering from lumbrici, and on pursuing a treatment by santonine, with occasional doses of castor oil, I have succeeded in relieving him of about a dozen round worms.

July 1873. There was a considerable increase of sickness during the month, due chiefly to fever, conjunctivitis, and gastric and intestinal disorders. There were, however, no serious cases, and no dysentery or diarrhoea occurred.

August 1873. Nearly half of the sickness (22 cases) was from fever, which was not, however, in any case severe; all the other causes of sickness were relatively unimportant.

One sepoy has been admitted for the second time for very large varicose veins in the left leg, which much interfere with walking. I fear he will be incapacitated for further service, although his age is only 34, and service 15 years. The disease has existed for about a year only, he states.

September 1873. 50 men were treated in hospital, of whom 30 were admitted during the month, 40 were discharged cured, and 10 remained in hospital on the 30th ultimo. The average daily sick was 11.3.

The only case of any importance was one of jaundice: the patient is a havildar, aged 42. He was treated at first by alkalies, rhubarb and salines, and since convalescence has taken nitro-muriatic acid with cinchona. The disease was evidently functional, as convalescence has been rapid, and there is no evidence of hepatic disease.

The fever was chiefly of a slight and transient nature, with ague. One case of scurvy occurred, the affection being manifested only by soreness and sponginess of the gums, for which no other cause could be ascertained; the general health of the man was good, and speedy cure resulted in the use of an astringent wash of tannic acid and an improved diet.

October 1873. No important cases were under treatment, except that of Naique Buckut Bullee, who has been in hospital for several weeks with fever and bronchitis, the latter having become in a measure chronic and accompanied by emphysema and much debility. He was sent before the Invaliding Committee, there being no prospect of his ever becoming again fit for active service.

Ague of a mild and transient kind was the most frequent disease during the month.

H. M.'s 11th Regiment N. I.

SATARA.—In Medical Charge—Surgeon O'KEARNEY; Strength 392.

I received medical charge of head-quarters of the regiment from Surgeon Wall on 23rd January 1873, and found it in a good state of health.

The left wing of the regiment was separated, two companies being stationed at Asirgarh, and the other two at Bombay.

The average strength of the head-quarters during the 11 months of the year has been 365. The number of admissions has been 290, 11 remained in hospital on 1st January 1873, making the total number of 301 cases treated during the period under report; of these 295 were discharged to duty, 2 died, 2 were granted leave on sick certificate to their native country, and 1 remained under treatment on 1st December 1873. The average daily number of sick was 13, percentage of treated to strength 10.5, deaths to strength none, deaths to treated none.

The strength of the detachment at Asirgarh was 150 and of that at Bombay 180.

These detachments will be reported on separately by the Medical Officers in charge.

Of the admissions 100, 28 were for fever, 93 being for ague, 31 for febricula, 3 for remittent fever, and 1 for simple continued fever.

The cases of ague were generally of a mild type, yielding to the ordinary treatment by quinine or liquor arsenicalis. Many were, in fact, so mild as to require simply the administration of an emetic on admission, followed by a purgative, with a few grains of quinine and a little attention to diet and regimen. The death reported as remittent fever was admitted into the hospital only a few hours before his death: the man unnecessarily exposed himself to the sun the whole of the second day before his death, and suffered much from its effects, but did not come into hospital. On admission he complained only of fever, but shortly afterwards he became insensible and died.

There is no regimental hospital, a wretched bungalow situated near the sudder bazaar being rented for that purpose. It is without exception the very worst hospital I have seen since I have been in the service.

The sanitary arrangements of the station are most defective. Nullahs in the immediate vicinity of the bungalows occupied by the officers of the regiment and others were used by Natives as latrines, and in the monsoon for ablution and other purposes. But soon after my arrival in Satara I reported the matter to the Officer Commanding, and recommended that policemen should be placed at different positions, and be directed to take any one into custody who was found committing such nuisance.

This had a very healthy effect upon the Natives, and latterly it has been a rare occurrence to detect any one committing the offence. The compounds of the bungalows were also, on my arrival, in a very dirty state, weeds and brushwood growing unmolested in them and along the public roads. This has also been in great part remedied. A very objectionable practice was and is still in force, viz., digging pits near the roads to procure moorum to repair the thoroughfares, these being used as waste pits by Natives when they can avoid detection. I have known a large quantity of prickly pear buried in a hole close to the high road only a short distance from the surface of the ground, this being covered with earth. The lines of the regiment are not pukka; they have been lately erected, and are kept very clean.

When I assumed charge of the regiment I found a sepoy suffering from small-pox.

I had him removed immediately to a tent at some distance from the lines, and with the Colonel's sanction the whole of the men, women, and children were inspected, and those who were considered by me to require vaccinating or revaccinating were operated upon as soon as lymph could be procured. No other sepoy was admitted with the disease; but 1 woman and 2 children had a slight attack of it, and were treated in the tent set apart for the purpose.

In this month two cases only of interest were reported, these being two cases of disease of the respiratory organs. It was feared one would terminate fatally, the pulse on the 25th 135. With active treatment, however, the temperature of the body was reduced shortly to 101°, in which state he remained for four days, after which the symptoms gradually improved, and he was discharged well some weeks afterwards.

In this month three cases only of a serious nature were admitted. A case of pneumonia threatened to be serious, but he was discharged to duty; two cases of bronchitis were admitted with serious symptoms—one was discharged to duty during the month, and the other, although in a precarious state, was discharged to duty in April. There was hepatic enlargement in this case in addition to lung affections, the temperature of the body being as high as 106°. Two-thirds of the admissions were of a trivial nature, viz. for febricula, colic paraphymosis, boil, and contusions.

During this month two cases only of a serious nature were admitted—one for quinsy, the other for remittent fever; the former was discharged to duty, the latter died, as reported above. One case of atrophy of the choroid was admitted, and he has been discharged with a gratuity.

Only 14 cases were admitted into hospital. One case of simple continued fever and one of ague threatened to be serious, but they were both discharged to duty.

April.

May.

Two cases of ague were threatened with serious complications, but after a few days the symptoms were relieved.

31 cases were admitted, of which 13, or 42 per cent., were from ague, of which 12 were discharged to duty; 35 per cent. were for febricula, contusion, and syphilis. One death occurred from remittent fever in an

June.

old man who was quite worn out. Had he lived he would have been recommended for pension this year.

One case was admitted with great constitutional disturbance, great heat of skin, vomiting, and diarrhoea. At first I considered it a case of remittent fever;

July.

but after a few days the man vomited a worm, after which the symptoms disappeared, and he was discharged to duty.

A case of trismus was admitted, the man being unable to give any clue as to the cause of the disease. He was treated with ext. conii every four hours,

August.

his strength being supported by stimulant and nutritious broths; fomentations were applied externally.

No case of interest was treated during these three months. One sepoy, originally admitted for bronchitis, but who had been suffering for some weeks past from debility, was recommended six months' leave to his native country,—stimulants, tonics, and nutritious diet not being attended with that benefit which I had expected from their administration.

The head-quarters of the regiment left Satara on November 25th in relief for Bhuj via the Camp of Exercise at Chinchwad, near Poona.

H. M.'s 28th Regiment N. I.

SHOLAPUR.—In Medical Charge—Surgeon A. J. LEGGATT; Strength 635.

The regiment up till November the 14th was stationed at Sholapur; on that date it left for the Camp of Exercise at Chinchwad, near Poona, on its way to Rajkot.

Sufficient has been said in preceding reports about the cantonment and country about Sholapur; consequently I shall confine myself in this to remarking (I.) on the state of health of the regiment during the past year, and (II.) the effects of the march and Camp of Exercise on the men.

The health of the men during the past year has been very good, especially when compared with the two preceding years, the total of treated for 1873 being 556 as against 998 in 1872 and 680 in 1871.

The disease for which the admissions show the most marked diminution is ague, the return of which during the past three years being as follow:—

1871	...	...	346 treated.
1872	...	...	551 „
1873	...	...	236 „

This may in a great measure be attributed to two causes—1st, the equable temperature which has been experienced during the past year; 2nd, the cheapness of provisions and abundance of good water.

The climate of Sholapur has been during 1873 most healthy and equable; there have been but few of those excessive and sudden changes of temperature, neither has there been any extraordinary falls of rain, both of which in the preceding year caused a large amount of sickness, especially ague.

The march to Poona during the last two months of 1872 may very likely have favourably effected the health of the men, though the month immediately following the return of the regiment from Poona showed nearly double the number of sick of any of the following months.

There is also an improvement in the number of admissions for rheumatism, being 43 as against 81 on the preceding year; this also may be accounted for in the same manner as the decrease in the number of admissions for ague. Diseases of the lungs alone show an increase in number of treated, attributable chiefly to exposure at the Camp of Exercise; as, out of the 18 cases admitted, 8 occurred during the last two months of the year, the time the regiment was on the march and at the Camp of Exercise. Disease of the intestine.—In this again there

has been a marked decrease, the number of treated being only 35 in 1873, as compared to 75 in 1872; this is almost entirely due to the plenteousness of good water and cheapness of food. Syphilis shows some slight improvement, but still there are a large number of admissions from it; and though the primary disease is not so often seen, the after effects of it are very apparent in the large number of patients which constantly present themselves for treatment, either suffering from bubo or secondaries in some form or other.

This is due to the reluctance the sepoys have for presenting themselves for treatment before an European officer while suffering from this complaint: neither threats nor kindness will prevail upon them to come for treatment till they have tried all manner of native remedies and found them all to fail. The consequence of this is, that the constitution is so thoroughly impregnated with the syphilitic virus that it is impossible to prevent secondary and tertiary symptoms intervening in their worst and most revolting forms.

Thus Government are continually burdened with the pay of a lot of men who are utterly useless as soldiers, but whom it is quite impossible to get rid of in any way except by invaliding, in which case they, for the most part, either receive a pension or gratuity. There have been four deaths during the past year, a decrease of three on the number in 1872.

Three of these were from chest complaints—Subedar Mahomed Khan from pneumonia, Color Havildar Balloo Lingday from bronchitis, Private Bhewa Rangday from pneumonia complicated with jaundice.

All three of these were men of long service, and the last two weakly men who had been a long time in hospital from various causes during the last two or three years. The fourth case was a case of secondary syphilis, in which that, at all times fearful, disease showed itself in its most repulsive form.

One Native officer and 8 rank and file have been sent on sick leave during the year, and nine men were invalided, all of them being entitled to pensions.

45 recruits were entertained, nearly all of whom are turning out healthy men, with the exception of one or two who have been suffering from primary syphilis since their admission to the ranks.

There has been no epidemic in any form whatever.

Before concluding these remarks I wish to add somewhat on the effects of marching on sepoy and their causes.

I. What does a sepoy chiefly fall out for on a march? 1st, shoe-bites; 2nd, oppressions of the chest, and shortness of breath.

To appreciate the causes of these, let me just shortly compare the ordinary dress of a Native with the clothes in which his body and limbs are imprisoned while on duty.

With regard to the head-dress, while in undress a Native wears many yards of light cloth, bound round his head in a manner which protects his temples and the back of the neck; on duty a small black forage cap, which may be covered with a small paggry, but which affords not the least protection to either temples or the nape of the neck.

2. The body of the Native when not in uniform is, if not unclothed altogether, clothed with the lightest covering, fitting quite loosely, and offering not the slightest impediment to respiration or movement of any of his limbs; on duty a sepoy is buttoned up in a coat tightly fitting round his body and neck, and with straps confining his chest and arms.

3. The Native shoe is as different from the ammunition boot ordered to be used by sepoys as it is possible to be, and one more unfitted than the latter for use by the Native soldier could not well have been invented.

The leather is hard, and rubs the skin, no socks being worn to protect it, and comes up high above the ankle, preventing by the sharpness of the edge of the leather any free play of this joint.

II.—What is the result of this method of trussing up our soldier?

Everybody who has any experience of Natives is perfectly aware of the long distances they can travel on foot, and the wonderful short space of time in which they will accomplish such distance. Every officer who has marched with a Native Infantry Regiment is also perfectly aware of the way in which men fall out on only a moderately long march, being utterly unable to keep up with the column; either their feet being so galled that they are almost unable to walk, or else suffering severely from shortness of breath and palpitation arising from their chests and throat being so confined by their clothes and accoutrements.

From this the result is easily deduced. That, instead of having an army capable of performing forced marches of almost any distance, by the unsuitableness of the dress provided to the Native army that body of men is reduced to its minimum of efficiency. It is true the dress looks well, and does well for simple garrison duty; but let any hard work in the way of marching be required, and then the utter unsuitability of it for the Native army shows itself by most unmistakeable signs.

H. M.'s 13th Regiment N. I.

AHMADNAGAR.—In Medical Charge—Surgeon-Major TICEHURST; Strength 622.

Last year I reported the health of the regiment had greatly improved since its arrival at Ahmadnagar from Surat, and it is satisfactory to be able to state that the improvement continued, and that the health of the regiment during the past year has been very good. The following table for the years 1871, 1872, 1873 will show the increase and decrease:—

H. M.'s 13th Regt. N. I.				1871.	1872.	1873.	Increase between 1872-73.	Decrease between 1872-73.	Remarks.
Strength	Europeans	...	...	64	65	69	04	...	
	Natives	...	...	632.0	650.0	622.0	...	28.0	
Admissions	...	...	...	868	753	488	...	265	
Daily average number sick	...	...	...	23.8	18.8	17.0	...	1.8	
Treated to strength	...	...	...	141	11.7	8.2	...	3.5	
Died in hospital...	...	...	...	9	3	1	...	2	
Died out of hospital	...	...	...	...	1	*2	1	...	* One case of suicide and one accidental.
Sent on sick certificate	...	...	...	12	8	8	...	...
Invalided	...	...	...	13	15	9	...	6	
Recruits joined	...	...	...	31	26	24	...	2	
Recruit boys joined	...	...	...	1	2	2	...	...

The admissions from all causes into hospital have been 488, of which 122 were cases of febricula; only 26 cases of ague occurred. The next great cause for admission was boils; next comes contusion, chiefly shoe-bites, 33 in number. Only 9 cases of dysentery are recorded, and the same number of diarrhoea. The fever generally of a mild type, and easily yielded to the treatment pursued—diaphoretics, quinine, arsenic, and other tonics. One fatal case (the only death in hospital during the year) of ague occurred: the subject, a sickly man with weak pulse and feeble action of the heart, died suddenly on the 7th day of admission from syncope. A few cases (17) of chicken-pox occurred during the hot season.

24 cases of simple catarrh were treated.

Of *rheumatism* 3 cases of acute and 23 of chronic rheumatism are recorded; the latter, as usual, proved very troublesome, remaining in hospital for a long time, and resisting all treatment.

Syphilis.—One case of hard chancre remained from last year. No fresh case was admitted. Four cases of indurated bubo were treated and discharged to duty. Four cases of soft chancre were admitted, cured, and discharged to duty.

Of *secondary syphilis* three cases were admitted, and one remained from last year; all have been discharged to duty. Treatment—large doses of iodide of potassium and the mercurial vapour bath.

Scurvy.—Only two cases occurred; both discharged to duty.

Conjunctivitis.—Of this disease 30 cases were recorded, and one remained from last year—total 31. Of these 30 were discharged to duty and one remained. The treatment pursued, consisted of the use of lotions of nitrate of silver—strength according to the severity of the attack; lotions of sulphate of zinc and acetate of lead were of use in some cases, and the vinum opii in others.

Diseases of the Respiratory System.—Six cases of bronchitis were admitted, and one remained from last year.

Diseases of the Digestive System.—Diseases of the stomach: six cases of dyspepsia occurred, all discharged to duty. Of the intestines nine cases of dysentery were admitted, and two remained from last year—total eleven; all were discharged to duty. Treatment: castor oil and small doses of ipecacuanha. Nine cases of diarrhoea were admitted, and one remained from last year. Of these nine were discharged to duty, and one was sent on sick leave.

Hæmorrhoids.—Four cases were under treatment during the year.

Diseases of the Liver.—One case of simple enlargement occurred, and discharged to duty.

Diseases of the Spleen.—Two cases of inflammation are recorded; both were discharged to duty.

Diseases of the Urinary Organs.—Nine cases of gonorrhœa are recorded; of these eight were discharged to duty, and one remained in hospital at the end of the year.

Diseases of the Generative System.—Of the male organs, &c., six cases of orchitis were admitted and treated; all discharged to duty. Treatment: fomentation, strapping the testicles, &c.

Diseases of the Cellular Tissue.—9 cases of abscess and 14 of dracunculus were admitted; all have been discharged to duty.

Diseases of the Cutaneous System.—36 cases of boil occurred; of these 35 were discharged to duty, and one remained in hospital at the end of the year. Treatment: poultices and incisions, and stimulating dressings.

Injuries of the upper extremities.—One case of sprain and two of contusion are recorded; both were trivial cases, and call for no particular remark.

Of the lower extremities 33 cases of contusion were admitted, and two remained from last year; nearly all were cases of shoe-bites caused by wearing ill-fitting boots.

Two deaths occurred out of hospital during the year: one was a case of suicide, the man shot himself in his hut; and the other shot himself accidentally while on guard at the jail. No European officer has been sent on sick certificate, nor has any death occurred.

Sanitary Remarks.

1. No case of cholera has occurred.
2. No case of small-pox has occurred.
3. Vaccination has been regularly and successfully performed.
4. The general sanitary condition of the cantonment has been satisfactory.
5. *Latrines.*—The trench latrines have been used by the regiment during the greater part of the year, but at one time during the rains they had to be given up, and the regular latrines were re-opened and used. The trench latrine system is now at work again, and the result is very satisfactory.
6. The hospital H. M.'s 13th Regiment N. I. has been altered and greatly improved; the light is now much better, and ventilation good.
7. A dead-house has been erected.
8. The water-supply has been ample in quantity and of good quality.
9. The rain-fall during the year came up to 26 inches and 80 cents. The mean temperature for the past year was 71·4; the highest temperature was obtained in April and May, and the lowest in December.

H. M.'s 5th Regiment N. L. I.

BELGAUM.—In Medical Charge—Surgeon-Major H. DAY ; Strength 607.

There has been an increase of this disease, but the cases have not been severe for the most part, but have been chiefly accompanied by rheumatic pains in the limbs, which may probably be owing to the fact that so many of the men were attacked with dengue in Aden, and I have noticed in some cases a disposition to return of the pains in the limbs.

Ague. One case only was fatal : a recruit came in with symptoms of great congestion of the lungs, and soon died.

Remittent Fever. There has been an increase of this disease, probably due to the dampness of this climate after Aden, and also to the fact of the scorbutic taint existing to a large extent in the regiment.

Chronic Rheumatism. Four men have been invalided from this cause.

Syphilis. This disease has been almost nil this year, and it does not call for any remark.

One man, however, of short service I thought it inadvisable to bring before the Invaliding Committee ; he was discharged.

Like all regiments coming from Aden this disease has greatly impaired the health of the regiment, and has lowered the standard of health of the men very much more than would be supposed from the numbers shown in this return. In fact, the men have a pinched-up, fine-drawn appearance about them, very different from a regiment in thorough health : this is quite palpable to eyes, non-medical even.

Scurvy. The regiment went to Aden in sailing ships, and was three weeks on the passage ; this is a very bad preparation for Aden, and tells most severely on the non-cooking men.

Before I left Aden I tried to get the rations altered : the men had brinjalls and dried pumpkin served out to them. I found that many of the men would not eat brinjalls ; and as for the dried pumpkin (even if it has any antiscorbutic properties) the sepoys for the most part threw it away and did not eat it.

There was a difficulty also about the cokum, as the men said they could not cook it in their brass cooking pots.

The lime-juice also was only lime-juice in name, and it would be very difficult to say what it was.

I sent some of it to the Chemical Analyzer to Government, who reported it as unfit for use. I believe that scurvy is almost unknown among the European troops at Aden, and should be also among the sepoys. If they could be sent for a short time without their families, say one year, I think it would be very beneficial, as there would not then be so many mouths to share in the rations. Perhaps they might be sent over in small parties as deck passengers, in the very numerous steamers now running, at small expense, but this is a question which hardly befits me to enter upon.

If find that, out of 24 men now receiving treatment for scurvy, 18 are non-cooking men ; this will show the class of men who find it most difficult to shake off the scorbutic taint. The men also with large families remain longest affected with this disease from poverty.

Appoplexy. There was one case invalided during the time Surgeon Welsh was in charge.

Conjunctivitis. The cases have all been slight, and probably more due to the smoke of the cooking fires than any other cause.

Occlusion of the Pupil. This was an unusual case, and was probably due to a syphilitic deposit ; the man has been invalided. Mercury had no effect on the deposit.

One man died from pneumonia during the time Surgeon Welsh was in charge ; the other cases of diseases of the respiratory system have not been severe, with the exception of one case of asthma, whom I have sent on leave.

I found belladonna very useful in this case.

Has been very slight this year, and needs no comment; but I think it is somewhat remarkable, as the scorbutic taint in the regiment would lead one to expect severe cases.

Dysentery

This has been very troublesome this year, but cannot, I think, be put down to Belgaum, as all the cases have happened to recruits from the vicinity of Mhar. I believe that, although guinea-worm is common at Dharwar, it is very rare in this station.

Guinea-worm.

The case of Indian hemp poisoning was very serious, but the man recovered in about 48 hours. I followed the plan of treatment advised in Squire's Pharmacopœia.

Indian Hemp.

Burns and Scalds.

These were all trifling.

Contusions of Leg.

Would be much better described as shoe-bite cases; they were almost all of this nature.

Only one case of small-pox occurred among the families of this regiment at the same time that it was prevalent in the lines adjoining ours, viz. those of the 6th Native Infantry.

Small-pox.

Vaccination.

Has been well looked after.

Rain.

43 inches 87 cents fell in the year, and the crops have done well.

By the direction of the Deputy Surgeon General measures have been taken during the year to check scurvy.

A dead-house, to be common to the two hospitals, is being built, but is not quite finished yet.

It will take about three years (after returning from Aden) of a healthy and cheap station like this to thoroughly re-establish the health of the regiment.

H. M.'s 6th Regiment N.I.

BELGAUM.—In Medical Charge—Surgeon-Major A. M. ROGERS; Strength 617.

Strength and Admissions into Hospital.

that period have been only 281, and 2 officers in sick quarters.

Number of Casualties.

Number invalided and successfully vaccinated.

The average strength—officers and men of H. M.'s 6th Regiment Bombay Native Infantry—for the year has been, within the smallest fraction, 625. The admissions into hospital for the year, details of which will be subsequently noticed. 33 men have been invalided and discharged, and nearly 300 children and adults have been successfully vaccinated.

It will be seen by the returns herewith submitted, that of the total admissions (281) into hospital during the year, more than half the number are derived from fever (79), rheumatic affections (24), disorders of the bowels (32), and contusions (29); the bowel derangements not including dysentery or cholera.

The casualties for the year amount to five: one from remittent fever which occurred previous to my taking charge of the regiment, and detailed particulars of which I have been unable to obtain; two of the other four deaths resulted from disease of the lungs (phthisis pulmonalis); and one of them, which appears under the head of aphonia, from miliary tubercle in the larynx and lung; the fourth case was one of sheer debility and a total incapacity to digest or assimilate nourishment of any sort.

Nature of Casualties.

The building in use as an hospital is little better than a large shed, with doors and windows, and a verandah all round; in two places this verandah is converted, by means of doors and windows, into rooms.

Hospital Accommodation.

One of these enclosures is dignified by the title of dispensary (22 feet by 8 feet wide), and at the opposite end of the hospital is another enclosure, about 13 feet by 13, which is occasionally used for severe ophthalmic cases and cases of itch.

When I state that appendages so essentially necessary to an hospital as a bath-room, a surgery, a room to receive, and when necessary in which to operate upon, difficult and dangerous obstetric cases which often occur amongst the wives of men and Native officers in the regiment, a room for the segregation or isolation of contagious cases, are entirely wanting, I may perhaps convey an imperfect idea of the limited, inexpensive, and somewhat primitive character of the building which is called a hospital.

The lines of the 6th Regiment Bombay Native Infantry are situated on the extreme south-east of the cantonment, close to some paddy fields, at the lowest point of a sloping ridge, upon the most elevated portion of which the magnificent barracks for the European troops are situated;—in a word, they occupy about one of the worst positions in the camp that could have been selected. The geological formation of their site alone saving them from being a hotbed of fever and dysentery: the laterite formation upon which the lines are built most fortunately admits of a ready percolation and distribution of the rain-fall.

The accommodation provided for housing the rank and file of the regiment is such as is commonly met with in Native regiments, light and ventilation being, as a rule, considered non-essential to the well-being of the inhabitants. The absolute cubical space is not open to much objection, being very little under 1,500 cubic feet, with about 100 superficial feet of space; the lighting and ventilation, however, is deplorably imperfect.

The supply of water is ample, and the character of it very satisfactory, the amount of saline and other impurities being almost entirely inappreciable. This favourable factor in the sanitary condition of the sepoy is due to a judicious and zealous conservancy, and the very favourable geological formation which has been already noticed.

The rain-fall during the past year has been seasonable and tolerably abundant, though under the average, amounting to only 44 inches and 8 cents—the average being 52.029. Up to the present date, however, no indication has been observed which would justify the anticipation of any evil result, either to the corps, animals, or inhabitants, from the slight deficiency registered.

Eight cases were registered and treated as variola during the year, but before I joined the regiment I have reason to think that an over-anxiety to be on what is termed the safe side induced some cases to be so classified and treated, though not cases of true variola at all. After I had taken charge of the regiment two cases were reported to me as variola, but which upon examination I discovered were cases of true varicella globata; and these the hospital assistant assured me were precisely similar to some of the other cases previously admitted. These cases were segregated from other patients by placing them in tents, which were pitched about a quarter of a mile away from the hospital; the two last cases referred to I treated in a little verandah room already referred to. Besides the cases which appear in the annual return, 2 women and 23 children were successfully treated, and no casualty occurred from this disease.

The station, including the inhabitants of the camp, has been favoured by a complete immunity from cholera,—a sanitary condition which Belgaum is noted for.

Cases affecting the urinary and generative organs have been very few, only 9 altogether, and of these one was a simple tumour situated on the prepuce, and which, but for its size—interfering with, if not altogether preventing, sexual intercourse—was harmless, I removed it by operation, and the case did admirably well. Three cases, which appear under the head of "true leprosy", I found under treatment on my taking charge of the regiment; but as I failed to discover in any of them the symptoms and appearances of "elephantiasis Græcorum" I had them transferred to what I considered a more correct classification.

There have been no cases treated during the year of sufficient professional or official interest to justify me in extending this report by commenting upon them.

A small, well-built, well-ventilated dead-house has just been completed for the use of both Native Infantry Regimental Hospitals. It is situated exactly midway between the two hospitals, and is just large enough to hold one table of the usual size for the *post-mortem* examinations. Trifling additional outlay would have provided a really useful building of two rooms, one in which a man might have sufficient space to work, and an adjoining room in which pathological research might be conducted, to the great advantage of the medical subordinates, the doctor of the regiment, and the public at large.

33 men have been invalided and discharged during the year, including some who were dismissed with a gratuity,—men whom I brought forward as physically unfit, either from diminutive stature, imperfect muscular development, or physical conformation, rendering them not only ineligible but absolutely unfit for the arduous duties of a soldier. I regret to say there are still a few in the regiment that should never have been admitted, and who can never be expected to become physically effective soldiers.

In concluding my remarks I cannot help expressing my sincere gratification at the exceptionally healthy and very satisfactory condition of the regiment, which, professionally, I consider at present fit for any service, anywhere.

Conclusion.

H. M.'s Poona Horse.

SIRUR.—In Medical Charge—Surgeon W. R. GORDON, M.B.; Strength 331.

The medical history of H. M.'s Regiment Poona Horse affords little to comment on, different to what has been alluded to in previous reports.

The general health of the regiment has been very satisfactory, there having been only

General Health.

214 admissions from an average strength of 251. The average number of daily sick was 7.4; proportion of sick to strength, 86. Three deaths occurred during the year: one from dyspepsia caused by opium-eating, one from phthisis, and one from debility, the result of a prolonged attack of fever while on outpost duty. Proportion of deaths to strength 1.1; proportion of deaths to treated 1.3.

The strength of the detachment at Dhulia during 1873 was 150; of that at Kaladgi 80.

Detachment.

The latter has now returned to head-quarters, having been relieved by a detachment of infantry, and this arrangement is to continue in future.

The following table will show the diseases which caused the admissions and deaths:—

Diseases.								Admissions.	Deaths.	Rate per 1,000.	
										Admissions.	Deaths.
<i>General Diseases.</i>											
A.	...	...	...	...	...	...	...	68	...	270.9	...
B.	...	...	...	...	...	...	...	29	...	79.6	...
<i>Local Diseases.</i>											
Nervous system	...	...	...	...	...	...	...	2	...	7.9	...
Eye	...	...	...	...	...	...	...	9	...	35.8	...
Ear	...	...	...	...	...	...	...	4	...	15.9	...
Absorbent system	...	...	...	...	...	...	...	...	...	...	...
Circulatory system	...	...	...	...	...	...	...	...	...	...	...
Respiratory system	...	...	...	...	...	...	...	7	1	27.8	3.9
Digestive system	...	...	...	...	...	...	...	24	1	95.6	3.9
Urinary system	...	...	...	...	...	...	...	4	...	15.9	...
Generative system	...	...	...	...	...	...	...	...	...	...	...
Organs of locomotion	...	...	...	...	...	...	...	...	...	...	...
Cellular tissue	...	...	...	...	...	...	...	3	...	11.9	...
Cutaneous system	...	...	...	...	...	...	...	23	...	91.6	...
Conditions not necessarily associated with local or general diseases	...	...	...	...	...	...	...	6	1	23.9	3.9
Poison	...	...	...	...	...	...	...	1	...	3.9	...
Injuries	...	...	...	...	...	...	...	...	...	...	...
{ General	...	...	...	...	...	...	...	...	...	...	...
{ Local	...	...	...	...	...	...	...	43	...	171.3	...
								214	3	...	...

From the above it will be observed that about half the number of admissions were caused by ague and local injuries, the latter being chiefly kicks or contusions occurring on parade. The ague cases occurring at Sirur are, as a rule, of a very mild type, and readily yield to dietetic treatment, with small doses of quinine and arsenic. I have, however, treated some very obstinate cases among the men returning from Khandesh.

From rheumatism, acute and chronic, there were 15 admissions, chiefly among the men who returned from Kaladgi.

Disease of the eye gave 9 admissions, one man with cataract being admitted three times

Nervous system furnished 2, one being a case of hemiplegia. The subject of this was admitted on the 22nd November, on arrival of the detachment from Kaladgi. He was suddenly seized on the night of the 5th November while sleeping under the shade of a tree,

and can assign no cause for the attack. He had no excess of work, nor undue exposure on the march, and was in perfect health previously. He has been treated with belladonna and bromide of potassium, and locally galvanism and dry cupping. He is now slowly improving.

The respiratory system furnished 7 admissions, 3 being from bronchitis, 2 from asthma, 1 from pneumonia, and one from phthisis. The subject of the latter died utterly worn out by the disease, although he had only been a short time under treatment.

The digestive system furnished 24, principally from dysentery and diarrhoea.

The urinary system 4, all being from gonorrhoea.

The cutaneous system 23, the greater number being from eczema and boils.

From debility there were six admissions, of which one died. This case will be alluded to in the para. on the Camp of Exercise.

The general sanitary condition of the lines and cantonment is very satisfactory. No case of cholera or small-pox occurred during the year, either in the regiment or among the followers.

Sanitary.

Conservancy.

This was fully described in my last report, and the same system is now carried out.

The water for all purposes is obtained from the river Gorch, which is a perennial stream.

Water-supply.

The following is the report, by the Chemical Analyser, upon the specimens of river and well water forwarded to him for analysis:—

	Grains per Gallon.	
	River Water.	Mess Well Water.
Total solids dried at about 280 F....	24.36	54.88
Loss on ignition ...	1.12	.56
Chlorine ...	4.46	3.47
Sulphuric acid ...	2.66	16.13
Lime ...	4.39	9.32
Magnesia ...	2.06	4.69
Silica ...	3.22	6.02
Hardness before boiling ...	16° 80	16° 80
„ after boiling ...	2° 80	13° 30
Ammonia—		
In distillate from carbonate of soda ...	.0406	.0147
In distillate from permanganate of potash ...	.0295	.0126
Of nitrates and nitrites ...	.0630	.2520
Oxygen—		
Total required by the water at 140° F. presence of acid ...	.0658	.0168
Colour in stratum of 2 feet ...	Opalescent, slightly milky. Earthy. Earthy. Neutral alkaline when concentrated.	Defectively transparent.
Odour... ..		None.
Taste		None.
Reaction		Neutral alkaline when concentrated.

SEDIMENT.

River Water.

Clay-coloured, flocculent, vegetable debris, novicula, monura dulcis, anthrodesimus.

The syces' lines have now been completed, and afford ample accommodation for 52 families. Since occupying these lines the sickness among the syces and their families has diminished very considerably.

Syces' Lines.

The subject of insufficient hospital accommodation and the want of subsidiary buildings has been so frequently brought to notice, both by my predecessor and myself, that it would be superfluous for me to again allude to the matter. I have on two separate occasions addressed the Commanding Officer on

Hospital Buildings.

Mess Well Water.

Small in quantity, light brown, paramacia, carbonate of lime crystals.

the subject, and he concurs in what I have brought forward. He has submitted both letters with a recommendation for the favourable consideration of the superior authorities. Copies of these letters were forwarded to the Deputy Surgeon General, Poona.

The rain-fall has been unseasonable, as it only extended over a short period, and the quantity (19 inches and 79 cents) is small when compared with the rain-fall (24 inches) during 1872.

EXTRACT from Hospital Meteorological Register.

Months.	1872.							1873.						
	6 A.M.		4 P.M.		Rain.			6 A.M.		4 P.M.		Rain.		
	Inside.	Outside in shade.	Inside.	Outside in shade.	Inches.	Cents.	Days.	Inside.	Outside in shade.	Inside.	Outside in shade.	Inches.	Cents.	Days.
January ...	67	58	83	96	...	...	...	62	53	83	89	...	...	...
February ...	68	58	85	97	...	...	...	71	67	90	96	0	22	1
March ...	78	68	93	104	...	...	...	72	67	91	102	...	...	...
April ...	76	72	94	106	0	74	3	76	70	95	103	0	5	2
May ...	77	72	90	103	0	11	1	80	75	92	103	1	48	5
June ...	77	75	88	92	4	66	16	76	74	85	90	4	41	7
July ...	75	73	81	83	3	85	15	75	73	82	83	0	55	11
August ...	74	72	83	86	2	93	7	75	72	82	84	6	64	8
September ...	72	71	79	82	11	43	17	73	70	80	81	4	94	10
October ...	71	67	87	94	...	...	...	65	76	87	95	0	13	1
November ...	69	59	80	89	0	12	1	73	66	88	97	1	37	4
December ...	62	55	82	88	0	17	1	59	55	82	95	...	...	...
	...	...	...	...	24	1	61	...	...	...	...	19	79	49

The regiment, 350 strong, left Sirur for the Camp of Exercise on the 1st December, and returned on the 27th idem. The number of sick during the manœuvres was comparatively few, and only 3 were sent to the Depôt Hospital at Kirkee for treatment; one of these was the result of an accident on parade. One sowar died at the camp from debility. The man had only just returned from outpost duty in Khandesh, where he had suffered very much from fever, and he would not have been taken to the camp had his condition been known before we marched. He presented himself at the hospital on the first march out from Sirur, and as he appeared to be only suffering from weakness, he was brought on in the hope that the change might do him good. On arrival at Chinchwad he was in much the same condition, but he suddenly became weaker, and died on the night of 6th December.

The health of the European officers during the year has been very good. Lieutenant Hay proceeded on one year's sick leave to England.

The following table will show the sickness and invaliding in the regiment during the past year as compared with 1872 :—

	1872.	1873.
Average strength at head-quarters ...	205	251
Remained in hospital last year ...	2	2
Admitted into hospital during the year ...	194	214
Discharged from hospital during the year ...	189	204
Died in hospital during the year ...	2	3
Invalided from the regiment ...	9	30
Pensioned on completion of 40 years' service ...	...	4
Transferred from the regiment ...	...	1
Remaining in hospital ...	2	9
Recruits joined during the year ...	9	32
Average daily sick ...	6.3	7.4
Proceeded on sick leave ...	3	5
Proportion of sick to strength per cent. ...	95.6	86.0
Do. of deaths to treated ...	1.02	1.3
Do. of deaths to strength ...	0.9	1.1

H. M.'s 12th Regiment N.I.

DHARWAR.—In Medical Charge—Surgeon-Major C. T. OGILVIE, M.D.; Strength 646.

Up to the 20th August the regiment was in charge of Surgeon-Major Alleyne, when he was taken ill with bronchitis, chronic, from which disease he died on 10th September.

From the 21st August to 16th September Surgeon-Major Mackenzie was in medical charge, when he was relieved by Surgeon Salaman, who held the charge until 21st November. Dr. Salaman being directed to proceed to the Camp of Exercise at Chinchwad, Surgeon-Major Mackenzie again held charge of the regiment until 30th December, the date of my arrival at Dharwar.

From the records I gather that the average strength of the regiment during the past year was 646. 545 cases were admitted into hospital, 12 remained on 1st January 1873, making a total of 557 cases treated during the period under report.

Of these 538 were discharged to duty, 1 died, 4 were sent on sick certificate to their native country, and 14 remained under treatment on 31st December 1873. The daily average number of sick was 15; percentage of treated to strength was 86; deaths to strength none; deaths to treated none. Of the admissions 132 were for ague, 43 were for contusions, 38 for abscess, 36 for rheumatism, 11 of which were admitted for the acute form of the disease. Syphilis gave 33 admissions, two of which were under treatment when I assumed medical charge of the regiment.

From the appearance of these two cases, and from inquiries I have made, syphilis in a very bad form exists in Dharwar; and I would strongly recommend that a lock hospital be established here without delay. From the proximity of Dharwar to Belgaum, and the large number of European troops at the latter station, the Natives of Dharwar having frequent intercourse with Belgaum, it appears to me that too great care cannot be taken to prevent this disease being communicated to that station from Dharwar.

Gonorrhœa and its complications gave 13 admissions, 16 cases of dysentery were admitted, and diarrhœa gave 5 admissions. The regiment commenced building lines on a new site about two miles from the old lines, and this accounts for the number of contusions, the men being unaccustomed to the work necessarily performed by them, quarrying for stone, &c. &c. On the whole I consider the health of the regiment to have been good, only one death having occurred.

Surgeon-Major Alleyne's lamented death can in no way be connected with the climate of Dharwar.

Garrison Staff and Details for the Year 1873 by Surgeon-Major O'Kearney, M.D.

The hill-fort of Asirghar appears to have derived its name from the herdsman Assa-Aheer, the reputed founder of the fortress, whose ancestors had, some 700 years previously, built a wall round the hill of Assir in order to protect their cattle from the robbers who infested the mountains.

The wall was afterwards levelled and a fortress built of masonry; and the work being the attempt of the herdsman further to secure the hill against depredations, it ever afterwards bore the distinguished name of its founder. It afterwards fell under the sway of the Mahomedan princes of Khandesh, who, according to Ferishtah on his visit to this place more than 250 years ago and whose account appears most authentic, treacherously possessed themselves of the fortress, and put Assa and his people to the sword. About two centuries after this occurrence Asirghar was taken by siege towards the close of the reign of Akbar the Great, in which dynasty it continued to remain until the Maharatta power rose upon the ruins of the Mogul Empire. It was finally invested, towards the close of the war of the Maharattas, by a strong and irresistible force under Brigadier-General J. Doveton, C.B., 1819, and surrendered unconditionally to the British after a protracted siege of eleven days, in whose possession it has continued ever since uninterruptedly to remain.

Topography and Physical Geography.—The fortress, isolated by nature from the plain, is situated on a detached hill, an off-set from the Satpara range, and lying on the borders of the Khandesh and Nimar districts in latitude N. 21°26', longitude E. 76°20'. From the most recent trigonometrical survey its height above sea level is said to be 2,300 feet, and about 850 feet from its summit to the base or foot of the hill adjoining the plains.

It is nearly 320 miles by rail N.E. of Bombay, the distance being taken from its nearest station, Chandni, 6 miles from the village of Assir, at the foot of the hill. This latter is 12 miles north from Burhanpur, population 30,000, and 29 miles S.W. from Khundwa,

the civil head-quarters of the district, containing a resident Deputy Commissioner, and bids fair to become shortly the terminus for the new line of railway being projected between that town, Indore, and Mhow. The hill-fort is situated between the valleys of the Tapti, 8 miles, and Nerbudda, 60 miles, the intervening space being but little cultivated, and cut up with ravines amidst a dense and in part impenetrable jungle. To the south-west and south-east the general aspect of the country is mountainous, hilly, irregular, with an occasional open plain of jungle and grass, surrounded or intersected by deep and shallow ravines, covered for the most part with dense jungle or brushwood, rich in fragrant gum resins and medicinal and other commercial products, together with trees of the stunted or bastard teak, the wild acacia, the catechu tree, the ficus Indica, conglomerate and other common jungle timber, the best of which, however, during the construction of the railway, some years ago, was cut down and removed for firing, railway sleepers, and local, mechanical, or other purposes. Three or four months after the rains, most, if not all, the nullahs and water-courses near the hills become dried up, and during the hot weather the ground is arid and destitute, at least for some feet below the surface, of all moisture. There are consequently no marshes, and but little cultivation can be practised beyond a few gardens in the neighbourhood. The soil, moreover, is poor, and morhum or rock crop up on every prominence. The general formation is trap, either raised in lofty basaltic pillars, as in the case of the hill-fort, or appearing as a hard, semi-decomposing trap detritus everywhere on the surface, thus rendering the ground impracticable in greater part for cultivation, and extremely dry, over-heated, and glaring to the eyes from the sun's rays during the hot weather. For the same reasons the cattle supply and feeding capabilities are poor, and edible grass or cattle forage scanty, and few cattle can remain here to graze beyond some months after the rains, having to seek the better, more fertile, and grass-yielding feeding ground in the neighbourhood of the adjoining rivers Tapti and Nerbudda, where the supplies of ordinary cattle food are, I believe, unlimited.

The rivers Tapti, Omrawutti and Nerbudda, &c., in the neighbourhood abound, during the season, in fish and wild fowl; and the former commodity is occasionally supplied the hill by the Boce, or fishermen of the adjoining village, who are wholly dependent thereon for a livelihood. The jungle abounds in game, especially of the larger kind—the tiger, cheeta, panther, leopard, bear, bison, wild boar, hyena, nilgai, sambur, cheetah, a few black buck on plains, chincara, and ravine deer, porcupine, jackal, hares, partridges, quail, pea and jungle fowl, &c. The alligator and tortoise, the marseer, patee, morrell and dakoo abound in the rivers and nullahs, affording excellent sport and exercise, &c., all which, owing to distance, &c., however, cannot easily be had without some trouble, exertion, and self-denial.

The vegetable products available are had from a few well-watered gardens at the foot of the hill, consisting of good Native vegetables, fruits, limes, mangoes, &c., together with an excellent description of very edible grapes, and a few oranges and plantains in the season.

The main or trunk road from Berampore to Mhow passes close to the foot of the hill; the same, uniting the Deccan with Central India, is still much frequented by travellers arriving from the Deccan, Hindustan, and Central India, together with the annual traders from Cabul, who all usually pass by this route. Hence the constant danger and exposure of the inhabitants in the village at the foot of the hill to the inroads or visitations of cholera, small-pox, and other epidemics, of which, however, I am glad to record, we have had none this year.

Lying in a N.W. direction, and within $1\frac{1}{2}$ mile from the hill, is a good encamping ground and well water reserved for troops on the march as well as for the local detachments of the fortress whenever required. The fortress at its summit is about 1,000 yards from east to west and in extreme breadth 5 to 600 yards from north to south, and being intersected by a ravine running almost the whole length it is divided into four useful tanks for the supply of drinking, cooking, and bathing water, and from these alone is the general supply of the hill wholly derived. I may add, however, that a good deal of the monsoon water is lost by the want of drains to catch and convey the water into the tank, in lieu of letting it pass off and gravitate along the slopes and sides of the hill into the jungle below; and when years of scarcity of rain occur these defects are much felt, and, if not remedied, the European troops, who consume most, will have to be temporarily withdrawn, or supplied with inferior water from below, as stated in the annual report for 1872.

The tank surface in the upper fort is estimated to be over 163,000 square feet, and about 7,000 square feet in the lower fort and pettah at foot of the hill. Within the fort at the south side are two new blocks of European barracks built in *echelon*, with subsidiary buildings on standard plan, and capable of accommodating 70 men, with an average space of 80 superficial, 1,500 cubic feet per man. At the north side is a musjid barrack, an old Native building converted into a barrack after having been originally a hospital. This can accommodate about 30 more men, though badly, owing to lowness of roof of that building not being in accord with professed standard plans. On the ridge at the south side, close and to the east of the new barracks, are two blocks of new patcheries and out-offices for 20 married families. At the extreme west end and south side are the Native lines, consisting of pendalls for 200 men constructed about

25 years ago of stone and lime, though now in great part only stone and mud, with plinth raised at about an average of $1\frac{1}{2}$ feet above the ground. There are no bath or ablution or cook-houses, and there is one general garrison latrine, divided off for men and women. There are two hospitals, one for Europeans, the other for Natives; the former originally a private bungalow, the latter a pendall with a latrine only attached. There is a Government bakery on standard plan, 9 private bungalows, a small bazaar, a jail for convicts, a lock up for the State prisoners, and these together with a magazine, post office, a chapel, and a few Native temples, together with some semi-dilapidated monuments, the remains of Native Government, complete the remaining buildings within the fort.

The Climate.—The weather is cool and dry in December, January, and February and part of March, when the hot weather commences, lasting till June, when about the 15th the S.W. monsoons commence with heavy winds, showers, thunder and lightning: to these succeed heavy rains and fogs and driving mists, the latter ceasing about the 1st week in October, and succeeded by a month and a half of close and rather sultry weather, usually unhealthy, accompanied with fevers of the intermittent and remittent types, which run on to the middle of the cold weather and generally disappear about January.

The climate is for the greater part of the year good, and conducive to health.

The prevailing diseases of the district are ague and remittent fevers, the latter occasionally of a bad type, and chronic rheumatism and bowel affections, especially diarrhoea and dysentery. Should an epidemic or any contagious disease appear in the village, an isolated place (with straw huts, and removed outside the village) has been, during the year, selected to meet any emergency that may arise, and which with the dispensary recently established in the pettah will tend, doubtless, to mitigate any sickness or distress that may occur below.

Apothecary Mr. Lobo took my place in November during my absence at the Camp of Exercise, I having been ordered from this in November for the Camp of Exercise, where for some time I had medical charge of the 1st Depot Hospital, Poona, and 11th N.I. at the camp. Mr. Apothecary Lobo was ordered from Belgaum to take charge of the station during my temporary absence and until I returned from Chinchwad, viz. on the 27th December, with a detachment 1-2nd Queen's Regiment.

The charitable dispensary was opened on the 24th February in the pettah at the foot of the hill. At first some difficulty was experienced as to the locale and house required. The Cantonment Committee were requested to examine and report on a dhurmsalla, which, it was considered, might be spared in the pettah for the purpose of dispensary. The Deputy Commissioner was addressed on the subject, and the reply being favourable, the building was made over to the care of the medical officer of the station with the view of its being used temporarily as a dispensary, 40 rupees per month having previously been sanctioned by the Central Province Government, provided the Bombay Government defrayed the expenses of a Hospital Assistant. The latter Government forwarded the matter to the Supreme Government for the sanction of an extra 1st class hospital assistant, and the arrangement was sanctioned, provided it would not entail any increase of the actual Bombay fixed establishment of hospital assistants. This, however, being found impracticable, the services of a 2nd class hospital assistant were afforded, and a subordinate temporarily told off for that purpose since February 24th, since which date the charitable dispensary with a small establishment has been in operation. It has since relieved much distress, poverty, and sickness in that unhealthy locality, the detail of which will be more fully submitted with the annual report on that institution due in April next.

I may here add that this institution, together with that of an isolated extra-mural site selected during the year as a small-pox, cholera, or other epidemic hospital locale (grass huts when required being provided at some few hours' notice), will all tend in some measure, it is hoped, to lessen the spread and danger of epidemic disease when appearing in pettah, and thereby, it is considered, tend to reduce the chances of its fatal extension, as on many former occasions, to the garrison and upper fort.

The average strength of garrison staff and details, 58.74. The average strength of detachment 11th Regiment N.I., 131.92. The average strength of detachment 16th Regiment N.I., 120.00. The average strength of Bengalli and Koka prisoners of State 10.

The detachment 11th Regiment N.I. arrived here on 20th December 1872, and remained up to the 14th November 1873, when they left this to proceed by rail *via* Chandni and Munmar, and thence marched *via* Nagar on Poona to Camp of Exercise, Chinchwad, to join head-quarters of their regiment on the 12th November. The detachment 11th Regiment N.I. were replaced by the detachment 16th Regiment N.I. sent from Mhow, which remained until the end of the year, and these latter will shortly after be replaced by a detachment 4th Rifles N. L. I. now on their way from Baroda, expected here about the end of this month.

General Sickness and Mortality.—In the detachment 11th Regiment N.I. there were 98 admissions to hospital during the year; 6 were remaining at end of former year. 90 were discharged well to duty, 1 died, 11 were discharged in the column "otherwise"; 2 were transferred. Of the 11 discharged in column "otherwise", 7 were invalided, and 4, whose diseases were changed, complete the remainder.

The detachment 16th Regiment N.I., which arrived in November last, had 45 admissions, of whom 44 were discharged well to duty, and only 1 was remaining on the books at the end of the year under notice.

Amongst the garrison staff and details there were 20 admissions and 20 discharged well to duty; no deaths, no transfers, no remainings.

Amongst the prisoners of State confined for life within the gates of this fortress, viz. the old Raja of Sumbulpur, his son, and suite, 7, and the recently arrived Kokas, 3, there has been scarcely any sickness to record beyond a slight attack of simple fever or occasional dyspeptic irregularity of stomach or abdominal organs. The same remarks also apply to the police and other Government civilians, European and Native, employed within the fort or cantonment.

The daily average number of sick, detachment 11th Regiment N.I., 5.85; the daily average number of sick, detachment 16th Regiment N. I., 6.31; the daily average number of garrison staff and details, 0.85.

The chief diseases from which the garrison staff and details of 11th and 16th N. I., &c., have suffered during the past year have been, as usual, of malarious origin, chiefly ague of the quotidian, tertian, and occasionally quartan form. Of these, 56 cases were treated, forming more than half of the admissions, 2 remained from past year, 54 were admitted, and all were ultimately discharged well to duty, the average number of days in hospital of each case having been 9.75. The treatment presented generally few complications; these appear on occasional irregularity in the time of the attacks; and some (about one in five) were attended with enlargement or congestion of spleen, liver or bowels, but yielding for the most part readily to treatment. After the administration of mild purgatives or alterative aperients, emetics followed by salines, diaphoretics, and, during the intermission, usually from 3 to 5 or 10 grain doses of quinine, with or without acid sulphuric dilute or acid nitro-hydrochloric dilute with 1 ounce of infusion of chiretta. The liquor arsenicalis combined with the above-named bitter infusion also proved of some avail, especially in those few cases in which quinine could not be given. The splenic enlargements, of which a few presented, were generally soothed and reduced by fomentations in addition to the above treatment modified to suit each case, and followed by mild chalybeates and tonics, warm flannel clothing and good and regular diet, with as much air and exercise as was found practicable to the patient under the varying circumstances of each case as presented. I would add in the treatment of these cases, as in all others, it would be very requisite, or at least desirable, that the sepoy, somewhat like Europeans, should be provided with some regular form of hospital and barrack diets, which he should under supervision adhere to, especially during treatment; as considerable difficulty is found and great vigilance required in many cases where there is little or no choice of food, and the sepoy is allowed to diet and arrange for himself, and will not go to the expense or trouble of getting what is recommended, being satisfied with his usual diet under all circumstances, and being very often unable to prepare any other.

Remittent Fever.—6 cases, of which 3 occurred in the detachment 11th and 3 in the detachment 16th Regiment N.I. after arrival from Mhow; of these 6 cases, 2 occurred in the cold weather, 1 during the rains, and 3 in the month of November. The general type of these fevers was rather severe, accompanied with cerebral congestion and gastric irritability, &c., affections of the liver, spleen, or bowels often troublesome, vomiting followed by adynamia or delirium lasting one or several days, succeeded by a somewhat tardy convalescence, due, I believe, in some measure to the poor, often scanty, ill-prepared, and sometimes inadequate, food of the self-fed sepoy, who at the end of the month finds himself often in debt, and forced to reduce his expenditure and necessities of life to effect an arrangement and liquidation, thus making him an unhappy burden to himself and the service to which he belongs; inasmuch as when called upon to discharge his regular duties (some of which are trying, and require strength and physical exertion), he is unable to do so, and is, therefore, marched off to hospital as weakly and debilitated, &c. &c.

One sepoy, Maratha, of 2 years' service and about 20 years of age, died of a low form of remittent fever, accompanied with severe cerebral and gastric irritability, excessive and uncontrollable vomiting succeeded by delirium (requiring much care and many attendants), and, finally, his being held down and quietly strapped with cot tape to the bed to prevent his injuring himself and others. This patient from the 18th of June, the date of admission, to the 7th of July, when he died, became, notwithstanding every possible care, hopelessly worse and worse, and owing to incessant vomiting it was difficult, especially with the strong prejudices

of caste always uppermost during his condition of delirium (lasting nearly a fortnight), to induce or get him to swallow the least food or nourishment which I had procured and prepared for him, and I was ultimately forced to use the stomach pump for the purpose. He died, finally, of asthenia and exhaustion.

Chronic Rheumatism.—22 cases admitted, all of whom were discharged well to duty, with the exception of 3 of the detachment 11th Regiment N.I., who had to be invalided as long suffering from chronic, arthritic, and muscular rheumatism contracted after leaving Nasirabad, where the regiment was quartered for five years, and suffered much from the effects of scorbutus, producing considerable general debility in many sent here, and thus predisposing many to the above complaints.

The treatment generally consisted in occasional alteratives, aperients, salines, and alkalies, with colchicum, tonics, alkalies, iodid. potassii, local counter-irritation, synapisms, blisters, warm flannel clothing, good generous diet as far as possible; and those still suffering with scorbutic taint had in addition 3 fluid ounces of fresh lime-juice with good effect daily given them.

Conjunctivitis.—3 cases admitted. Though this affection generally appears annually as an epidemic in the garrison and cantonment, it is principally confined to the children. The symptoms were those of the simple catarrhal form, readily yielding to treatment, of which the best I have found is simply bathing the eyes frequently with tepid water to remove all irritant discharges, extreme cleanliness, non-exposure to the light, and, towards the end, mild astringent lotions, tonics, and good diet.

Nyctalopia and Hemeralopia.—1 case of old standing, not contracted here, had to be invalided. This man first noticed the disease suddenly about 12 months ago during the monsoon in Bombay; in what way it first came on is not known,—certainly not from over-exposure, vice, or intemperance. At the time he was apparently quite well and in excellent health, though he felt his sight slightly impaired at the time, and not so good and strong as before; he was, however, willing and able then to perform his ordinary duties, but latterly on coming here, not being able to see distinctly during the day, was forced to come to hospital. On admission there was some slight congestion of the retina, and he could see indistinctly but 4 or 5 yards by day, but at night was unable to distinguish the closest objects. These symptoms continued unmitigated during his stay in hospital; and, as there was little likelihood of his regaining his sight for a long time to come, he was recommended to be invalided, having already completed his first term for half pension.

Deafness.—1 case, contracted 18 months or more ago while at Nasirabad, where he suffered from a severe attack of scorbutus, was admitted to hospital with inflammation of the external meatus and chronic foetid discharges from ears; these, however, under treatment soon improved, but the chronic deafness remained, and being an old complaint contracted elsewhere and never likely to recover was recommended to be invalided as unfit for further active service.

Bronchitis, chronic.—6 cases; all recovered and were discharged to duty, the average number of days under treatment being 15.

Dysentery.—2 cases: one occurred in January in detachment 11th, and one in November in detachment 16th Regiment N.I. They were both rather severe, especially the former, (acute), which was accompanied with at first violent purging, followed with excessive pain, tormina, and tenesmus, with abundant discharge of mucous blood and slime, great heat of skin, high pulse, and foul tongue. These symptoms, however, rapidly succumbed to treatment, and the patient was discharged well to duty on the 4th of February, having been 19 days in hospital.

Diarrhoea.—4 cases, slight, and speedily recovered under the use of a few doses of pulvis creta, with or without the opiate.

Colic.—5 cases, generally produced from cold or indigestion, soon recovered under simple treatment.

Bubo, simplex, contracted from overstraining during exercise; quietly reduced by fomentation, tincture iodi, quiet, and rest.

Tumour, non-malignant adipose.—This man had to be operated on under chloroform for the removal of a "fatty tumour", about the size of a duck egg, situated in the left lumbar region, and interfering with the use of his belt and efficiency on duty. The tumour being situated beneath the integuments, an incision was made across, the tumour and capsule dissected out, and the parts being brought together with a few stitches and straps of adhesive plaster, and with the use of water-dressings followed by carbolic-acid oil and lint, the wound, after an abundant discharge for some days, slowly healed, and the patient was discharged well from hospital.

The case of enlargement of bursa over the internal condyle of femur, producing considerable lameness, was partially at first reduced by perforation with trocar and canula, but this not being found quite efficient, it was reduced by the introduction of a seton, for some days followed by compresses to the part. The patient slowly progressed; and, though the swelling

rapidly disappeared, together with all positive symptoms of uneasiness, some lameness was apparent, which the man tried more to manifest with the object of becoming, as I had reason to suspect, a subject for invaliding: this latter inclination with a little patience and firmness soon subsided, and the man was returned well to duty.

Obesity.—This man was only in hospital a few days under observation, having steadily done and kept to his duty to the last, when he was at length, owing to the excessive corpulency from which he suffered, obliged to seek refuge in hospital from palpitation and dyspnoea on the slightest exertion, unfitting him for the active duties of a sepoy, or such as he would be called upon immediately to perform at the forthcoming Camp of Exercise, or for any further active service of that nature. This disease appears to have been a purely constitutional infirmity, and not induced or aggravated by intemperance, vice, or other misconduct.

Scalp Wound; bone exposed.—A private of the detachment 11th Regiment N.I. who, in trying to get at some honey on the top of a cliff, lost his footing and fell on his head, sustaining the foregoing injury, which penetrated to the frontal bone, leaving the bone exposed, and threatening exfoliation. The case, however, improved beyond expectation, and the patient was shortly discharged well to duty.

Contusion of the Foot.—24 cases in the detachment 11th Regiment N.I. and 7 in the 16th N.I. after their march from Mhow, all for the greater part tedious, and arising from imperfect shoeing, the result of allowing the sepoys to wear the European-fashioned boot without its necessary accompaniment inside (socks) to shield the feet from the rough friction produced by the badly-made Native productions. It would be very desirable, and, indeed, I should say, requisite, if these were made by regulation to be adopted by the sepoys; otherwise on active or other service the number of cases of foot-sores will always be considerable, and a never-failing source of weakness to the strength and efficiency of our army.

The general health of the women, European and Native, has been good; but among the children (Native) 3 deaths occurred from infantile remittent fever and convulsions, the Natives usually bringing their children to hospital when the case is hopeless and beyond reasonable recovery.

Vaccination.—From the accompanying returns of vaccination it will be seen that 98 children were vaccinated in the garrison and cantonment, 17 children in the 11th N.I., making in all 115 cases successfully vaccinated. 2 children were left unprotected in the 11th, being too young and delicate for the operation; one child in garrison staff (a week old) and 30 in cantonment bazaar remaining "unprotected" were at the end of the year either "too young, delicate, or absent" from the bazaar to undergo the operation. These cases, as usual, will be vaccinated during the forthcoming quarter.

The general quality of the lymph employed has been good.

From the foregoing, therefore, it will be seen that the general health and sanitary state of garrison staff and details with detachment 11th and 16th Regiments N.I., &c., have been for the greater part satisfactory; there having been but one death to record among the troops, and no epidemics or other special sources of disease.

State of Lines and Subsidiary Buildings.—No change since last report; are as satisfactory as can be expected, but remain still unaltered and unsuitable in sanitary respects for the use of troops (*vide* last and all former reports). There are few, if any, subsidiary buildings; the only ones being an earth-shed and a latrine for males and females in good order, and dry earth is used as far as consistent with the Native habits of ablution.

The state of the hospital buildings continues the same as last year, unsuitable. Originally a pendall, it has no verandahs, and but little interior accommodation, being often over-crowded and utterly insufficient to meet the requirements of the place, under which circumstances a tent has to be pitched, or some adjoining pendalls (dark, insanitary hovels) used for the purpose. The sum of Rs. 5,144 were allotted for improvements in this building; but the local committee were of opinion that was not worth the additions and repairs proposed, and that it would be more economical and better to build a new hospital, the site of which has been already, for many years past, selected, but the works have not been as yet undertaken, though annually brought forward in the annual Cantonment Committee proceedings, &c., as one of necessity for the use of the garrison staff and details in this fort.

The latrines, same as last and former years, are temporary, kept in good order, and dry earth used therein. The quarters for hospital assistant and medical pupil are still deficient, those subordinates occupying a part of the pendall of the hospital buildings, which necessarily, under the above-named circumstances (overcrowded and from want of space), tends to considerable inconvenience. These deficiencies, however, have for many years past been annually represented, but nothing practical appears as yet to be done in the matter.

Rain-fall and temperature is appended to the report: from it it will be seen that the average fall has taken place this year, and it is hoped that the quantity may be sufficient for the forthcoming season. All the remarks thereon made in annual sanitary and annual medical

reports of last year apply equally in the present instance, and it is unnecessary to repeat them here. The quality of the water, though in appearance good, does not appear from analysis to be by any means one of favourable mention; the water this year has not undergone analysis at the hand of the Chemical Analyser to Government, but as it has previously been so often examined, it is to be presumed that the general character and quality of the water still remains the same. The only thing favourable that can be said with regard to this water is that drinking it does not appear to produce disease, and that is all that can be said, for it will not stand the test of analysis. I beg again to draw attention to the remarks contained in my report of last year on this point.

GARRISON STAFF AND DETAILS HOSPITAL.

Meteorological Observation for the Year 1873.

Asirgarh, 1st January 1874.

Months.	Temperature.							Rain.			Wind.		Remarks.
	Highest in month.	Lowest in month.	Range in month.	Mean of all high- est.	Mean of all low- est.	Mean daily range.	Approximate mean for month.	Number of Days it fell.	Amount collected.		Direc- tion.	Estimated Strength.	
									Inches.	Cents.			
1873.													
January	80	50	30	74.00	63.32	10.68	68.66	3	...	38	N. W.	...	
February	86	60	26	79.39	66.89	12.50	73.14	5	2	43	N. W.	...	
March	97	67	30	88.23	74.94	13.29	81.58	...	...	...	S. W.	...	
April	99	76	23	95.56	81.56	14.00	88.56	...	...	...	S. W.	...	
May	106	75	31	96.38	83.12	13.26	89.75	7	...	60	S. W.	...	
June	96	74	22	87.83	76.83	11.00	82.33	13	5	35	S. W.	...	
July	87	72	15	78.58	73.61	4.97	76.09	28	7	25	S. W.	...	
August	83	71	12	79.35	72.77	6.58	76.06	18	9	38	S. W.	...	
September	84	70	14	78.40	71.93	6.47	75.16	15	7	78	S. W.	...	
October	86	69	17	82.71	73.06	9.65	77.88	...	...	...	N. E.	...	
November	85	64	21	79.63	69.70	9.93	74.66	2	...	19	N. E.	...	
December	79	55	24	75.16	62.61	12.55	68.88	...	...	...	N. E.	...	
Mean	89	67	22	82.93	72.53	10.40	77.73	91	33	36			
								Total.					

H. M.'s 14th Regiment N. I.

KOLHAPUR.—In Medical Charge—Surgeon D. HUGHES, M.D., F.R.C.S.E.; Strength 583.

Till the 18th November 1873 this regiment was stationed at Kolhapur, and on the above date marched to join the Camp of Exercise at Chinchwad.

The position of the lines has been so often described both by my predecessors and myself, that repetition of the description appears to me uncalled for.

A dead-house to leeward of the hospital has been commenced. It will be a great convenience, as heretofore all *post-mortem* examinations have had to be conducted in the hospital verandah, exposed to the observation of the patients and passers-by.

The past year, considered either as regards the number of admissions or the mortality, has been a healthy one.

In 1872 the total number of admissions was 581, and the deaths 2; last year only 568 cases were admitted, and only one man died.

Ague, of course, was the principal cause of loss of service, 212 cases having been treated during the year. This being the stock disease with us, it may readily be believed that much attention has been paid to its treatment. Slight cases readily give way before a purge or emetic, followed by the exhibition of quinine or liquor arsenicalis, but the more severe ones tax the ingenuity and patience of the Medical Officer in no slight degree. In very many instances the paroxysms will recur with the regularity of clock-work, uninfluenced, either as regards their severity or duration, by any thing short of change of air. To avoid the too profuse use of this somewhat expensive remedy we have had recourse to many methods of treatment: the antiperiodic has been given combined with a stimulant shortly before the advent of the cold stage; strong opiates have been given with a view to send the patient to sleep before the paroxysm appeared, and thus

"to break the habit". Success has sometimes attended these efforts, but failure has been the rule. When, some years ago, the hypodermic injection of quinine was highly spoken of, we gave it an extensive trial, using filtered water, acidulated with just enough acetic or sulphuric acid to keep the alkaloid in solution, and found that, while the new method was perhaps as successful as the old in slight attacks of ague, it was quite useless in cases of persistent intermittent fever, and there was in such cases an almost absolute certainty of sloughing taking place at the points of injection. That this sloughing was due to no fault in the preparation of the solution, but to the cachexia of the patients, is proved to my mind by the fact that no such accident resulted from the little operation when performed on comparatively healthy subjects. Another proof of this, which I can call to mind, is that on one occasion I injected the ordinary morphia solution into a man debilitated by fever to ease the pain of sciatica, and a slough formed, though such an accident had never occurred in the scores of patients unaffected with the malarial cachexy similarly treated. The plan which we have found most successful is an old and very simple one: the giving of an emetic, whether depressant or stimulant apparently does not matter much, about an hour before the onset of the paroxysm, followed by doses of the antiperiodic when the vomiting has ceased. This procedure may have to be repeated two or three times before the recurrence of the fever is quite stopped; but after the first emetic, followed by quinine, the duration and severity of the attack is almost invariably lessened. Dr. Sydney Ringer is of opinion that quinine combined with an emetic "produces a greater effect on the system", whatever that may be, than either medicine alone. With all due deference to so great a therapeutical authority I am inclined to think that the beneficial effect of the emesis is entirely mechanical and local. The mechanical pressure exerted by the abdominal muscles on the viscera in the act of vomiting, lessens the congestion, which is always present in them previous to and during the cold stage, and thus lessens the severity and danger of the most distressing phase of ague. Not only does an emetic do good thus, but it also facilitates the absorption of the quinine by removing the mucus, which, judging from the state of the fauces, I assume to be adherent to the mucous membrane of the stomach.

Last year 12 cases of remittent fever were treated; some were severe and complicated with pneumonia, but none of them proved fatal.

Syphilis.—There has been a great increase in the number of admissions for primary syphilis. In 1871 there were only 3 cases treated (this was in Mhow, where there is a lock hospital); in 1872 the number of admissions rose to 6; last year, I regret to say, it has risen to 15. As an offset to this sad state of affairs it is pleasant to see that gonorrhœa was not so prevalent last year as it was in the previous one—7 admissions against 19. During the last twelve months of the regiment's stay in Mhow it is worthy of note that only one case of gonorrhœa was treated.

There were 15 admissions for the various secondary manifestations of syphilis.

Bronchitis.—11 cases of this disease have been treated; and though no deaths have occurred from this cause, the disease has generally been very severe, and, particularly in Gujur recruits, complicated with urgent asthmatic attacks. There seems to be something in the climate of Kolhapur which favours the development of spasmodic diseases of the respiratory system.

Spasmodic.—Croup is very common among both European and Native children; and persons who have never before suffered from asthma in apparently much more trying climates have had several attacks in Kolhapur, the so-called cold weather being the most unhealthy season.

Dysentery.—17 cases of dysentery have been treated during the year: 2 were very severe, and the sufferers had to be sent away on medical certificate.

During the month of December, while the regiment was under canvas, 5 cases, probably due to cold, were admitted; all readily yielded to treatment after the regiment reached Kolhapur, but they made little progress towards recovery, while the patients had to sleep on the ground in the hospital rowties.

Insanity.—Two cases of insanity have been under observation: one was a case of mania, resulting from the abuse of stimulants and ganja; the other was a case of imbecility following a very severe and protracted attack of remittent fever. Both of the sufferers have been invalided.

Deaths.—Only one death, and that from rather an uncommon disease—sloughing of the scrotum, has taken place in hospital. The patient was a broken-down havildar, who never had been treated in hospital for anything except rheumatism, but who, according to the state-

ments of his comrades, had suffered severely from syphilis, and been "cured" by a quack in Ahmadnagar some years ago. The man stated that, two days before his admission, he had suffered from pain and slight swelling in the scrotum, which he thought nothing of at first, and neglected. The pain soon increased in severity, and the patient was brought to hospital prostrate and dying. The scrotum, which was quite black and dead, emitted a most offensive smell. The urine at first was passed without any difficulty; for about six hours there was slight difficulty in micturating, which, however, passed off, and the flow of urine was re-established. From the time of admission to his death, 48 hours afterwards, the patient was harassed by constant and distressing hiccup, which no remedies relieved in an appreciable degree.

Medical Certificate.—Of the 19 men who required change to their native country, 1 was sent to the Deccan, 1 to Hindustan, 1 to Peshawur, 2 to Rajputana, 3 to the Concan, 4 to the Khybur, and 7 to the Punjab. 7 men required change having suffered severely from ague, 4 had been long laid up with rheumatism, 2 were cases of dysentery, and the remainder were cases of scurvy, bronchitis, asthma, sciatica, and syphilis.

Invaliding.—83 men presented themselves before the Regimental Committee, desiring their discharge; but only 23 were sent before the General Invaliding Committee, of whom 16 passed. Some reform is, I think, required in the rules regarding pensions: almost every sepoy who is entitled to pension wishes for his discharge, and does all in his power to get it. Were all men after 20 years' service allowed to claim a pension, whatever the state of their health, the daily number of sick in hospital would be sensibly diminished. If a man after 20 years wished to serve on for a higher pension, he should only be allowed to do so if approved of by the Medical Officer and the Commandant.

Camp of Exercise.—While the regiment was at the Camp of Exercise it was very healthy, all weakly men having been carefully weeded out before leaving Kolhapur. Dysentery was more prevalent while the regiment was under canvas, and was not easily cured in the rowties which were used as hospitals; the cold air at nights came in under the loose flaps and chilled the men. For the treatment of the sick the old style of hospital tent is, in my opinion, much the best. If a rowtie is shut up so as to be warm, there is no attempt at ventilation; if kept open, it is too cold to be occupied by sick men sleeping on the ground.

H. M.'s 5th Regiment N. I.

MALIGAM.—In Medical Charge—Surgeon-Major E. P. BURROWS; Strength 637.

The general health of the regiment has been good throughout the year. The total of admissions into hospital was 399. The daily average number of sick 11·8. The percentage of treated to strength 62. There were 3 deaths, a percentage to strength of 0·4. One death was from remittent fever, one from abscess of the liver, and one from pyæmia.

Small-pox was prevalent both in the lines and sudder bazaar during the hot season and rains; 11 cases in all coming under treatment, 5 from the lines, and 6 from the bazaar and surrounding huts. The first case was admitted on the 19th of March; the last on the 10th of July. They were all removed for treatment to the old hospital to the south of the bazaar, which has been set apart for this purpose. The disease was not of a severe type, and all the patients made good recoveries.

Cholera. No case of cholera has occurred in camp during the year, nor was any heard of in the town of Maligam or surrounding districts.

Lines, and general sanitary condition. The lines are in excellent sanitary condition.

Latrines. The trench system of latrines for the occupants of the lines has been continued, and is found to work satisfactorily.

Hospital. The hospital is in good repair, and has afforded ample accommodation for the sick of the regiment throughout the year.

Rain-fall. 27 inches and 21 cents of rain were gauged at the hospital, being 6 inches and 1 cent less than in 1872.

Temperature.

Maximum temperature in the shade in May, 103°; minimum in January, 45°; mean for the year, 72°.

Water-supply.

Since the line wells were deepened last year the water-supply has been abundant and good.

Dysentery was slightly prevalent during the rains and cold season. Some severe cases of fever. Three of remittent form occurred amongst the men of the wing from Tanna, who were in tents from 19th February to the end of March.

Report on the Poona Division by G. G. Maitland, Deputy Surgeon General, Poona Division.

During the year the average strength of the Native troops in the Poona Division was 8,954. The admissions into hospital among them amounted to 8,405. These numbers give the ratio of 961 admissions and 4·6 deaths per thousand of mean strength, both much lower than in the previous year.

The following table shows the admissions into hospitals and deaths among the troops by different classes of disease:—

	Strength 8,954.				Ratio per 1,000 of Mean Strength.			
	1873.		1872.		1873.		1872.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I.—General Diseases—								
1. Febrile group	3,415	10	5,483	20	381·	1·1	613·	2·2
2. Constitutional group	926	5	1,071	4	103·	0·5	120·	0·4
II.—Local Diseases—								
Nervous system	101	1	87	4	11·	0·1	10·	0·4
Eye	280	...	335	...	31·	...	37·	...
Circulatory system	24	1	21	3	3·	0·1	2·	0·3
Respiratory system	351	7	295	10	39·	0·8	33·	1·1
Digestive system	979	8	1,232	10	109·	0·9	138·	1·1
Generative system... ..	164	...	140	...	18·	...	15·	...
Cellular tissue	317	...	301	1	35·	...	33·	0·1
Cutaneous system	838	4	890	3	94·	0·4	99·	0·3
III.—Debility								
IV.—Poisons	11	...	17	...	1·	...	2·	...
V.—Injuries—								
Accident	920	...	906	...	103·	...	101·	...
Judicial	3	...	1	...	0·3	...	0·1	...
VI.—Surgical operations								
	...	...	5	...	...	...	0·5	...

Compared with the previous year (1872) the reduction in the numbers of admissions is very large, and is chiefly in continued and malarious fevers. The decrease in the ratio of deaths is due to the absence of cholera, and in local diseases generally diarrhoea furnishes no deaths.

Eruptive Fevers were less prevalent than in 1872. Of the 66 admissions 17 only were cases of small-pox, 9 of which occurred at Belgaum, 4 at Maligam, 1 at Satara, and 4 at Poona; one of these proved fatal. In all instances, with exception of the fatal case, the men are reported to have shown marks of previous vaccination. Malarious and continued fevers, though considerably less than in the previous year, still furnished 35 per cent. of the total admissions to hospital. The ratio of deaths to admissions was 3 per thousand.

Malignant Cholera was not present in any of the stations in the division during the year.

Diarrhoea and Dysentery.—From the former disease there were 192 admissions, but no deaths. The admissions from dysentery, though less than in the previous year, are reported to have been of a more severe type, and followed by a higher rate of mortality.

Rheumatic Affections furnish every year a large proportion of the cases treated in a regimental hospital. The number of admissions, however, show a decrease of 29 per cent. from that of 1872.

Diseases of the Lungs, with exception of the heart and dropsies probably dependent on them, have been proportionately more fatal than other diseases, but both in point of admissions and mortality less so than in the former year.

Syphilitic and Gonorrhoeal Affections.—The admissions from these classes of disease were nearly one-third greater, and the ratio of mortality higher. From the prevalence of enthetic diseases amongst our sepoys, the question probably will soon arise as to the measures which should be adopted to repress venereal diseases at stations garrisoned by Native troops.

Scorbutic Affections.—Scurvy still lingers in the 5th and 8th Regiments,—corps that previously were stationed at Aden and in Guzerat. The number of admissions to hospital during the year is 88, which is much above that of 1872. The disease is stated to be found chiefly amongst the married men, and Medical Officers are of opinion that they in a measure starve themselves for the sake of their families. On recent inspection of the 5th Regiment N. I. some 13 men presented slight traces of the disease.

Injuries.—Under this head is included that injury to the foot commonly termed "shoe-bite", caused by the men being allowed to wear ill-fitting boots. The ammunition boot worn by our Native Army is usually made of wretched country leather, badly fitted, and worn without what is considered a necessary safeguard to the feet—socks.

The subject has been brought prominently to notice by all Medical Officers whose regiments marched to the Camp of Exercise, and I consider it is one which might well engage the attention of the military authorities; for from the experience of the last two years we find that more men fell out on the line of march from this cause than any other. Of the 920 admissions from "injuries" a large proportion of them were cases of blistered feet, caused by the men being imperfectly booted.

SANITARY REPORT.

During the past year the health of the Native troops in the Poona Division and Southern Maratha Circle has been very good, and contrasts favourably with the return of the previous one.

Epidemics.—Neither cholera nor small-pox prevailed epidemically during the year under report. A few cases of variola were admitted to hospital from the lines at Maligam and Belgaum in the hot season, but amongst the sepoys only 10 cases have occurred. Vaccination has been strictly carried out, both among the recruits and families of the sepoys.

Hospital Buildings.—Few alterations or additions to regimental hospitals and their subsidiary buildings have been made since last report.

At Ahmadnagar and Belgaum, dead-houses on the standard plan have been erected, and the regimental hospital at the former station has been enlarged, and a better system of ventilation introduced. The floors belonging to the hospital of the Grenadiers and 17th Regiment at Poona, as well as others in this division, are of earth, which renders them at times damp, and, moreover, necessitates them being smeared over with cow-dung three or four times a month,—a practice which might be avoided if asphalt floors were introduced, and which, I consider, would be preferable even to stone flooring.

With exception of that at Satara, all the hospital buildings are good, and are sufficient to meet ordinary requirements; but in sickly seasons, and when the daily average number of sick is large, hospital accommodation has to be supplemented by tents pitched in the compounds.

The sick of the 11th Regiment N. I. have for two years been treated in a bungalow situated in the officers' lines; but if a regiment is to be permanently located at that station, a hospital will require to be built. A very good site for such a building might be found in rear of the present bungalow.

In the hospital compound of the 1st Grenadiers, a grass shed on a stone plinth has been erected, in which are treated cholera and small-pox cases when they occur,—a plan which, I think, might be usefully adopted at all other military hospitals.

Native Lines.—The condition of the lines, with one or two exceptions, may be stated to be very satisfactory. Those in which the 8th Regiment N. I. are located are bad, and ought to be vacated for new lines,—a project which has been sanctioned, and a site selected, but the order for their commencement has been countermanded. The new lines at Dharwar are in course of construction. This work has been long needed, as the present lines are in a dilapidated condition, and situated too near the town, bazaar, and other objectionable localities.

The standard plan on which new lines are being built is good, in so far as space, strength, durability of material, and distance between the several blocks are concerned; but, with respect to light and proper ventilation, too much regard, I think, has been paid to the prejudices of the Natives, leading not unfrequently to a violation of all sanitary principles. These remarks point particularly to the lines of the 1st Light Cavalry at Ghorpuri, and to those now being built at Dharwar and at Kirkee for the Sappers. At Ghorpuri new lines for the syces are especially required. This subject was brought prominently to the notice of the military authorities on the occasion of an outbreak of cholera in 1872, but unfortunately without result.

Drainage.—The state of drainage at all stations in the division is satisfactory, as both lines and hospitals are, as a rule, built on elevated ground. Surface drainage has been found sufficient.

Conservancy.—The system of conservancy varies at different stations: at Poona the Grenadiers and 17th Regiment continue to use the regimental latrines, but the trench system is that now more commonly in force, and, with the exception of those opened for the 8th Regiment N. I. at Poona, the plan has succeeded very well. At all hospitals the dry-earth system of conservancy, so far as the habits of the Natives will allow of it, is carried out; but until latrines are constructed on a plan which will permit of the urine and ablution water being separately carried off, the advantage of this system cannot be properly realized.

Water-supply.—The water supplied to the Native troops is good and sufficient at all stations, Asirghar and Dharwar excepted: at this latter station I believe the question of water-supply has long retarded the commencement of the new lines. Springs of good water have, however, now been found; but I am inclined to doubt their being *perennial*, in which case the troops will have to depend on rain water collected in tanks.

At Poona, when the Kurruckwasla canal scheme comes into operation, an abundant supply of water for all purposes will be procurable, and thus in a great measure supersede the use of water pumped up in the dry season from the Moota-Moola River.

The Staff Surgeon at Asirghar draws attention to the scarcity of drinking water which usually prevails in that fortress in the months of April and May. The water, it appears, is obtained from a percolating well, which in the hot season becomes so low as to necessitate the troops and residents being placed on allowance. When the well becomes dry, water has to be obtained from a well $2\frac{1}{2}$ miles from the fort.

These facts, I think, suggest that another percolating well should, if practicable, be opened without delay, and I strongly recommend to the Surgeon General and to Government that measures be immediately taken to carry out this object.

G. G. MAITLAND,
Deputy Surgeon General, P.D.A.

MEDICAL HISTORY OF THE CAMP OF EXERCISE.

The most important event that has taken place during the past year in connection with the Native Army was the formation of a Camp of Exercise, under the orders of His Excellency the Commander-in-Chief, on the plains of Chinchwad, about 10 miles from Poona.

2. On the 16th of September a committee was ordered to assemble, of which the writer was a member, for the purpose of reporting on certain sites proposed for the standing camps of the troops about to join the camp.

The positions taken up, in a sanitary point of view, were all found to be more or less favourable for the object in view, the ground selected being high, and admitting of good surface drainage, with a sufficient supply of good water in their immediate vicinity, both for the troops and cattle. As the whole of the potable water was to be supplied from wells, of which there were altogether 19, it was a matter of the last importance that the quality of the water should be properly analysed before the troops assembled. Samples, therefore, from each well were procured and transmitted to the Government Analyser at Bombay, who promptly undertook the duty, and furnished us with a table showing the exact analyses of each. They were all considered to be fairly good, with exception of one well, the water of which, containing highly organized infusoria, was rejected.

4. The constitution of the force ordered to assemble at the camp was as follows:—

European Infantry:—2nd Foot, 1st Battalion.

7th do.

56th do.

66th do.

68th do.

83rd do.

Native Infantry:—1st N. I., Grenadiers.

8th Regiment N. I.

11th do.

14th do.

15th do.

17th do.

19th do.

26th do.

28th do.

Artillery Troops.

D. B. C. Royal Horse Artillery.

D. 9th

E. 9th

F. 9th

F. 18th

Two Companies Native Artillery with Mountain Train.

Cavalry Brigade.

3rd Hussars, 2 squadrons.

1st Light Cavalry.

Poona Horse.

The aggregate strength of the above force was 10,529; of this number 4,818 were Europeans and 5,711 Natives.

5. *General Medical Arrangements for the Camp.*—As the force was to take up a position having Poona and Kirkee for its bases of operations, with a railroad running in close proximity to, and in rear of, the whole line of its encampments, it was not considered necessary nor advisable to carry out the regimental hospital system so much in vogue in our service, but to organise in its stead field hospitals in the camp, and dépôt hospitals at Poona and Kirkee. All serious cases of sickness from the field hospitals were ordered to be sent by rail—the cavalry and artillery to Kirkee, and the infantry to Poona—to be attached for treatment to the dépôt hospitals established at those stations.

6. *Field Hospitals.*—In view to carry out this arrangement, two Native Infantry field hospitals, one for each division, were equipped under the orders of the Deputy Surgeon General, P. D. The establishments required for each hospital were organized, as far as possible, from corps arriving at the camp, and placed in medical charge of the senior executive Medical Officer present with the force, with instructions to indent on the Medical Store-Dépôt at Poona for field medicines (Nos. 1 and 2), and also for a sufficient supply of hospital necessaries and medical comforts, including wine and brandy, from the Commissariat dépôts established at the camp. With respect to hospital clothing, orders having been previously issued on the subject, each Medical Officer brought to camp 3 per cent. of his established proportion of clothing, which proved quite sufficient for the wants of the sick.

7. *Camp Equipage for Hospitals.*—The proportion and description of tents for Native field hospitals, as laid down in Circular G. O. No. 5, was six, sepoy No. 1 pattern, for each division. These tents were supplied from the regiments, as each corps arrived with two hospital tents; and the Medical Officer was instructed to give up one for the use of the field hospital, retaining the other as a regimental hospital tent in case of emergency.

8. The sepoy tent No. 1 is calculated to hold 16 healthy men; but as they were required for the purpose of accommodating the sick, it was arranged that the above number should be reduced to 10. Thus, each divisional hospital could receive, without over-crowding, 60 patients, giving each patient 130 cubic feet of space. But, during the whole time the force was under canvas, the daily average number of sick never exceeded 30; the accommodation provided proved amply sufficient.

9. As regards the description of hospital tents brought into use at the camp, I am of opinion that, although they answered very well for the short time the troops remained under canvas, the season of the year, and the comparatively slight cases treated in them, yet for actual warfare I do not think the covering they afford would be sufficient, exposed as the troops would then be to all vicissitudes of weather, and in which would have to be treated men perhaps badly wounded, and serious cases of sickness. On field service I consider that the regimental hospital system is the best, and that the tents required both for field and regimental hospitals would be the usual double-poled hospital tent.

10. The position selected for the field hospitals was elevated ground, of course in the rear of the division, and as near, as circumstances would permit, between the brigades. The soil was disintegrated trap, but very stony.

11. In the reserve brigade attached to the 2nd Division there was only one Native Regiment, 15th N. I. As it was encamped at some distance from the field hospital, only serious cases were sent to it for treatment, all others being treated in the regimental hospital.

12. *Sick Carriage.*—The sick carriage employed was of the ordinary description, viz. dhulies and spring carts. Native regiments marched to the camp with the usual complement of sick carriage issued to them according to strength; but as few were provided with more than one dhulie and one spring cart, Medical Officers on arrival were required to indent for an additional dhulie, which they gave up to the field hospital together with the spring carts. This carriage was returned to them on the breaking up of the camp.

13. On troops marching out for the purpose of manœuvre, a proportion of dhulies and sick carts accompanied them. The latter, however, owing to the rocky, difficult ground traversed over, were found to be of little or no use. When the sick fell out, for there were no wounded, dhulies were brought into requisition. The spring carts were chiefly employed in removing the sick from the field hospital to the railway station, and in this way proved very serviceable.

14. I may here remark that the carriage for the sick at the camp proved quite adequate to meet all wants; and, even had we been engaged in real warfare, I doubt if any better transport for the sick could have been provided. But this is a subject which has long engaged the attention of military surgeons, and one on which there is still much diversity of opinion. For severe cases of disease I am inclined to think that no better means of conveyance can be found than the dhulie. The only objection against the dhulie in use in this Presidency is its great weight, which varies from 90 to 120 lbs. In the field these might be substituted for the Madras dhandy, so much approved in Abyssinia. It is only a lighter description of dhulie, weighs but 46 lbs., and like a dhulie forms a comfortable bed.

15. *Sanitary Arrangements of Camp.*—The inspection and control of all sanitary, hospital, and conservancy arrangements devolved on the senior Medical Officer of the division. Each camp, for sanitary and conservancy purposes, consisted of as many blocks as there were corps and departmental establishments, and the arrangements for ensuring cleanliness and maintaining a healthy sanitary condition of the camp were admirably carried out by regimental and departmental authorities.

16. The water supplied to the troops for drinking purposes, as I have before mentioned, was good and sufficient. The wells were all numbered, and over each a sentry was posted to prevent the water being wasted or rendered impure by camp followers and others washing their clothes around them.

17. The British troops, as usual, were supplied with filters; as also the field hospitals, European and Native.

18. *Latrine System: Conservancy.*—The dry-earth system of conservancy was strictly carried out in the British regiments and hospitals; but for Native troops the trench plan was adopted and found to answer very well.

19. *Remarks on the prevailing Diseases.*—The general health of the Native troops during the period they were at the Camp of Exercise was remarkably good. The daily average number of sick never exceeded 60, and the ratio of admissions to hospital to strength was only 31 per thousand.

The diseases most prevalent were fever and venereal; nearly all the cases from the latter disease had to be transferred to the dépôt hospitals. The only fatal case occurred in the Poona Horse: the man died rather suddenly from fever and exhaustion.

ANNUAL RETURN of Sick and Wounded of Native Regiments in the Poona Division of the Bombay Presidency, from 1st January to 31st December 1873.

Poona, 1st January 1874.

Class of Diseases. N.B.—The number quoted are those of the Nomenclature of Diseases.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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A Sub-Division.					B Sub-Division.					Diseases of the Stomach and Intestines 449 to 500.					Diseases of the Liver, 501 to 520.					Diseases of the Spleen, 521 to 530.					Gonorrhoea, 535 to 534.					Abscess 519, and elsewhere according to site.					Ulcers 529.					Skin diseases, 527 to 501.					Other diseases of this class.					Old Age and Debility, 904 to 905.					Poisons, 906 to 991.					Injuries, 992 to 1145, and blistered feet.					Punishment					Human Parasites.					Surgical operations.					Total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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Eruptive, 1 to 3.					Continued, 6 to 14.					Malarious, 15 to 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.					Dropsies, 57.					Other diseases of this class.					Dropsies, 57.					Other diseases of this class.					Dropsies, 57.					Other diseases of this class.					Dropsies, 57.					Other diseases of this class.					Dropsies, 57.					Other diseases of this class.					Dropsies, 57.					Other diseases of this class.					Dropsies, 57.					Other diseases of this class.					Dropsies, 57.					Other diseases of this class.					Dropsies, 57.					Other diseases of this class.					Dropsies, 57.					Other diseases of this class.					Dropsies, 57.					Other diseases of this class.					Dropsies, 57.					Other diseases of this class.					Dropsies, 57.					Other diseases of this class.					Dropsies, 57.					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NORTHERN DIVISION.

Average strength present during the year	8,450
Average daily sick per cent. to the average strength...	4.63
Ratio of mortality per cent. to the average strength...	0.61

H. M.'s 3rd Regiment N. L. I.

AHMEDABAD.—In Medical Charge—Surgeon-Major C. JOHNSON ; Strength 642.

Average Strength. 1. The average strength of the regiment during the year 1873 has been 642.

Prevailing Diseases. 2. Intermittent fever, remittent fever, bronchitis, conjunctivitis, dysentery, scurvy, small-pox, and rheumatism.

Treated to strength...	150.9
Deaths to do.	1.2
Deaths to treated	0.8
Average daily sick	21.6

3. The treatment has been that generally in use in modern practice. Carbolic oil was extensively used, rubbed over the whole body in cases of small-pox, and with such good effect that in many of the cases there have been absolutely no marks left of any consequence to show that there has been an attack of the disease.

4. The total number of admissions during the year has been 957, showing a decrease of 317 on the preceding year; this may be in a great measure attributed to there being no epidemic, as that of dengue in the former year.

Small-pox prevailed to some extent from the month of January to the month of April.

The number of admissions from each disease was as follows:—

Intermittent fever	515
Remittent do.	5
Bronchitis	53
Bronchial catarrh	7
Conjunctivitis	41
Dysentery	32
Diarrhoea	5
Scurvy	24
Small-pox	14
Rheumatism	21
Lumbago	18
Venereal	13
Contusion	55
Boil	37

Epidemic. 5. None. Several cases of small-pox occurred, but not sufficient to be called an epidemic.

Deaths. 6. Eight deaths occurred during the year—

Fatty degeneration of the heart	1
Pneumonia	2
Remittent fever	1
Splenitis	1
Sun-stroke	1
Ascites	1
Phthisis pulmonalis... ..	1

Total ... 8

These, with the exception of two pneumonia and one remittent fever, were the result of accident or old organic disease, so that three deaths only should be counted as showing the amount of actual mortality in the regiment, as it was simply a matter of time as to when the cases of organic disease would die.

Lines. 7. The lines are clean, well-built, and well kept.

8. Water is abundant and good, but for the 3rd Regiment there are not a sufficient number of wells in their lines; and the water of the river, though quite fit for drinking during the cold weather, is, I think, injurious during the hot weather and rains, when it becomes much polluted.

I have recommended that more wells should be dug in the lines occupied by the 3rd Regiment N. L. I.

9. The latrines have now been removed into the building originally made for the purpose, and the trench latrines done away with. The dry-earth conservancy system is carried out, and the arrangements are all that can be desired. The excreta are removed and buried beyond cantonment limits.

This arrangement is much better suited to the requirements of the regiment than the new system of trench latrines.

10. The hospital is excellent, but there is a great want of subsidiary accommodation. There is no dead-house for either Native hospital in the cantonment, no contagious ward, and no female ward. The hospital assistants have no separate cookroom, nor privy for their families, which I consider they should have. I would strongly recommend that a respectable woman from the regiment should be entertained to attend to any female patients under treatment, and paid for the time she is so employed.

11. The camp bazaar is good, and well supplied with ordinary articles required by the troops; most of the men, however, prefer to get their supplies from the city bazaar, where they get them cheaper. Fish, European and Native vegetables, can generally be obtained in both bazaars.

H. M.'s 9th Regiment N. I.

AHMEDABAD.—In Medical Charge—Surgeon-Major R. BOUSTEAD, F.R.C.S.; Strength 569.

In my annual report for 1872 (last year) I gave a complete description of Ahmedabad, its history before and since British rule, its architecture, situation, and general topography, its population and the various races it contains, the number and description of the dwellings they inhabit, and the proportion of inmates to each dwelling.

I also fully described the cantonment, its population, and their several creeds and nationalities, their dwellings, the roads, wells, water-supply, barracks, and sepoy's huts, their arrangements, size, and build, accompanied by a most complete and accurate map and some plans. I also described the system of conservancy, the climate, rain-fall, drainage, &c., the duties and recreation of the sepoy's, their clothing, head-dress, and shoes, and their food, according to their caste: so that there is not so much to be said this year, since all these things remain, without exception, unchanged.

The health of the regiment during the year may be said to have been very fair. Sickness has been very slightly in excess of that in the year of 1871 and 1872; this excess is accounted for by the large number of cases of bronchitis (36) that have been admitted this year in comparison with the admissions from the same cause last year, which were only two. The climate of Ahmedabad would, therefore, appear to agree with the men of the 9th Regiment quite as well as that of Poona, their previous station.

1. The number of cases treated during the year 1873 has been 528 from a strength of 369, or 92.7 per cent. Of the 528 treated, 3 remained in hospital on the 1st of January 1873, and 525 were admitted. Of these, 492 were discharged to duty, 7 died, 13 were sent on sick certificate, 9 were invalided or otherwise discharged, and 7 remained in hospital on the 1st of January 1874.

2. The prevailing diseases have been—ague 280, conjunctivitis 36, bronchitis 33, dysentery 22, contusions 20, boils 19, scurvy 14, ulcers 14, lumbago 10, chronic rheumatism 8, small-pox 4, pneumonia 4, sprain 4, scabies 3, chicken-pox 2, remittent fever 2, true leprosy 2, anemia 2, whitlow 2, burns and scalds 2, enteric fever 1, dengue 1, phthisis 1, pleurisy 1, bronchial catarrh 1, gum-boil 1, phymosis 1, bubo 1, urticaria 1, psoriasis 1, wasp-sting 1, debility 1, concussion 1, blistering by vegetable substances 1, dislocation upper extremities 1, contusion upper extremities. These are placed in their order of frequency.

3. 280 cases have been admitted, or 53.1 per cent. of the whole admissions into hospital.

Ague. The greater number of these cases have been of the ordinary type and readily amenable to treatment; some cases, however, have been most obstinate, chiefly those patients who have a scorbutic cachexia or impoverished system from insufficient food. Quinine in these latter cases I have found to be of no use whatever, whether administered by mouth or hypodermic injection. Protosulphate of iron in 3-grain doses three times a day, with a liberal amount of food and little lime-juice, seems to recover these cases sooner than any other treatment I have tried. In ordinary cases of simple intermittent fever I seldom administer either quinine or arsenic, but treat them entirely on the

eliminative plan, and trust to sudorifics, diuretics, &c., with very satisfactory results, and at much less cost to Government.

4. Conjunctivitis has been unusually prevalent this year, and was generally of severe type. The families of the regiment suffered very intensely from this affection, and weekly inspections of all in the lines became necessary to stamp out the disease. Want of cleanliness and prevalence of dust and flies considerably increased the number of these cases. The remedy that was found to be the most useful in the treatment of acute conjunctivitis was a solution of nitrate of silver, 20 grains to water one ounce, dropped into the eye once or twice, and lint or cloth wetted with water subsequently applied and frequently changed.

5. 33 cases of bronchitis were admitted during the year, and nearly the half of this number during the month of September, which was mild, genial, and moist month, just at the termination of the rainy season. I cannot account for the large increase of these cases during that month. 3 deaths occurred from this disease, 2 of whom were pensioners, one belonging to the 4th Rifles and the other to the 24th Regiment N. I., who happened to be attached to the 9th Regiment N. I. at Ahmedabad. 7 were invalided on pension by the last Invaliding Committee.

6. 21 cases of dysentery occurred during the year, being over double the number that were admitted from this disease in 1872; only one case died. The treatment I employ in these cases consists of half drachm doses of powdered ipecacuanha, combined with one to two grains of opium; should the hæmorrhage be more marked than usual, I add 4 or 5 grains of gallic acid to the ipecacuanha powder; if there be much gastric irritability, I give oxalate of cerium 5 to 8 grains, combined with a like quantity of bicarbonate of soda or potassa, and a synapism is applied over the stomach. I have found no good whatever by commencing the treatment of dysentery cases with a dose of oil or other aperient medicine.

7. 20 cases of contusion have been admitted; these cases include shoe-sores, bruises, &c. Shoe-sores, however, constitute most of the cases that are returned under this head. The men wash their feet outside, and without drying them they walk over the sand to their huts, and put on their shoes while their feet are damp, and (the sand still adhering) a few paces on parade in this state produces shoe-sores, which are frequently very difficult and troublesome to heal. These cases have become less frequent since (at my suggestion) the Commanding Officer informed the regiment that all men who were admitted into the hospital with shoe-sores would have to make up all their guards and duties on their discharge from hospital.

8. 19 cases were admitted during the year, most of which were readily amenable to simple treatment. A few cases, however, in impoverished systems were rather troublesome, requiring ferruginous tonics and an increase of good and wholesome food.

9. 14 cases were treated under this heading; this disease is the most inexcusable and easily preventible disease of all that are admitted into hospital.

Scurvy appears to attack almost solely those men who have impoverished their systems by voluntary starvation, or insufficient food of an inferior quality. Stale fish, cereals of the cheapest and most inferior kind, very little or no vegetables or fruit, seem to constitute the food of this class of patients, who live thus cheaply to enable them to hoard their money, or spend it in gambling, in pleasure, or in vice.

10. 14 of these cases were admitted during the year, chiefly in men of low and poor stamina; most of these cases were very difficult to heal, and required a decidedly stimulant treatment, both externally and internally.

11. 10 cases of this obscure and unsatisfactory disease were treated, and 5 of these were pensioned by the last Invaliding Committee. This and chronic rheumatism are the most favourite diseases of those sepoys who have determined to take their pension.

12. 8 cases were admitted and treated by every known method, but without success, as these patients had made up their minds that no treatment whatever should benefit them, as they had decided to obtain their pension and leave the service. These cases and lumbago are the pest of the Army Surgeon.

13. 4 cases only of this disease were admitted, 2 of which were of a severe confluent type, and the other 2 of an ordinary nature. The families, however, suffered more severely, 14 cases having occurred in the lines; these were at once segregated and admitted into the contagious disease ward of the

hospital. Most of these cases were confluent. Bi-weekly inspections of all those in the lines were strictly carried out, with excellent results—the disease having been completely stamped out in two months; most of the cases occurred during the month of March. Of the 18 cases of small-pox which occurred in the men and families, 13 were protected by previous vaccination, the marks of which were clearly perceptible; 5 had been previously vaccinated, but the marks were not clearly visible.

14. 4 cases of this disease were treated: one of whom died, another was sent on medical certificate for a change of climate to the Deccan, and two were discharged to duty.
Pneumonia.
15. 5 of these cases were admitted during the year—3 from gonorrhœa, 1 from phymosis, and 1 from bubo; these were successfully treated, and returned to duty.
Euthetic Diseases.
16. 8 cases of affections of the skin (parasitic and other) have been treated—scabies 3, eczema 3, urticaria 1, and psoriasis 1; all these were readily amenable to the treatment employed.
Cutaneous Diseases.
17. 2 cases of this disease were admitted into hospital, both of whom were invalided on pension this year. In one of these cases I excised some of the metatarsal bones of the foot as well as the whole of the great toe; these surgical wounds healed very favourably.
True Leprosy.
18. Vaccination has been carried on most carefully; no operations were performed on the men and recruits. No operation on the women; but there were 53 primary operations on the children, all of which were successful. 7 excess in number were again vaccinated, and the second operation was successful.
Vaccination.
19. The meteorological features of this year have differed considerably from many previous years, inasmuch as there was a diminution in the rain-fall of 9 inches, and a decrease in the mean temperature of 5°. The hottest months were April, May and June—the month of May being the hottest, with an average of 101° in the shade within the hospital building, and an average minimum of 79°, the mean daily range being 22°. The highest temperature was reached during the month of May 111°; the lowest in that month was 66°, the range during the month being no less than 45°. The coldest months were December and January, with a maximum heat of 82° and 80° respectively, and a minimum of 43° and 42°, the range during these months being 39°.
Climate.
- The prevailing winds were N.W. and S.W.
20. Rain fell during 4 months of the year. In July there were 24 days of rain, on which there fell altogether 7 inches and 15 cents. The heaviest rain-fall occurred in August, in which 14 inches and 52 cents fell during 15 days on which it rained.
Rain-fall.
- In September there were 4 days of rain, during which 1 inch and 27 cents was collected making a total rain-fall for the year of 23 inches and 80 cents, which is about 9½ inches less than the rain-fall registered last year, 1872.
21. The drainage of the cantonment of Ahmedabad is largely favoured by natural circumstances; it is situate on a perfectly (particularly level) homogeneous self-drainage sand, containing no known underlying stratum of clay or other impervious medium, through which the rain-fall readily percolates and disappears. This topographical condition ought to secure it a healthy character; but that it is a malarious station is unquestionable, although the malarious fevers do not here assume that deadly character which is so peculiar to some other stations. Surface drainage prevails within the lines: all the refuse water that has been used by the men and families of the regiment, with all its impurities, is thrown out on the streets within the lines, in front of each dwelling, and there allowed to evaporate under the sun's rays. There is also a channel which conveys impure water from the interior of each hut through an opening in the wall to the road in front, where it is allowed to flow at large, and sink into the earth. Both these arrangements are objectionable, but it is difficult to suggest any other that the Natives would use. The dry sweepings are carted away daily to a place appropriated for the purpose, about 1½ mile distant, east of the cantonment.
Drainage.
22. The water-supply to the regiment is sufficient for all purposes, and is bright, sparkling, and potable; but the men do not confine themselves to the use of this undoubtedly good water, but prefer that from the river, the disgusting impurities of which I described in my last report.
Water-supply.
23. The food supply is abundant, comestibles of all kinds easily procurable at fair rates, except meat and vegetables in the hot weather, when they are the most required. The meat is just the same as I reported last year, and vegetables for the same reason are not procurable.

24. The clothing of the regiment remains unaltered, and I still urge, as in my last report, a change in the entire dress of the Native soldier; it would improve his appearance, his comfort, and his health.

Clothing.

25. The hospital building is ample and commodious for all cases; it is well ventilated by roomy shafts in the roof. These unfortunately leak badly during the rains, especially when the wind beats in the rain

Hospital Building.

through them, the floor becomes soaked, and the interior of the hospital damp and cheerless. This defect should be rectified.

Subsidiary Buildings.

26. The subsidiary buildings are all that could be desired

27. The hedge around the hospital compound is of cactus bush, and is very objectionable; it harbours reptiles of sorts, and is the general receptacle of broken bottles, bones, and such like refuse, and sometimes of filth. A light, low wall would be a very great, and not a costly, improvement.

28. The dry-earth system of conservancy is carried out in the hospital latrines; the earth is not re-used, but is carted away daily along with the dry sweepings of the compound.

I beg to append abstracts and forms conveying every other information of interest pertaining to the regiment and hospital under my charge—

METEOROLOGICAL OBSERVATIONS, noticing the Temperature and Humidity of Air, the Fall of Rain, Amount of Cloud, the Prevailing Wind, &c., for the Year 1873.

Year and Month.	Localities at which Observations were made.	Temperature of Air.							Dry and Wet Bulb.		Rain.		Wind.		Cloud.	
		Highest in the Month.	Lowest in the Month.	Range in the Month.	Mean of all highest.	Mean of all lowest.	Mean Daily Range.	Approximate Mean for the Month.	Mean of Dry Bulb.	Mean of Wet Bulb.	Number of Days it fell.	Amount collected.	General Direction.	Estimated Strength.	A. M.	P. M.
1873.																
January	...	80	42	38	75	47	28	61	71	60	...	...	E.S.E.	...	...	...
February	...	86	43	43	81	59	22	70	77	65	...	...	N.E. & N.W.	...	...	...
March	...	98	55	43	88	68	20	78	83	68	...	...	N.W.	...	...	...
April	...	101	74	27	97	75	22	86	88	78	...	...	N.W.	...	...	...
May	...	111	66	45	101	79	22	90	93	80	...	...	N.W.	...	...	...
June	...	102	76	26	99	81	18	90	92	83	4	86	S.W.	...	...	...
July	...	97	73	24	89	77	12	83	86	82	24	715	S.W.	...	...	...
August	...	92	70	22	87	72	15	79	84	80	15	1452	N.W.	...	...	...
September	...	89	59	30	87	70	17	75	84	80	4	127	S.W.	...	...	...
October	...	91	63	28	88	68	20	78	84	75	...	...	N.N.W.	...	...	...
November	...	87	56	31	84	59	25	71	82	70	...	...	N.N.E.	...	...	...
December	...	83	43	39	79	54	25	77	73	63	...	...	S.E. & W.	...	...	...
Mean	...	93	63	33	88	67	20	78	83	74	47	2380				

H. M.'s 9th Regiment Hospital, Ahmedabad.

RETURN of the Age and Service of the Native Rank.

Age.	Native Officers.	Havildars.	Naiques.	Drummer and Fifer.	Privates.	Total.	Service.	Native Officers.	Havildars.	Naiques.	Drummer and Fifer.	Privates.	Total.
55 and upwards.	2	1	...	...	1	4	Under 5 years ...	...	...	...	...	120	120
50 " ...	1	3	1	...	5	10	From 5 to 10 years.	...	...	...	2	114	116
45 " ...	6	8	5	...	17	36	" 10 to 15 " ...	...	...	3	2	31	36
40 " ...	5	9	5	1	11	31	" 15 to 20 " ...	1	12	16	7	175	211
35 " ...	1	8	12	2	101	125	" 20 to 25 " ...	1	12	2	1	12	29
30 " ...	...	4	3	5	84	96	" 25 to 30 " ...	8	8	6	1	15	38
25 " ...	...	2	4	2	107	115	" 30 to 35 " ...	2	2	2	3	5	14
20 " ...	...	...	...	2	86	88	" 35 to 40 " ...	3	1	...	...	1	5
18 " ...	...	...	...	3	58	61	Above 40 ...	...	...	...	...	...	...
Under " ...	...	...	...	...	3	3							
Total...	15	35	30	16	473	569	Total...	15	35	30	16	473	569

RETURN showing the Service of the Pensioned during the Year 1873.

Service.	Native Officers.	Havildars.	Naiques.	Drummer and Fifer.	Privates.	Bhistis.	Total.
Above 15 years	1	...	...	2	...	3
16 "	12	...	12
17 "	7	...	7
18 "	3	...	3
19 "	3	...	3
20 "	1	...	...	1	...	2
21 "
22 "
23 "
24 "
25 "
26 "
27 "	2	...	4	...	6
28 "
29 " ...	1	2	1	...	3	...	7
30 "	1	...	...	...	1
31 "
32 "
33 "
34 "
35 " ...	1	...	1	...	...	...	2
Total...	2	4	5	...	35	...	46

	1871.	1872.	1873.
Average yearly strength of fighting men.	636	472	569
Remained in hospital last return	18	12	3
Admitted into hospital during the year	421	650	525
Discharged from hospital during the year	417	656	514
Died in hospital during the year	4	3	7
Transferred from the regiment... ..	6	...	1
Invalided from the regiment	18	23	48
Remaining in hospital this day	12	3	7
Recruits joined during the past year	17	25	44
Average daily sick during the year	12.4	14.7	16.6
Proceeded on sick leave from the regiment	3	6	13
Proportion of sick to strength per cent	69.0	140.2	92.81
Do. of deaths to treated... ..	0.6	0.4	1.32
Do. of deaths to strength	0.9	0.3	1.23

SUMMARY of the Diseases for the Years 1871, 1872, 1873.

	1871.	1872.	1873.
General Diseases ... { A.	271	508	290
... { B.	15	8	36
Nervous system ... ..	...	1	2
Eye	14	39	36
Ear... ..	1	1	1
Circulatory system	1	...	...
Respiratory "	8	6	40
Digestive "	29	36	37
Urinary "	3	2	5
Generative "	1	2	...
Organs of locomotion ... ..	...	3	...
Cellular tissue	8	4	3
Cutaneous system	34	25	44
Condition not necessarily associated with local or general diseases	5	1	1
Poison ... ..	...	...	1
Injuries ... { General ... ..	...	2	2
... { Local... ..	30	12	27
Surgical operation	1	...	...

The following table shows the proportion per 1,000 of admissions from ague in each month to treated and to strength :—

		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Admissions to treated.		428.0	312.5	424.2	461.5	441.8	263.1	289.4	411.7	261.6	543.4	373.7	512.7
Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...
Admissions to Strength.		30.0	23.2	24.7	38.7	33.4	15.5	18.5	43.0	44.5	105.6	69.4	24.6
Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...

DIET TABLE.

DESCRIPTION of Food eaten by the various Castes in the Regiment.

	Marathi Deccanis and Mudrasis.	Sikhs, Purdasis, Chuttris and Brahmins.	Concan Hindus and Purwaris.	Jews and Mussalmans.	Native Christians.
Flour, wheaten	lb. $\frac{3}{4}$	lb. $1\frac{1}{2}$	lb. $\frac{3}{4}$	lb. $\frac{1}{2}$	lb. $\frac{1}{2}$
Rice	" $\frac{1}{2}$	" $\frac{1}{4}$	" $\frac{1}{2}$	" $\frac{1}{2}$	" $\frac{1}{2}$
Ghi	ozs. 2	ozs. 3	ozs. 2	ozs. 4	ozs. 4
Dhall...	" 4	" 4	" 4	" 4	" 4
Mutton, twice in week	lb. $\frac{1}{2}$	None.	lb. $\frac{1}{2}$	lb. 1	lb. 1 daily
Bajri flour	" $\frac{3}{4}$	None.	" $\frac{3}{4}$	None.	None.
Vegetables	" $\frac{1}{4}$	lb. $\frac{1}{2}$	" $\frac{1}{4}$	lb. $\frac{1}{4}$	lb. $\frac{1}{4}$
Fish	" $\frac{1}{2}$	None.	" $\frac{1}{2}$	" $\frac{1}{2}$	" $\frac{1}{2}$

The diseases by which the deaths, as well as the whole admissions to hospital, in the course of the year have been occasioned, are specifically detailed in the return hereto annexed B, whereof the following is an abstract:—

	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Total.		
	Admitted.	Average of Week-ly Return.	Admitted.	Average of Week-ly Return.	Admitted.	Average of Week-ly Return.	Admitted.	Average of Week-ly Return.	Admitted.	Average of Week-ly Return.	Admitted.	Average of Week-ly Return.	Admitted.	Average of Week-ly Return.	Admitted.	Average of Week-ly Return.	Admitted.	Average of Week-ly Return.	Admitted.	Average of Week-ly Return.	Admitted.	Average of Week-ly Return.	Admitted.	Average of Week-ly Return.	Admitted.	Average of Week-ly Return.	
<i>General Diseases, Class I—A.</i>																											
1. Intermittent, remittent, and yellow fevers ...	12	...	10	...	14	...	24	...	19	...	10	...	11	...	29	1	28	...	76	1	37	...	12	...	282	2	
2. Enteric, typhus, and continued fevers ...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3. Febricula ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4. Eruptive fevers ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5. Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6. Erysipelas and pyæmia ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Class I—B.</i>																											
7. Rheumatism ...	1	...	...	...	2	...	...	...	1	...	2	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...
8. Syphilitic diseases ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9. Phtisis pulmonalis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10. Scrofulous diseases ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11. Other constitutional diseases.	...	...	...	...	1	...	...	...	...	...	...	...	1	...	7	...	6	...	10	...	...	...	1	...	57	...
<i>Local Diseases, Class II.</i>																											
1. Diseases of the nervous system.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2. Conjunctivitis ...	2	...	5	...	1	...	...	...	4	...	3	...	...	...	...	...	14	...	4	...	...	...	...	...	...	...
3. Other diseases of the eye ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4. Diseases of the circulatory system	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5. " Respiratory system	2	...	...	...	...	...	...	...	1	...	3	...	1	...	3	1	14	...	4	...	3	1	...	...	39	4
6. Diarrhoea ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7. Dysentery ...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	6	1	...	...	...	...	...	...	...	...
8. Other diseases of the digestive system	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9. Gonorrhoeal affections	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10. Other diseases of the urinary system	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11. Skin diseases ...	5	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12. Other local diseases ...	1	...	5	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Condition, &c., Class III.</i>																											
1. General debility ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Poisons, Class IV.</i>																											
1. Delirium tremens ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Injuries, Class V.</i>																											
1. Wounds, &c., received in battle	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2. Accidental ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3. Other violent deaths and diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Surgical Operations, Class VI.</i>																											
Total ...	25	...	25	...	30	...	36	...	29	...	30	...	27	...	59	2	87	1	103	1	51	1	23	1	525	7	

Detachment H. M.'s 9th Regiment N. I.

SADRA.—In Medical Charge—Apothecary W. CONWAY; Strength 41.

1. A detachment of this corps has been stationed at Sadra during the year, a part of each month from January to October.

2. Average strength	...	...	...	...	...	...	41
" daily sick	...	...	...	...	...	...	0.6
Admissions during the year	...	...	...	...	...	...	15
Discharged to duty do.	...	...	...	...	...	...	15
Average daily sick per cent. to average strength	...	...	...	...	...	...	0.14
Ratio per cent. of admissions to average strength	...	...	...	...	...	...	36.58

3. The admissions from one detachment, stationed here from the 12th of January to the 15th of February 1873, were—

(466) Dysentery	...	...	1
(526) Congestion	...	...	1

The lowest and highest minimum for this period—	The lowest and highest maximum for this period—
<i>Thermometer</i> —41° and 59°.	71° and 95°.

The dysenteric and splenic derangements took place in somewhat cachectic subjects, who, prior to arrival here, had suffered from ague. This condition as a predisposing, and exposure to low night temperature when on guard duty as an exciting, cause led to the adoption, by way of treatment, of quinine and opium in the one and quinine and iron in the other, with suitable diet and clothing. The case of dysentery was only three days, and the other about a week, under treatment.

Prevailing winds—N. and N.W.

4. The admissions from another detachment stationed here from the 11th of March to, the 12th of April 1873 were for

(9) Enteric fever	...	...	1
(12) Febricula	...	...	1
(111) Conjunctivitis	...	...	1

The lowest and highest minimum for this period—	The lowest and highest maximum for this period—
<i>Thermometer</i> —56° and 79°.	86° and 109°.

The steadily increasing solar light, atmospherical and terrestrial temperature gave rise, as usual, to increased activity in vegetative and animal functions, attended with numerous collapses (many in a mild) and consequent derangements, such as small-pox, measles, and continued fevers. One of the latter happened to a young soldier, whose case accompanies this report.

Prevailing wind—westerly.

5. From the detachment, located here from the 13th of May to the 13th of June 1873, there were two admissions—

(12) Febricula	...	...	1
(43A) Syphilis	...	...	1

The lowest and highest minimum for this period—	The lowest and highest maximum for this period—
<i>Thermometer</i> —78° and 89°.	89° in June and 107° in May.

These two months are considered the healthiest in the year to vegetarians, excepting intemperate consumers of spirits, opium, and tobacco, who generally suffer from boils, whitlows, carbuncles, &c.

6. From one detachment, located here from the 10th of July to the 13th of August, there were three admissions,—two from quotidian ague and one from dysentery.

The highest and lowest minimum during this period—	The highest and lowest maximum for this period—
<i>Thermometer</i> —86° and 76°.	99° and 80°.

Rain-fall during these two months was 33 inches and 13 cents.

From another, stationed here from the 12th of September to the 9th of October 1873, there were five admissions for quotidian ague—two in September and three in October.

Highest and lowest minimum range for these two months—	Highest and lowest maximum range for these two months—
<i>Thermometer</i> —80° and 62°.	98° in October and 89° in September.

Rain-fall for September only 40 cents.; in October none. The admissions during these four months were quotidian fever and dysentery, attributable, no doubt, to a high thermometrical and hygrometrical condition of atmosphere, along with the great difference in the thermometer's culminating and lowest points, from 23 to 36 degrees.

Sanitary Report by the Senior Medical Officer on the Health of the Native Troops forming the Garrison of Ahmedabad for the Year 1873.

1. The Native troops serving in Ahmedabad during the past year have been the head-quarters H. M.'s 3rd Regiment Bombay N. L. I. and head-quarters Station of Troops. H. M.'s 9th Regiment Bombay N. I., both these regiments alternately furnishing a detachment monthly for duty at the Political Agency at Sadra. In addition to these, 2 companies of H. M.'s 9th Regiment were ordered in October to march on Surat, to relieve H. M.'s 26th Regiment N. I., proceeding to the Camp of Exercise at Chinchwad, which have not yet returned.

Average Strength.	2. The average strength of the 3rd Regiment N. L. I. during the year has been	...	...	...	...	...	642
Treated to strength	...	...	...	...	...	...	150.9
Deaths to strength	...	...	...	...	...	...	1.2
Deaths to treated	...	...	...	...	...	...	0.8
Average daily sick	...	...	...	...	...	...	21.6
The average strength of H. M.'s 9th Regiment N. I.	...	...	...	...	...	...	569
Treated to strength	...	...	...	...	...	...	92.7
Deaths to strength	...	...	...	...	...	...	1.2
Deaths to treated	...	...	...	...	...	...	1.3
Average daily sick	...	...	...	...	...	...	16.6

3. The general health of both regiments has, on the whole, been good during the past year. Small-pox to some extent prevailed in both regiments from the month of January to the month of April, but could scarcely be called an epidemic. Vaccination has been thoroughly carried out in both regiments; and one of the cases of small-pox had marks of a previous attack of the disease, and many of vaccination. The cases, as a rule, were of a mild type, with the exception of one or two in both regiments: no death occurred from this disease.

4. The lines of both regiments are good, and well built, extending to the east and State of the Lines. west, on the south bank of the river Sabermutti, with the streets running north and south; they are airy, well ventilated, and kept clean, and are well sheltered by trees.

The public buildings, quarter-guards, &c., are well built, and suited for the purposes required.

The solitary cells are situated on the high bank of the river, well built, well ventilated, and dry.

General sanitary condition.

5. There has been really no epidemic at Ahmedabad during the past year.

The 3rd Regiment had 30 cases of small-pox, including women and children. The 9th Regiment N. I. had 17 cases, including women and children.

6. The hospitals are good and well sheltered from the heat of the sun by trees growing Hospitals, &c. towards the eastern aspect. There is great want, however, of female contagious ward and dead-house, which latter might be made to answer for both regiments; but each ought to have a separate ward for female patients.

I am also of opinion that a respectable woman belonging to the regiment might be entertained to attend to female patients while under treatment in hospital.

The hospital assistants have got no cook-room or privies for their families, which is a great annoyance and inconvenience to them, and should, I think, be provided separately.

Rain-fall and Temperature. 7. The rain-fall during the year has been good, very well distributed over the season; the total amount of rain-fall has been—

Inches.	Cents.	Total.
23	36	23-36

Temperature—

Maximum.	Minimum.	Mean.
93	64	78

The alternations of temperature during the past year have been very trying: the early part of the hot weather was comparatively cool, but towards the month of May and the beginning of June the heat was unbearable, and without the advantage of any wind, the thermometer reaching 115° on one or two occasions.

8. From what cause I am unable to explain, but the 9th Regiment lines have got nine wells to three in the lines of the 3rd Regiment. This is not sufficient for the supply of good wholesome water for the regiment, and they are consequently obliged to draw part of their supply from the river, which at certain seasons of the year I consider most injurious. I have recommended through the proper authority that more wells should be dug for the lines occupied by the 3rd Regiment N. L. I. The water-supply, though insufficient for the wants of the lines occupied by the 3rd Regiment, is very good and ample for the supply of the lines occupied by the 9th Regiment N. I.

Prevailing Diseases among the Troops or in Vicinity. 9. The prevailing diseases during the year in both regiments have been intermittent fever, remittent fever, bronchitis, conjunctivitis, dysentery, scurvy, small-pox, &c.

12 deaths have occurred in both regiments—1 from fatty degeneration of the heart, 3 from pneumonia, 2 from remittent fever, 1 from phthisis pulmonalis, 1 from sun-stroke, 1 from splenitis, 1 from ascites, 1 from bronchitis, 1 from dysentery.

10. The sudder bazaar is immediately in front of the lines, where all supplies may be obtained of good quality, but not so cheaply as in the bazaar in the city, from whence the greater number of the men get their food, going a distance of four miles to the city on Sundays and brigade holidays for that purpose. Fish generally, and European and Native vegetables of good quality in their season, are to be had in both bazaars.

Latrines. 11. The hospital latrines are in good order, and kept so by using the dry-earth conservancy system, with McDougall's powder.

The regimental latrines are now in the old buildings where the dry-earth conservancy system is carried out, and answers all purposes, the earth being carried away and buried by the sweepers outside cantonments; they are much more suited to the necessities of the regiment than the new system of trench latrines.

12. That there should be a contagious ward and dead-house in common between the two Native regiments, and one separate female ward for each regiment, with authority to employ a woman out of each regiment as nurse when her services are required.

H. M.'s 18th Regiment N. I.

RAJKOTE.—In Medical Charge—Surgeon-Major E. SEXTON; Strength 625.

The general health of the troops of H. M.'s 18th Regiment was very satisfactory during the first seven months of the year 1873. The new regimental lines, which had entailed

much hard work and exposure and consequent illness, were all finished before the setting in of the rainy season, and the troops at head-quarters had no duties to perform beyond the ordinary parades and regimental and station guards.

In April a detachment, consisting of 54 men and a Native officer, was sent to Porebunder to guard some prisoners awaiting trial, and this was further augmented, two months later, by an addition of 35 men, together with one Native and one European officer.

Escorts were also furnished occasionally to assist in the conveyance of Government stores to and from Wadwan, but no parties of men were permanently detached from head-quarters beyond those mentioned in the preceding para.

During the months of August, September, and October the health of the troops, which had previously been all that could be wished for, declined very materially; the number of admissions into hospital, which had previously averaged 40 per month, rising in August to 69, in September to 149, and in October to 204. The greater part of this enormous increase is attributable to the great prevalence of fever during these months.

Of a total of 69 admissions during the month of August, 37 were cases of fever; of 149 admissions in September, 112, or more than two-thirds, were also cases of fever; and in October of a total number of 204 admissions no less than 190 were cases of various forms of fever. Three deaths took place during the year—one from asthma, an old chronic case, in January, one from effusion into the pericardium in March, and one from pneumonia in May.

13 men were allowed sick leave to visit their native country during the period under review.

During the month of January a slight outbreak of small-pox occurred among the families; every precaution was taken to prevent the spread of the disease, and after a few weeks it totally disappeared.

No case of cholera occurred in the lines or cantonment up to the present date.

H. M.'s 2nd Company Native Artillery.

RAJKOTE.—In Medical Charge—2nd Class Hospital Assistant SHAIK LUTEEF; Strength 128.

During the past ten months of the year 1873 the general health of the troops of the Guzerat Mountain Train, consisting of gunners and mule drivers, was on the whole satisfactory.

The total number of admissions into hospital during the above period amounted to 98, of which number no less than 54, or considerably more than one-half, were cases of various forms of intermittent fever; but a reference to the returns will show that no less than 36, or about 66 per cent. of the cases, were admitted during the months of September and October, which are noted for their unhealthiness in the province of Kathiawar.

The following were the monthly admissions for ague during the period under review :—in January 1, in February 2, in March 2, in April 1, in May 3, in June 2, in July 4, in August 3, in September 21, and in October 15.

Diseases of the pulmonary system were, as may be surmised, most frequent in the cold weather, nearly all the cases of bronchitis and pneumonia having occurred during the months of January and February. Only three cases of diarrhoea and one of dysentery figure in the returns; only one case of primary syphilis and one of suppurating bubo were admitted since the 1st of January; wounds, both punctured and incised, contusions, and other accidental injuries were somewhat numerous, but the total is not much above the average. No deaths took place in hospital during the ten months; but one sudden death, owing to fatty degeneration of the heart, occurred in the regimental lines. An inquest was held on the body, and a verdict of death from natural causes was returned.

The average number of monthly admissions was 9.8—the greatest, 31, being in the month of September, and the least, 4, in April, and in August there has been no change made in the lines since last report. The hutting of the troops is satisfactory, water-supply fair, and lines' conservancy efficiently carried out.

Squadron 2nd Regiment N. L. C.

RAJKOTE.—In Medical Charge—Surgeon R. H. BATTY; Strength 111.

The total average strength of the detachment 2nd Regiment Light Cavalry has been 111 officers, non-commissioned officers, and sowars. The 1st Squadron 2nd Regiment Light Cavalry was relieved by the 3rd Squadron on the 20th November. The men were

located partly in new and partly in the old lines. There is a plentiful supply of water near the Government garden, but many of the families had recourse to the well situated close to the hospital, which contains a good supply of water during the whole year. A detachment of 28 men accompanied the Political Agent, and was absent for about one month.

Another detachment of 22 men has been stationed at Drappa.

The total number of admissions into hospital during the year amounted to 142; of these 65, or rather less than the half, were cases of intermittent fever.

There was only one case of conjunctivitis of a very slight nature. There were 9 cases of disease of the respiratory organs, and 10 of the digestive system. There were 16 of contusions admitted during the year, some of a rather severe nature; nearly all were occasioned by falls or kicks from horses.

No death took place during the year.

There were 6 men invalided, and 5 proceeded on sick certificate to their own countries.

Head-quarters H. M.'s 7th Regiment N. I.

RAJKOTE.—In Medical Charge—Surgeon T. B. BATTY; Strength 193.

The average strength of the head-quarter wing of H. M.'s 7th Regiment N. I. during 1873 has been 193. The number of admissions into hospital has been large when compared with the strength, viz. 300 admissions from all causes.

Treated to strength	...	...	...	...	165.28
Average daily sick	...	...	...	...	9.13
Deaths to strength	...	...	...	...	1.03
Deaths to treated	...	...	...	...	0.62

This large number of admissions may be ascribed to the men being compelled to live in tents during the hot weather while building their new lines,—simple fever and ague resulting from this exposure, which two diseases gave half the total number of admissions. Two deaths occurred during the year—one from pneumonia, the other from remittent fever. The subject of the last-named disease had been on furlough, and on his return was admitted into hospital in a dying state. The death-rate is small when compared with the number of men under treatment.

Prevailing Diseases.—Ague, simple fever, and dracunculus have been the diseases which have given the largest number of admissions. Most of the cases of fever have been uncomplicated, and were discharged convalescent after two or three days under treatment.

The following is a summary of the diseases which gave the largest number of admissions:—

Ague	...	...	...	...	...	100
Febricula	...	...	...	...	...	56
Dracunculus	...	...	...	...	...	52
Chronic rheumatism	...	...	...	...	...	15
Contusion	...	...	...	...	...	15
Dysentery	...	...	...	...	...	6
Diarrhoea	...	...	...	...	...	5

From this it will be seen that ague gave one-third of the entire number of admissions; guinea-worm one-sixth, which is a large proportion. This disease was brought from Dharwar, where it always has been most prevalent.

State of the Lines and Subsidiary Buildings.—New lines are in course of construction; they won't be completed for some five or six months.

General Sanitary Condition.—The ground around the new lines is kept as clean as the making of bricks, &c., can well allow.

The new latrines are in use, and the system of conveying away the nightsoil in carts is found to work satisfactorily.

Hospital Buildings.—The hospital occupied by the 7th Regiment is the staff hospital, and also accommodates the cavalry and artillery. It is a large roomy building, more like a store-house than a hospital; it has no proper dispensing place, nor a room to lock up any surplus stores or drugs. There is no dead-house, nor any kind of accommodation for the Native medical pupils.

Rain-fall. The rain-fall up to the 31st December has been 29 inches and 17 cents.

Thermometric Observations recorded at Rajkote during the Year 1873.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Minimum	61.32	54.17	72.06	70.2	96.58	85.2	80.77	79.58	73.13	70.19	69.96	63.12
Mean	77.51	84.28	89.74	96.2	98.90	96.8	84.19	83.87	85.43	89.74	84.2	79.45
Maximum	78.0	84.96	93.0	97.6	100.35	98.86	85.87	90.16	89.16	91.51	85.53	79.54

The water-supply is obtained from wells, there being 11 Government and 9 private wells in the station. Four of the Government wells contain excellent water, and lasted during the whole year, but the others run dry from time to time. There is a river in the vicinity which could be made use of in case of necessity.

Vaccination.

Vaccination has been carefully carried on during the year: there were 30 children vaccinated (from arm to arm) all successfully.

One man was sent away on sick certificate, 9 were invalided, and 28 recruits joined during the year.

Detachment H. M.'s 7th Regiment N. I.

DWARKA.—In Medical Charge—3rd Class Hospital Assistant RUGOONATH; Strength 87.

The detachment consisted of one European and two Native officers and 85 non-commissioned officers, rank and file. The general health of the same throughout the year was very good.

The average strength for 12 months, 87.25

Admissions into hospital for all classes of diseases.—The principal diseases under the general diseases—48 ague, 16 chronic rheumatism, 1 syphilis secondary, 1 scrofula, 1 scurvy, 3 lumbago; and local diseases, 1 brow ague, 5 bronchitis, 2 pneumonia, 1 gastritis, 2 dyspepsia, 3 dysentery, 5 diarrhoea, 5 colic, 1 hæmorrhoids, 1 epididymitis, 7 abscess, 33 dracunculus, 9 boil, 1 thecal abscess, 1 snake-bite, 1 wound, 22 contusions, 3 sprains.

One death occurred in a case of pneumonia. The deceased had fever when admitted; after three days he got lung disease, showing symptoms as follows:—High fever with increased heat of surface, especially on the chest, injection of the eyes, headache, frequent and compressible pulse, thirst, furred tongue and great debility, dry cough accompanied with scanty, mucous expectorations.

A vaccinator is appointed and paid by His Highness the Guicowar, and he is carrying out his duties in a satisfactory manner. No epidemic of cholera or small-pox in lines; the latter disease raged to some extent in the town.

Water here is generally drawn from wells and tanks. The climate of Dwarka is very pleasant, as there is a fresh breeze generally. The rains are mild; cold season is delightful.

The lines consist of three rows of stone buildings with open verandahs, and are divided into rooms of different sizes. The rooms are all 12 feet broad, height of the wall 9½ feet, and that of the central wall 14 feet. The space between the lines is 40 feet. They are full built north and south.

The hospital is placed in one of the blocks of buildings inhabited on one side by men in health, the other side being used for the sick, both being under one roof. The ventilation is bad, the air being admitted only on one side, and that not directly facing the sea breeze. The tiles are single; during the past monsoon the rain water fell inside, making all the rooms used for the sick unfit to live in. It is particularly necessary to have a proper house for hospital use, and for second class servants, some of whom at present are allowed to find accommodation anywhere, causing hindrance to work.

Detachment H. M.'s 7th Regiment N. I.

BURDA CHOWKEY.—In Medical Charge—Acting 3rd Class Hospital Assistant LUXIMON SING; Strength 89.

Average strength of detachment H. M.'s 7th Regt. N. I., during the past year, 89.

The general health of the detachment has been very bad during the past year, but since the arrival at Porebunder from Burda Chowkey has very much improved.

The prevailing disease, ague of quotidian and tertian type, was mostly prevalent during the year.

295 admissions were from ague, 9 chronic rheumatism, 2 syphilis secondary, 2 scurvy, 3 conjunctivitis, 2 bronchitis, 4 dysentery, 3 diarrhoea, 4 colic, 19 dracunculosis, 2 eczema, 3 scabies, and 4 from contusion.

Remittent fever, syphilis primary, jaundice, boil, whitlow, burns and scalds, circumcision, and open abscess of the perineum, each contributed one admission.

There was no case of either cholera or small-pox.

Two deaths occurred during the year, one from jaundice and the other from syphilitic rheumatism.

The camp is situated on the east side of the town of Porebunder, and just in the rear of the traveller's bungalow.

The bachelors of the detachment are quartered in tents, and the married men are chiefly located in small cadjan huts of cocoanut leaves which they have erected for themselves and families; some of the married men, however, are quartered in some old buildings in an enclosure close by, which has been temporarily placed at their disposal by the kindness of the owners.

Lines and general sanitary condition.

Latrines.

There is no latrine accommodation, and the place resorted to, is about 400 yards to the south.

Hospital.

There is no regular hospital accommodation, but one of the rooms in the aforesaid enclosure has been set apart for the use of the sick.

Rain-fall.

There is good rain-fall during the year.

Water-supply.

There is a well of very good water close by, where the men are encamped.

Sanitary Report by the Senior Medical Officer on the Health of the Native Troops garrisoned at Rajkote during the Year 1873.

Garrison. { Native Cavalry, consisting of 1st Squadron 2nd Regt. Light Cavalry.
Guzerat Mountain Train, consisting of 2nd Company N. A.
Native Infantry, H. M.'s 7th and 18th Regiments.

Average strength, 1,068.

The general health of the troops was satisfactory during the first seven months of the year. In August, September, and October fevers prevailed to a considerable extent.

The average daily sick per mille of strength has been 31.30.

Three deaths took place—one from asthma in January, one from effusion into the pericardium in March, one from pneumonia in May.

New lines have been completed by the 18th Regiment; new lines are in course of construction by H. M.'s 7th Regiment N. I. No additions have been made to the cavalry or artillery lines, but a new veterinary hospital has been finished.

State of Lines and Subsidiary Buildings.

Latrines.

The new latrines constructed in 1871 are in use, and the system of conveying away thenightsoil in carts is found to work satisfactorily.

General sanitary condition.

The general sanitary condition of the station has been good.

There are two good hospitals, on the usual plans, for Native troops, which are well situated—one for the cavalry, artillery, and H. M.'s 7th Regiment N. I., and the other for the 18th Regiment N. I. There is no dead-house, nor is there any accommodation for the Native medical pupils.

State of Hospital Buildings.

Rain-fall.

The amount of rain registered was 30.60 inches during the year.

Thermometric Observations recorded at Rajkote during the 5 Years from 1869 to 1873.

		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1869	Minimum	59	58	65	71	80	81	78	81	77	71	65	59
	Mean	71	72	78	86	91	91.50	89	87.50	83.50	80	76.50	73
	Maximum	83	86	91	101	102	102	100	94	90	89	88	87
1870	Minimum	52	62	66	76	81	81	71	75	79	76	67	60
	Mean	67	75.50	79	88	92	91.50	81.50	81.50	90	84.50	78.50	72.50
	Maximum	82	89	92	100	103	102	92	88	91	93	90	85
1871	Minimum	52	61	63	77	77	80	77	74	77	74	65	55
	Mean	67.50	76	80	89	89	89	84.50	82.50	84	64.50	79	69
	Maximum	88	91	97	101	101	99	92	91	91	95	93	83
1872	Minimum	51	50	65	67	78	77	76	77	83	80	69	66
	Mean	65.50	72.50	80.50	83.50	89	81	84	82.50	83.50	85.50	75.50	75.50
	Maximum	80	93	96	100	104	105	92	88	84	91	82	85
1873	Minimum	51	57	63	70	78	80	77	75	74	66	69	63
	Mean	63.50	68	75	84.50	88	88	85.50	79.50	82.50	77	76.50	71
	Maximum	76	79	87	95	98	96	94	84	89	88	84	79

Water-supply, sources and quality.

The water-supply is obtained from wells, there being 11 Government and 9 private wells in the station.

Four of the Government wells contain excellent water, which lasts during the whole year, but the others run dry from time to time.

There is a river in the vicinity which could be made use of in case of necessity.

Prevailing Diseases.

Intermittent fever prevailed to a considerable extent during the months of August, September, and October.

During the month of January a slight outbreak of small-pox occurred among the families; every precaution was taken to prevent the spread of disease, and after a few weeks it totally disappeared.

No case of cholera occurred in the lines or cantonment up till the present date.

H. M.'s 20th Regiment N. I.

BHUI.—In Medical Charge—Surgeon H. De TATHAM; Strength 618.

The 20th Regiment Bombay Native Infantry was stationed during the year 1873 at—

Bhuj from 1st January to 12th November,
On the march from 13th November to 16th November,
On board ship from 17th November to 19th November,
Bombay from 20th November to 31st December.

The average strength of Europeans, 6.7.
Do. do. of Natives, 618.

The regiment was stationed during a greater portion of the year at Bhuj, the topography and general aspect of which I have already described in previous reports. The headquarters and six companies left Bhuj for Bombay on the 13th November, arriving in Bombay Harbour on the morning of the 20th. The passage by sea was performed in two days and a half by the steam-ship "Arcot". The amount of space allowed for each individual would not have been sufficient for a long voyage; but as the passage was short, and the weather very fine, no great inconvenience was experienced.

The climate of Bhuj during the past year was, upon the whole, favourable. The following table shows the maximum and minimum temperature, the prevailing winds, and rainfall, from January to October inclusive:—

1873.	Temperature.		Prevailing Winds.	Rain-fall.	
	Maximum.	Minimum.		Inches.	Cents.
January	72	52	S.W.	.....	.....
February	77	53	N.N.W.	1	6
March	85	63	N.N.W.	.....	.....
April	84	71	S.W.	.....	.....
May	93	78	S.W.	.....	.....
June	92	80	S.S.W.	2	61
July	86	80	S.S.W.	2	61
August	85	79	S.W.	2	49
September	86	82	S.W.	... ..	1
October	90	80	N.N.E.	.....	.....
Total...	85°	71°	.....	6	17

The trench system of latrines was introduced at Bhuj in the month of October, and had not proved offensive up to the time of the departure of the regiment; the accommodation, however, was very scanty, and I think hardly adequate to the requirements of the troops. In the hospital compound the dry-earth system of conservancy was regularly and efficiently maintained; I think there can be no doubt that this plan is very suitable for a hospital latrine.

Conservancy.

Water-supply.

The supply at Bhuj was both plentiful and good throughout the period under report.

I have already on two occasions described the regimental lines at Bhuj; but having rejoined the regiment on the 31st of December, after an absence on duty of five weeks, I am not in a position to report upon the lines at present occupied by the 20th Regiment in Bombay. They are, as has already been frequently reported, pervaded by a disgusting smell, caused by the conservancy arrangements which are carried on in their immediate neighbourhood, but it yet remains to be seen whether this state of affairs will have any deleterious influence upon the health of the men.

Lines and Subsidiary Buildings.

Having had but a few days' knowledge of the hospital and its surroundings I am not able to say very much under this head; the hospital consists of four wards, each calculated to hold 12 patients. The quarters for subordinates

Hospital Buildings.

and 2nd class servants are very fair. The only objection that I see at present, is the very confined space of the hospital compound, and the bad state of repair of the hospital latrine; this latter exhibits some glaring defects, such as a bad arrangement in front of each seat for carrying off the urine, which does not act, the holes getting stopped up, and the place being very offensive in consequence. I think the present system is objectionable, and, if practicable, I shall introduce the dry-earth system.

The following table shows the increase and decrease in the regiment during the year:—

Recruits joined during the year	35.
Invalided as unfit for further service	19.

Dismissed, deserted, and dismissed the service 4, died in hospital 4, died out of hospital and on leave 10. Of the new recruits 27 were Concanis, 2 Deccanis, 4 Hindustanis, and 2 Madrasis; the recruit boys of the regiment furnished 10 out of the whole number. In the month of March, when the Enfield rifle was served out to the regiment, considering that the greatest attainable accuracy in the visual examination of the recruit was thereby rendered necessary, I wrote to the Deputy Surgeon General of the Northern Division, requesting that the Surgeon General would sanction the issue to me of a set of the "test dots" (corresponding with Swellen's types) which are used in the British Army for the purpose of determining the quality of vision of the recruit: in reply I received a copy of the test types and dots in use at the Ophthalmic Hospital in Bombay, and was requested to report as to their efficacy. Having tried them I gave it as my opinion that they were not so well suited to a Native regiment as would have been the test dots for which I had applied; as, in the first place, a large majority of the recruits who join are unable to read a word even of their own language, and, secondly, the line of asterisks placed below the types are a far harder test of vision than would be the dots in question, the former from their shape alone (quite unlike the bull's eye of a target) producing a certain amount of confusion of vision.

I look upon myself as "*Emmetropic*", but I cannot count the asterisks at the proper distances, neither could a dozen other persons (selected by chance and all young) upon whom I experimented. Subsequently a copy of Swellen's types was sent to the senior Medical Officer of each station; this contains a page of white dots on a black ground, which answers the purpose very well, but it also contains a large number of types which are not suited to Natives; and as the expense of the book must be considerable, I cannot but think that it would be more economical to serve out to each regiment a copy of the "*test dots*" introduced into practice by Inspector General Longmore and used at Netley in the usual examination of all recruits. This consists simply of a card with black dots arranged in several lines one above the other, and each line containing a varying number of dots, with a second sliding card over the face so as to expose a certain number of dots at will.

I should think that a copy of these "*test dots*" could be served out to each regiment at a cost of one or two annas.

Of the men invalided as unfit for further service two suffered from chronic bronchitis and emphysema, one from hemiplegia, one from dementia, and the others were all invalided on account of senile decay, loss of teeth, defective vision, and other infirmities incidental to long service.

While on the subject of invaliding I am desirous of entering my humble protest against the system now in force—one which tempts every sepoy who has completed 15 years' service to feign debility, deafness, night-blindness, lumbago, or any other disability which may procure his discharge from the service, and enable him to draw his pension of four rupees a month, well knowing, as he does, that, unless promoted to non-commissioned rank, no higher pension can fall to his lot until he shall have completed a total service of *forty years*.

This I think is wrong in principle. The present system puts a premium upon malingering, whereas if a sepoy knew that after 15 years' service he could *claim* a certain small pension (say two and half or three rupees per mensem) and also that, if reported inefficient, he could be compelled to *go* on that pension, whether he desires it or no; but if still smart and efficient, might as a favour be granted an extension of service in order to earn a *higher* rate of pension, we should, I think, hear no more of malingering in the Native Army, as it would then be to each man's interest to demonstrate his activity and intelligence, rather than to persuade his superiors (as is now too often the case) that his 15 years' service have rendered him decrepit and useless as a soldier.

It seems very hard that a Native soldier cannot *claim* a certain pension after a reasonable term of service, as is the case with his European brother in arms. The distinction is, I think, invidious, more especially when we consider that the Native of India is, as a rule, *shorter-lived* than the European.

Sickness.

The following table shows at a glance the admissions into hospital during the year and their causes:—

1873.	Average Strength.	Total Admissions.	Average Daily Sick.	Ague.	Dengue.	Small-pox.	Rheumatism, Acute and Chronic.	Syphilis.		Phthisis.	Scoury.	Apoplexy.	Paralysis.	Disorders of the Intellect.	Palpitation of Heart.	Bronchitis and Pneumonia.	Pleurisy.	Dysentery.	Diarrhoea.	Diseases of Spleen.	Gonorrhoea.	Guinea-worm.	Debility.	Contusions and Local Injuries.	Eye Affections.	All other Causes.	Prevailing Diseases.
								Primary.	Secondary.																		
January ...	6384	108	59.4	46	...	...	4	...	...	...	1	...	...	...	...	9	...	...	...	1	...	...	4	11	...	30	Ague and bronchitis, Do.
February...	629	69	54	22	...	...	...	1	...	...	2	...	...	...	...	5	...	...	4	1	1	...	3	8	...	20	Do.
March ...	643	45	33	11	...	...	1	...	...	...	...	...	...	...	...	9	...	...	5	...	1	...	2	7	...	14	Ague.
April ...	620.9	41	26	10	...	...	1	...	...	1	1	...	...	...	...	...	...	...	2	1	...	...	...	5	1	13	Do. and diarrhoea.
May ...	641.4	38	27.3	4	...	...	3	...	...	...	3	...	...	...	1	1	...	...	5	1	...	1	...	1	3	15	None.
June ...	645	37	25.3	10	...	...	...	1	...	...	...	...	...	...	...	1	...	...	2	...	...	...	2	6	...	15	Do.
July ...	641	47	29.3	15	...	...	2	...	1	1	...	...	...	...	...	2	...	3	4	...	1	...	...	7	...	11	Do.
August ...	639	60	36	22	...	...	...	1	...	...	...	...	...	...	...	4	...	5	2	1	...	1	...	11	...	13	Ague.
September	629	55	31	17	...	...	2	2	...	...	...	...	...	...	1	1	...	2	5	1	...	1	...	7	1	15	Do.
October ...	615	69	21.3	34	...	...	3	...	...	...	1	...	...	...	...	2	...	...	3	...	...	1	1	7	1	16	Do.
November	554	39	15	10	...	...	2	1	1	...	5	...	...	...	...	1	...	...	1	...	...	1	1	4	2	10	None.
December	523	29	16.4	9	...	...	1	...	...	...	1	...	...	...	1	1	...	1	1	...	...	...	...	6	...	8	Do.
Total...	618	637	31.1	210	...	...	19	6	2	2	14	...	...	...	3	29	...	13	42	6	3	5	13	80	10	180	

I am glad to be able to report that the health of the regiment has been much better than during the year 1872: the total number of admissions into hospital have been 637, of which 210 were due to ague. The highest average daily number of sick was in January and February (59 and 54 respectively), when the men were still suffering from the malarial fever which attacked them in the latter part of the previous year.

I think that the comparative immunity from fever enjoyed by the regiment during August, September and October may be attributed to the unusually scanty rain-fall in Bhuj and its immediate neighbourhood; the total amount registered in camp during the rainy season being only 5 inches and 11 cents.

No cases either of cholera or small-pox were admitted during the year.

4 deaths have occurred in hospital: 1 from diarrhoea in a man who was already much debilitated from a recent attack of malarial fever, 1 from phthisis pulmonalis, and 2 from pneumonia. 4 other deaths also occurred out of hospital at Bhuj: 2 suddenly (from fatty degeneration of the heart and apoplexy respectively), and 2 cases of suicide—1 by gun-shot wound of the chest, the other by drowning.

Scurvy has furnished 14 admissions; but, as usual, a large number of the cases in hospital for other affections have also been observed to be suffering from the disease.

13 cases of *dysentery* and 42 of *diarrhoea* were admitted; they all yielded to the usual treatment.

Eye affections have furnished 10 admissions; they were all slight cases.

Bronchitis and *pneumonia* give 29 admissions; of these 2 pneumonia cases died.

No capital operations have been performed.

I operated on one man for fistula in ano, a cure resulting; and in a case of hydrocele of the tunica vaginalis I injected the sac with iodine, leaving the injection in the sac: the cure was complete. The average daily number of sick for the whole year was 31.1.

The proportion of sick to strength was 5.0, and the proportion of admissions per cent. of strength was 103.

11 men were invalided to their own country for change of climate on account of scurvy, ague, syphilis, and lung affections.

2 European officers were in sick quarters, one for hæmorrhoids and one for acute gout.

Vaccination has been practised regularly. 78 primary operations have been performed, of which 75 were successful; and 95 re-vaccinations, of which 82 were successful.

H. M.'s 2nd Regiment L. C.

DISA.—In Medical Charge—Surgeon A. BARRY, M.D., F.R.C.S.; Strength 293.

The regiment has been stationed at Disa since January 1871. The 3rd Squadron relieved the 1st at Rajkote on the 20th November, and the latter reached Disa on the 10th December 1873.

The 1st Squadron during a residence of nearly two years in Kathiawar furnished a detachment to Drappa, a locality pregnant with miasm, where many sowars suffered from various forms of ague, and a few with remittent fever. Several men who had no fever in Kathiawar, after an indefinite latent period now suffer from the effects of the malaria poison, the fever having ill-defined, cold, hot, and sweating stages. True remittent I have seldom seen.

2. The soil is composed of sand with a considerable quantity of organic matter from decaying vegetable debris. The ground is very porous, and absorbs water rapidly.

3. I have made a few measurements of the depths of the ground or sub-soil water. In the cold weather the mean depth is 51 feet. A sheet of water, originating at the base of

the Aravelli chain of hills, percolates through the soil of Disa towards the bed of the Bunass; the rate of flow has not been ascertained.

4. I am of opinion that, if a reservoir was formed on the Bunass by the aid of irrigation thus supplied, the arid, verdureless ground in the hot weather would be converted into a pleasant pasture, which would be refreshing to the eye, check the development of malaria, lessen the reflection of light and radiation of heat from the sand, diminish dust-storms, and considerably lower the temperature, which is always extremely high in the hot season.

Rivers.

5. The Bunass, the only river, arises in the Aravelli chain, and falls into the Runn of Kutch.

The sudder bazaar is situated on its left bank.

The Natives prefer to drink well-water, and only wash and bathe in the Bunass.

Marshes.

6. None.

7. In January strong N.E. winds prevailed, and the cold was extreme, the mercurial column frequently standing at 35.1° F., being 5.7° F. less than the lowest temperature recorded in 1872. The lowest during February was 45° F. Rain fell on two days in the month to the extent of 0.358 of an inch.

Climate.

8. The hot season commenced in April, and lasted till the beginning of July. The heat in May was intense, the thermometer indicating the unprecedented height of 119.1° F. in the shade.

9. During June rain fell one day, when 0.226 of an inch was gauged. The rains began early in July and fell on 19 days in this month, lowering the temperature 26° F. Total rainfall in July 3.934 inches.

10. In August rain fell on 13 days, when 12.560 inches were registered. During the month the mean daily range was 12.1° F., the smallest observed during the year.

11. In October, November, and December the variation of temperature was great, the mean daily range being nearly 34° F.

12. During the year the mean monthly range was 40.91° F, and the mean daily range 26.42° F, almost the same as 1872.

13. The mean of the barometer readings for the year was 29.523; the barometric range was small, the mean monthly being .106. Rain fell on 35 days; the total for the year was 17.118 inches, being 7.224 inches less than last year. In the hot season and rains the prevailing wind was from S.S.W. and S.W.; in cold weather from the N.E. and N.W. Highest temperature 119.1° F.; lowest 35.1° F.

Meteorology.

14. The following are the meteorological observations taken at Disa during the year, viz.—

METEOROLOGICAL OBSERVATIONS during the Year 1873, noticing the Pressure of the Atmosphere, the Temperature and Humidity of the Air, the Fall of Rain, the Amount of Clouds, the Prevailing Winds, and the Variations in the Weather at Disa.

Month and Year 1873.	BAROMETER.				TEMPERATURE OF AIR.								DRY AND WET BULB.		Mean deduced Dewpoint.	Mean Degree of Humidity.	RAIN.		WIND.		CLOUDS.	
	Mean for Month.	Highest in Month.	Lowest in Month.	Range.	Highest in Month.	Lowest in Month.	Range in Month.	Mean of all high. est.	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.	General Direction.	Estimated Strength.	9-30 A.M.	3-30 P.M.	
January	29.702	29.861	29.526	.104	88.8	35.1	53.7	79.9	48.1	31.8	64.0	71.2	54.8	45.7	.442	...	...	N.E. W.	...	...
February .....	.674	.661	.432	.116	94.7	45.0	49.7	86.7	55.4	31.3	71.1	78.0	59.0	49.1	.410	2	0.338	N.E. N.W.	...	...
March .....	.591	.733	.441	.116	107.1	51.0	56.1	95.4	63.8	31.6	79.6	88.2	68.3	50.8	.312	...	...	W.	...	...
April .....	.487	.636	.342	.120	108.8	64.1	44.7	103.3	71.0	32.3	87.2	94.7	68.3	55.1	.305	...	...	N.W.	...	...
May .....	.420	.612	.116	.115	119.1	75.3	43.8	106.9	80.5	26.4	93.7	99.1	72.7	59.6	.308	...	...	W.S.	...	...
June .....	.271	.421	.093	.107	109.9	79.0	30.9	104.5	84.8	19.7	94.7	96.4	79.1	70.5	.458	1	0.266	S.S.W. S.	...	...
July .....	.236	.374	.097	.078	102.8	76.0	26.8	92.3	79.6	12.7	86.0	86.0	78.5	74.7	.716	19	3.034	S.S.W. S.S.W.	...	...
August .....	.384	.561	.235	.089	97.0	74.9	22.1	89.3	77.2	12.1	83.3	84.8	77.5	74.4	.720	13	12.500	W.	...	...
September .....	.456	.431	.256	.100	97.8	73.2	24.6	94.0	76.8	17.7	85.2	89.4	76.3	69.8	.544	...	...	S.W. W.N.W.	...	...
October .....	.585	.727	.458	.108	102.7	56.1	46.6	97.8	63.6	34.2	80.7	91.6	67.0	54.7	.317	...	...	N.E. N.W.	...	...
November .....	.728	.835	.612	.114	95.1	50.1	45.0	90.7	56.6	34.1	73.7	84.5	60.9	49.2	.222	...	...	E. N.N.E.	...	...
December .....	.736	.873	.547	.109	90.0	43.1	46.9	83.6	50.5	33.1	67.1	76.1	57.0	47.1	.388	...	...	N.E. N.W.	...	...
Mean ...	29.523	29.076	29.346	.106	101.15	60.24	40.91	93.70	67.28	26.42	80.53	68.67	67.87	58.39	.437	35	17.11828	.29	

TABLE showing the Amount of Rain-fall in each Month, from 1861 to 1872, taken at the Disa Meteorological Observatory.

Months.	Amount in 1861.	Amount in 1862.	Amount in 1863.	Amount in 1864.	Amount in 1865.	Amount in 1866.	Amount in 1867.	Amount in 1868.	Amount in 1869.	Amount in 1870.	Amount in 1871.	Amount in 1872.
	In. Ct.	In. Ct.	In. Ct.	In. Ct.	In. Ct.	In. Ct.	In. Ct.	In. Ct.	In. Ct.	In. Ct.	In. Ct.	In. Ct.
January ...	.....	0 9	0 44	0 4	0 34	.....	.....	.....	0 11	.....	.....	.....
February ...	0 2	.....	.....	1 45	.....	.....	.....	.....	0 20	.....	.....	.....
March ...	.....	.....	.....	.....	1 40	.....	.....	.....	0 88	0 9	.....	.....
April ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 1
May ...	.....	.....	.....	0 7	.....	.....	.....	.....	0 20	.....	1 38	.....
June ...	1 11	3 76	13 9	3 27	.....	0 2	.....	3 64	0 27	4 29	2 19	2 14
July ...	3 6	12 37	7 74	17 38	9 56	2 10	3 20	1 72	16 2	17 60	5 64	11 28
August ...	14 79	5 63	12 51	5 97	11 11	13 62	13 99	11 94	6 42	2 84	13 96	10 53
September ...	0 51	5 19	0 47	0 2	0 19	0 19	6 23	0 5	8 71	1 93	0 39	0 39
October ...	0 31	11 65	1 15	0 3	0 24	.....	.....	1 6	0 19	0 51	.....	.....
November ...	.....	0 25	.....	.....	.....	.....	.....	.....	0 39	.....	0 97	.....
December ...	.....	.....	.....	.....	.....	.....	1 0	.....	.....	0 9	0 18	.....
Total ...	19 80	28 94	35 40	29 23	22 84	15 93	24 42	18 41	33 39	27 35	24 71	24 35

26. The above 648 men and women died without medical aid of any kind. If Government would sanction a civil hospital, I am confident many lives would be saved.

27. The following were the chief endemic diseases observed amongst the Natives in the order of their frequency during the year, viz.:—Quotidian and quartan ague, venereal affections, conjunctivitis, rheumatism, catarrhal ophthalmia, ulcers, boils, scabies, eczema, 5 cases of leprosy, fungus foot, calculus vesicæ, cataract, and one case of epithelial cancer of the tongue. No small-pox in camp during 1873, although several cases occurred at a village seven miles distant.

Operations.

23. The following operations I performed in the verandah of the cavalry hospital, there being no ward for staff or civil cases.

29. Two cases of fungus foot amputated above ankle by long anterior and short

Fungus Foot.

posterior rectangular flaps. Lister recommends that the muscles which lie between tibia and fibula be included in the anterior flap; detaching them at the sides with the knife, they are gently raised from the interosseous membrane with the thumb, which prevents laceration or injury to the anterior tibial artery. This operation is much to be preferred to the old one of short anterior and long posterior flaps, which are difficult to keep in apposition, and tend to form a cavity favouring the collection of pus.

30. I have now operated fourteen times successfully, after Teal's method, with Lister's carbolic-acid treatment, and the patients were discharged with a good stump, on an average 29 days after the operation.

Lithotomy.

31. There were three cases of lithotomy. The lateral operation was performed, and the average time the wounds were in closing was 24 days.

Two of the calculi were composed of triple phosphate of ammonia and magnesia mixed with amorphous phosphate of lime; the other, of oxalate of lime, as determined by the microscope.

32. A hakim, aged 50, with hard cataract for five years, was operated on by the scoop-

Cataract.

method without chloroform. There was slight escape of the vitreous humour; no iridectomy. The sclero-corneal wound healed kindly, and the patient was discharged, with distinct vision, 27 days after the operation.

33. In December, whilst a butcher was seizing his fire-lock, he was accidentally shot in

Gun-shot Wound of Hand.

the left hand. With the exception of the integument all the structures of ball of thumb were completely disorganized. The whole of the fragments of metacarpal bone were extracted, the thumb amputated. Granulation progressed favourably, and stiffness in the wrist and fingers was overcome by gentle flexion and extension.

34. An officer's servant was bit on the foot by a carpet snake or "krait". Ligatures

Snake-bite.

were bound above ankle, the parts incised, cupped, ammonia applied and given internally. Patient made a rapid recovery.

35. There was one case of simple fracture of humerus, caused by a blow with a stick, cured in five weeks.

36. There were two obstetric cases of interest.

37. One of transverse presentation with placenta prævia. On examination the mem-

Obstetric Operations.

branes were ruptured, cord prolapsed and detached from placenta (it had been torn by a Native midwife). The hand was introduced into the uterus, legs seized, child turned with great difficulty, and woman delivered of a dead child. There was a history of syphilis. Patient made a quick recovery.

38. The other case had been 24 hours in labour (primipara), with the head impacted in the pelvis. The os uteri was fully dilated, membranes ruptured; and having felt the uppermost ear, the short forceps were introduced, and the woman delivered of a living child. No bad effects.

39. During January the average strength of the regiment at Disa was 284. The

Sickness in Regiment.

admissions were 42, and the daily average number of sick 15.5. The chief causes were ague, rheumatism, contusions, and bowel complaints. There were also a few cases of conjunctivitis.

40. There was one case of acute pneumonia treated with $\frac{1}{4}$ th-grain doses of tartar emetic combined with calomel and opium. After subsidence of hyperpyrexia, small doses of aromatic spirits of ammonia, at short intervals, were administered with great benefit. The patient made a good recovery.

41. In February 16 were admitted into hospital, and the total treated numbered 40.

Prevailing affections in the order of frequency were sub-acute rheumatism, ague, contusions, and ephemeral fever caused by exposure to cold. Average strength was 308, and the daily average number of sick 14.6.

42. In March the average strength was the same as last month, and the daily average number of sick 6.4. The admissions numbered 14, and the total treated were 23, showing a diminution of 17 contrasted with February.

43. A duffedar, of 26 years' service, who had been ailing for some months, died from the effects of dyspepsia, mal-assimilation, and general debility. Strychnia, quinine, and iron, charcoal and bismuth were administered without benefit. Great attention was paid to diet. For 14 days he had a change of air to Palunpur in the best season of the year. He obtained sick leave to Hindustan for six months, but was too feeble to undergo the fatigue incident to the journey. His family strongly objected to a *post mortem*. I regret one was not made.

Admissions for April were 9, and the total treated 19. Prevailing diseases ague and rheumatism. During the month sand-storms were frequent towards evening.

44. In May there was an increase of 6 cases contrasted with April. Hospital Assistant Womrow Sing was confined to his quarters throughout the month with congestion of the liver.

45. The prevailing disease in June was ague. Three European Officers suffered severely from boils on the legs and thighs. Treatment: chlorate of potass alternately with ferri sulphas and magnes. sulphas, with good diet and light wines.

46. A flagman was bit on the foot at midnight by a black snake, supposed to be a cobra. The following were the most prominent symptoms, viz., in three minutes he felt giddy and faint, with blood-red spots in field of vision and tremors of muscles. In six hours pulse 70; pupils, temperature, and respiration natural. In 24 hours extreme restlessness, burning at pit of stomach, and cool drinks taken eagerly. Leg enormously swollen and ecchymosed; forearms swollen and livid. Temperature 102° F.; pulse 136. Blood in sputa and urine. Senses of smell and taste lost. Blood will not coagulate. The usual treatment for snake-bite was assiduously given, also quinine, and afterwards chlorate of potass drinks. Ammonia liniment and evaporating lotions to leg and arms. By the fifth day convalescence was established, and he was discharged cured in 18 days.

47. During July the admissions were 31, and total treated 38. Prevailing diseases the same as last month. A sowar aged 30, of six years' service, who had been over five months in hospital, died from exhaustion consequent upon necrosis of the bones of left foot resulting from a sprain. He was of the scrofulous diathesis; tonics, cod-liver oil, and stimulants, &c., had no effect on him.

48. In August the admissions were 12 less than in July. Prevailing diseases—quotidian ague, ulcers, and boils.

49. In September, although the average strength was the same contrasted with August there was an increase of 20 admissions.

50. The admissions in October were nearly the same as September, but 103 less compared with October 1872.

51. During November the average strength was 174, the 3rd Squadron being on the line of march from Rajkote to Disa. Total treated 16. Principal affections—ague and contusions. Two sowars' wives died of acute bronchitis; I was called to see them when they were moribund. On my recommendation the Commandant has issued orders that all falling sick are to be immediately reported to me. For four days there were no sick in or out of hospital.

52. Total admitted throughout December, 26; chief causes were various forms of ague. The 3rd Squadron arrived from Rajkote on the 10th, bringing 7 sick. They suffered from irregular intermittent fever, the poison of which had been generated in Drappa.

53. The average strength of the regiment at head-quarters was 293. The admissions 313, and the deaths 2, being in the ratio of 1068·26 and 6·82 per 1,000 of mean strength. The admissions rather less than half those of 1872. The mortality half. The following table shows the admissions and deaths during the last three years in a classified form :—

2nd Light Cavalry.			Strength 293.		Annual Ratio per 1,000 of Mean Strength.					
Disease.			Admitted.	Died.	1873.		1872.		1871.	
					Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
<i>General Diseases.</i>										
A	...	...	160	...	546·08	...	1,558·13	6·644	29·09	3·64
B	...	...	37	...	126·28	...	106·31	3·32	54·54	...
<i>Local Diseases.</i>										
Affections of eye			13	...	44·36	...	99·66	...	69·09	...
Do. of ear			4	...	13·65	...	...	...	...	...
Circulatory system			...	...	...	...	9·96	...	...	...
Respiratory do.			8	...	27·30	...	23·25	3·32	18·18	3·64
Digestive do.			22	1	75·09	3·41	69·76	...	72·12	3·64
Urinary do.			1	...	3·41	...	9·96	...	18·18	...
Do. Organs			3	...	10·24	...	...	...	...	...
Generative System			5	...	17·06	...	...	...	...	...
Cellular tissue...			4	...	13·65	...	76·44	...	21·81	...
Integumentary			24	...	81·98	...	23·25	...	32·72	...
Injuries			31	...	105·80	...	129·56	...	109·09	...
Organs of locomotion			1	1	3·41	3·41	...	...	...	...
<i>Human Parasites,</i>										
<i>Class A.</i>										
Cœlemintha			...	...	...	...	...	...	7·27	...
			3	2	1,068·26	6·82	2,106·28	...	...	...

54. Total admissions from ague	160
From remittent fever	0
Daily average number of sick	7·2
Percentage of... { Treated to strength	111·6
Deaths to strength	0·68
Deaths to treated... ..	0·61
Deaths in hospital	2
Do. in whole regiment	5
Number of men proceeded on sick leave in whole regiment... ..	8
Do. invalided during the last five years	41
Do. invalided in whole regiment in 1873	13
Do. proceeded on furlough in 1873	41
Do. discharged on account of unfitness	2
Number of recruits joined in 1873	15

55. Table showing average strength, admissions, daily average sick, deaths, invalided during the last five years :—

2nd Light Cavalry.	1873.	1872.	1871.	1870.	1869.
Average strength, head-quarters.	293	301	275	413	425
Total admissions	313	634	191	354	445
Admissions from malarial disease.	160	263	80	189	261
Daily average sick	7·2	15·2	7·2	12·17	9·8
Proceeded on sick leave	8	4	3	2	1
Invalided	13	5	3	9	11
Deaths	6	4	3	1	1

56.	Average height of sowar	...	...	...	5 feet 7½ inches.
	Do. weight do.	...	...	...	130 lbs. 12 ozs.
	Do. age do.	...	...	...	32½ years.
	Number of sowars' wives in whole regiment	...	...	...	247
	Do. children do.	...	...	...	204
	Do. male relations	...	...	...	20
	Do. female do.	...	...	...	37
	Regimental followers	...	...	...	80

Castes in Regiment.

57. The regiment is composed as follows, viz:—

Christians	...	...	...	...	6
Brahmins	...	...	...	...	50
Mahrattas	...	...	...	...	75
Mahomedans	...	...	...	...	200
Rajputs and Jats	...	...	...	...	92
Other castes, including Achears, Chutrees, } Guddurees, Koorees, Loadhs, and Mochees }	...	...	...	...	53
Total...					476

58. The weight of the accoutrements and equipment are chiefly carried by the horse.
 Weight of accoutrements and equipment of Sowar 2nd Light Cavalry in marching order, 1873. The cloak, when not worn, is carried in a roll in front on the horse.

ARTICLES.

	Lbs.	oz.
Carbine	6	0
Sword-belt and sword	4	8
Pouch-belt and pouch with 20 cartridges with caps	4	0
Cloak	4	0
Forage cap serves as topee	0	4
Serge coat	1	4
Cloth breeches	2	0
Haversack	0	4
Drawers and shirt	0	12
Long boots and spurs	5	8
Saddle, bridle, halter and two pegs, with brush, curry-comb, and two spare shoes	37	0
Saddle cloth	2	0
Head and heel ropes	4	8
Tobra, with three pounds of gram	4	8
Total	76	8
Average weight of sowar (naked)	127	0
Total lbs.	203	8

59. The cavalry camp is situated on low-lying ground, and is too near the sudder bazaar, Lines. being separated from it by a street only 40 yards wide.

60. The house of the sowar consists of one apartment, the mean cubic space being $15' \times 10\frac{1}{2}' \times 11' = 1,732$ cubic feet. This space is more than the British regulation limit for the European soldier in the tropics; but one opening—the door—serves as inlet and outlet. In the cold season, when the door is closed during the night, the ventilation is very defective.

61. In the houses of the married men, where in many cases there are four to each room, the inspired air is greatly vitiated with the products of respiration and organic emanations from the skin.

Latrines.

62. The latrines are carefully attended to.

63. The married, especially those with large families, who have more mouths to feed and more claims on their generosity and purse, are not so strong and well-fed as the bachelors.

Food.

64. The usual food of the sick is rice-conjee, wheaten cake fried in ghi, and also baji and salt.

65. In affections of the alimentary canal, milk, with rice and sugar, is given in small quantities at short intervals.

66. There is no cook attached to the hospital establishment; the men get their food cooked in the lines, and by the time it reaches hospital it is cold and out of season. The usual difficulty is experienced in dieting the patients.

67. The following table shows the kind and approximated quantity of food used by the various castes in the regiment daily:—

	Flour, Wheaten or Rajri.	Rice.	Dhall.	Ghi.	Salt.	Masalla.	Cocum or Tama- rind.	Vegetables.	Milk.	Mutton.	Fish or Fowl.
	lb.	lb.	oz.	oz.	oz.	oz.	oz.	lb.			
Mahrattas ...	1½	1	4	2	1	1	2	½	Occasion- ally.	Sometimes.	Seldom.
Purdasees ...	1½	8	4	2	1	1	1	½	2 lbs. when no dhall.	...	Fish oc- casionally
Chutrees ...	1½	8	4	2	1	1	1	½	Do.	...	Do.
Brāhmīns ...	1½	8	4	2	1	1	1	½	Do.	...	Do.
Mussulmans ...	1½	8	4	2	1	1	1	½	Tea, coffee, and milk occa- sionally.	Occasion- ally.	Occasion- ally.
Native Christians ...	1½	8	4	2	1	1	1	½	Tea, coffee, and milk fre- quently.	Frequent- ly.	Do.

68. The woollen clothing is insufficient for the cold weather, and consequently the sowars suffer from colds, febricula, and rheumatism.

69. Situation and ventilation good; constructed to contain 22 beds. Total space 36,190 cubic feet, giving 1,645 cubic feet to each patient when full, which is rare.

70. There is no separate ward for contagious diseases, which is a great desideratum; no ward for staff cases.

Water-supply. 71. There is a good well in the hospital compound.

Latrines. 72. In accordance with Sir E. Russel's order, so-called earth was introduced into the hospital.

73. Latrines in December 1872.—Almost pure sand was supplied (there is no earth in camp), which is a poor deodorizer; therefore no benefit resulted.

Water-supply. 74. In the cavalry camp water is obtained from three wells, and is good and abundant.

75. These wells should be yearly drawn dry, thoroughly cleaned, all débris removed and kept completely covered in the hot season, when dust-storms, charged with organic matter from the horse lines, prevail.

Vaccination. 76. Vaccination has been successfully performed throughout the year.

77. Pursuant to directions received from Deputy Surgeon General Turner, F.R.C.S., all the men, women, children, and followers of the regiment were examined by me with the view to detect unprotected persons. On one Native officer and five sowars no small-pox marks or traces of vaccination could be discovered. They have all been successfully re-vaccinated.

I also revaccinated two ladies and three European officers of the regiment. Only in one case, that of a lady, the lymph had no apparent effect.

78. Exercise parades three or four times a week in the drill season; also guard and patrol duties. A detachment of one duffedar and 14 sowars was usually on outpost duty at Palanpur, a locality often malarious. They were relieved monthly. Throughout the year a party of 1 Native officer, 1 duffedar, and 12 sowars were stationed at Baroda, acting as escort to the Resident.

79. There is an excellent gymnasium supported by monthly contributions from the European officers; yet few men take advantage of it. Should not gymnastic exercises be compulsory, especially for recruits?

80. There has neither been small-pox nor cholera during the year.

81. No European officer proceeded on sick leave in 1873.

H. M.'s 24th Regiment N.I.

NIMACH.—In Medical Charge—Surgeon P. W. COCKELL; Strength 617.

This year the regiment has enjoyed fair health, though the men have become debilitated and liable to become sick on slight provocation on account of the two attacks of fever last year at Disa, dengue and continued fever—the former commencing in July and ending in September, the latter beginning in October and ending in November, followed by chest affections in December. Beginning with a tabular statement we have—

Disa, 1st January 1873.

Months.	Thermometer.		Average Number of Daily Sick.	Sick remained from last month.		New Admissions.		Total.
	Maximum.	Minimum.		Total.	Fever.	Total.	Fever.	
January ...	78	42	30	23	10	97	55	120
February ...	88	56	18	22	4	44	15	66
March ...	99	60	15	16	2	40	10	56
April ...	102	74	19	20	4	53	27	73
May ...	120	80	26	15	7	104	84	119
June ...	108	80	25	25	15	80	44	105
July ...	96	78	27	28	8	75	33	103
August ...	94	78	34	30	4	92	46	122
September ...	93	80	51	35	11	161	108	196
October ...	94	68	35	53	31	129	101	182
November ...	86	61	20	23	16	75	33	98
December ...	75	55	31	28	9	84	36	112

Taking the total admissions for the year we have 1,034 admissions into hospital, favourable as compared with last year, when the admissions were 2,086.

The deaths this year have been 7 only, whilst last year there were 12. Men on sick furlough this year 15, only 1 died; last year (1872) 24, 4 died.

Thus, taking the health of the regiment by the total admissions into hospital and deaths, this year compares favourably with last; but it remains to be seen what amount of injury has been done by the two severe attacks of fever of 1872.

In 1872, 27 were invalided, and this year 33, though 50 passed the regimental board.

Next year (1874) I expect the number will be still greater.

H. M.'s 10th Regiment N.I.

MHOW.—In Medical Charge—Surgeon-Major T. MURRAY; Strength 837.

The 10th Regiment N.I. has been quartered at Mhow during the year. On the 10th February a detachment of 194 men rejoined from Indore, and on the 11th August a wing was detached there to relieve one of the 16th N.I.; and on the 1st November a detachment of two companies, composed of one from head-quarters and one from Indore, proceeded to Maligam to occupy the station during the absence of the 15th N.I. at the Camp of Exercise, Chinchwad.

The past year has been remarkable for the unusually high temperature at the latter part of the hot season, and by deficiency in the rain-fall, which was upwards of 8 inches below the amount registered in the previous year, and considerably below the average of the preceding 12 years. The difference in the last two years will, perhaps, be best seen when placed in juxtaposition—

Rain-fall at Mhow.				1872.		1873.	
January ...	...	...	...	...	...	1	13
February...	...	...	...	...	10	3	15
March ...	...	...	...	...	03	...	...
April ...	...	...	...	...	62	...	...
May ...	...	...	...	...	...	...	10
June ...	...	...	...	8	65	4	59
July ...	...	...	...	14	71	6	64
August ...	...	...	...	9	40	6	40
September	...	...	...	3	06	6	80
October...	...	...	...	...	...	...	32
November	...	...	...	...	...	...	12
December	...	...	...	...	90	...	...
Total ...				37	47	29	25

The deficiency in the rain-fall has led to the consideration of the probable effect on the water-supply of cantonment next hot season, and the condition of all the wells in camp has been investigated, and measures have been taken for their supervision and deepening wherever practicable; but this will scarcely meet the difficulty in season of drought without also preserving some of the supply of the two rivers in the vicinity, which probably could be utilized to some extent so as to render the station not entirely dependent on wells, which have heretofore proved unequal to the requirements of the place.

The average strength at head-quarters has been 837, the admissions 1,123, of which 1 died in hospital and while on sick furlough. The mean daily sick was 24.3, the ratio of admissions to strength was 167.33, to deaths 0.20. In the year, 11 were sent on sick leave and 69 discharged the service. Of these, 59 were pensioned at last invaliding season, and 3 that had been on detachment at the commencement of the year. This is an unusually large number to invalid in one year; but, on looking into the previous history of the men, it was found that the majority of them had been worn out on field service, and that of the 59 men 36 had served in Central India and Abyssinia, 2 in Central India, and 21 in Abyssinia, besides several had been stationed at Aden previous to transfer to the regiment. Their respective length of service was—3 under 16 years, 23 under 17 years, 5 under 18 years, 8 under 19 years, 7 under 20 years, 7 from 20 to 25 years, 5 from 25 to 30 years, and 1 above 30 years, averaging 18.49 years' service. The cause of disability was—in 19 impaired constitution or worn out in course of service, in 7 worn out from length of service, in 8 scorbutic cachexy, in 9 bronchitis, in 6 phthisis pulmonalis, in 4 impaired vision, in 2 hernia, 2 rheumatism, 1 being complicated with heart affection, in 1 enfeebled intellect, and in 1 atrophy. In the course of the year 52 recruits joined, 2 were discharged on being found unlikely to prove equal to military service, and 1 for hernia. It has been represented by recruiting parties that there is considerable difficulty in obtaining good recruits up to the standard, possessing constitutional vigour and power of endurance for continuous hard work, such as were easily enough enlisted formerly. Under these circumstances it would seem the best policy to gradually develop the power of those likely to become good soldiers, and to get rid of the more weakly as early as possible, as indicated by Sir H. Rose, were whose instructions in this respect more fully kept in view, probably instances such as referred to by the Deputy Surgeon General, Sind Division, would be of rare occurrence, and there would be a material decrease in the number of those who become unfit for further military duty on the completion of 15 years' service. The matter is one deserving consideration, and has been made the subject of a communication to the U. S. Institution of India by the Commandant of the 1st Beluch Regiment.

As compared with the previous year there has been a decrease of 63 in the admissions from fever. In the hot season there was an increase of fever, while in the autumnal months there was a marked diminution in the frequency of the disease among the Native troops at this station. In the former the high temperature and the exposure of the men at rifle butts until about noon daily up to the first week of April, to complete the annual course of musketry, may have had some influence in causing the increase, while the less continuous saturation of the surrounding black soil would tend to lessen the malarious exhalations therefrom during the drying of the ground after the rains, and would probably explain to a certain extent the

comparative healthiness of the autumnal season. Towards the end of the season the weather was very trying and oppressive, and in the latter end of May there was no appreciable rain, though repeated electrical disturbances occurred, and the shock of an earthquake was felt on the 28th May. The average temperature in the shade was 95, and the maximum 105 in the hospital. In consequence of the heat the military authorities, on recommendation, reduced the exposure of the men on duty as far as practicable, and permitted orderlies to go on duty in white clothing. In this month some cases of fever were evidently attributable to exposure to the sun, and were accompanied with injected eyes, more or less headache, and subsequent icteric tinge; some were associated with thoracic complication, and others with well-marked hemiparesis. There was a greater amount of sickness in the regiment than in the 16th N.I., and an explanation was called for, of the disparity of the percentage of sick in the two N.I. regiments. This was shown to be from the greater prevalence of fever in the regiment and to a number of chronic thoracic cases keeping up the daily average sick. Moreover, the previous history of the two corps showed that the 16th N.I. had invalided largely in the previous year, and that they had come from the healthy station of Ahmadnagar, where they had been quartered for five years; while the 10th N.I., after the Abyssinian campaign, had a wing stationed at Tanna, where the men deteriorated in condition, and some acquired a scorbutic diathesis. A similar disparity is recorded as having occurred here in 1870 in 3rd and 14th N.I. when subject to the same hygienic conditions, the latter having had more parade duty and not having recovered from fever which they had had at Mehidpur, while the former had got rid of a large number of weak, sickly men by invaliding after the Abyssinian campaign.

The corps has been free from epidemic disease, excepting small-pox, which was limited to 2 men, 3 women, and 6 children in the first four months of the year. It should probably be here mentioned that on the 28th January there was an outbreak of small-pox in the cantonment bazaar, which continued for upwards of three months and a half, during which 123 cases were treated, of whom 14 died. On the occurrence of the epidemic, measures were taken to isolate those attacked, and a small-pox camp was pitched to the eastward of the bazaar for the reception of all cases among the inhabitants.

The last case was discharged from the camp hospital on the 17th May, and the hospital was finally closed on the 14th June. In the regiment the first case that occurred was in a woman who had been confined about 20 days previously, in whom the disease assumed a confluent character. She was in very dangerous state when admitted, but eventually recovered with impaired vision from ulceration of cornea from her feeble condition and from defective nutrition. One child remained long ill, and fell into a state of atrophy notwithstanding the continued use of extra diet, spirits, quinine iron, and cod-liver oil. In the other cases that had been protected by vaccination the disease was comparatively mild. Isolation of those affected was duly carried out; unserviceable tents were pitched, and disinfectants freely used, chloride of lime employed in the tents, and carbolic-acid oil smeared over the surface to reduce the fetor, which in one case was so offensive that the attendants were not allowed to remain in the tents, but were located in grass huts in the vicinity.

Revaccination has been carried out systematically, and by the middle of July all the men at head-quarters had been operated on, and the results of the last two years' procedure will be seen in the subjoined table. Vaccine lymph seemed to be less active in the hot season, when it appears to deteriorate, and cannot always be depended on without renewal; and in the present year it failed entirely from the middle of September to the middle of November, when a fresh supply was obtained from Poona. The result of the revaccination experiment, as far as it has gone, shows the existence of a greater susceptibility to the influence of vaccination in those who have had small-pox than was formerly supposed by many writers. It is possible that there may be a greater susceptibility in Natives, as Dr. Egan has stated that revaccination is more frequently successful and perfect in Natives than Europeans in Kaffraria. Be that, however, as it may, it would be advisable, as a preventive measure, to vaccinate all recruits on joining, irrespective of marks, distinct or otherwise, and thus reduce their liability to small-pox to a minimum.

Revaccination, 1872-73.

10th Regiment N.I.	Revaccinated in 1872.	Revaccinated in 1873.	Total.	Successful in 1872.	Successful in 1873.	Total success- ful.	Percentage of successful revaccinated in two years.
Previously vaccinated	51	114	165	10	58	68	41.21
Had small-pox previously	70	231	301	18	96	114	37.87
Do. and been vaccinated previously.	108	86	194	14	22	36	18.55
Total ...	229	431	660	42	176	218	33.53

Dengue appeared in the cantonment bazaar in September, but not in an epidemic form, and did not extend to the Native troops here, though it seems to have been rife at Mehidpur about this time in the 25th Regiment N.L.I.

Enthetic disease has been of infrequent occurrence, as a large number of the men have their families with them, and there is a regularly conducted lock hospital at this station.

Nervous Disease.—The most serious case was one of hemiplegia. The disease affected the motor power of the right side without rigidity of flex—or muscles, but with diminution of sensibility and with impaired power of articulation, which is still thick and indistinct on excitement. The affection was of syphilitic origin, and is probably dependent on intercranial, gummatous formation. Iodide of potass was exhibited for a long time, in as large doses as could be tolerated, without exciting injection of eye and lachrymation. It was varied with bromide of potass, &c., but with little material benefit, and the case will have to be brought before a special Invaliding Committee on the completion of 15 years. The other cases of nervous disease were chiefly neuralgic headaches, which were most severe, and prevalent in the hot season as a complication of fever; and afterwards at the end of the rains, when the weather was cloudy, close with a more or less electrical state of air. The disease is very frequent in this province, and its prevalence is ascribed to the rarity of the air, the sun's power, electrical state of atmosphere, and other as yet inappreciable meteorological influences which disturb the equilibrium of the nervous system, and induce neural seizures in those predisposed to such affections. Diseases of the eye have been twice as frequent as in the previous year, but did not present any peculiarity calling for remark. Diseases of the respiratory system were more numerous than usual, and several had more or less of a phthisical character. The number inserted as phthisis in the return does not fully represent the extent of the existence of the diathesis. Diseases of the stomach and bowels have been less frequent and severe. Injuries have been a more common cause of admissions. The most severe met with was one of Collis's fracture, which did well under ordinary treatment. A few cases probably may require special remarks. One of dementia occurred in February, and was brought before a medical committee, and was transferred to the lunatic asylum. One of incipient leprosy, brought before a medical committee, was discharged the service. It had been under treatment for febrile accessions, general cachexy, more or less atrophy, and ulcers on the leg. The nature of the illness was at first obscure, but as the disease developed itself, the expression of the features changed, the eyes became injected, the voice husky, the skin of the face and eyebrows slightly affected, and the ears, which were carefully covered with the pugree, thickened and studded with leprosy deposits. He was treated with tonics, mineral acids, arsenic and iron, and carbolic-acid dressing locally without improvement. It was at first thought that there might be a syphilitic complication, as he admitted having had disease at Tanna, but had not had any constitutional manifestation since that time. Another was an obscure case of alleged hip-joint affection, without any appreciable symptoms of disease beyond limping and disinclination to put the foot to the ground. He remained for some time under observation, and returned to duty, and has since continued free from any illness, leading to the supposition that the case may have been one of neurominosis.

Conservancy.—The system of trench latrines has been in use here during two dry seasons, and the ground has been ploughed up before the rains, and sown with a rain crop in the monsoon. In the beginning of the rains it was proposed to demolish part of the permanent latrines to provide additional ground for trench latrines to be used by the troops all the year round, but the Commanding Officer represented the great inconvenience and hardship that this measure would cause to his corps, and it was accordingly postponed. It was evidently supposed that, were the ground drained, there would be no risk of sickness; but such measure could hardly be substituted for ploughing and cultivating the soil in the rains with safety. In my last year's report it was fully explained that the ground to the north of the Native infantry lines is of black soil, and becomes more or less saturated in heavy rain, fissured and full of holes afterwards, and there would be difficulty in maintaining the integrity of the trenches, as rain occasionally falls very heavily, and sufficiently so to flood the trenches. Moreover, it would be difficult to obtain a supply of dry earth to cover the excreta, which would undergo putrefactive fermentation, and disengage noxious gases injurious to those exposed to their influence, and in all probability occasion sickness. The limited applicability of this system to cantonments was clearly pointed out in the last sanitary report of the Cantonment Committee Poona, and by a former Sanitary Commissioner of Bombay, and the question of the disposal of sewage has recently formed the subject of discussion at the last meeting of the British Association at Bradford, where it was demonstrated that no single plan, though theoretically approved of, could be applied to all communities indiscriminately, and that each locality was more or less dependent on the nature of the country, its meteorological conditions, and various other circumstances.

In the beginning of the year, with the view of improving the drainage of the Native Infantry lines, and of diverting the refuse water after heavy rain from the direction of one of the principal wells, the ground was surveyed, but nothing further has been done since taking

the levels. The hospital accommodation, which has hitherto been insufficient, is in course of being increased by a new hospital, isolation ward, and subsidiary buildings, which when completed will be a great improvement, as during the greater part of the year four or five tents have had to be pitched in the hospital compound to prevent overcrowding.

Detachment 10th and 16th Regiments N.I.

INDORE.—In Medical Charge—Surgeon F. JONES; Strength 234.

Detachment of Troops. The following detachments of Native troops were stationed at Indore during the year 1873 :—

Detachment H. M.'s 10th Regiment N.L.I., 1st January to 10th February.

" " 16th " N.I., 11th February to 10th August.

" " 10th " N.L.I., 11th August to 31st December.

Average Strength. The average strength of the troops was 234.25

The general health of the troops was good; there was more sickness amongst the troops than in the previous year, the increase being in ague, chronic rheumatism, lumbago, and conjunctivitis. The prevailing diseases were—

Ague	211 admissions.
Chronic rheumatism ...	43 "
Lumbago	12 "
Conjunctivitis...	35 "

The total number of admissions during the year was 424. The cases of ague were of a mild type; chronic rheumatism and lumbago affected the old men of the detachment. The majority of these were invalided. One case of insanity (melancholia) occurred. The patient was a well-conducted sepoy. No hereditary history of insanity could be elicited, nor could any reason for the man becoming insane be assigned. The patient was transferred to head-quarters.

Vaccination. Vaccination has been regularly carried on in accordance with Government regulations. Revaccination has also been practised.

A hospital to accommodate 8 patients and necessary out-offices has been built; it is situated about 150 yards to the westward (rear) of the lines.

Hospital.

It is too small to accommodate all the sick of the detachment.

A tent has consequently been pitched close to it, to supply the deficiency.

Sanitary condition.

The sanitary condition of the lines is good

Water-supply.

The supply of water is obtained from two large wells in the immediate vicinity of the lines; it is abundant and of good quality.

Deaths.

No deaths occurred amongst the sepoys during the year.

Sanitary Report on the Station of Indore by Surgeon F. Jones, in charge of Native Details.

As meteorological instruments are not supplied to the Native detail hospital, the following observations have been kindly supplied by Surgeon-Major Beaumont, Residency Surgeon :—

Months.	Temperature.			Direction of Wind.	Rain-fall.	
	Mean.	Maximum.	Minimum.		Inches.	Cents.
January	62.25	82	39	E. and S.E.	...	51
February	66.62	82	50	E. and N.E.	2	92
March	72.64	97	53	W. and N.W.	...	...
April	81.05	100	65	W.	...	...
May... ..	89.81	110	69	W.	...	18
June	85.15	109	73	W.	5	67
July... ..	75.66	89	71	W.	8	60
August	75.88	92	67	W.	12	34
September	76.22	91	66	W.	6	9
October	77.50	96	52	E.	...	...
November	75.75	94	44	E.	...	...
December	68.88	90	34	E.	...	...

H. M.'s 16th Regiment N. I.

Mhow.—In Medical Charge—Surgeon-Major A. N. E. RIDDELL; Strength 480.

Station, Mhow. Movements.—On the 10th of February the left wing went on detachment duty to Indore; it returned on the 11th of August. Strength—Europeans 2, Natives 241.

On the 1st of November 2 companies went on detachment duty to Asirgarh, where they still remain. Strength—European 1, Natives 119.

Average strength of regiment—Europeans 6, Natives 691.

Sickness and Mortality. The health of the corps has been good during the year. Average number of daily sick, 23·2.

There have been 835 admissions into hospital.

The principal diseases were as follows:—Chicken-pox 4, intermittent fever 309, remittent fever 1, rheumatism (acute and muscular) 5, chronic 33, lumbago 16, syphilis—primary 8 secondary 3, gonorrhœa 6, diseases of the eye 34, diseases of the lungs 55, diseases of the intestines 37, of the cellular tissue 20, diseases of the cutaneous system 84, burns and scalds 8, wounds, contusions and sprains of upper and lower extremities 148. Of the latter 123 were cases of abrasion of cuticle, known as "shoe-bite". One case of small-pox was admitted; it occurred in a recruit boy who had been vaccinated. He made a favourable recovery. During the four first months of the year small-pox was prevalent in the cantonment, and 7 camp followers were attacked by it; all had been vaccinated. Of these, 5 were children and 2 adults. They all recovered, although both the adults had the disease in its most acute confluent form, and one, a woman, had been delivered of a child only about a week previous to the attack.

There has been no cholera. No deaths have occurred in hospital. On the 14th of July a sepoy fell down on parade, and when brought to the hospital was dead. Apoplexy was the cause.

The admissions from fever were 9 less than in the preceding year. But, though there were fewer cases in Mhow, there was an increase of cases at Indore. The greatest number of admissions were—in August 35, September 31, October 47; the fewest in February, 5.

State of Lines and Subsidiary Buildings.

Good, clean, and in good repair.

Sanitary Condition and Conservancy.

Good. I have no suggestion to offer.

The hospital and out-buildings are in good repair; but, as I remarked last year, the accommodation is not sufficient, and the chunam floor is as great a nuisance as ever. However, the extra buildings recommended are in course of erection, and another hospital has actually been commenced.

Water-supply.

Scarcely sufficient, but another well is being dug. The quantity of the water is "doubt-ful", but is, I believe, as good as can be had.

Annexed is a table of rain-fall and temperature—

Months.	Thermometer.			Rain-fall.		Prevailing Wind.
	Maximum.	Minimum.	Average.	Inches.	Cents.	
January	76	52	64	1	8	S.W.
February	83	59	71	3	35	S.E.
March	95	63	79	...	...	S.
April	96	74	85	...	...	S.
May	105	77	91	...	57	S.W.
June	100	75	85·5	4	25	S.W.
July	83	73	78	7	63	S.W.
August	85	71	78	6	55	S.W.
September	86	71	78·5	5	83	N.W.
October	86	60	73	...	61	N.E.
November	83	53	68	...	4	S.E.
December	75	48	61·5	...	...	N.E.
Total...	...	...	...	29	91	

The rain-fall has not been up to the average, and a scarcity of water may be expected next hot season.

Prevailing Diseases.

Fever, rheumatism, lung and skin diseases.

Rations.

Good, tolerably cheap, and easily procured.

Vaccination.

This is carried on according to regulation.

H. M.'s 3rd Regiment N. L. C.

NIMACH.—In Medical Charge—Surgeon-Major C. J. F. MACDOWALL; Strength 280.

The regiment has been very healthy this year (sick 3 per cent). The principal diseases have been—

Fevers 155.

Accidents (surgical)... 57.

2 cases of fracture occurred, and a rare dislocation of the acromial end of the clavicle. There were 2 amputations of portion of the foot (Hay's and Lisfranc's) for caries. Nasal polypi and hæmorrhoids were successfully treated by evulsion and ligature.

There was a trace of scurvy in one or two instances, but this could not be traced to anything connected with the supplies of food, with the exception, perhaps, of the absence of plaintains and fruit generally. Accidents on horseback or from kicks and in stables as usual swell the return to an extent which gives a fictitious importance to the number.

Small-pox was soon stamped out by segregation and quarantine, &c., although it was raging in the foreign territory round us. The system of closed courtyards to each hut (which is itself only 11 feet by 8, and without windows), to which system I called attention, before going home on sick leave, in my reports 1866, 1867-68 at Poona, also obtains in Nimach.

The courtyards, 13 feet by 12 (wall 5 feet high) seem to be necessary for the use of the higher class of females who have married into the regiment. The courts are used for ablution and natural purposes. It is probably an unavoidable necessity. The regiment is always, however, exceptionally healthy. The excreta, being nevertheless daily removed by privately paid sweepers (and always disinfected by ashes), are thrown (and accumulate every morning in a dangerous manner) in heaps or baskets behind the latrines, together with the other sweepings of the lines. To remedy this, repeated and urgent requests for extra receptacles were made by me. Four receptacles have been obtained since I joined (1873), more are required, and, if possible, more sweepers and public carts.

As, from the dimensions (11 feet by 8) above given, the accommodation is rather restricted for married men, and inferior to that at Poona, and as the ventilation is only by the tiled roof and door, it will be understood that I would recommend a better class of huts. But they are built at the private cost of the men, and they are obliged to take the consideration of expense most seriously into their plans of building.

I have had solid masonry flooring laid down in the four latrines (amply sufficient in number), and dry earth is kept for sprinkling in the receptacles and pans.

The sweepers were, and sometimes still are, very remiss in this.

The hospital is at present much too far from the lines; but, as soon as the artillery evacuate their *old* lines, we shall have our own hospital (now temporarily occupied by R. A.) returned to us (next year).

In the meantime I had the hospital assistants' quarters, which were highly inadequate and insanitary, thoroughly repaired and improved.

The water under the microscope and by rough testing with permanganate of potash proved to be fairly good, although amœbæ and rotiferæ appeared on the ninth day! There was not much decaying vegetable matter.

The regiment is located on the *laterite* * which forms the cantonment site.

There is black soil close by in the hollow, through which flows a small stream on the east.

The elevation above the sea is 1,476 feet.†

The temperature in hospital was—maximum 104, minimum 46.

The only death was from general dropsy connected with disease of the heart. Hydro-pericarditis was the immediate cause of death.

Vaccination was carried out most rigorously; 60 cases were successful in the regiment.

* Trap tufa of some authorities.

† Given by some authorities as high as 1,000 feet.

Detachment H. M.'s 3rd Regiment N. I.

SADRA.—In Medical Charge—Apothecary N. CONWAY; Strength 47.

1. A detachment of this corps has been stationed at Sadra during a part of each month of the year up to October, on the 9th of which month the last arrived from Ahmedabad, and has been here ever since.
2. The average strength during the year has been 47 rank and file, and the average daily sick 1.
3. Admissions during the 12 months 29. Discharged cured 28, remaining under treatment 1—total 29.
4. The largest number of admissions (5) happened in the month of June, but they were all local diseases. One of carbuncle case accompanies report.
5. One case of small-pox of the abortive variceloid form happened in February. Patient stated that he had been, when young, unsuccessfully vaccinated twice, and he bore no marks of having previously suffered from small-pox. One case of enteric fever is still under treatment; duration of disease about a fortnight. Case accompanies report. The others were simple cases of ague and skin diseases.
6. Sanitary condition of lines and hospital good, but that of surrounding buildings defective.
7. Water-supply abundant and good.
8. Average number of nights in bed during each week, from 3 to 4.
9. Maximum temperature during the year 117° in May and 41° in December. Rain-fall 34 inches and 8 cents registered from about the end of May to about the end of September, of which quantity 23 inches fell during 21 days of August last.
10. Prevailing diseases during the year among town inhabitants were those ordinary fevers and skin diseases.

H. M.'s 22nd Regiment N. I.

NIMACH.—In Medical Charge—Surgeon-Major LEWIS; Strength 608.

The health of the regiment during the past year has been tolerably good; only two deaths have occurred, one from gun-shot wound (a case of suicide), the other from pneumonia in a sickly-looking man who did not seek relief till the disease was in an advanced stage.

Malarious fevers, chiefly of the intermittent type, were prevalent as usual in this station after the rains, but there is a decrease this year in the number treated as compared with last year; and, with one exception, I find that all the cases occurred in men who had been previously attacked.

The prevalence of fever cannot, in my opinion, be attributed to any defective sanitary measures in the lines, as they are always kept clean, and the drainage well attended to.

The huts occupied by the men are made of mud, the roofs tiled; but there is no proper system of ventilation in them. In each hut there is a raised place or "chowitra" which is used as a sleeping place. In one or two rows of buildings the floor is on a lower level than the ground outside, yet on visiting several of these huts during the monsoon I did not perceive any dampness of the floor or walls, and the men did not complain of any discomfort. But, at the same time, I would suggest that the floor be raised, and the roof be made higher, and some mode of ventilation be adopted.

Except during the hot months the water-supply has been ample. The rain-fall this year being above the average, 35.4 inches were gauged. The wells used by the men are properly walled round, and so protected from any surface contaminations.

At about 400 yards to the north-east of lines are two latrines, which are weekly inspected and kept in good order.

The regimental hospital is situated some 200 yards from the nearest row of huts; it was formerly used as a barrack for European troops. There are three wards in the building, each accommodating 18 beds. The flooring is of stone, well raised from the ground outside, and the ventilation throughout the building is good.

There have been no new buildings erected during the year, but proper accommodation for the hospital assistants and Native medical pupils has been proposed. There is also a want of a ward for treating special cases, a bath-room, and a dead-house.

During the month of October, when the daily sick increased so greatly, I was obliged to make use of another similar building to the present hospital. Of the diseases treated during the year under review ague was the most common; but the number of admissions this year, as before stated, is less by 30 as compared to that of last year. But the symptoms were more severe, the fever was often attended by great purging and vomiting, the hot stage prolonged, and there was delirium in several cases. The spleen was enlarged in a few.

The treatment adopted was the administration of large doses of quinine, as 5-grain doses three times daily were found inert.

There were 9 admissions for venereal diseases, 4 of which were followed by mild secondary eruptions.

During September and October several of the men suffered from sore eyes, but these were cases of simple conjunctivitis, which readily yielded to the usual treatment.

The supply of vegetables and meat has been satisfactory. There was only one case of scurvy treated during the year.

No cases of cholera have occurred. 32 men have been invalided.

H. M.'s 23rd Regiment N. I.

NASIRABAD.—In Medical Charge—Surgeon D. SIMPSON; Strength 616.

The average strength of the regiment for the year has been 616.

During the year the health of the regiment was, on the whole, good, with the exception of the months of September, October, and November, when ague was prevalent. The admissions for the year were 1,201, being 690 less than for the previous year, treated to strength 2044, deaths to strength 0.65, deaths to treated 0.32, daily average sick 29.

The following table (an abbreviation of that forwarded with the report) will show at once the number of cases remaining from the previous year, admissions during the year, and those in hospital on the 1st January 1874:—

Diseases.	From last year.	Admitted.	Remaining 31st December 1873.	Diseases.	From last year.	Admitted.	Remaining 31st December 1873.
Malarious fevers	39	786	8	Diseases of the liver	1	...	...
Rheumatic affection	48	2	...	Do. spleen	12	...	...
Syphilitic do.	1	9	...	Gonorrhœa... ..	9	...	...
Scorbutic do.	1	7	...	Abscess ... ..	...	...	...
Other minor causes of general diseases.	3	27	...	Ulcer	15	2	...
Diseases of the nervous system.	12	...	...	Skin diseases	1	87	...
Do. of the eye	1	12	...	Other minor causes of local diseases.	2	20	1
Do. do. heart	1	1	...	Debility ... ..	...	...	...
Do. do. lung	3	40	1	Injuries, shoe-bites, &c. ...	2	32	2
Do. stomach and intestines.	3	34	...	Snake-bite... ..	...	1	...
Diarrhœa.	3	34	...				
Dysentery ... ..	...	13	...				
Other	1	35	...				
				Total	58	1,201	16

There were 783 cases of ague admitted during the year, being 588 less than last year: of these one was fatal. The ague cases this year were of a milder character than those of the previous year. The worst cases were recruits who joined during the year, in whom the disease commenced with violent purging and vomiting.

The other causes of admission were—boil 54, rheumatism 48 (of these 3 were of the acute form), diarrhœa 34, bronchitis 16, dysentery 13, injuries 32, small-pox 2.

The syphilitic cases were of a mild form.

The lung diseases generally occur during the rains and cold season.

The diseases of the bowels were, as a rule, mild, and readily yielded to treatment.

The injuries were trifling,—chiefly cuts, bruises, and shoe-bites. One case of fracture occurred during a wrestling match. 28 men were sent on sick leave, and 13 were invalided during the year.

As small-pox was prevalent in the bazaar during the last two months, the men were prohibited from going into it, and only two cases were admitted into hospital towards the end of December.

The lines are kept clean, and were repaired during the year, but still they are in an unsatisfactory state; and until the site is changed, or new lines on a different plan are built, the regiment stationed here must always have a large number of sick.

No change has been made in the hospital. Quarters for 1st class hospital establishment have been built during the year.

Vaccination has been carried on regularly in the regiment.

Squadron 3rd Regiment N. L. C.

NASIRABAD.—In Medical Charge—Surgeon J. SIMPSON; Strength 110.

The average strength of the squadron during the past year has been 110.

The number of admissions 148.

Daily average number of sick 2.55.

The squadron arrived in Nasirabad in the month of February from Nimach, and during the time it has been stationed here the general health of the men has been good. The greater part of the squadron was on detachment duty at Deoli for two months.

During the months of August, September, and October ague was prevalent.

The principal diseases treated were ague, contusions, boils, conjunctivitis, bronchitis, and diarrhoea. Two deaths occurred during the year, one from ague in an old man of over 38 years' service, the other from diarrhoea in a sowar of over 27 years' service.

State of the Lines.—The lines are in good order and kept clean. The accommodation in the hospital is sufficient for the sick. Another well has been sunk near the lines, and a good and plentiful supply of sweet-water found.

There has been no cholera epidemic in the squadron during the year. One case of small-pox in a follower was admitted into hospital on 30th December 1873.

Vaccination has been regularly carried on.

Sanitary Report by the Medical Officer on the Health of the Native Troops in the Nasirabad Garrison during the Year 1873.

During the above period the average strength of the Native troops, staff, and details was 1,027. The percentage of sickness and number of deaths are shown in the table below:—

	Mean Strength.	Mean daily average of Sick.	Percentage of Sick Strength.	Number of Deaths.					Total.
				Ague.	Apoplexy.	Pleurisy.	Diarrhoea.	Incontinence of Urine with excess of prostatic fluid.	
Squadron H. M.'s 3rd Regiment Light Cavalry	110	2.55	1.35	1	...	...	1	.....	2
H. M.'s 23rd Regiment N. L. I. ...	616	29	204.4	1	1	1	...	1	4
H. M.'s Staff and Details	301	2.90	4.05	...	...	...	...	.....	...
Total ...	1,027	34.45	209.44	2	1	1	1	1	6

The Native troops which have been stationed at Nasirabad during the past year were the 23rd Regiment N. L. I. and one Squadron 3rd Regiment Light Cavalry, together with details, making an aggregate of 1,027.

The Squadron 3rd Light Cavalry was in a healthy condition on its arrival from Nimach, and has continued so through the year.

The 23rd Regiment N. L. I. has not suffered from so much sickness during the past year; the daily average number of sick (29) contrasts favourably with that of the previous year (60.9).

Two cases of small-pox occurred in this regiment, and were accommodated in the separate wards of the hospital.

The hospital accommodation, both for the cavalry and infantry, is sufficient, and provided with separate wards for contagious diseases.

The lines are kept clean, the cavalry occupying a far better site than the infantry, the latter lying low and with a western exposure.

The health of the staff and details has been satisfactory. No death occurred during the year.

The lascars occupy an old cook-house, once attached to the European hospital; this has been partitioned off into small compartments.

The trench system of latrines is in operation in this cantonment for Native troops, and has answered; but, as the space is limited, the trenches have to be dug on the same ground several times over. This, I think, is objectionable; the ground ought to be cultivated.

There has been a total absence of epidemic diseases among the troops during the year; and, although small-pox was prevalent among the children in the sudder bazaar, only two cases were admitted into the infantry hospital.

None of the women or children in the lines suffered; an order was issued forbidding the troops going into the bazaar.

During the year the fall of rain has amounted to 21 inches 98 cents. The following table shows the quantity of rain registered each month:—

Locality.	1873.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
	In. c.	In. c.	In. c.	In. c.	In. c.	In. c.	In. c.	In. c.	In. c.	In. c.	In. c.	In. c.	In. c.
Rain-fall registered at the hospital of H. M.'s 23rd Regiment N. L. I.	0 13	0 10	...	...	0 88	0 75	11 35	7 31	1 44	...	...	...	21 98
Total.....	0 15	0 10	...	...	0 88	0 75	11 35	7 31	1 44	...	...	...	21 98

Left Wing H. M.'s 25th Regiment N. L. I.

AUGUR.—In Medical Charge—Surgeon R. CALDECOTT; Strength 268.

The lines are in fair condition. They are built in four parallel blocks, with about 30 yards between each block, which consists of a double row of huts placed back to back. The huts are built of unburnt bricks and mud, and have sloping tiled roofs. The plan of building them back to back is, I think, bad, as it interferes with proper ventilation. There is ample accommodation in the lines for four companies. Since May there have been five companies here, which has caused slight overcrowding. Each man has on an average 109½ superficial feet of space. The roofing of the lines is still far from good, and the huts leak very much during the rains. There is, I believe, great difficulty in procuring good tiles around Augur.

The end huts of the blocks are at present occupied by the Native officers, for whom there are no proper quarters.

The quarter and store-guard buildings have long been condemned, as have also the school and workshop building. A new magazine is now in course of erection, and when it is completed the new quarter-guard, &c., will be commenced.

The situation of the lines is very good; they stand on red laterite. The ground being high, with good drainage, water runs off very quickly by the surface drains. There are plenty of large trees in and around the lines, which are useful in keeping the sun off the huts. The bazaar is about 300 yards to the south of the lines, and is kept clean and in good order. It is well supplied.

The latrines are on the trench system, and are placed in the only available position, about 600 yards from the lines to the west. They work satisfactorily enough, but it is a source of great discomfort to the men and their families to have to go such a distance, especially in the rains.

The parade-ground and rifle-range are both of them high, dry, and well drained.

The general sanitary conditions of the station are very good, the cantonment is kept very clean and in excellent order, there is good natural drainage all over camp, and water runs quickly off from every part. There is no rank vegetation whatever.

The new hospital was first occupied on the 25th April; it is situated within a few yards of the site of the old one. This situation, with the exception of its great distance from the lines (about 800 yards), is in every way excellent. It is on the highest point in camp, the ground sloping away on all sides of it. It contains one large ward 73 feet long by 20 feet broad and 24 feet high. This ward has three windows, $4\frac{1}{2}$ feet by $3\frac{1}{2}$ feet, on each side of the ward, the bottom of each being $2\frac{1}{2}$ feet from the ground. It has also eight doors, three on each side and one at each end; size 7 feet by 4 feet. In the roof are two 14-feet long ventilators. An 8-foot verandah runs the whole length of the ward on each side, the roof being 12 feet above the edge of the verandah. There is a room, 12-foot square, at each corner of the hospital; these are used, one as an office, another as a dispensary, a third for hospital stores, &c., and the fourth for the use of patients who require to be separated from the rest.

The floor of the hospital is well raised and paved throughout with flags; the roof is double-tiled, and proved water-tight.

The Native doctor's quarters, servants' houses, and cook-house are roomy and well-built houses. The latrines and dead-house are also all that could be desired. The rain-fall during the last year amounted to 34.88 inches, the fall during 1872 having been 30.90 inches.

The average temperatures for each month were—

	6 A.M.	Noon.	4 P.M.
January ...	51.0	65.29	79.25
February ...	58.71	73.14	88.35
March ...	67.32	78.90	89.96
April } There are no temperatures recorded during these two months. The thermometer was accidentally broken.			
May }			
June ...	82.83	84.7	86.53
July ...	79.86	81.16	83.96
August ...	75.25	82.32	89.22
September...	74.63	78.6	82.63
October ...	75.16	82.69	89.22
November ...	68.6	76.43	84.3
December ...	64.25	75.80	85.67

The really hot weather lasted for a very short time. The evenings and nights were always cool.

During the early part of the year the Right Half Battalion were stationed here; they were relieved in March by the Left Half Battalion from Mehidpur. The health of the Right Half during the two months and a half was very good, and they left Augur without any sick; the Left Half Battalion arrived here with 11 sick, principally fever cases. In May one company of the Right Half Battalion was sent back from Mehidpur, so that for eight months of the year there have been five companies in here.

The average number of daily sick has been large this year. Fever has given the greatest number of admissions; there have been altogether 163. The greatest number were in the months of April and May amongst the men arrived from Mehidpur. There have been also a greater number of cases than usual during the last two months of the year. In hardly any of the cases has the fever been of a severe type, and the patients have generally left the hospital again in a few days. The hypodermic injection of quinine has been used in all the cases with satisfactory result. There have been no special points of interest in any of these cases.

One death occurred on the 6th January. The man had been on furlough, and returned in a weak and emaciated state, suffering from fever; he gradually sank, and died 12 days after his admission.

Chronic Rheumatism.—45 admissions. Many of these were old, worn-out men, who have since been pensioned. The large number of men who were in hospital with rheumatism and lumbago during the two or three months previous to the time of the Invaliding Committee has made the average daily sick number so large.

Contusion gives 62 admissions, most of which were cases of shoe-bite. A good many of these occurred at the commencement of the drill season, when the men were being practised in running drill. The present style of boots issued to the sepoys cannot be kept soft as regards the upper leather while the boot is required to be blacked and polished. They can be made very soft and comfortable by the use of ordinary bazaar castor-oil, but they will not afterwards take the polish.

A man on duty with the pay escort was assisting on the road up from Indore to pull a cart up a steep portion of the road by means of a rope, when the rope which he had hold of suddenly broke, causing him to fall backward on to his left shoulder. On his arrival here, some time after the accident, all external marks, such as bruises, swelling, &c., had disappeared, but the man stated that he was unable to raise his left arm. No fracture or dislocation could be discovered. His left shoulder was and is still pulled up by the contraction of the muscles at the back of the neck. He has been several times put under chloroform, but movement of the arm whilst he is under its influence causes him to suffer intense pain for a day or two afterwards, his suffering being apparent for some time before consciousness fully returns.

1 case of pneumonia occurred. The patient was subsequently attacked with dysentery and hepatitis, and was dangerously ill for some time. On his recovery he was sent on sick leave to his own country.

In November there were 12 and in December 2 admissions from what I supposed to be dengue. They were all similar to each other in nearly every respect. In most of them the onset was very sudden: generally the patient was seized with fever and cramps in the extremities; severe pain in the head and back of neck was also a prominent symptom. The temperature during the first three days was uniformly high, there being little variation between evening and the morning. The pulse never exceeded 110, and was generally much slower. During a certain part of each of the first three days the patient would say that the fever had left him. The pulse was reduced at these times, but the temperature remained unchanged. On the fourth day the temperature always went down. There seemed to be scarcely any disturbance of the stomach or bowels. The patient was generally out of hospital again by the tenth day, by which time the pains in the limbs and joint had disappeared. In none of the cases was there any change in the outward appearance of the affected joint. No eruption took place in any of the cases.

The lines of the Central India Horse are situated not more than 400 yards from those of the 25th N. L. I.; yet no case occurred in them.

Small-pox has for the last three weeks been excessively prevalent within city and surrounding villages. 7 cases occurred amongst the camp followers of the C. I. Horse. They were all children, 1 only amongst them being protected by vaccination. 1 case was fatal. The post-vaccinal case was very mild. The child had one imperfect mark on the left arm. No reliable information as to the actual extent of the disease in the city and surrounding country can be obtained, but every means has been taken to prevent the spread of the disease. Vaccination and revaccination are being carried on as quickly as possible.

There has been no cholera during the year amongst the troops, neither has it been reported from the city or surrounding country.

The general health of the wing has been very good.

H. M.'s 25th Regiment N. I.

MEHIDPUR.—In Medical Charge—Surgeon M. HEFFERNAN; Strength 337.

The head-quarters and one wing of the 25th Regiment N.L.I. formed the garrison of Mehidpur during the year 1873. The left wing, which had been stationed here since the arrival of the corps, was relieved by the right from Augur in March. The health of the men was decidedly bad, and the amount of sickness considerably in excess of that which prevailed in 1872. The average strength of the garrison was 337, the total number of admissions into hospital 1,435, the daily average of sick 44.29, the percentage of sick to strength 13.14, and the percentage of admissions to strength 425.81.

The mortality in hospitals was inconsiderable, only two deaths having occurred. A young Mahratta recruit accidentally fell into a deep well in the lines from which he was drawing water, and was taken out dead, having sustained fractures of the skull and thigh, and other severe injuries. There was but a small amount of water in the well at the time, which was not sufficient to prevent him falling heavily on the hard bottom. A wall was afterwards built round the place as a guard against similar accidents in future.

The great amount of sickness during the past year was almost altogether due to the prevalence of fever.

Ague contributed 713 to the total number of admissions into hospital. Great care was taken in registering none but fever of a decidedly intermittent type as ague, and the thermometer was used in every case returned as such. In the month of October 140 cases of ague were treated, and a few of these, of the tertian type, were of a very severe and well-marked character. I have never had an opportunity of seeing such intense rigors as those which came on in a few of the cases alluded to. The patients had to be held down on their beds by two or three friends, and the legs of the iron cots were actually made to rattle on the tiled floor. Of course there were only a few of the cases registered as ague of this description. Many were complicated with chest and bowel affections, and in one or two permanent enlargement of the spleen took place. Change to Angur was in some cases at once attended with the best results. No more conclusive evidence of the existence of some local cause at Mehidpur for malarial fever can be adduced than the fact that some of the worst cases got well almost immediately on removal to Angur, which is only about 30 miles distant, and of the same description of climate. The lines are generally blamed for the fever; but I do not for a moment think that new ones would render the station healthy, although, of course, they would prevent a good deal of sickness. The ague I consider due to the same causes as those mentioned in my last yearly report, which are rank vegetation, wretched and badly-drained lines, low site of camp, the proximity of a large river which rises and partly overflows its banks in the rains, the nature of the soil which causes it to retain moisture, and the presence of an amount of jungle to the south and south-west of camp.

Remittent Fever.—6 cases of remittent fever were treated, and of these 1 proved fatal.

Dengue.—This disease appeared amongst the sepoys and their families in October, and continued until the end of the year, causing 223 admissions into hospital. It presented all the symptoms already described as peculiar to it, but differently developed in different cases. No European was attacked, and in only a few of the cases was an eruption noticed. Pains in the joints continued for a long time, and a few of the men are still under treatment for them. It prevailed in the town of Mehidpur to a great extent, and on inquiry I found that the Natives also suffered from it in September and October 1872. The usual diaphoretic mixture of the hospital, which contains liquor ammonia acetatis, was used in the febrile stage, and afterwards colchicum and iodide of potassium and other medicines recommended for rheumatism. I did not notice any striking results from the exhibition of these rheumatic medicines, but quinine was decidedly useful. Salines and purgatives were used as required.

Simple Continued Fever.—There were 123 admissions into hospital from simple continued fever, and of these 70 occurred in April, and were supposed to be due to heat. Four cases of scarlet fever of a very mild type were treated.

Diseases of the Digestive System ranked next to fevers in point of numbers and importance, and caused 85 admissions into hospital. The most important of these were 14 cases of dysentery, 10 of splenitis, 3 of hepatitis, and 1 of gastritis. The dysentery was treated with ipecacuanha, lead, opium, quinine, and gallic acid, with perfect success in every case. The other diseases of the digestive system were 14 cases of diarrhoea, 27 of colic, 2 of dyspepsia, 3 of gum-boil, 7 of hæmorrhoids, and 1 of abscess near the anus.

Diseases of the Respiratory System.—54 men were admitted with disease of the lungs, and of these, 2 were for pneumonia, 3 for asthma, and 49 for bronchitis. These cases were chiefly owing to cold and damp operating on men whose systems were debilitated by fever. Alcoholic stimulants, quinine, carbonate of ammonia, squills, senega, ipecacuanha wine, and compound tincture of camphor were the chief remedies used in their treatment. 1 man died who was under treatment for acute bronchitis. He had been a long time in hospital with ague, and also suffered from asthma and enfeebled action of the heart, and was an old man of over 33 years' service. 44 cases of conjunctivitis and one of inflammation of the eyelids were treated. They presented nothing worthy of note.

Rheumatism.—The hospital has been comparatively free from rheumatism during the year, as only 25 cases of chronic, 4 of muscular, and 1 of the acute form of that disease were admitted.

A case of sun-stroke, which ended in facial paralysis, was admitted, and the man has since been pensioned.

A case of apoplexy was successfully treated by purgatives, enemata, croton oil, and cold to the head.

A case of valvular disease of the heart was admitted.

The remaining diseases were of the ordinary character common to Native troops.

Vaccination has been regularly practised, and revaccination also, as far as possible, has been carried on.

2 cases of small-pox occurred in the lines in April. All precautions were taken to isolate them, and with success. The disease prevailed in the native town.

34 men were pensioned, and 77 recruits have joined the regiment during the year.

2 deaths occurred in hospital, 1 from remittent fever, and 1 from acute bronchitis, asthma, and an enfeebled heart combined, in an old man who had been a long time under treatment for ague.

The Lines and Subsidiary Buildings.—The lines have been several times reported as quite unfit for Native troops, and during the year under review their condition was as bad as usual.

The Latrines.—The latrine accommodation is the same as that described in my last yearly report. The trench system is carried out on a piece of ground, hedged in, in one of the most public parts of cantonment, about 200 yards from the lines, and quite close to the mess compound. The system does not answer well, and without constant supervision is likely to do more harm than good. It is filthy, and, if not closely looked after, in my opinion, dangerous. The men and their families do not like using the place, but avoid it as much as they can. A sepoy is told off to see that they use the trench.

General Sanitary Condition.—The general condition of cantonment and its vicinity was very good from the 1st January until the rains came down; then everything changed for the worse, and remained so until about the middle of November, when the autumn sun of Central India had dried up the mud and vegetation left by them. No one visiting Mehidpur in the cold weather can form any idea, from the appearance of the place then, what it is like in the rains. Rank vegetation springs up in cantonment and all round, which it would be almost impossible to keep thoroughly down without a large expenditure of money. Whether I am right in considering this vegetation a source of malaria (or whatever the cause of intermittent fever may be) or not, may be doubtful; but there is no doubt of its existence. The closeness of the native town, which is a large one without any system of conservancy, and surrounded by prickly-pear hedges that have not been cut for years, is, in my opinion, hurtful to the health of camp, particularly in September and October, when the winds blow from that direction.

The hospital accommodation was deplorably insufficient for the number of sick during the year. There is no separate place for cases requiring isolation, except a small room which cannot be shut off from the main ward without also shutting out a great amount of necessary light and ventilation. There are no quarters for medical subordinates or hospital servants in the compound, and as a consequence these people have to live in the lines. The erection of quarters has been sanctioned, but was delayed, I believe, on account of the proposal made of removing the head-quarters to Augur. There is no dead-house or place to carry out the *post-mortem* investigations in, required to keep up the cholera register, or comply with a recent notification by Government.

Dry earth is used in the hospital latrine, and the urine received in dampered pans fitted for its reception in the rear, as stated in my report of the station for 1872. The system works very well.

Rain-fall and Temperature.—The climate during the year was as usual, with the exception of the hot months, rather pleasant. The only event worthy of notice was the occurrence of a great thunder-storm and rain-fall of over 5 inches in February. The total rain-fall of the year amounted to 35 inches and 45 cents., which was quite sufficient for the wants of the district, I understand.

The mean of maximum thermometer inside was 75°50', the mean of minimum 72°41', the mean of the year 73°95'; in the hospital verandah the mean of maximum thermometer was 87°56', the mean of minimum 65°16', mean of the year 76°41'. The year has been much cooler than 1872 was.

Prevailing Diseases amongst the Troops and in the Vicinity.—The prevailing diseases during the past year were fevers, chiefly intermittent and dengue; small-pox prevailing in the native town in the hot weather, and 2 cases occurred in the lines.

Recommendations and Result.—The removal of the head-quarters of the regiment to Augur was proposed during the year, but, I am sorry to say, not carried out. No changes have been made in cantonment.

H. M.'s 4th Regiment N.I.

BARODA.—In Medical Charge—Surgeon-Major C. G. Ross ; Strength 620.

When the reliefs of 1873 were published, the 4th Rifles were in orders for Satara, and subsequent instructions directed that the regiment should proceed to that station *via* Chinchwad by road, and rail and road again. But these movements were countermanded, and the battalion did not, as was originally intended, take part in the autumnal manoeuvres of the Camp of Exercise. On the arrival of the left wing of H. M.'s 22nd Regiment in Baroda our own left wing was free to move, and two companies began their march on Asirghar on the 25th December 1873, and the other two proceeded the following day by rail to the Presidency on detachment duty. The head-quarters will not, it is believed, be moved before February.

The health of the regiment has not improved since last report, but deteriorated at an increasing ratio year by year, since coming to Baroda. That this is so, may be seen from the subjoined table—

Admissions in 1871	.....	514.
" 1872	.....	807.
" 1873	.....	947.

In the foregoing abstract the admissions from dengue, which was epidemic in 1872, are excluded, as the disease is an exceptional one. It was not noted in last report that admissions from dengue alone were numerically the same with those from all other causes in 1871, and these were, respectively 514. Although the sickness of 1873 exceeds that of the former and first years, yet the mortality was small, as only one death occurred in the regiment. The lines, however, record a very different story, for there the death-rate among the women and children was, as usual, heavy. A lighter death-rate is, perhaps, not to be looked for in the miserable quarters assigned to the sepoys, their wives, and children. Under present circumstances the Baroda lines must continue to tell a startling annual tale of disease and death. During the three years the regiment has been stationed here the bills of mortality read thus:—

In 1871, 7 women and 21 children died, or 4·4 per cent.
In 1872, 5 women and 27 children died, or 5 per cent.
In 1873, 3 women and 20 children died, or 3·6 per cent.

The trivial mortality of the sepoys depends in a measure on better health, relatively, which the nature of their calling secures in the way of exercise at drill on parade, and in consequence of periodical absence from the lines on duty both by day and night.

The average strength of the Rifles during the year was 620, with a daily sick average of 20·0. The percentage of treated to strength was 155·0, of deaths to strength and treated 0·1 respectively.

Average Strength.

It seems unnecessary to say more on the state of the lines already referred to. In the words of the Deputy Surgeon General they are, indeed, "very rickety" and "should be re-built". In their erection due attention will, no doubt, be paid to sanitation as regards drainage and ventilation. The new lines should stand *en echelon*, facing the south-west, and be built on plinths of masonry 3 feet high, with spacious verandahs in front and rear.

The quarter-guard and school-houses require little or no change, but the solitary cells, as mentioned in former reports, are unsuitable for prisoners in the hot season. The new latrines in the lines, which were closed two years ago, should be re-opened, and the dry-earth system introduced therein, as the trench system so called is quite a failure from the lack of proper supervision, and the disinclination on the part of the sepoys to assist in working a scheme which appears to answer admirably in some places under effective surveillance. In the hospital latrine the dry-earth system has been in operation for years, and without offence. But, even here, constant supervision is a *sine qua non*, without which the advantages of the system would quickly vanish.

The preamble renders further remarks on the general condition of the lines superfluous. The hospital buildings are in fair order outwardly; much might be done to improve their interior economy if new ones are deemed unnecessary. The hospital floor is of crumbling and uneven brickwork. Asphalte or wood might be substituted with great advantage. There is no surgery proper, and the dispensary so called is simply a large dark closet. Here the windows should be cut down to the floor, and light and air let in. Quarters for medical pupils are still in abeyance. Their erection is now under contemplation, as none of the out-houses are suitable for the accommodation of the youths. A dead-house is still a *desideratum*.

Compared with last year the rain-fall of 1873 was less by 13 inches and 16 cents. The rains broke lightly in June, when only 1 inch 46 cents. fell. In July 11 inches and 43 cents. were registered. A still heavier fall of 14 inches and 40 cents. took place in August.

Rain-fall and Temperature.

The subjoined table shows the decennial rain-fall from 1864 to 1873, which gives an average of 32 inches 74 cents :—

Years.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Total.	
	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.	I.	C.
1864											3	74	11	63	4	89	...	85	...	...	...	...	...	20	61
1865											96	6	41	10	93	3	18	...	...	...	...	...	...	27	48
1866											5	48	4	4	10	27	...	29	...	...	...	...	...	27	99
1867											3	45	7	80	15	57	4	50	...	96	...	...	...	32	28
1868											5	1	8	68	31	30	...	37	...	...	...	...	...	45	36
1869											1	29	10	8	5	43	19	62	...	34	...	...	...	36	76
1870											7	81	19	73	3	28	2	77	...	...	...	...	...	33	79
1871			14				20½		25½		1	66	4	32	15	9½	5	6	...	1	...	30½	28	4		
1872											10	47	20	74	10	45	2	49	...	...	...	...	...	44	15
1873		3	12								1	46	11	43	14	40	3	55	...	...	...	...	...	30	99
Grand Total...											—	327	45	
Average of the above	32	74	

The drinking water furnished by numerous wells in camp is ample, and considered good.

Water-supply. The Vishwamitri, which bounds camp on the east, is distant about 140 yards from hospital. The water of the river as well as that of a tank on the west, within camp limits, is in use, chiefly for the purposes of ablution, and much resorted to by dhobis. Washermen, however, are not permitted to ply their vocation when the water of the tank begins to abate, which is quickly the case shortly after the monsoon. Were the tank faced with masonry, it might be kept with advantage full all the year round.

As regards temperature the extremes of heat and cold were greater than last year, but not much. On 7th January the *minimum* reached by self-registering thermometer was 37°. But greater cold than this prevailed on the outskirts of camp, for ice of considerable thickness was found on some pools of water near the old railway station. The exalted temperature of May, when the mercury rose to 111, was in common parlance "perfectly fearful". The health of the regiment was at this time, nevertheless, wonderfully good, as during the month the average of daily sick was only 10·4. The intense heat, however, was fatal to lower forms of animal life, and is reported to have killed large numbers of flying foxes. Subjoined is a comparative table of the *maxima* and *minima* of temperature, given by self-registering thermometers, for the last two years, from which it will be seen that the difference in temperature in 1872 is very small indeed :—

Months.	1872.		1873.	
	Maximum.	Minimum.	Maximum.	Minimum.
January	76·2	52·9	75·3	51·9
February	80·5	53·9	80·8	58·6
March	89·6	67·9	89·0	63·4
April	95·0	73·4	96·0	71·9
May	97·6	78·9	100·0	79·8
June	93·8	80·7	94·7	81·1
July	85·4	77·5	86·9	77·0
August	83·3	76·1	85·0	75·1
September	85·3	75·7	85·9	74·9
October	86·4	66·2	88·1	63·8
November	85·9	51·0	85·2	59·3
December	80·1	56·2	79·2	53·4
Total...	1,038·2	810·4	1,045·1	810·2
Average	86·5	65·5	87·0	67·5

During the hot weather, although the regiment escaped small-pox, the disease prevailed to a great extent in the city of Baroda, and a few cases, 10 ten in all, occurred in the lines among the women and children. The first, which was also the worst case, happened to a boy 15 years old, who had recently come from the Concan, and had never been vaccinated; the disease was semi-confuent. All the patients were treated in one of the disused hospitals furthest from that of the Rifles, which with the late Royal Artillery one stands in the same compound.

Revaccination, in accordance with recent circulars on the subject, was begun on the 13th February 1873. The last operations were performed on the 14th December. In the interval of these dates there were 682 operations. The results from the register are thus tabulated:—

Results of Revaccination of Persons previously successfully vaccinated.			Results of the Revaccination of Persons who have previously had Small-pox.			Results of Revaccination of Persons who have previously had marks of both Small-pox and previously vaccinated.			Total.
Good.	Middling.	Bad.	Good.	Middling.	Bad.	Good.	Middling.	Bad.	
186	88	203	40	47	95	5	4	14	682

Vaccination has been carefully practised, and with satisfactory results. The lymph was on all occasions found good. 66 operations on children under two years of age were successfully performed.

Ague, which is endemic in Baroda every month of the year, prevailed exceedingly in the autumnal months. The admissions rose from 56 in September to 225 in October. Bronchitis and pneumonia complicated

some of the cases, and attacks of great severity occurred in two of the patients, who after an anxious time ultimately did well. Ague cake was not uncommon in men who suffered long from intermittent fever; some resisted all modes of treatment and were, as a last resource, sent for change of air to their native country. Of 17 men who proceeded on sick certificate, 8 went fever-stricken, and all suffered more or less from splenic enlargement. The total number of ague cases under treatment amounted to 579. No casualty occurred under this head. Indeed only one death occurred during the year, and this was due to cerebro-spinal meningitis. The deceased was 23 years of age. He was admitted into hospital on the 10th, and died on the 27th January 1873. When brought to hospital he was comatose; consciousness was restored on the 12th; on the 16th coma again set in, and persisted until the 18th; from this date the case was more hopeful, though serious from the first; the pulse rose to 107; the powers of deglutition were all but abolished. Cold affusion and wet-sheet packing reduced the heat of surface from time to time. Nourishing enemata were introduced, and stimulants freely given. Iodide and bromide of potassium with tincture of aconite and large doses of quinine were prescribed with apparent benefit. The spine and head were blistered with good effect, but the patient died unexpectedly at the last, exhausted. *Post-mortem* examination showed enormous congestion of the meninges and effusion of serum. The spinal cord appeared sound. On review of the case I am induced to think that he was not watched with sufficient care from hour to hour, even though the attending men were told off to wait upon him day and night. The case was a most instructive one, and full of interest to the medical subordinates. Dr. Seward, the Residency Surgeon, kindly saw the case several times, and rendered valuable advice and aid in the treatment. Under the head of prevailing diseases, the next after ague, contusions excepted, stands bronchitis, which furnished 38 admissions. Most of the cases occurred in elderly men, but some of the worst in comparatively young, and in one or two instances the disease was associated with syphilis; in these cases iodide of potassium was of great value. That the venereal poison is the cause of many obscure diseases, to say nothing of those which are unambiguous and significant, is generally admitted. The remarks, however trite, are introduced for the purpose of expressing in the report the opinion, which many hold, that the establishment of a lock hospital at Baroda is urgently needed, for venereal diseases prevail to a frightful extent in camp and city, and the prostitutes in both places are under supervision of no kind. Our soldiers, European and Native run great risk in Baroda, and suffer in some instances irremediable damage at the hands of unclean women. Were lock hospitals established in all our cantonments, the prevention of disease (of syphilis emphatically), better proverbially than the cure, would re-

cruit our ranks with hardier men than are met with in these days; the State would be gainers in the end, possessing an army in which the most crippling of all diseases should be reduced to a minimum. In consequence of the increase of syphilis in the garrison of Baroda, I was induced, last October, to address a letter on the subject to the Officer Commanding, in which the establishment of a lock hospital at this station was strongly advocated. In reviewing other diseases under treatment during the year, some of the more interesting cases may be noticed. A sepoy was admitted on the 4th September 1873, severely wounded in the left scapular region (*supra spinous*). The wound, most likely inflicted by a sword, and which bled profusely, was 8 inches long, clean cut, and deep. The patient said he had fallen on a broken bottle, but the nature of the wound precluded such an idea. The wound was injected with carbolic-acid lotion, and the edges were kept in apposition by 3 sutures and 4 hare-lip pins. Cotton wool steeped in oil, containing one part of carbolic acid to 8 of oil, was laid over the parts, and the upper arm (the axilla well padded) secured to the side, with a bandage suspending the fore-arm. The wound ultimately did well, though it did not heal by the first intention. The next is a not uninteresting case of *coup de soleil*. The patient was admitted on the 14th October; he was found by one of his comrades lying insensible on the ground about 11 A.M. Shortly before the hour mentioned he had taken his rifle for inspection of the wing officer, and was on his way back to the lines, near which he succumbed as described. The patient was comatose on admission, and continued so until the 16th, when he could be partially roused to answer questions. Treatment consisted of cold affusion, turpentine enemata, blisters, calomel, croton oil, iodide of potassium, quinine, spiritaous stimulants, &c. After a slow, but satisfactory, recovery he was ultimately discharged to duty, after having been in hospital until the 6th of November 1873. Diarrhœa and dysentery of severer type than usual have been under treatment. In the latter disease large doses of ipecacuanha were followed by rapid and permanent cures. Scurvy was not very common; the admissions were 9 against 3 last year. A scorbutic taint, however, affects large numbers of the sepoys in consequence of a meagre and ill-assorted diet. Conjunctivitis (34) exceeded the admissions last year (29) by 5. All the cases, with few exceptions, yielded readily to treatment. Of the 8 abscesses under treatment, one only possesses sufficient interest to be noticed here. On first admission the patient was treated for chronic rheumatism. Shortly after a diffuse swelling appeared in the right gluteal region. An exploring needle was introduced, but only a little serum came away. After the lapse of a week a larger needle was introduced, and pus filled the groove. The abscess was then laid freely open, and a large quantity of matter evacuated. In consequence of long and continued discharge the patient became much emaciated and cachectic. He was ultimately sent on sick certificate to his native place. Before leaving, he had improved very considerably in health, and the discharge had nearly disappeared.

But little remains to add in concluding this report. Guinea-worm was singularly rare, as only one case occurred. Admissions under the head of sprains of the elbow (1) and wrist (3), knee (1) and ankle joints (17), were somewhat numerous. Contusions as already stated, in which trifling wounds and shoe-bites are included, furnish a tolerably large list, but these with the preceding are not of sufficient interest to warrant special mention. During the year 13 men were invalided, 17 proceeded on sick certificate to their homes, and 25 recruits joined the regiment. Such, in brief, is an epitome of the medical history of H. M.'s 4th Rifles for the year 1873.

Sanitary Report by Surgeon-Major C. G. Ross on the Health of the Baroda Garrison for the Year 1873.

Garrison { Royal Artillery, 3012.
H. M.'s 4th Rifles N. I., 620.
Left Wing H. M.'s 22nd Regiment N. I., 280.

The health of the Baroda Garrison has not improved since last report but deteriorated.

Health of the Garrison. Although the sickness exceeds that of last year if dengue be excluded, yet the mortality is small, one death only having occurred.

The average strength of the detachment Royal Artillery at this station has been increased from 2383 to 3012. The numbers treated amounted to 81. The following is a list of diseases treated during the year:—Abscess 1, ague 45, bubo 5, condyloma 1, contusion 1, diarrhœa 4, dysentery 5, enlarged tonsils 1, epididymitis 1, febricula 2, gonorrhœa 1, hepatitis 1, inflammation of inguinal glands 1, in-grown nail 1, palpitation 2, rheumatism chronic 2, muscular 2, syphilis primary 2, secondary 1, wound 1, epileptic vertigo 1. There were no deaths among those treated.

No cases of cholera or small-pox occurred. Revaccination in the Royal Artillery was performed in 31 instances; of these 9 were successful, 8 middling, and 14 failed altogether.

H. M.'s 4th Rifles have been treated at Baroda during the year. The average strength of the regiment, exclusive of 5 Europeans, was 620.

The average number of daily sick was	20.0
The percentage of treated to strength was	155.0
Do. deaths do. ...	0.1
Do. to treated ...	0.1
Admissions into hospital numbered	947

which, with a remainder of 14, give a grand total of 961 under treatment. There was 1 death during the year from cerebro-spinal meningitis. That the health of the corps has deteriorated since coming to Baroda, upwards of three years ago, may be seen at a glance from the following table :—

Admissions in	1871...514.
Do. in	1872...807.
Do. in	1873...947.

As stated in last year's report, the tour of duty in Baroda should not exceed two years. The amount of sickness in the lines among the women and children was, as usual, exceedingly great, and the mortality large.

During the year 3 women and 20 children died from fever, bronchitis, diarrhoea, scurvy, &c.

None of the sepoys suffered from cholera or small-pox. 10 cases of the latter disease were under treatment, the patients being 1 woman (a sepoy's wife) and 9 children. There were no deaths; all affected with the disease had been previously vaccinated.

Revaccination, in accordance with Circulars No. 3215 of 13th September 1872 and 1330 of 19th October 1872, was begun on the 13th February 1873. The results were as follows :— 680 operations were performed, 370 took beautifully, 310 were middling or altogether failed.

Scarlet fever, which is believed by writers generally to be unknown in Western India, was met with in two instances in a mother and her child; both did well.

Dr. Roberts has favoured me with the following notes of his charge :—

The Left Half Battalion H. M.'s 22nd Regiment N. I. marched from Nimach to Baroda during the present relief season, starting on the 20th November and reaching its destination on the 23rd December.

Previous to the Left Half Battalion leaving Nimach a good deal of sickness, chiefly intermittent fever, had prevailed. On the march the men seemed to shake off this disease, and out of a strength of 312 the greatest number of admissions to hospital on one day was 16; of these three-fourths were cases of intermittent fever, but all were of mild type. The other admissions during the march comprised bronchitis, boil, and in 1 case a perineal abscess. This latter occurred in a Native officer, and was attributed by him to riding on a hard cavalry saddle. A large quantity of pus accumulated in the perineal region, and spread upwards over the pubis in front of the region of the bladder. The matter was evacuated, and the abscess healed favourably. There was no other case, with this exception, that in any way approached a serious disorder. The administration at Rutlam, on the line of march, of quinine hypodermically to men who were victims to fever in Nimach had the best result.

No sickness of a contagious nature was encountered at any of the towns or villages through which the half battalion marched.

The encamping grounds were healthy, and for the most part well chosen. With only two exceptions the water at all the encamping grounds was good.

The health of the general community inhabiting the station appears to have been better this year than last, as only 1 death has occurred. The deceased was a woman who before and after her confinement suffered from diarrhoea, which proved fatal 10 days after giving birth to a child. In the sudder bazaar, with an average population of 2,531, there were 63 deaths and 24 births.

Trenches are cut in various directions, which are efficient generally in carrying off the monsoon fall. There are no wheels or marshes in the vicinity of camp. On its western side there is a tank of considerable size, which dries up in the hot season. If it were faced with masonry it might be kept full all the year round. During the rains, and for some time after, the tank is resorted to by the dhobis, but they are not allowed to wash clothes there when the water begins to abate.

As stated in former reports, the water-supply, which is obtained from numerous wells, is ample, and considered good.

The barrack and married quarters allotted to the Royal Artillery are in fair order, and sufficient for the accommodation of the few men who are on detachment duty here.

The lines of the 4th Rifles could not be worse. New ones are urgently needed.

The hospital and out-houses are in fair order. The dispensary is badly lighted and incommensurate. There is no dead-house, and quarters for medical pupils are still in abeyance.

Conservancy. No change has occurred in the conservancy arrangement during the year.

The station generally as well as the Native bazaar and private compounds presents a clean and tidy appearance. Much might be done to improve the roads in and about camp, but the cantonment committee is straitened for funds. The question of utilising the services of our troops on the highways, building culverts, levelling rough ground might be discussed with advantage to the men and economy to the State.

Rations. The rations have been uniformly good and never complained of. The market price of the food of the population generally undergoes little change from month to month.

Other defects. Special defects call for no comment at this time.

New Sanitary Measures. No new measures have been adopted. As in former years the sanitary condition of the station has been attended to by keeping down rank vegetation, lopping the branches of trees about 16 feet from the ground, trimming hedges, &c.

Suggestion. Under this head the suggestion of former reports may again be quoted. In building new barracks for Europeans and lines for Native soldiers, the suggestion that each barrack and lines should stand on a plinth not less than 3 feet high, with a spacious verandah all round, is one likely to improve the health of the troops. Upper-storied barracks are calculated to be very hot, but built as suggested are, perhaps, best adapted for the vicissitudes of an Indian climate. The rooms themselves should be lofty, with walls of substantial thickness; and covered ways connecting the latrines with the barracks should certainly be constructed.

In conclusion, I may state that the propriety of establishing a lock hospital at this station was suggested, but has not been adopted.

Report by the Deputy Surgeon General of Hospitals, Northern and Mhow Divisions, 1873.

The Native troops within both divisions during the year under report, the average strength of fighting men as shown in the annual returns of the respective corps, and the stations garrisoned, were as follows:—

NORTHERN DIVISION.

Regiments.				Stations.				Strength.
2nd Company Native Artillery	...	...	...	Rajkot	...	...	...	No report.
" Light Cavalry	...	...	...	Disa	...	...	...	293
" do. (Squadron)	...	...	...	Rajkot	...	...	...	111
3rd Regiment N. I.	...	...	...	Ahmedabad	...	...	...	642
4th do. (Rifles)	...	...	...	Baroda	...	...	...	620
7th do.	...	...	...	Rajkote	...	...	...	193
9th do.	...	...	...	Ahmedabad	...	...	...	569
18th do.	...	...	...	Rajkote	...	...	...	625
20th do.	...	...	...	Bhuj	...	...	...	No report.
24th do.	...	...	...	Disa	...	...	...	617
Staff and Details	...	...	...	Ahmedabad	...	...	...	1,137

MHOW DIVISION.

Regiments.				Stations.				Strength.
3rd Light Cavalry	...	...	...	Nimach	...	...	...	280
Do. (Squadron)	...	...	...	Nasirabad	...	...	...	110
10th Regiment N. I.	...	...	...	Mhow	...	...	...	469
16th do.	...	...	...	Do.	...	...	...	691
22nd do.	...	...	...	Nimach	...	...	...	608
23rd do.	...	...	...	Nasirabad	...	...	...	616
25th do.	...	...	...	Mehidpur	...	...	...	337
do. (Wing)	...	...	...	Augur	...	...	...	268
Staff and Details	...	...	...	Mhow	...	...	...	883
Do.	...	...	...	Nimach	...	...	...	350
Do.	...	...	...	Nasirabad	...	...	...	301

2. During the year the 7th Regiment N. I. furnished detachments to Dwarka and Porebunder, the 10th and 16th Regiments to Indore, and the 3rd and 9th Regiments to Sadra.

3. The following were the annual reliefs, within both divisions, during the year :—

4th Regiment N. I. (Rifles)	...	Baroda	...	...	...	Asirghar.
18th do.	...	Rajkote	...	...	...	Disa.
20th do.	...	Bhuj	...	...	...	Bombay.
22nd do.	...	Nimach	...	...	...	Baroda.
34th do.	...	Disa	...	...	...	Nimach.

4. The head-quarters 4th Regiment N. I. and a detachment 20th Regiment N. I. were relieved during the present year.

5. The aggregate number of admissions during the year was 12,147 against 14,701 in 1872, and was made up from the undermentioned hospitals :—

Regiments.		No., 1873.	Regiments.		No., 1873.
2nd Regiment L. C.	...	313	10th Regiment N. I.	...	855
Do. (Squadron)	...	142	16th do.	...	812
3rd Regiment L. C.	...	299	Native Details	...	424
Do. (Squadron)	...	148	18th Regiment N. I.	...	885
3rd Regiment N. I.	...	957	22nd do.	...	1,178
Do. (Details)	...	29	23rd do.	...	1,301
4th Regiment N. I.	...	947	24th do.	...	1,034
7th do.	...	300	25th do.	...	1,862
Do. (Detachment)	...	181	Staff and Details, Mhow	...	436
Do. do.	...	360	Do. Ahmedabad	...	93
9th do. (Details)	...	15	Do. Nimach	...	197
Do. do.	...	525	Do. Nasirabad	...	121
Total...					13,294

6. At the close of the year 1872 there remained in the military hospitals of this Division ... 306
 Admitted during this year ... 12,147
 Discharged ... 12,153
 Died in hospital... 45
 Remained under treatment ... 250

7. The deaths amounted to 45, against 65 in the previous year.

8. The average number of daily sick in each corps, wing, or detachment was—

Regiments.	1873.	Regiments.	1873.
2nd Regiment L. C.	7.5	10th Regiment N. I.	24.3
" do. (Squadron)	3.3 ₁	Native Details	10.12
3rd do.	11.2	16th Regiment N. I.	23.2
Do. (Squadron)	2.55	18th do.	16.13
3rd Regiment N. I.	21.6	22nd do.	42.3
Do. (Details)	1.0	23rd do.	29.0
4th do. (Rifles)	20.0	24th do.	28.0
7th do. do. Dwarka.	9.13	25th do.	16.40
Do. (Detachment, Porebunder.	17.3	" do. (Wing)	44.29
Do. do.	12.5	Staff and Details (Mhow)	15.8
9th do. do.	16.6	Do. (Ahmedabad)	5.9
Do. (Detachment)	0.6	Do. (Nimach)	6.09
		Do. (Nasirabad)	2.90

9. In my review, submitted in 1873, of the Native troops garrisoning the various stations within the Northern and Mhow Divisions of the Bombay Army under my administration, for the year 1872, I deemed it of importance, during my tour, once for all, to study in a practical way the wants and requirements of these, as well as the stations themselves, as adapted for garrisons. Hence it was not my intention this year, after a tour through the Northern Division of upwards of two months, visiting the whole of the dispensaries also, to have revisited the Mhow Division, seeing there were no new troops to inspect. However, small-pox having made its appearance among the children of the town and bazaar at Nasirabad, I was requested by the Officiating Surgeon General to visit that station, and report with reference to its advent.

10. In order to the carrying out of this design I left Ahmedabad for Bombay, in furtherance of this object, in February, as I wished to travel expeditiously *via* Agra; but on arrival at Bombay, my health having sustained a severe shock during the previous tour through jungly country, the Officiating Surgeon General recommended me to desist from an attempt which might have ended in a break-down, requesting me to return to head-quarters, in order to prepare my annual reports (military and civil), ere applying for leave to Europe on sick certificate.

11. It is a pleasing duty to have to report that the health of the troops in both divisions had been maintained at a far higher standard than in the preceding year, and the mortality proportionately smaller, viz. 45 against 65 in 1872.

Epidemics.

12. There have been no epidemics, and no cholera.

13. In a foot-note to my report on "dengue" from Aden in 1871 I stated—"This latter disease (cholera) in its inroads (into Aden) 1865 and 1867 came so suddenly that the question arises, how the disease leaves a place once attacked, if theories of contagion from clothing, water, &c., hold good."

Cholera.

14. In a review, dated 1st January 1874, in the *Indian Medical Gazette*, three years afterwards, the following appears:—"No better indication exists of our ignorance of the *modus operandi* of contagious disease poisons than the difficulty we experience in accounting for the cessation of an epidemic after affecting a limited number of persons instead of its continuously growing, until, on any hypothesis, all the members of the community must be attacked. We are painfully ignorant in whatever point of view we contemplate cholera."*

15. What is to be gleaned towards acquiring a greater amount of practical knowledge of this disease from the following by the same reviewer? "Dr. Murray's hypothesis of the nature of cholera is a very simple one. Specifics are due to a specific poison, which obtains access to the body through the lungs, skin, and stomach, and, after developing and multiplying in the body, leaves it through the lungs, skin, and bowels."

16. I have marked well advents of cholera in their mildest and most intense forms. I have purposely passed through their line of route, and hold no belief in the so-called specific

* Save on the wave theory.

poison; and traversing the system and returning multiplied, is a very doubtful hypothesis; the suddenness of the attack and, frequently, rapid exodus of the disease, is incompatible with such a doctrine.

17. Cholera is, I believe, as previously asserted in my numerous former reports, a peculiar electric state of the atmosphere in a magnified or mitigated form, and not a *specific* poison; "yet so long as the very existence of the poison," continues the reviewer, "which is the centre and essence of the speculation, has not been demonstrated, the whole theory must be characterized as a *petitio principii*."

18. With reference to these diseases I still maintain, as in former reports, that intermittents have their origin in rapid atmospheric changes, more especially in vicinities of humid soil, such as black soils after the rains and thick plantations; whilst remittent—the so-called ardent and continued—are caused by long exposure to the sun's rays, and that "malaria" is simply a fiction.

19. These diseases also frequently owe their origin to the same causes, probably primarily disturbing the biliary system; yet these diseases are also said to arise from malaria.

20. It is worthy of note that in the 4th Rifles, during my inspection observing that Dr. Ross, the Medical Officer in charge, paid great attention to the readings from the self-registering thermometer under his charge, that a very large increase of fever admissions appeared in this regiment in the month of October, viz., 225, by comparison with the previous month of September, viz., 56; yet if we refer to the thermometer range it will be found that the difference between maximum and minimum in the latter-mentioned month was but 10°, whereas in the succeeding it amounted to 25°; moreover, affections of the lungs were complicated, indicating to any reflecting mind that the sudden transitions were the causes of this excessive prevalence, and not what is termed "malaria", and this will be seen, I opine, in all excessive so-called epidemics or endemics of fever, lung, and alimentary canal affections.

21. I will here quote from a letter from Surgeon-Major Oldham, serving with the army on the Gold Coast, who writes:—"The only effectual means of escaping the serious maladies of the coast of tropical Africa are—*first*, to avoid as much as possible exposure to the heat of the sun; *secondly*, to take the greatest care to protect the body from comparative cold and damp, which, especially in the form of raw night air, dew, and drenching rain, constitute the much-dreaded malaria. If these precautions be neglected, the profuse employment of quinine will be of no avail. It should ever be borne in mind that the greater the degree of heat, and the longer and more continuous the exposure to it, the more vitally important does it become that even the slightest degree of chill should be avoided."

22. Of other affections little need be said, since it becomes a labour of supererogation advertent to these year after year, and the successful treatment of such may be learned from the reports of the several Medical Officers.

23. The ratio and comparisons for 1873 and 1872 will be found in the tabulated statement appended to this report.

24. As I purpose the above preamble to have reference to every regiment within my two divisions, I shall only prefer remarks on reviewing separately any matter likely to be of professional interest.

25. There is one simple affection which holds a large figure in the numerical strength of diseases in H. M.'s Native regiments—one which is of small account in European regiments—I refer to "shoe-bites", as they are termed. I am informed by Medical Officers that such abrasions are, not unfrequently, caused by the sepoys resorting to the river-banks, &c., for bathing and putting on their ill-assorted and ill-fitting boots whilst their feet are wet and covered with sand. Surely the usual sandal of the sepoy could be worn when performing such ablutions, or some remedy resorted to, to put a stop to the numerous admissions which deprive the State of the services of a large number of men during the year.

26. The comparatively small amount of rain that has fallen appears to have been generally mentioned from both divisions, the exception being at Mehidpur, where fever was reported as greater, viz., from a strength of 311 the total admissions were in 1872, 913, whilst with a similar strength in 1873 they were 1,483, of which an outbreak of dengue in the latter year gave 223 admissions. Hence, with this one exception, every other station shows a considerable decrease in fevers.

27. The heat was almost universally greater in 1873 than in 1872, and at Disa, from a self-registering thermometer in the shade, 119 Fahrenheit.

28. By reason of these two electric causes, great anxiety prevailed in regard to water-supplies at some stations, especially Mhow, where every effort is being made by the authorities to stay the coming evil by formation of a committee of investigation, whose proceedings will eventually, I presume, be submitted to His Excellency the Commander-in-Chief for the information of Government. Hence I have abstained in this report from making special reference till these are closed.

29. In para. 36 of my report for 1872 I drew attention to the ruinous condition of the regimental lines—Mehidpur and Indore in particular, but nothing towards amendment has been attempted.

NORTHERN DIVISION.

30. *Native Artillery (Mountain)*—The 2nd Company Native Artillery stationed at Rajkote left the division on the 5th November last, and proceeded *via* Porebunder to the Presidency *en route* to the Camp of Exercise near Poona. No report has been received from the Medical Officer in charge.

31. *H. M.'s 2nd Regiment L.C.*—The cavalry portion of the service contrasts favourably in regard to its healthy status during the past year, with that for 1872, as 1 to 2.

This regiment, whose head-quarters is at Disa, has an average strength only of 293 sabres, and provides a detachment to Palunpur; whilst a squadron garrisons Rajkote, furnishing a detachment to Drappa, both outposts being reported unhealthy, consequent on what is called "malarious poison".

Diseases.	Fevers predominate, and the usual affections common to Natives follow, but all in a minor degree compared with 1872.
The rain-fall here (Disa).	like in almost every other military station, has been less than in the last year, and the heat not greater, the highest range in a covered verandah being 119 Fahrenheit.
Pluviometer and Thermometer.	
Epidemic.	None.
Casualties.	2 at head-quarters, and 5 in the entire regiment.
Hospital.	Good and ample.
Water.	Good supply.
Vaccination.	Successfully performed during the year.
Reliefs.	The 1st Squadron at Rajkote was relieved by the 3rd from Disa on the 20th November last.

32. *H. M.'s 3rd Regiment N. I.*—Reports from this regiment are most satisfactory by comparison with last year. This and H. M.'s 9th Regiment N. I. having been located at my head-quarters, I have had frequent opportunities of seeing the men in and out of hospital.

The decrease in sickness is, in the former, attributed by the Medical Officer in charge, in some measure, to absence of epidemics; yet the general tone of the regiment is better than in 1872.

The small-pox that prevailed was chiefly among children in the lines, commencing in the cold season, as is generally the case, and terminating on the advent of the hot weather. Some cases were of severity, but the generality modified, and no deaths out of 14 admissions into hospital are recorded among the men.

Vaccination.	Carefully and satisfactorily carried out.
These are confined to	those usually met with among Natives. Fevers, as is always the case, occupy a prominent position, 515 to 325 of all other diseases.
Diseases.	
Casualties.	Small—3 from fever and pneumonia, and 5 the result of accident or old age.
Lines.	As reported last year—good.
Water-supply.	As reported last year, though more frontage wells have been recommended.
The trench system has	been departed from in favour of the more suitable buildings originally erected by Government at great expense, the arrangements under the dry-earth system being reported on favourably.
Latrines.	
Hospital.	All the Medical Officer could wish. Nevertheless, as reported in my last annual, subsidiary wards for special cases essential,

Dead-house. One building for the use of all Native regiments should be erected in every cantonment.

The suggestion for entertainment of a Native nurse for attendance on female patients is a good one for all Native charges. This servant should be paid at the rate of 6 or 8 annas per diem when on duty, since, under the present system, every sepoy's wife is allowed her husband in attendance,—a privilege that deprives the State of his services.

Good, and abundantly supplied for wants and requirements; yet the city—4 miles off—is frequently resorted to for purchases, being somewhat cheaper in tariff.

33. *H. M.'s 4th Regiment N. I. (Rifles).*—This regiment, after being warned for duty at the Camp of Exercise, was detained at Baroda. On arrival of the Left Wing H. M.'s 22nd Regiment N. I. from Nimach two companies proceeded, *via* Mhow, to Asirghar, and the other two by rail to the Presidency; the head-quarters remaining until relieved in February by the Right Wing 22nd Regiment N. I.

The corps is said not to have improved in health; indeed, in so far, admissions appear considerably increased since 1871, excluding in 1872 admissions from dengue; nevertheless, one casualty only occurred, and the daily average seems scarce above 3 per cent.

The Medical Officer, as in former years, dwells on the wretched condition of the sepoys' lines and the mortality among women and children; yet 3.6 per cent. is not large, taking into consideration that out of a total of 23, 20 were children.

In my last annual progress report comment was made on these lines, but no notice has hitherto been taken.

These are pronounced a failure, and, as with the 3rd and 9th Regiments N. I., the *pukka*-built latrines under the dry-earth system should at once be re-opened.

Hospital. As reported last year; no change.

Water-supply. Good.

Variola. A few cases of small-pox, modified, appeared in the lines, but the men of the regiment escaped.

Vaccination. This and revaccination have been assiduously and successfully resorted to, and lymph reported good.

34. *H. M.'s 7th Regiment N. I.*—Consequent on strong detachments from this corps occupying outposts at Dwarka and Porebunder, the head-quarters wing at my inspection averaged 193 only, and these men were almost entirely employed in building new lines.

As the men were employed at this work for a few hours during the morning and again in the evening, and the heat of the day allotted for rest, it would be reasonable to suppose that the labour would tend to their improved health; but the Medical Officer attributes the somewhat large percentage of sick to the fact of the men being in tents during the hot weather whilst so labouring. The fevers, however, were ephemeral chiefly.

Like in other corps, fevers gave half the total of all other diseases; yet but two deaths occurred, one from pneumonia and one from remittent fever, the latter going into hospital on returning from furlough, and this should scarcely be considered a hospital case.

Dracunculus. Guinea-worm gives the large amount of $\frac{1}{2}$ to the total of sick; but as this regiment was some time at Dharwar, it is accounted for.

Other Diseases. The remaining diseases are few, and of a mild character—in fact, the men may be considered fairly healthy.

Latrines. Those erected by Government are in use, and found to work satisfactorily. The trench system has not been in use at this station.

Water-supply. Good.

Bazaar. Notably clean.

35. *H. M.'s 9th Regiment N.I.*—This regiment, like the 3rd stationed at head-quarters, has been fairly healthy during the past year, although a slight increase in sickness, accounted for by the large number of admissions from bronchitis—36 against 2 in 1872.

Two companies of the regiment were ordered to Surat in November last, consequent on *H. M.'s 26th Regiment* being ordered to the Camp of Exercise, and rejoined head-quarters on the latter end of January.

Ague was the prevailing disease, giving 280, or 53·1 per cent. of the whole admissions, into hospital, but the greater number of the ordinary type, and readily amenable to treatment.

Diseases.

Treated.

528 out of a strength of 569.

18 cases of small-pox, the majority amongst the families in the lines, occurred in the month of March; but as the greater number were of the ordinary type, the disease disappeared there in two months.

Variola.

Vaccination.

Carefully attended to; 53 primary operations on children, all successful.

Casualties.

7, against 8 in 1872—3 bronchitis, 1 dysentery, 1 pneumonia and 2 remittent fever.

Water.

Good, and supply abundant.

Latrines.

The dry-earth system, which is reported most satisfactory.

Hospital.

Commodious and ample for all requirements.

36. *H. M.'s 18th Regiment N.I.*—The health of this regiment for the first seven months, *i.e.*, till the end of July, was most satisfactory. Last year this corps, like *H. M.'s 7th Regiment N. I.* in the latter portion, was reported as having suffered from exposure by reason of labouring at the building of their new lines.

Lines.

Before the rains the huts were finished, and the men comfortably housed.

Escorts.

Beyond occasional escorts of a temporary nature, the regiment was in its strength during the year.

Here we have again a fine healthy regiment suddenly collapsing in September and October, the former giving 149 admissions, the latter 204, chiefly fevers 190, the other diseases amounting to 14 only, and from all these no casualty.

Fever.

The Medical Officer does not enter into any cause for this sudden outbreak in the autumnal months.

During the cold weather—January—a slight outbreak of small-pox occurred among the children; but, consequent on the usual precautionary measures, the disease was stayed in a few weeks.

Small-pox.

Epidemic.

None.

Casualties.

3—1 chronic asthma, 1 disease of the pericardium, and 1 pneumonia.

Vaccination

Successfully carried out.

Water-supply.

Good.

37. *H. M.'s 24th Regiment N.I.*—This regiment, which suffered largely last year from dengue and fever at Disa, has relieved *H. M.'s 22nd Regt. N. I.* at Nimach, and is reported to have been fairly healthy, though somewhat debilitated; dengue appearing in September, fever in October as usual. However the change, doubtless, and invigorating march will, I hope, tend to a better state of health.

Admissions.

1,034 against 2,08 in the previous year, somewhat less than half.

7 against 12 in 1872, and men on sick furlough as 15 with 1 casualty against 24 with 4 deaths in 1872; so far, as in the case of other regiments, this is satisfactory by comparison.

Casualties.

Invalids.

The number invalided in 1872 was 27; yet 1873 shows 33 out of 50 sent up to the Board.

Epidemic.

None.

Conservancy, &c.

Water, latrines, lines, &c., reported on last year, the same.

38. Small-pox and ague were the two predominating diseases during the year under review, the former giving 33 admissions—20 confluent, 9 ordinary, and 4 mild type—all successfully treated, except a young child, the only casualty; the latter, 33 cases, which readily yielded to treatment.

A singular case of an old woman treated in the hospital will be found detailed in the report of the Medical Officer in charge; however the patient died from constitutional enervation and exhaustion after all the larvæ were destroyed.

Larvæ.

Diseases.

Fever, diarrhoea, and coughs were the most prevalent, especially among the children.

Vaccination.

Successfully carried out: 40 operations during the year.

Latrines.

None; the bazaar inhabitants resort to the adjacent nullahs and ravines.

39. *H. M.'s 3rd Regiment L.C.*—A very healthy regiment, quartered at Nimach and Nasirabad, at latter of which one squadron is stationed.

This usual disease predominates in its season and others of the organic affections, yet subordinate to common treatment, in all considerably less than reported last year.

Fevers.

As in all mounted corps, accidents, abrasions, &c., lend a fictitious importance to the number of admissions.

Casualties.

1 at Nimach from disease of the heart, and 2 at Nasirabad—old men; 1 ague, the other diarrhoea.

Epidemic.

None.

Vaccination.

Regularly carried out.

MHOW DIVISION.

40. *H. M.'s 10th Regiment N.I.*—This regiment, quartered at Mhow, has, similarly with *H. M.'s 16th Regiment N. I.*, to furnish a strong detachment, alternately, for garrisoning Indore, and it is still under the able medical charge of Surgeon Major-Murray, who has been associated with the corps for many years.

69 men were discharged the service, apparently a large number—63 receiving pensions; yet of these a considerable number had served in Central India, Aden, and Abyssinia, having done good and arduous service.

Invalids, &c.

Casualties.

As in foregoing regiments very small—2 only, one on furlough.

Enthetic.

The men mostly having their families with them, the venereal disease has been at a minimum.

Variola.

This disease was partial during the first months of the year in 2 men, 3 women, and 6 children; the attendants, however, did not suffer.

Vaccination.

This has been carried out extensively both primarily and in revaccinations.

A diminution of 63 from last year. Contrary to other reports and usual experience, the

Fever.

increase of fever in this regiment was greater in the hot season, whilst during the autumnal months, when the ranges of the thermometer are greater, a diminution is reported.

In the former it is accounted for consequent on exposure till a late hour of the day during the annual course of musketry practice, and dry condition of the black soil during the latter months, which permitted of little or no exhalations therefrom.

Hospital.

The same as reported on last year; yet increased accommodation is in progress,—a great desideratum for both regiments located at Mhow.

The want of hospital accommodation was commented on in last report.

Water-supply.

Good. The paucity of rain-fall, however, may interfere with its sufficiency during the ensuing hot weather.

41. *H. M.'s 16th Regiment N.I.*—This is another regiment stationed at Mhow, and the report endorses that of the Medical Officer in charge *H. M.'s 10th Regiment N. I.* in relation to a diminution of sick, and healthy status of the men, and, like the latter regiment, gives its detachment towards garrisoning Indore, and during the Camp of Exercise gave two companies for temporary duty at Asirghar.

These two diseases gave 300 of a total of 835 treated during the year; and, as in the 4th

Fevers and Chicken-pox.

Rifles, the largest number of admissions was in October, the other diseases being of the normal character—rheumatism, lung affections resulting from cold, diseases of the eye and alimentary canal, and cutaneous

diseases; and of 148 under the head of wounds and contusions, no less than 123 were from shoe injuries, and of these, I have remarked in the preamble, this regiment is not singular in this respect; all are alike.

Variola.	This appeared in one instance only, that of a recruit boy who had been vaccinated. Recovery favourable.
Casualties.	None in hospital. One man died on parade from heat apoplexy.
Lines.	Good; also sanitary condition.
Hospital.	The same as H. M.'s 10th Regiment N. I., and the same remarks hold good.
Water-supply.	Good. Other wells are being dug to meet risk from small amount of rain-fall.
Vaccination.	Strictly attended to.

42. *Detachment 10th and 16th Regiments N. I.*—At Indore the Mhow Native troops alternately provide detachments for garrison duty every six months. Average strength 234.

Health.	The general health of the details was good, though more sickness prevailed than in 1872—chiefly the result of a mild type of ague.
Epidemic.	None.
Hospital.	A new hospital for 8 patients has been built and occupied since last report;—somewhat small by comparison with the detachment.
Vaccination.	Carefully carried out.
Water-supply.	Good.
Casualties.	None.

43. *H. M.'s 22nd Regiment N. I.*—This regiment had garrisoned Nimach for three years.

One wing marched *via* Dohud to Baroda in December last, and the other followed in the succeeding month in relief of H. M.'s 4th Regiment N. I. (Rifles).

Health.	The health of the men has been tolerably good.
Casualties.	2 only—one pneumonia and the other suicide.
Fevers.	Chiefly of the intermitting type prevailed (less than last year) and, as at other stations, during the autumnal months, October specially.
Conservancy.	The Medical Officer in charge does not attribute the disease to any defective measures in the lines, as these are kept clean, and drainage well attended to.
Water-supply.	Good and sufficient, save in hot months.

In last year's report I made reference, para. 62, to a tank or lake the bund of which had been carried away by the flood, recommending its repair, and if carried out the water-supply will most probably be prolonged.

Epidemic.	None.
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44. *H. M.'s 23rd Regiment N. I.*—The report from this regiment is also favourable, save in the months of September, October and November; yet the admissions were 690 less in 1873 than in the previous year, and those from fever 588 less than in 1872,—a very marked improvement, one only fatal. The type of disease mild by comparison, though a few cases occurred among the recruits of the season.

Other Diseases.	These were small by comparison, and not worthy of comment.
Veneral.	Of a mild form and few.
Variola.	This was prevalent in the bazaar, chiefly among children; and prohibition to enter was advised. 2 cases only occurred among the men.
Vaccination.	Regularly carried out.

45. *H. M.'s 25th Regiment N. I.*—This regiment alternately gives an exchange of wings to Augur, and has been stationed at Mehidpur, its head-quarters, since 1872. Mehidpur, proverbially a sickly station consequent on the nature of the soil—black—which retains moisture for several months succeeding the rains and floods, giving out, after sunset, its cold damp emanations, thus producing fevers, diarrhoea, and dysentery.

This appears to be the only regiment which has suffered more largely than in the previous year, since in 1872 of an average of 311 men, the admissions large as they were, viz. 913, are by comparison small to the one under review, viz. 1,435, from an average strength of 337 men; yet the mortality was small—3, one an accident from falling into a well and fracturing the skull, &c.

The chief cause of this increase may be attributed to fever and dengue, and this latter disease, as well known, sparing but few, the result being 223 admissions; whilst fever gave the large amount of 839, the union an equivalent considerably more than two-thirds of the entire sickness in the regiment.

Diseases of the alimentary canal and lungs give, respectively, 82 and 54 admissions, and, doubtless, from similar causes to those productive of fever; since the sepoy, save on duty, is very scantily clothed.

Diseases.

Epidemic.

Variola.

Vaccination.

Latrines.

46. *Wing H. M.'s 25th Regiment N. I.*—This station (Augur) is a contrast to Mehidpur; it is a healthy, dry, well-drained, compact, little cantonment.

Hospitals.

Diseases.

Casualties.

Variola.

Vaccination.

None save dengue.

Although prevalent in the villages, yet only 2 cases occurred in the lines among the families.

This has been carefully carried out, though the lymph as times was not satisfactory

Trench; reported unsatisfactory.

A new one has been erected and reported on favourably; situation on elevation.

These have been in excess of 1872, chiefly fever of a very mild type.

1 death only, and this in a man recently returned from furlough.

Prevalent in the native city; but no case in the wing.

This has been carried out satisfactorily.

47. *Staff and Details, Mhow.*—The hospital accommodation, as reported last year, was formerly occupied by the Royal Horse and Foot Artillery sick. Bomb-proof, and considered good for Europeans; perhaps a few additional windows, as suggested by the Medical Officer, might be an improvement.

The sudder bazaar, which has been increasing and multiplying for years past, contains the enormous population of 20,000; it is reported in a fairly sanitary condition, and is usually free from epidemics. Improvements are being made towards new and broad streets, which will tend to greater ventilation.

Bazaar.

The drainage, the more essential of the two, is now under consideration, but will not be carried out till completion of the new cantonment survey.

Drainage.

Some anxiety exists in reference to the supply during the hot season, consequent on deficient rain-fall, but a committee is said to be engaged to meet and compete with future wants and requirements.

Water.

This is carried out, as in most cantonments, partially by the dry-earth system in built-up latrines, and partially by trenches, the sewage being extensively used for gardens, but result of products not mentioned.

Conservancy.

Food

Supplied apparently abundant, though variable in rate of price; quality good.

A new dhurumsalla near the railway station should be erected; the old one, consequent on increased buildings, originally outside the town, is nearly central at present; but a case of cholera having occurred in it during 1872, has since then been closed. If every building where a case of cholera occurred was so treated, some difficulty would ensue. A dhurumsalla, however, should ever be *extra muros*.

Defects.

The hot weather was prolonged, and rain-fall deficient during the year under report, 29 inches against an average over ten years of 34 inches 5 cents.

Climatic.

During the month of August vaccination, as is usual in excessively hot weather, afforded less satisfactory results, and by consequence no lymph was available in October; but it was resumed in November, when

Vaccination.

the results were good. Yet there was a goodly show of operations, 680 during the year (primary). The failures, however, were large—166, probably from causes assigned above.

There was a laxity, notwithstanding the prevalence of small-pox in the bazaar, on the part of the residents to bring their children for vaccination.

Commenced in January, terminating in the warm season, and arrangements made towards segregation; but this was not popular, and never will be.
 Variola 123 cases in the varied forms were treated, 14 of which proved fatal.

The type in this disease, of which 225 were treated, with 2 casualties only—one brought to hospital in a very exhausted state, the other from disease contracted in the jungle on the line of march—has been less severe than in 1872, though some very obstinate, resisting all manner of treatment, even liq. arsenicalis pushed to 1-drachm doses, subcutaneous injections of quinine, &c.
 Ague.

48. As remarked in last annual report, this is the only approach to an appropriate hospital of this description within the two divisions.
 Lock Hospitals, Mhow.

This institution has now entered on its septennial existence, and during each year the number of registered prostitutes was on the increase; that for the past year exceeds the previous by 2 only. Nevertheless a smaller number removed their names from the register, viz. 42 against 52 in 1872, whilst the number actually registered on the 1st January last exceeds by 12 that of the previous year. But, as remarked by the Medical Officer in charge, any spread of venereal disease among the troops does not arise from want of zeal or laxity in vigilance on the part of the lock hospital, but from the operation of the Contagious Disease Act being limited to cantonments solely, the Government of India having declined to sanction its extension to the three-miles' radius.

A single, well-lighted, and ventilated ward, capable of accommodating 12 patients; yet a second one of same size is under construction.
 Hospital.

This is held fortnightly at the hospital by the Medical officer, and the majority of women are said to be regular in attendance.
 Inspections.

The house of every registered prostitute in the bazaar is visited once a month on an uncertain date, in order to enforce cleanliness, and a supply of water allowed for personal ablution.
 Visits.

The average number of females treated was 14.5, against 19.7 in 1872.
 Treated.

The average number of European soldiers treated for venereal, 3.80 against 5.08 in 1872, is so far satisfactory.

Sufficient in quantity and good in quality.
 Diet.

A monthly registration fee of one rupee on all registered prostitutes, sanctioned by the Cantonment Committee in September 1872 to meet, in some measure, the heavy outlay for diet, and which promised to prove a valuable addition to the funds, has been discontinued consequent on receipt of a prohibitory order from the Government of India.

49. The number of prostitutes on the register during the year was 101, at present on the list 70, and the average fortnightly attendance at inspections 27.8.
 Ahmedabad.

64—34 gonorrhœa, 27 primary syphilis, 1 secondary ditto, and 2 condyloma.
 Treated.

The Act, heretofore limited to cantonments, having been extended to the city of Ahmedabad and 27 adjacent villages, the monthly average of registered prostitutes have risen from 10 to 62, and admissions into hospital from 1½ to 3½—a very slight increase.
 Increase and Cause.

50. The total, including 3 remaining from 1872, treated during the year was 240,
 Disa. the average strength of registered prostitutes 30·1, and daily
 average sick 4·5.
- Admissions. 237, being 60 more than in 1872.
- Diseases. Mild leucorrhœa, and one case of syphilis.
- Inspections. Weekly, on Saturdays, by Medical Officer in charge.
- Nasirabad. 51. 116, inclusive of 3 remaining from previous year,—an
 increase of 25 over 1872.
- Diseases. Gonorrhœa, syphilis primary, simple ulcer, leucorrhœa,
 and bubo.
- Inspections. Fortnightly. One special examination held in November
 consequent on venereal being prevalent among the soldiers
 H. M.'s 59th Regiment.
- Nimach. 52. 122, including 3 remaining from the previous year.
- Diseases. Syphilis, bubo, chancre, &c.
- Inspections. Fortnightly.
- Hospital. A wretched shed; site excellent.

ANNUAL RETURN OF SICK.

ANNUAL RETURN of Sick of Native Troops in the Northern and Mhow

Stations.		Strength.		Remained.	Admitted.	Total.	Discharged.	Died.	Remaining.	Total.	Percentage.			1872.	
		Europeans.	Natives.								Treated to Strength.	Deaths to Strength.	Deaths to Treated.	Admissions.	Casualties.
Ahmedabad	3rd N. I.	7	609	21	1,494	1,515	1,498	5	12	1,515	248.7	0.8	0.3	F.	
	9th N. I.	5	472	12	650	662	656	3	3	662	140.2	0.6	0.4		
Disa	24th N. I.	6	619	18	2,086	2,104	2,069	12	23	2,104	339.9	1.9	0.5		
	2nd Lt. Cavalry	6	301	4	634	638	620	4	14	638	211.9	1.3	0.6		
Baroda	4th Rifles	6	644	16	1,305	1,321	1,306	1	14	1,321	205.1	0.1			
Rajkote	18th N. I.	6	619	14	947	961	927	3	31	961	155.2	0.4	0.3	F.	
	Squadron 2nd Lt. Cavalry	1	118	2	96	98	97		1	98	83.0				
Dwarka	Detacht. 9th N. I.	1	89	4	149	153	148		5	153	171.9			F.	F.
Burda Chowkey	Ditto		90	3	292	295	287	1	7	295	327.7	1.1	0.3	F.	F.
Sadra	Detacht. 3rd N. I.		48		21	21	21			21	43.7				
	Detacht. N. I.		50	1	42	43	43			43	86.0				
Mhow	10th N. I.	5	494	15	881	896	876	3	17	896	181.3	0.6	0.3		
	16th N. I.	8	646	9	917	926	891	12	23	926	143.3	1.8	1.3		
Indore	Details	2	233	15	352	367	364		3	367	157.5			F.	
Mehidpur	25th N. I.	5	311	23	910	933	912	6	15	933	300.0	1.9	0.6	F.	
Augur	Wing 25th N. I.	3	248		288	288	279	1	8	288	116.1	0.4	0.3	F.	
Nimach	22nd N. I.	6	638	82	1,163	1,245	1,186	6	53	1,245	195.1	0.9	0.5		
	3rd Lt. Cavalry	5	309	13	387	400	381	1	18	400	129.4	0.3	0.2		
Nasirabad	23rd N. I.	8	626	34	1,891	1,925	1,861	6	58	1,925	307.5	0.9	0.3		
	Squadron 3rd Lt. Cavalry	1	133	10	196	206	204	1	1	206	154.8	0.7	0.4		
Total for 1872		81	7,297	296	14,701	14,997	14,626	65	306	14,997	205.5	0.9	0.4		

The red-ink letters show the contrasts in sickness

* This corps is not

Divisions for the Years ending 31st December 1872 and 1873.

1873.		Stations.	Strength.		Remained.	Admitted.	Total.	Discharged.	Died.	Remaining.	Total.	Percentage.			
Admissions.	Casualties.		Europeans.	Natives.								Treated to Strength.	Deaths to Strength.	Deaths to Treated.	
F.	...	Ahmedabad ...	3rd N. I. ...	7	642	12	957	969	936	8	25	969	150.9	1.2	0.8
			9th N. I. ...	5	569	3	525	528	514	7	7	528	92.8	1.2	1.3
F.	F.	Disa ...	24th N. I. ...	7	617	23	1,034	1,057	1,032	7	18	1,057	171.3	1.1	0.6
			2nd Lt. Cavalry...	5	293	14	313	327	319	2	6	327	111.6	0.6	0.6
F.	...	Baroda ...	4th Rifles ...	5	620	14	947	961	947	1	13	961	155.0	0.1	0.1
			18th N. I. ...	8	625	31	885	916	889	4	23	916	146.5	0.6	0.4
...	...	Rajkote ...	Squadron 2nd Lt. Cavalry...	1	111	1	142	143	139	...	4	143	127.9	...	...
			7th N. I. *	4	193	19	300	319	311	2	6	319	165.2	1.0	0.6
...	...	Dwarka ...	Detacht. 7th N. I.	1	87	...	181	181	178	1	2	181	208.0	1.1	0.5
...	...	Burda Chowkey ...	Ditto ...	...	89	7	360	367	357	2	8	367	412.4	2.2	0.5
F.	...	Sadra ...	Detacht. 3rd N. I.	...	47	...	29	29	28	...	1	29	61.7	...	...
			Detacht. 9th N. I.	...	41	...	15	15	15	...	...	15	36.5	...	...
F.	F.	Mhow ...	10th N. I. ...	6	499	17	835	852	841	1	10	852	170.7	0.2	0.1
			16th N. I. ...	6	691	23	812	835	819	...	16	835	120.8	...	...
...	...	Indore ...	Native Details ...	1	234	3	424	427	415	...	12	427	182.4	...	...
...	F.	Mehidpur ...	25th N. I. ...	5	337	15	1,435	1,450	1,412	2	36	1,450	430.2	0.5	0.1
...	...	Augur ...	Wing 25th N. I. ...	2	268	8	427	435	418	1	16	435	162.3	0.3	0.2
F.	F.	Nimach ...	22nd N. I. ...	6	608	53	1,178	1,231	1,205	2	24	1,231	202.4	0.3	0.2
			3rd Lt. Cavalry...	3	280	18	299	317	307	1	9	317	113.2	0.4	0.3
F.	F.	Nasirabad ...	23rd N. I. ...	7	616	58	1,201	1,259	1,239	4	16	1,259	204.4	0.6	0.3
			Squadron 3rd Lt. Cavalry.	1	110	1	148	149	143	2	4	149	135.4	1.8	1.3
F.	F.	Total for 1873...	.....	76	7,384	301	12,147	12,448	12,153	45	250	12,448	168.6	0.6	0.4

during 1872 and 1873. "F." shows for in favor.

included in the total.

SPECIAL REPORT ON THE OUTBREAK OF SMALL-POX AT NASIRABAD.

The outbreak of variola at Nasirabad among the bazaar people, as reported on by the military authorities, would appear to be one not dissimilar to outbreaks in former years, at other stations, during the cold weather.

The disease showed itself in the last days of November; yet at this period the Staff Surgeon found it somewhat difficult to discriminate between it and chicken-pox, so modified was it in form.

3. It is supposed to have originated by immigrants from surrounding Native States, but no proof is attached to this statement; while my own opinion is based on atmospheric influence, and not supposed immigration.

4. The disease would appear to have been almost entirely confined to young children, and in a modified form chiefly, not a single adult having been reported.

5. The poorer classes, and necessarily under-fed and ill-clothed, would appear to have been more numerous affected; yet, strange to relate, in a disease so constantly designated "contagious", seldom more than one of a family in their confined huts, and that the youngest and possibly unprotected by vaccine, was affected. Nevertheless the disease was found, in a great many cases, among the Buneahs, or better-to-do people, who declined having their children vaccinated; these are low feeders, cereals being their chief diet.

6. As in all reports on this disease there was a marked difference in virulence in cases occurring after vaccination and the non-vaccinated; the former being mild in character, the latter more severe, and frequently of the confluent variety.

7. It is an error to suppose that the duty of the vaccinator, whether European or Native, is one without difficulty or careful discretion; for castes can but with the greatest trouble be persuaded to allow their children to be operated on. The poor and low caste seem to be almost powerless under the influence of police pressure, and their children are carried, *volens volens*, to the hospital; while among the better classes, who are non-residents of the place, and here only for temporary trade, when the pressure is put on, deport their families and children to their homes in foreign territory.

8. The age of three months is, I believe, the usual time, under England's Act, for performing the operation, and many of those reported unvaccinated were under that age.

9. I met on my tour an instance of a vaccinator with a police peon who were both cut down, whilst in performance of their duty, by a Mahomedan fanatic in the Panch Mahals.

10. I do not see anything special to remark upon. We have had severer outbreaks at Aden; all went on well when the warm season set in.

I attach a tabular statement showing the number of cases and result from the 24th November 1873 to 28th February 1874, since which it has disappeared.

STATEMENT showing the Number of Small-pox Cases and Result in Cantonment of Nasirabad from 24th November 1873 to 25th February 1874.

Station.	Total of Small-pox Cases.					Total of Recovered.				Total of Deaths.				Total of Left the Station without being seen.				Total.
	Vaccinated.		Not vaccinated.		Total.	Vaccinated.		Not vaccinated.		Vaccinated.		Not vaccinated.		Vaccinated.		Not vaccinated.		
	Males.	Females.	Males.	Females.		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	
Nasirabad	81	73	122	116	392	72	57	101	93	8	16	21	22	1	...	...	1	392
Total.....	154		238		392	129		194		24		43		1		1		392

SIND DISTRICT.

Average strength present during the year	...	...	2,950.
Average daily sick per cent. to the average strength	...	...	3.11.
Ratio of mortality per cent. to the average strength	...	...	1.09.

H. M.'s 27th Regiment N. I.

KURRACHEE.—In Medical Charge—Surgeon W. NOLAN, M.D.; Strength 657.

The health of the regiment during the year was, on the whole, good; the total number of admissions from all causes having been 655 against 985, 460, 501, 667, 749, and 495 in the six preceding years.

The principal diseases in order of frequency were—ague 244, contusions 136, diseases of the digestive system 73, diseases of the respiratory system 56, venereal affections 42, diseases of the cutaneous system 31, conjunctivitis 23, diseases of the cellular tissue 16.

The first of these, viz. ague, is and will probably be for a long time the chief cause of admission to Native regimental hospitals in Sind. Its cause is in many cases due simply to chill produced by exposure of the body, when heated, to cold, to want of proper precaution in dressing to suit a changeable climate, and not unfrequently to errors in diet. Local conditions of the air and soil no doubt contribute in some way to the production of ague; but attention to the rules of hygiene, avoidance of undue exercise, and regular habits are great safeguards against it.

Contusions are the next largest item. Of these, 111 were of the lower extremities, and would be more properly called shoe-bites. They are caused by badly-fitting boots, and by the friction of the gaiters which the men wear. The advantages of appearance, as far as this article of dress is concerned, are not counterbalanced by the loss of service which they entail. The abrasions of skin produced by them are not severe; but as a man who has any such hindrance to putting on his gaiter or boots is sent to hospital, his service is lost to the State for five, six, or seven days, there being no light duty which such men could easily perform.

Diseases of the Digestive System come next in point of frequency. Although, as a rule, little is known about the diet of patients previous to their admission to hospital, yet it is probable that unripe and often over-ripe melons, cucumbers, and such fruit act very largely in producing colic and kindred affections. Excessive smoking and opium-eating may be set down as another cause.

Diseases of the Respiratory System are met with in the cold months from November to March. In these months the cold at night is intense, and pleuritis, pluro-pneumonia, pneumonia, and bronchitis are met with. Cases of bronchitis, as a rule, recover, but pneumonia generally proves fatal from asthenia.

Venereal Diseases are becoming somewhat less frequent since the establishment of the lock hospital at Kurrachee, the total number of admissions having been 42 in 1873 against 47, 74, and 60 in the three preceding years. Of these 42, 23 were cases of gonorrhœa, 7 of secondary syphilis, 5 soft and 2 hard chancres.

Diseases of the Cutaneous System comprise furunculus, ulcers, herpes, eczema, pemphigus, and impetigo. Sind boils are not met with.

Diseases of the Cellular Tissue comprise abscesses, which are frequently met with in the axilla, on the neck, and in the perinæum.

There were 8 deaths during the year in hospital and 2 out of hospital. Of these, 2 were from pericarditis, 2 from bronchitis, 2 from pneumonia, 1 from general dropsy, 1 from calculus vesicæ, 1 from accident, and 1 from diarrhœa. One of the cases of pericarditis died out of hospital. *Post-mortem* examination showed the existence of old pericarditis, dilatation of the ascending aorta, and incompetent aortic valves.

26 children were successfully vaccinated during the year. Of these, 17 were males and 9 females; 11 were Hindus and 15 were Mussalmans. 25 were under 1 year, and 1 was above that age.

There was no cholera, small-pox, or any other epidemic.

71 recruits joined during the year, 25 men were invalided, and 4 men were discharged the service with a gratuity.

The regiment is composed of 547 Mussalmans, 122 Hindus, and 3 of other castes.

There were 573 Mussalmans admitted to hospital during the year, and 82 Hindus.

The rain-fall was 1 inch and 42 cents.

H. M.'s 29th Regiment N. I.

HAIDARABAD.—In Medical Charge—Surgeon-Major E. MORRIS; Strength 641.

The standard of health maintained throughout the year under review in the 2nd Beluch Regiment (average strength as per margin) may be considered high.

665 were admitted and 39 remained in hospital on the 31st December 1872, making a total of 704 treated from 1st January 1873 to 31st December 1873. Of the above total, 669 were discharged to duty, 8 proceeded on sick certificate for periods ranging from 3 to 8 months, 7 died, 12 were invalided, 3 discharged as unfit for further service, and 20 remained under treatment at the close of the year.

Viewing the general health of the regiment comparatively with the preceding year, I am happy to be able to report a marked and most favourable contrast as evidenced by the number of admissions, amounting to the large total of 1,133 in 1872, against 665 in 1873.

The cause of this marked improvement in health is not far to seek. The river Indus in its periodic inundations exercises on the sanitary condition of Haidarabad an influence so marked as to determine whether any given year shall be healthy or unhealthy. The boundary of inundation varies with each recurring year. Sometimes the overflow is so great as to flood to an unusual extent the low-lying ground to the south and west of the cantonment, over which the prevailing winds blow; while, on the other hand, it occasionally, though not frequently, happens that the annual flooding falls considerably short of the ordinary limit of inundation. The year 1873 was exceptional in the latter respect: the superficial area usually covered by the waters of the Indus was in extent so diminished as materially to interfere with cultivation,—a circumstance which fully explains the low ratio of admissions from diseases of miasmatic origin. I shall briefly refer to the principal classes of disease in their order of frequency, and compare them with the preceding year.

Under Sub-Division A of General Diseases, but limited to the febrile group of that sub-division, the admissions were 283 in 1873, against 783 in 1872, or nearly one-third less.

Diseases of the Digestive System prevailed in the ratio of 68 admissions in the year under review to 42 in the preceding year.

The admissions from injuries, general and local, were 64 against 69 in 1872.

Diseases of the Cutaneous System numbered 50 admissions against 68 in 1872.

The admissions from diseases of the respiratory system show a total of 49 against 32 in 1872.

Diseases of the Cellular Tissue increased in the proportion of 23 admissions in 1873 to 13 in 1872, while diseases of the eye decreased in the ratio of 22 in 1873 to 41 in 1872.

There was a total absence of dengue, which prevailed in an epidemic form in 1872; and of cholera or small-pox there was not a single case.

Diseases of the Respiratory Organs contributed largely to the mortality of the year, 3 cases of pneumonia proving fatal in 15, 5, and 4 days respectively, and 1 case of bronchitis in 54 days.

Of the remaining 3 fatal cases, ague, diarrhoea, and phthisis are respectively recorded as the immediate cause of death.

H. M.'s 30th Regiment N. I.

JACOBABAD.—In Medical Charge—Surgeon J. A. HOWELL; Strength 595.

The health of the regiment for the year under review compared with the last 3 or 4 years has been very fair.

The average strength of the regiment was 595, number of admissions 624, and deaths 11.

The following table shows the difference of the health of the regiment for the year 1873 as compared with the previous year :—

	Year.	
	1872.	1873.
Average strength	510	595
Admissions	931	624
Deaths	19	11
Treated to strength	189	113·2
Deaths to treated	1·96	1·6
Proportion of admissions to strength per cent	182·5	104·37
Proportion of deaths to strength per cent	3·7	1·85
Average number of daily sick	29	16

The causes of the regiment being healthier this year are that malaria has been less rife, and consequently the number of admissions from fever have diminished considerably. The cold weather also set in gradually, and has not been very severe.

Prevailing Diseases.—Malarious fever, skin diseases, and chest affections. There were 315 admissions from fever during the year as compared with 504 for 1872. The type of the disease was very mild, chiefly intermittent of the tertian form; there were only 2 cases of remittent fever. The usual plan of treatment was adopted, and there was no casualty.

Chest Affections.—41 admissions—16 from bronchitis, 18 from pneumonia, and 1 case of phthisis. Of the 11 deaths 8 were from pneumonia. In all the cases that succumbed, both lungs were extensively affected, and in all the disease progressed very rapidly.

Skin Diseases.—Chiefly ulcers and boils; 69 admissions from this cause. Boils are very severe in the hot weather, and appear in crops, some of them terminating in ulcers. Most of the cases of contusions, chiefly arising from shoe-bites, also turn into intractable sores. Besides these diseases, rheumatism of a chronic form is pretty prevalent, due in most cases to syphilis. Several of the invalids of this season obtained their discharge, chiefly owing to syphilitic rheumatism. There are very few admissions under the heading "venereal", but this does not show the absence of this evil. It is very prevalent in this station, but those affected prefer being treated by Native hakims, and only come to hospital when they cannot help themselves.

A lock hospital is a great want.

Deaths.—Total number 11. Besides the 8 from pneumonia there was 1 from apoplexy; the other 2 were from debility, one dying just before he was about to be invalided, and the second after he had passed the Board.

Sick Certificate.—10 men proceeded on sick certificate, chiefly to Hindustan, each on 6 months' leave; most of them have returned greatly benefited by the change. No European officer went home on sick certificate or furlough.

Invalided.—31 men invalided, 29 of the number having received pensions; the other 2 were discharged with a gratuity. Many of the invalids were declared unfit from simply being worn out from long residence in this very unhealthy station; the majority had just completed 15 years' service, but had to leave, being prematurely worn out.

Recruits.—63 admitted during the year.

Marching.—With the exception of a few men being on outpost duty, the regiment did not move out of camp.

Vaccination.—Total number of vaccine operations 47—29 of which were primary, and 18 revaccinations; there was only 1 unsuccessful case amongst the primary, and 3 cases amongst those revaccinated.

Hospital Accommodation.—No change during the year; the building is not large enough to accommodate the number admitted in the cold weather. A stove has been erected in hospital, and is a source of great comfort to the sick.

Latrines.—The dry-earth system is carried out with good effect.

Temperature in the Shade.—Maximum 106°, minimum 45°.

Rain-fall.—4 inches, most of which fell in August. Small quantities fell in December and January.

H. M.'s 1st Sind Horse.

JACOBABAD.—In Medical Charge—Surgeon S. O'B. BANKS; Strength 355.

Average strength present during the year ... 355.

Average daily sick to the average strength ... 3.9.

Ratio of mortality per cent. to the average strength ... 1.6.

The medical history of the regiment for the year ending 31st December 1873 has not much of a novel nature to present.

The following table shows the diseases by which admissions and deaths were caused during the year:—

Diseases.				Admissions.	Deaths.	Remarks.
<i>General Diseases.</i>						
A.	...	...	...	318	1	
B.	...	...	...	39	...	
<i>Local Diseases.</i>						
Respiratory system ...				19	2	
Nervous system ...				1	...	
Eye ...				6	...	
Ear ...				2	...	
Digestive system ...				38	3	
Urinary system ...				5	...	
Cellular tissue ...				4	...	
Cutaneous system ...				63	...	
Condition not necessarily associated with local or general diseases ...				1	...	
Injuries { General ...				2	...	
{ Local ...				72	...	
Total ...				570	6	

Malarious fever in its various forms gave the greatest number of admissions, 314 in number—

January ...	44	July ...	12
February ...	23	August ...	14
March ...	21	September ...	17
April ...	35	October ...	50
May ...	22	November ...	38
June ...	11	December ...	27

Next in frequency came diseases of the cutaneous system, 63 in number—

Cutaneous system ...	...	{	Eczema	...	...	5
			Ulcer	...	...	15
			Boil	...	...	32
			Whitlow	...	...	11
			Total	...		63

Then diseases of the—

Cases of the—								
Digestive system	...	...	{	Dysentery	...	...	17
				Diarrhoea	...	...	6
				Colic	...	...	4
				Jaundice	...	...	3
				Splenitis	...	...	8
Total							38	
Respiratory system	...	...	{	Asthma	...	...	1
				Bronchitis	...	...	4
				Pneumonia	...	...	14
				Total		..	19	
Eye	...	...	...	Conjunctivitis	...	...	6
Cellular tissue	...	...	{	Dracunculus	...	...	2
				Abscess	...	...	2
				Total		...	4	
Urinary system...	...	...	...	Gonorrhœa	...	...	5
Ear	...	...	...	Otitis	...	...	1
Nervous system	...	...	...	Coup de soleil	...	...	1
Conditions not necessarily associated with local or general diseases				{	Debility	1
...						
Injuries	...	...	{	Local—			
				Contusion upper extremities.	...	...	17
				Wound	...	...	1
				Contusion lower extremities.	...	...	54
				General burns	...	...	2
Total							74	

Deaths.—6 deaths took place in hospital—2 from pneumonia, 1 ague, and 3 dysentery; out of hospital 6—3 from ague, 1 dysentery, 1 heat apoplexia, 1 gun-shot wound. It will be observed that the deaths from pneumonia are very small, only 2 out of 14 cases, which is probably owing to the attacks being of a milder nature.

Dysentery gives 3 deaths out of 17 cases; ague gives 1 death.

The deaths out of hospital (as far as I can learn) were caused by the following diseases:—From ague 3; 2 of these 3 cases were on leave, and 1 on outpost duty. From dysentery 1 on leave. From gun-shot wound (self-inflicted) 1. From heat apoplexia 1; this death took place in July, on the march from Jacobabad across the desert to Oach and Shapore. A detachment of 40 sabres under the command of a Native officer left this on the 17th July, marched to Oach across the desert—a distance close on 30 miles. 15 men were reported sick with symptoms of sun-stroke, all of whom recovered, except one. What such a march conveys, can only be understood by those who have been in the desert at that time of the year. Of the 15 men reported sick 1 has been invalided, and most likely all have sown the seeds of future diseases.

Health of the regiment continues in a most unsatisfactory condition, which is not at all to be wondered at, considering Jacobabad and its surroundings. Water everywhere. Indus water got into camp on the 17th May. The Jacobabad floods of 1873 commenced on the 12th August, an account of which it is not my province to give. However, in connection with the floods, I may mention that water can now be struck at 12 feet, and appears to be rapidly coming to the surface, which most likely has something to do with the large increase of dysentery which has now become quite common here. The men, as I have before remarked, are wanting in stamina and physique to a most marked extent.

I have only to add, whilst on this subject, a change for the regiment to a better climate is the only thing I can suggest, or believe could in any way be of service. Hygienic measures carried out in all their entirety cannot improve the health of a regiment decimated from diseases and long service in a deadly climate.

Lines.—Good lines are now in course of construction, built, I believe, on a standard pattern.

Hospital.—Another ward recommended to be built.

Latrines.—In the hospital the dry-earth system is used, supplemented with disinfectants.

The Lines.—Latrines are situated between the horses' and the men's houses, the excreta is removed night and morning, no vessels of any sort are used in the latrines, consequently the soil is impregnated with filth.

Water-supply from wells and from nullahs when the Indus water comes into camp.

It is to be feared that in many instances the well water becomes contaminated from the surface water during the floods, and from the dirty habits of the men. The protected wells give good water to the taste, but about March they get brackish. As soon as the Indus water comes in, the saltish taste disappears.

European Officers, 8 in number. 2 are on sick leave to Europe; most of the other officers have been ill, and obliged to go away for change during the year, as the only means of recruiting their health.

Vaccination has been successfully carried on during the year.

Temperature.—Thermometer showed a maximum of 107°, minimum 44°.

Rain-fall.—Rain fell in January, May, August, and December,—4 inches 17 cents in all.

Winds.—South-east and north-east from May to October; north-west and north-east from November till April.

Recruits.—31 entertained during the year.

Invaliding.—During the year 18 were invalided, in 1872 17, in 1871 18, in 1870, 24. It will be seen from the above that out of a strength of 493 about 20 men are pensioned yearly, or discharged with a gratuity.

H. M.'s 2nd Sind Horse.

JACOBABAD.—In Medical Charge—Surgeon S. O'B. BANKS; Strength 342.

Average present strength during the year..... 342.

Do. daily sick per cent. to average strength..... 4.3.

Ratio of mortality per cent. to average strength..... 3.2.

The medical history of the regiment for the year 1873 does not present much of a novel nature, the admissions have been fewer, but deaths nearly the same as last year.

The following table shows the diseases by which the admissions and deaths were caused during the year :—

Diseases.						Admissions.	Deaths.	Ratio per 1,000.	
								Admissions.	Deaths.
General Diseases {	A. ... ..	...	...	...	...	217	2	634.5	5.8
	B. ... ..	...	...	...	...	13	...	38.0	...
Local Diseases. {	Nervous system	...	...	...	...	1	...	2.9	...
	Eye ... ..	...	...	...	...	1	...	2.9	...
	Respiratory system	...	...	...	...	14	5	40.9	14.6
	Digestive " ...	...	...	...	...	21	...	61.4	...
	Generative " ...	...	...	...	...	1	...	2.9	...
	Urinary organs	...	...	...	...	6	...	17.5	...
	Cellular tissue	...	...	...	...	21	2	61.4	5.8
	Cutaneous system	...	...	...	...	42	...	122.8	...
	Condition not necessarily associated with general or local disease					7	1	20.4	2.9
	Injuries { General	...	...	...	...	1	...	2.9	...
						45	1	131.5	29.
Total ...						390	11	1,140.0	32.0

Malarial Fever as usual gives the greatest number of admissions. Fever, as a rule, was speedily cured by the administration of quinine; in some obstinate cases the hypodermic injection was resorted to, with, I regret to say, not the same success which it has had in the hands of other officers. In some few and obstinate cases of malarial poisoning met with here nothing appears to have any effect but change. The admissions in each month of the year, arranged in numerical order, were as follows:—

September.....	19	March.....	10
October.....	46	April.....	20
November.....	37	May.....	7
December.....	20	June.....	6
January.....	20	July.....	3
February.....	20	August.....	8

Deaths in Hospital.—Ague 1, remittent fever 1, pneumonia 5, inflammation 1, abscess 1, debility 1, fracture of tibia alone (simple) 1.

Enthetic Diseases.—The number of admissions reported under this head amounted to 10—a decrease from the previous year of 6, of which 3 syphilis primary, 5 gonorrhœa, 1 bubo, and 1 orchitis.

Diseases of the Respiratory Organs furnished 2 bronchitis and 12 pneumonia.

Diseases of the Digestive System.—The number of admissions under this head amounted to 21, of which 1 ulceration of the gums, 14 dysentery, 1 diarrhœa, 4 colica, and 1 congestion of spleen.

Diseases of the Cellular Tissue furnished 21 cases, of which 3 inflammation, 17 abscess, and 1 dracunculus.

Diseases of the Cutaneous System furnished 42 cases, of which 32 ulcers, 4 boils, 4 whitlow, and 2 scabies.

Diseases of the Eye.—1 conjunctivitis.

Injuries.—46 cases, of which 1 burns and scalds, 36 contusions, 5 wounds, 1 dislocation of shoulder, 1 fracture of fore-arm radius (simple), 1 fracture of tibia alone (simple), and 1 sprain.

Lines.—New ones have just been built, which appear to be desirable in every way.

Hospital.—I have recommended another ward, as in the coldest and most sickly season patients have frequently to be placed in the verandah.

Water-supply, Source and Quality.—Water is obtained from wells and nullahs (for six months) during the inundation. The water is apparently good to the taste. No analysis has been made of the water here that I am aware of, but it is doubtless rich in chlorides from the nature of the soil.

Latrines.—In the hospital the dry-earth system is used, supplemented by McDougall's powder.

Invalids.—12 men were invalided during the year.

Recruits.—36 were entertained.

The extremes of temperature with the amount of rain for the months of the past year are as follows:—

Months.				Maximum.	Minimum.	Rain.	
						In.	c.
January 1873	...	...	...	76 °F.	38 °F.	1	0
February	...	...	...	82	54	.....
March	...	...	...	91	63	.....
April	...	...	...	94	71	.....
May	...	...	...	102	75	0	75
June	...	...	...	105	85	.....
July	...	...	...	103	88	.....
August	...	...	...	98	86	2	28
September	...	...	...	95	80	.....
October	...	...	...	87	62	.....
November	...	...	...	76	58	.....
December	...	...	...	73	50	0	14
Total				.....	.....	4	17

European Officers.—2 are on sick leave in England, and most of the others were obliged to take short leave during the year.

H. M.'s 3rd Sind Horse.

JACOBARAD.—In Medical Charge—Surgeon C. MACRURY, F.R.C.S.; Strength 360.

I assumed medical charge of the regiment on 3rd April 1873.

The admissions during the year were 786, remained 26, total number of cases treated 812, deaths 6. Prevailing diseases—ague, contusions, ulcers, boils, abscesses, and rheumatism. The causes of deaths of the 6 cases that proved fatal were, respectively, ague, remittent fever, encephalitis, hemiplegia, pneumonia, and rupture of the heart. 3 of the deaths occurred previous to my taking over charge; two sowars died out of hospital, causes of death unknown. Dr. Carswell was accidentally killed by the premature explosion of a mine in the hills on the frontier on 14th March 1873. No European officer proceeded on furlough or sick certificate during the year.

State of the Regiment on the 31st December 1873.

European officers	...	...	...	...	...	No. 7
Strength of the regiment—Natives	...	...	...	...	...	493
Hindus 63, Mussalmans 429, Christian 1	...	...	...	...	...	493
Married men 363, children 77	...	...	...	...	...	440
Recruits at riding drill 36, recruits at foot drill 17	...	...	...	...	...	53
Men under two years' service	...	...	...	...	...	95
Courts-martial during the year	...	...	...	...	...	3
Strength of guard—by day 40, by night 10	...	...	...	...	...	50
Nights in bed	...	...	...	...	...	5
Regimental school (Persian and Urdu) boys...	...	...	...	...	...	21
<i>Native Establishment.</i>						
Hospital Establishment	...	...	...	...	...	11
Chowdri	...	...	...	...	...	1
Peons	...	...	...	...	...	7
Dulie-bearers	...	...	...	...	...	32
Muccadam	...	...	...	...	...	1
Syces	...	...	...	...	...	245
Bullock bhisties, per troop 1	...	...	...	...	...	6
Workshops	...	...	...	...	...	12
Barbers	...	...	...	...	...	12
Dhobis	...	...	...	...	...	12
<i>Latrine and Line Conservancy.</i>						
Filth carts	...	...	...	...	...	6
Sweepers	...	...	...	...	...	14

	Per 100.	Per 1,000.
Proportion of treated to average strength	225.5	2,255.5
Do. of sick to average strength	3.9	39.1
Do. of admissions to do.	218.3	2,183.3
Do. of deaths to do.	1.6	16.6
Do. of do. to treated	0.7	7.3

Total admissions for 1873..... 786

„ deaths for „ 6

Average number of daily sick for 1873... 14.1

The hospital is imperfectly ventilated, and the accommodation it affords is insufficient. The floor is on a level with the surrounding ground, and the building is hemmed in on all sides, but more especially in the direction of the prevailing wind in the hot season by the family lines of the 2nd Sind Horse, the hospital assistants' quarters, dulie-bearers' lines, and hospital privy, which is small, faulty in construction, and dangerously near the hospital assistants' house.

I attach a sketch showing the outlines of the hospital buildings of the 2nd and 3rd Sind Horse. During the hot season the hospital was found to be excessively close, and the air inside always very hot and oppressive on account of its being roofed with hollow tiles, which are excellent conductors of heat. If there were a cluster of trees conveniently situated to the hospital to give sufficient shade to the patients in the day-time they could be treated in the open air for six months in the year, April to September, as Natives in Upper Sind prefer the shade of a tree to a house owing to the stillness of the atmosphere and the radiation of heat from the walls; even in the open air they constantly fan themselves with the small hand-punka which they invariably carry about with them. During the months of June, July, and August the inundation water had free access to the numerous open ditches throughout camp, in which all manner of filth accumulates, and which only dried up about the end of October. The atmosphere was loaded with moisture, and the temperature, generally about 92° at sunrise, became almost intolerable to Europeans; the constant action of the punka day and night, to agitate the air and drive away mosquitoes and sand-flies, being the only source of relief. There is neither bath-room, cook-room, nor dead-house attached to the hospital, and serious inconvenience is felt for want of them. As the men cannot afford to take a warm bath in their own quarters, it would be highly necessary to give each patient a hot bath in the cold season on admission into hospital; this would be very desirable in a sanitary point of view, as well as valuable in a therapeutic respect.

Two cook-rooms are indispensably necessary, one for Hindus and one for Mahomedans. At present, men suffering from ulcers, which requires absolute rest to the part affected, usually the lower extremities, have to walk several hundred yards for the purpose of cooking their meals in the lines, rendering the treatment and cure extremely unsatisfactory and tedious. A dead-house is also a desideratum of considerable importance, as I attended several courts of inquest during the hot season, where I was obliged to perform the *post-mortem* examination in the open air, under the shade of a tree.

In reply to official inquiries regarding hospital accommodation at Jacobabad, I have recommended that a new hospital on the standard plan be built on an eligible site, with accommodation for 10 per cent. of the strength of the regiment, at the minimum rate of 100 superficial feet and 2,000 cubic feet of space per patient; the present buildings to be handed over to the 2nd Sind Horse for hospital accommodation in addition to their own, as both hospitals are only separated by a partition wall. The space for each man in the pendalls is insufficient, and the ventilation is imperfect, as no provision is made for the horizontal movement of the air; each man keeps his saddle and accoutrements, as well as his cooking apparatus in his own apartment of the barracks, and this gives the pendalls and verandahs a crowded appearance. Detached huts properly constructed, with abundance of ground space, would, in my opinion, be much more suitable for the Native Army in India, especially in a sanitary respect. There are three latrines, with the usual cess-pits, saturating the surrounding ground with impure organic matter, situated in front of each row of pendalls, which are to be removed; and two latrines, one on each flank, are being constructed. The lines are kept scrupulously clean, and contrast favourably in this respect with the adjoining portion of the sudder bazaar.

The regiment marched round the outposts of Ghoranari, Sunuri, and Toj on 25th November to escort His Excellency the Governor of Bombay from Kussmore to Sakkar, and returned to Jacobabad on December 27th. During the march there was little or no sickness, and the men improved in general health; the only ailments being slight contusions, ulcers, and abrasions consequent on the long marches. The outpost pendalls are imperfectly ventilated, and the well-water at Ghoranari and Sunuri is brackish. Some of the men, having to sleep in the open air on the line of march, suffered from fever after a shower of rain at Shikarpar. In future they should be supplied with tents whenever they march in the districts, as the dew is very heavy at night in the cold season in Upper Sind, and is liable to give rise to ague and rheumatism.

During the months of October and November 24 cases of successful vaccination were registered. The regiment and camp followers are all protected by vaccination.

Rain-fall during the year 2 inches 35 cents.

Maximum temperature in verandah 113°.

Minimum temperature in verandah 45°.

ANNUAL REPORT OF THE SIND DISTRICT FOR THE YEAR 1873, BY J. R. MILLER, M.D., DEPUTY SURGEON GENERAL OF HOSPITALS.

1. At one time it was fully expected that a portion of the troops serving in the Sind District would have been required to join the Camp of Exercise established last year in the vicinity of Poona, but the difficulties and expense attending this arrangement precluded its being carried out. This is to be regretted, as a change of climate, even for the limited period this would have embraced, would not have been without its advantages, particularly to men so long exposed to the yearly-recurring poison of malaria as those serving in Upper Sind. The regiments, therefore, now named—

Native Troops in Sind.	27th Regiment N. I.		
	29th	do.	do.
	30th	do.	do.
	1st Regiment Sind Horse		
	2nd	do.	do.
	3rd	do.	do.

having neither been relieved by others from Bombay, nor exchanged stations with one another—as might have been done in the case of the infantry, and which was recommended in last year's report—will again furnish comments for the present one.

2. As a compensation, partly, in the absence of reliefs, it would be very desirable if the regiments could be sent into the adjoining districts during the cold season on a marching tour. Setting aside the experience to be gained from this practice, it would conduce greatly to the health of all ranks. The change of air, of scene, and daily exercise, could not fail to be beneficial to the men. It would help to brace them up, and enable them better to withstand the depressing effects of the hot season and the subsequent exposure to the malarious poison, which to a greater or lesser extent is always met with during and after the rains. As a case somewhat in point, I may mention that the 3rd Regiment Sind Horse left Jacobabad, on the 25th November last, to escort His Excellency the Governor of Bombay from Kussmore to Sakkar, returning to Jacobabad on 27th of the following month. During its absence there was no sickness, save slight contusions, abrasions, and ulcers consequent upon the daily marching, while the general health of the men was much improved. Another instance, although it does not strictly enter into the medical history of the military charges for 1873, I may be permitted here to notice, as it bears on the question of the utility of marching corps about in the cold season as a prophylactic measure. The 29th Regiment N. I., or 2nd Beluches, proceeded into the districts during this last cold weather. It was absent from Haidarabad from the 16th January to the 14th February; and the Medical Officer reports that the men were continually in good spirits, their health excellent, and a marked improvement was visible in their physique and general condition on their return to camp.

3. The total strength of the Native troops for the past year has been 2,950—

Strength of Regiments.	27th Regiment N. I.			657
	29th	do.	do.	641
	30th	do.	do.	595
	1st Regiment Sind Horse			355
	2nd	do.	do.	342
	3rd	do.	do.	360
Total...				2,950

which is 106 higher than for the preceding one. But, owing to the absence of all epidemic disease, the mildness of the fevertype, and the general healthiness of the year under report, the admissions into hospital have amounted to only—

Admissions into Hospital.	27th Regiment N. I.			655
	29th	do.	do.	665
	30th	do.	do.	624
	1st Regiment Sind Horse			570
	2nd	do.	do.	390
	3rd	do.	do.	786
Total...				3,690

compared with 5,040 for the previous one. The number of deaths likewise, not counting those occurring out of hospital or on leave, is less by one-third, 51 being reported against 74 for the year 1872—

Deaths in Hospital.	27th Regiment N. I.	...	...	10
	29th do. do.	...	...	7
	30th do. do.	...	...	11
	1st Regiment Sind Horse	...	...	6
	2nd do. do.	...	...	11
	3rd do. do.	...	...	6
Total				51

This gives a death-rate of 17·2 per mille against 26·0 for that year.* And the casualties out of hospital and while on leave contrast also favourably with those of the preceding year, being 16 against 24. The salubrity of the past year is further evidenced by the ratio per cent. of treated to strength—135·6 against 183·3, and of deaths to strength, which show 1·7 against 2·6 recorded for the previous year. It was found necessary to send 73 men away for change of climate for periods ranging from three to eight months, and 118 were discharged with gratuities or to the pension list, which is 9 less than for 1872. The above particulars will be found in Appendices C and D.

4. While the aggregate number of deaths in the four regiments serving in Upper Sind has an exactly corresponding ratio with that of the two Beluch regiments in Haidarabad and Kurrachee—the former giving 34 and the latter 17—yet the ratio per cent. of admissions to strength in the mounted corps points forcibly to the greater unhealthiness of Jacobabad compared with Lower Sind, and the increased proclivity of the men to become subjects of disease. The 30th Regiment N. I., which has always stood high in this respect, has made a marked improvement for the better during the past year. Its ratio of admissions is 104·8, which is only slightly in advance of the two Beluch regiments. Whereas the Sind Horse, and especially the 3rd Regiment, show high ratios, that of the latter being 218·3. This regiment, although its mortality for Upper Sind is low, being only 1·6 to strength, which is considerably less than that of the 2nd Regiment Sind Horse, has this year again shown itself to be the most unhealthy of any. In the last-named regiment, while the admissions have been comparatively few—114·0 per cent. to average strength—yet the ratios of deaths to treated and to strength are about double that of any of the others, being for the former 2·4, and for the latter 3·2.

5. With the exception of the 30th N. I. (Jacob's Rifles), where Hindus and Mahomedans are nearly equal, the latter sect greatly preponderate. They are to the Hindus in the ratio of 7 to 2. But the proportion in which the two classes are admitted into hospital is slightly in favour of the Mahomedan. The ratio of deaths, however, is against him; for the percentage of mortality in and out of hospital and on leave amounts to 2·0, whereas for the Hindu it is only 1·2.

6. The European officers, whose strength is—

European Officers.	27th Regiment N. I. (1st Beluch)	7
	29th do. (2nd do.).....	7
	30th do. (Jacob's Rifles).....	7
	1st Regiment Sind Horse	3
	2nd do. do.	3
	3rd do. do.	4
Total...		31

have on the whole suffered less this year than on previous occasions. It has, nevertheless, been necessary to send two of them from Jacobabad to Europe on sick certificate, and to give short periods of leave to several others serving in Upper Sind to enable them to recruit their health.

5. These are stationed at Kurrachee and Haidarabad. At the former the strength of Staff and Details. Europeans is 23, Natives 532; at the latter the Europeans number 17, and the Natives 186. The total of the former class is, therefore, 40, and of the latter 718. No deaths occurred among the Europeans; among the Natives 5 casualties are recorded. From Kurrachee 2 officers were sent home on sick

* This is the ratio per mille of deaths in hospital to strength; but if to this is added casualties out of hospital and while on leave, the death-rate for 1873 will amount to 22·7 per thousand.

certificate; also 1 warrant officer. And from Haidarabad 1 officer and 1 warrant officer. There were likewise 4 lascars invalided.

7. In Appendix C is shown, according to the authorized nomenclature of 1868, the diseases which have affected the several regiments in Sind for the past year, with the numbers treated and died. Under the head of General Diseases, Sub-division A, is included nearly one-half of the whole numbers to be accounted for. And this is almost entirely made up of malarious fevers. This class of disease is the one of all others most frequently brought under the notice of Medical Officers serving with Native regiments. But it is in Sind, and especially in Upper Sind, that malarious fevers show an undesirable pre-eminence. Out of the whole number of sick treated—3,903—during the year under report, there were 1,881 cases of fever due to malarious poison. These were distributed as follows:—

27th Regiment N. I. (Beluch)	...	...	248
29th do. (Beluch)	...	...	307
30th do. (Jacob's Rifles)	...	...	344
1st Regiment Sind Horse	...	...	334
2nd do. do.	...	...	243
3rd do. do.	...	...	405

The above shows that, while the two Beluch regiments had 555 cases, the four others stationed at Jacobabad recorded 1,326—clearly proving the greater preponderance of miasmatic disease in Upper than in Lower Sind. The mortality, however, was small—7 deaths only having occurred, of which 5 are debited to the Jacobabad brigade.

8. Referring to the sub-division next in order—B, General Diseases—we find 226 cases, with one casualty. The most numerous admissions under this class were from chronic rheumatism, of which the 29th Regiment N.I. shows 31, the 3rd Sind Horse 27, and the 2nd Sind Horse 23.

9. Next in frequency, but of greater importance, come syphilis (A) primary, and (B) secondary. The numbers treated in both phases of this disease are almost equal—32 being the amount of the first, and 33 of the last. But when we remember the *Protean* forms assumed by this malady, and, as appears by the researches of later years, that it is capable of affecting nearly all the tissues and organs of the body, the numbers noted under the head of secondary syphilis—which includes also its tertiary form—give but a very imperfect record of the serious consequences resulting from this poison once it has entered the system. On examining the returns of the several regiments as regards the extent to which they have been affected with syphilis, it would appear that the Beluch Regiments, especially the 2nd at Haidarabad, have suffered more heavily from this disease than have those in Jacobabad. This is tabulated as follows:—

27th Regiment N.I. (1st Beluches)—				
	Primary...	...	...	8 } 15
	Secondary	...	...	7 }
29th Regiment N.I. (2nd Beluches)—				
	Primary...	...	...	12 } 30
	Secondary	...	...	18 }
				Total ... 45
30th Regiment N.I. (Jacob's Rifles)—				
	Primary...	...	...	2 } 5
	Secondary	...	...	3 }
1st Regiment Sind Horse—				
	Primary...	...	...	6 } 8
	Secondary	...	...	2 }
2nd Regiment Sind Horse—				
	Primary...	...	...	4 } 4
	Secondary	...	...	0 }
3rd Regiment Sind Horse—				
	Primary...	...	...	... } 3
	Secondary	...	...	3 }
				Total ... 20

So that, in so far as returns prove anything, the two Beluch regiments show upwards of 4 times as many cases of syphilis as do the four regiments in Upper Sind; and this in spite of a lock hospital having been established for some years at the station where one of them is quartered. But, as I took occasion to point out in last year's report, I do not believe in the apparent immunity from syphilitic disease enjoyed by the Upper Sind Brigade. The regiments there—at least those of the Sind Horse, which number a larger proportion of Mahomedans than do any of the others—are not likely, considering their tastes and habits, to escape contracting disease if it happens to be prevalent, any more than do other classes of the community. And it is not on account of the women in Jacobabad being in any degree less free from disease that the regimental returns are so bare. On the contrary, the Medical Officers report that, as regards this matter, the station is in special bad repute, and that the type of disease also is often of a very aggravated form. The men, therefore, do not escape, and the proportion in which they are affected is certainly not less than in the Beluch regiments. But while, in the corps last mentioned, all men who from sickness are temporarily unfit for duty are obliged to remain in hospital, a different system is pursued in the Sind Horse, and which is not uncommon in regiments of irregular cavalry elsewhere—I mean that compulsion is not strictly followed. Such of the men only whose sickness necessitates their remaining in bed are attended to in hospital, but others reported sick are generally treated as out-patients. In this manner it is that many cases of syphilis are not heard of, and consequently are unrecorded. The men have recourse to Native remedies, greatly to their subsequent injury; and while the returns show a remarkable absence of venereal disease, there is as much, if not more, of it actually present with these as with other regiments; in addition to which, all the grievous evils resulting from erroneous treatment fill the records with diseases under another name, and burden the invaliding rolls to an unnecessary extent.

9. Next in order are diseases of the nervous system. Only 9 admissions are recorded under this head, out of which 3 casualties occurred—2 of them in the 3rd Sind Horse.

10. Diseases of the eye are almost entirely disposed of under the simple affection conjunctivitis, which numbers 69 cases, and require no particular notice beyond mentioning the rather singular circumstance that, with the exception of 11 cases, they all occurred in the three regiments of infantry.

11. The next class which claims attention is diseases of the respiratory system. In a country like Sind, where changes of temperature are great and sudden, this section is an important one. The most prominent affections are bronchitis, pneumonia, and pleurisy; the first returning 103 cases, the second 67, and the last 13. Of the first, two-thirds are furnished by the 27th and 29th regiments. Of the next named—pneumonia—all but 10 have occurred in the Jacobabad troops. And the 27th and 29th Regiments monopolize the entire number of the cases of pleurisy. The deaths from this class of disease amount to 25, just half of the whole mortality for the year; and from pneumonia alone 21 casualties are recorded, 16 of them being debited to the Upper Sind Brigade.

12. Diseases of the digestive system also furnish a large proportion of the admissions—dysentery, diarrhoea, colic, and affections of the spleen being the most frequent maladies under this head. Of the former 81 cases are recorded, of which 55 are supplied by the three regiments Sind Horse, and the total mortality from this disease—3—occurred in one regiment, the 1st. Diarrhoea shows 61 cases and 2 deaths, 25 of the former with 1 of the latter being returned by the 29th Regiment N. I. The cases of colic were almost exclusively met with in the regiments of infantry. Splenitis—24 cases—occurs only in the 29th Regiment N. I. and the 1st and 3rd Regiments Sind Horse; while the affection termed lardaceous spleen is entirely confined to the 30th Regiment N. I., which returns 12 cases with 1 death.

13. Diseases of the urinary system, and organs, and generative system may be considered together. Gonorrhoea figures largely among these, there being 61 cases of this affection alone in a total of 97 returned under the above heads. And, as noticed when speaking of syphilis, the regiments of the Upper Sind Brigade appropriate only 22; while the 29th Regiment N. I. has 16; and the 27th Regiment N. I., quartered in the same station as the lock hospital, shows 23 cases. 1 casualty occurred from among the diseases now being noticed. It followed the operation for calculus vesicæ in a man belonging to the 27th Regiment N. I.

14. The diseases next in order to be mentioned are those of the cellular and cutaneous systems. As these include the common affections of abscess, ulcer, and boil, the admissions have been of course numerous. With regard to ulcers—which embrace the “*Sind sore*”, and which have amounted to 142, or nearly one-fourth of the entire number, the three regiments of Sind Horse return 110. As Jacobabad is abundantly provided with trees, grass, and vegetation—the main conditions enumerated by General Lord Mark Kerr as necessary for the prevention and cure of “*Delhi sore*”, and by analogy likely to have a similar beneficial influence in “*Sind sore*”, but which conditions are signally absent at the stations where the two Beluch regiments are quartered—the very large proportion of ulcers in the locality thus favoured, would appear greatly to militate against the theory held by that officer. Whatever good effects have resulted from the presence of grass and trees at certain stations in Bengal in diminishing the prevalence of “*Delhi sore*”, it does not appear that similar benefits have attended the same conditions when brought to bear on the “*Sind sore*”. On the contrary, as I have shown when discussing this subject in my administrative report for the previous year, it is notorious that the largest number of these sores, and manifesting themselves in their most intractable character, are found to prevail in those places in Sind where the conditions supposed to remove them are present. Special reports on this matter have been forwarded to Government through the Surgeon General by the military Medical Officers serving in this province. With one exception (that by Surgeon Keelan, attached to the 29th Regiment N. I.) I have not seen these reports, as they were transmitted during my absence on tour. But I have reason to believe that the views held by these officers are not dissimilar from those I advanced last year, and have again here briefly repeated.

15. Injuries are the last class of diseases affecting the troops in Sind which still require to be noticed. These have amounted to 484, and of course have predominated largely in the mounted corps. For the most part they have been of trifling importance, and attended with only 2 casualties—one the result of a broken limb, the other occasioned by rupture of the heart.

16. The above is a general view of the sickness and mortality which have prevailed among the troops in Sind for the past year. The month of October was the most unhealthy, but no epidemic, or disease in an aggregated form, has been witnessed; and reviewing the year with the one immediately preceding, the health of the troops will be seen to have materially improved.

17. As regards vaccination the results have been satisfactory (except in one instance, to be noticed under head of 2nd Regiment Sind Horse), although the numbers fall short of those for the previous year. But this is explained by the number of the unprotected being fewer, consequent on the stimulus which was given to this matter in 1872, for before that year little or no attention had been paid to vaccination, out of deference to the prejudices of the married men of the corps who resented any interference with their families. Since then, however, by judicious admixture of tact, perseverance, and kindness, and by properly explaining the objects sought to be gained, less opposition has been experienced than was expected; and now there is every hope of vaccination being carried out in future in the Sind Horse in as satisfactory a manner nearly as in other regiments. In revaccination also progress has been made: 59 successful cases are reported against 27 for the year immediately preceding the last.

18. *27th Regiment N. I. (1st Beluches).*—In the 27th Regiment N. I. (1st Beluches) Surgeon Nolan again reports favourably respecting the hypodermic injection of quinine in ague. The solution he employs is:—

Quininegrains xxx
Acid Tartaric „ xv
Distilled water half an ounce.

The strength is 3 grains in 25 minims, and of this he usually injects 7 to 10 minims. He does not wait for a remission, but considers it admissible at any period of the disease. The injection, he says, is generally required a second time, but, seldom oftener; and he does not find it leaves any sore or subsequent irritation. The men make very little objection to the operation, and there is hardly a private in the regiment who has not been subject to it. He has also had recourse to the *endermic* method of administering this drug, and his mode of procedure is as follows:—He passes a pencil of caustic potash lightly over a portion of the skin of the shoulder as large as would be covered by a four-anna piece; 2 grains of quinine are then sprinkled over the spot, and afterwards protected by a small slip of adhesive plaster, which is removed in 24 hours. These are the chief modes in which he gives this medicine; and he finds that by one or other plan he effects a cure in half the time, and with

a great saving of quinine. For the last three years he has not expended, on an average, more than 1 lb. 3 ozs. of the drug, while in the other regiments in Sind the expenditure varies from 2½ to 4 lbs. and upwards. So that in an economical point of view, if in no other, Surgeon Nolan's methods recommend themselves as deserving of a fair trial at the hands of other Medical Officers. The unusual number of 111 contusions is explained by badly-fitting shoes, but chiefly owing to the gaiters lately introduced. The abrasions thus caused are not severe; but so long as a man is unable to wear them he is considered unfit for duty, and is sent to hospital. The State, therefore, loses his services while being cured; and it is a matter for consideration how far the smart appearance of a certain number of sepoys on parade, or while performing other duty, is a sufficient equivalent for a sojourn of from four to eight days in hospital. The deaths in the regiment (not counting those on leave) were 10, which equals 15·2 per mille of average strength.

19. *29th Regiment N. I. (2nd Beluches).*—In the report of the 29th Regiment N.I. (2nd Beluches) stationed at Haidarabad, Surgeon-Major Morton, when noticing the very marked improvement in the health of the regiment as compared with that for the previous year—the admissions having been 665 only against 1,133 for 1872—expresses his opinion that this has been due entirely to the limited extent of inundation. And on this point he says:—“The river Indus in its periodic inundations exercises on the sanitary condition of Haidarabad an influence so marked as to determine whether any given year shall be healthy or unhealthy. The boundary of inundation varies with each recurring year. Sometimes the overflow is so great as to flood to an unusual extent the low-lying ground to the south and west of the cantonment over which the prevailing winds blow; while, on the other hand, it occasionally happens that the annual flooding falls considerably short of the ordinary limit. The year 1873 was exceptional in the latter respect. The superficial area usually covered by the waters of the Indus was in extent so diminished as materially to interfere with cultivation,—a circumstance which fully explains the low ratio of admissions from diseases of miasmatic origin.” Under ordinary conditions of weather I fully endorse this opinion; and when I come to notice the inundations to which Jacobabad and the surrounding districts are almost annually exposed, and especially so in respect to the one witnessed last year, I will take occasion to point out that, so long as these recur and cannot be kept within proper bounds, and are attended likewise with great solar heat, Jacobabad will always be regarded as one of the most fever-stricken stations for troops in Sind, or perhaps in Western India. The mortality in this regiment has amounted to 7 casualties; and taking the average strength at 641, the ratio per mille is 10·9.

20. *30th Regiment N. I. (Jacob's Rifles).*—On recalling to mind the great sickness and formidable rate of mortality in the 30th Regiment N. I., or Jacob's Rifles, for the year 1872, when the admissions amounted to 182·5 per cent. of strength and the deaths to 37·2 per mille, it is gratifying to note the immense improvement which has taken place in both these respects during the year under review. The admissions have been reduced to 104·3 per cent., and the deaths in hospital from 19 to 11, which is at the rate of 18·5 per mille of average strength. The deaths out of hospital, and while on leave, were 4, but the causes are unknown. These, therefore, should not be considered in reference to the local causes tending to mortality, and by which the health of a regiment should be estimated. The death-rate of the whole Bombay Army in and out of hospital is stated to be 14 per thousand. What must be said, therefore, of the health of a regiment which, during a good year, and not counting the men who have died out of hospital and on leave, shows a ratio of 18·5 per thousand? And what must be thought also of the salubrity of the station where it is quartered—and where apparently it is doomed to remain—when even this high death-rate is regarded as exceptionally low, and hailed with satisfaction?

21. *1st Regiment Sind Horse.*—On examining the returns of the 1st Regiment Sind Horse it is seen that malarious fever in its various forms furnished 334 cases, or three-fourths of the entire admissions. The fewest number of cases occurred in the month of June, viz., 11; the largest number was in October, when the admissions from this cause amounted to 50; thus proving that malaria was at its height and exercising its greatest power just when the waters of the inundation were drying up. Surgeon Banks, in charge of the regiment, describes a very severe and trying march which some of his men had to undertake in the height of the hot season. 40 troopers, under command of a Native officer, marched from Jacobabad across the desert to Oach and Shapore, a distance of some 30 miles. In a few days 15 men were struck down with sun-stroke, all recovering except one. Of the remaining, 1 had to be invalided; and the Surgeon considers the others have had their constitutions so much impaired through this exposure that they will be specially liable to suffer on any slight provocation. He further reports that the general health of the regiment is in a most unsatisfactory condition. The mortality has been high; 6 deaths have occurred in hospital. The strength being 355, the ratio per mille is 16·9.

22. *2nd Regiment Sind Horse.*—In this regiment—the 2nd Sind Horse—the proportion of malarious fevers to the remaining diseases is higher than in the one just noticed. They amount to 243 out of 390 admissions, or two-thirds of the whole. The month of July returns the fewest—3, and October again shows the largest number—46. The Surgeon in charge has tried the hypodermic injection of quinine in the treatment of ague; but he has not met with the same measure of success as has attended its employment in the hands of the Surgeon of the 27th Regiment N. I. Indeed, in certain severe cases of malarious poisoning which are not unfrequently met with in Upper Sind, he believes the ordinary remedies to be of no avail. Thorough change of locality affords the only chance of cure. And this, doubtless, is owing to the miasma being in a more concentrated form in these districts than it exists elsewhere; as also the inferior power of resisting its effects met with in the troops at Jacobabad. Diseases of the respiratory organs proved fatal in 5 cases out of 14. These were all occasioned by pneumonia—a disease which this year has carried off one-third of all those who have been attacked with it. The total admissions in this regiment—390—have been considerably lower than for the previous year, when they stood at 581; but the mortality—11—has been very much higher, being at the rate of 32.1 per mille of average strength. Dr. Byramjee, whose connection with this regiment commenced in 1869, proceeded to Europe in the month of September last, and Surgeon Banks has held charge of it since then.

23. *3rd Regiment Sind Horse.*—The mortality in the 3rd Regiment Sind Horse has been on a par with that of the 1st Regiment. It shows a ratio of 16.6 per mille of average strength for 12 months. The proportion of malarious disease to the whole admissions has been one-half, or 51.5 per cent., and the general health has been the reverse of satisfactory. The average daily sick is very similar in amount to what it was in the previous year. But a marked improvement in this respect took place consequent on its marching as escort to His Excellency the Governor in the cold season; thus pointing to a means, within reach of all the troops in Sind, of shaking off some of the seeds of disease, and partially recruiting their strength. In the earlier part of the year the regiment had to lament the sudden death of Surgeon Carswell, in medical charge. He was killed by the premature explosion of a mine in the hills on the frontier while present with Captain Brown, R.A., who was likewise unfortunately killed by the same explosion. Surgeon MacRury, on general duty, was sent from Kurrachee to Jacobabad to assume charge, since which he has been with the regiment.

24. In para. 3 I stated that the ratio of deaths in hospital per mille of the whole troops serving in Sind for the last year was 17.2. For the Beluch regiments only—one at Kurrachee, the other at Haidarabad—the ratio is 13.05 per mille; but for the Upper Sind Brigade it gives the high figure of 21.02. And this last ratio, again, is, as I have already shown, borne very unequally by the several regiments. Only a slight variation in the death-rate is apparent in the Beluch Regiments (27th N. I. and 29th N. I.) for the last two years. This is seen below :—

		1872.	1873.
27th Regiment N. I.	...	17.9	...15.2
29th do. do.	...	12.2	...10.9

but in the regiments at Jacobabad for the same period great irregularity in this respect has prevailed—

		1872.	1873.
30th Regiment N. I.	...	37.2	...18.5
1st Regiment Sind Horse	...	36.7	...16.9
2nd do. do.	...	37.2	...32.1
3rd do. do.	...	29.5	...16.6

From the above it will be perceived that the 1st and 2nd Regiments Sind Horse and the 30th Regiment N. I. showed an excessive rate of mortality for 1872, being for the first-named 36.7, and for the two last 37.2, per mille; whereas during the past year the ratio of mortality per mille to strength in the 1st Regiment Sind Horse has fallen to less than half. This is also the case with the 30th Regiment N. I., is less marked in the 3rd Regiment Sind Horse; while in the 2nd Regiment the rate of mortality stands at the high figure of 32.1 per thousand, which is only 5 numerals lower than for the preceding year. But why this should be the case—why there should exist such a disparity in respect to the health and rate of mortality among the troops stationed at Jacobabad, is a question not easily solved. The men are recruited alike, are exposed to the same climatic influences, their duties are similar, no difference is appreciable in their habits or mode of living, their lines lie side by side those of the 3rd Regiment, in which the highest percentage of sickness, though not of casualties, is observed, being nearly new and well constructed; while those occupied by the 1st and 2nd Regiments, particularly the latter, are wretched and miserable. And yet this last, whose strength varies but little from that of the 3rd Regiment, possessed of the new and well ventilated lines, admitted during the year only 390 sick against 786,—that is, one-half less.

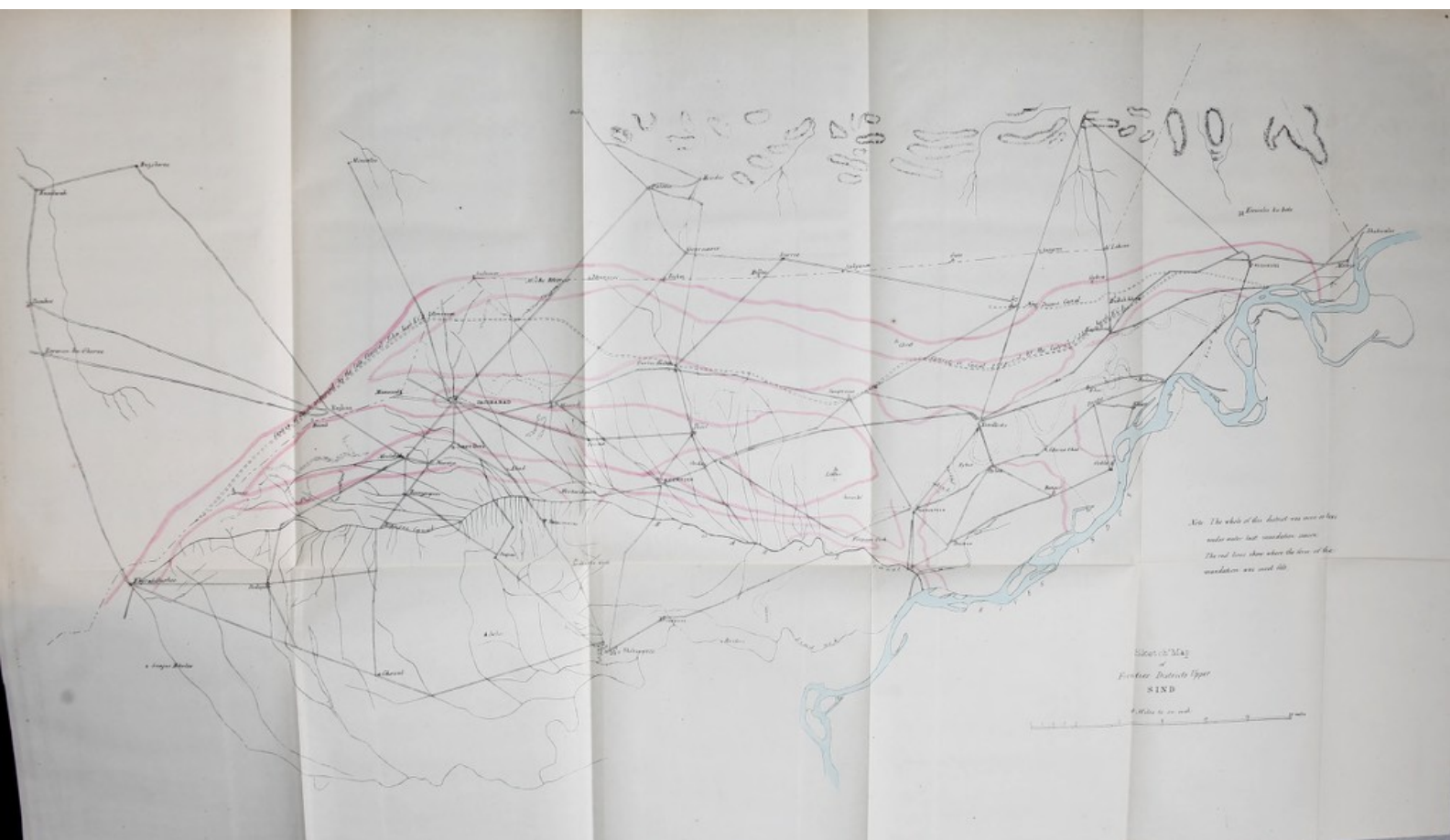
25. Let us now see whether it is easier to explain why the ratio of mortality per mille in the troops of the Sind Frontier Force for the past year should be, when compared with that for 1872, as 21·05 is to 35·15; or, excluding the 2nd Sind Horse from the calculation, in which the decrease is not very apparent, it should have fallen so low as to be represented by the decimal figures 14·03 for the year under review against 34·46 for the preceding one, or upwards of one-half less? That some powerful cause has been at work to account for this marked difference will readily be admitted; for the medical history of the troops at the close of 1872 afforded no reasonable expectation that, so long as they remained in Jacobabad, the reports for the succeeding years would have to chronicle aught except a gradually progressive deterioration in their health, and a corresponding increase in the ratio of mortality. It is true the amount of rain—4 inches 7 cents—was but a little more than half of the quantity—7 inches and 9 cents—registered in 1872; but the inundations of the Indus were to the full as heavy and extensive as on any previous occasion, indeed rather more so. So that the quantity of water *per se* spread over a country does not seemingly afford any exact indication of the amount of, or severity of, miasmatic emanations following the subsidence and drying up of the water. This is well illustrated in New South Wales, where large tracts of that region are extensively flooded after heavy rains, and yet ague and other forms of malarious disease are seldom seen in Australia. And why is this? Chiefly, if not entirely, owing to the absence of tropical heat, which, acting on the numerous low forms of animal and vegetable organisms, is the one factor apparently wanting in that country to develop telluric poison, so abundantly produced in other lands having a high solar temperature. If this theory is now applied to the state of matters as obtaining in Jacobabad during the two past years, it will, I think, explain the reason for the large amount of sickness and mortality witnessed in the year 1872 compared with what has been observed for the one under review. In the former year the rain-fall was the greatest; in the latter the floods were higher. There was not, therefore, probably much material difference in the amount of standing water and moisture, comparing one year with the other. But there was a great difference in the temperature of the two seasons. In 1872 the mean maximum of the thermometer in the shade during the months of May and June was 112° and 119° respectively; the highest reading for the year being in June, when 124° was registered in the shade. During the past year the mean maximum for these two months was respectively 102° and 105°, the highest reading not exceeding 107°. But even this amount of heat, as indicated by the thermometer in 1872, did not truly represent the full power of the sun's rays. It was but relative; for the winds towards the latter part of the year were light and variable, and often scarcely perceptible. The circumstances, therefore, were all specially favourable for the production of malaria, as also its reception by those whose previously impaired health, or low state of vital energy, rendered them predisposed to its effects. Again, with regard to the range of the thermometer for the past year, the heat was considerably modified by the prevalence of breeze, which rendered the climate during the usual trying portion of the year far more endurable than it was for the corresponding period in 1872. The sun, it is seen, therefore, possessed much greater power one year than it had in the other; and it was during the season this was at its greatest intensity, *i.e.* in 1872, that malarious fevers were so prevalent, their type severe, and the mortality from these and other causes ran so high. The reverse of all these are the features for the past year; and the great improvement in the health of the troops in Sind, particularly those at Jacobabad, with reference specially to malarious disease, must, I think, be attributed—not to the amount merely of the rain-fall and extent of flood-water, though these bear a direct relation to diseases of the abdominal organs—but to the intensity of solar heat, influenced by the absence of permeating breezes. It would appear, therefore, that, putting out of account the mortality caused by pneumonia and other kindred affections of the lungs, which will always affect the death-rate in a climate like Upper Sind, where in the cold season the variation of temperature is excessive and sudden, something more than the mere presence or absence of water and moisture must be superadded to insure any given season being remarkable for the prevalence of diseases of miasmatic origin. And according to the potential influence of this special agent in developing malaria, so will follow the mildness or virulence of the fever type, and the corresponding rate of mortality. And this special agent will, I think, be found to be *solar heat*.

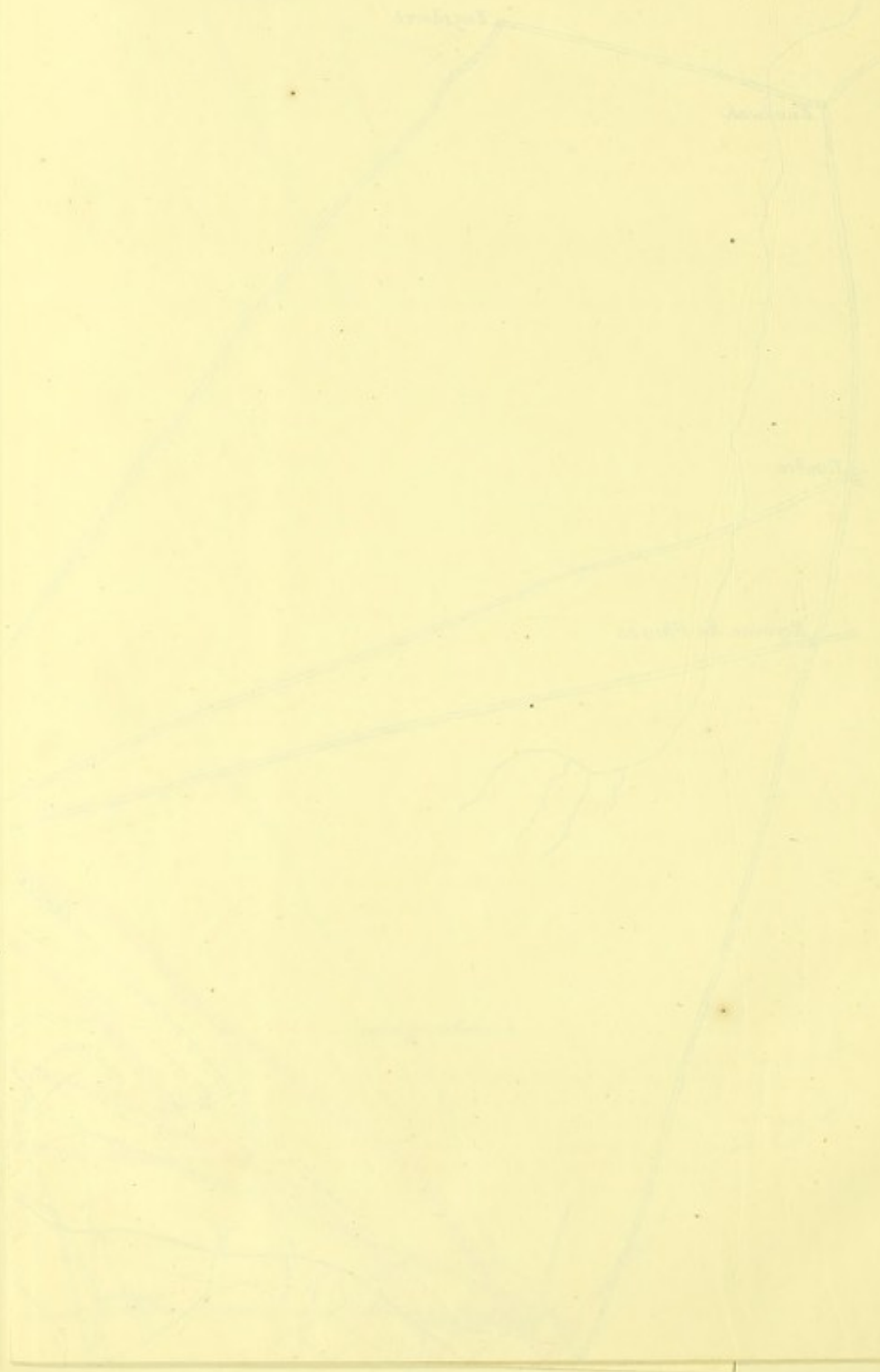
26. But it is, on all hands, allowed that the climate of Sind for the past year was very mild, indeed exceptionally so. We must not, therefore, look for a speedy or frequent repetition of so favourable a circumstance, but remember rather its normal condition; and which for Jacobabad—as it is in that direction the greatest danger is to be apprehended—requires a separate consideration. From the beginning of May to near the end of October solar temperature is very great; the atmosphere in a state of hyper-saturation from the many square miles of canals and water-courses, the multitude of trees, and the general absence of any steady permeating breeze; to which must be added another condition becoming ap-

parently also a normal one,*—I mean the annual flooding of the country around, caused, first, by the rising of the Indus, and, secondly, the difficulty hitherto experienced in bunding in, and diverting the enormous mass of water away from Jacobabad, and which on many former occasions has laid the whole surrounding district under water, threatening seriously the safety of Jacobabad itself. In my Administration Report for 1872, para. 4, I gave a short account of the inundations as they occurred for that year; and now, through the courtesy of the Commandant Sind Field Force, I append a "*precis*" of the floods for the year under report, accompanied with a sketch-map showing in red lines the course of the inundation and the extent of country submerged. Colonel Loch forwarded me likewise a list of villages which had been wholly or partially swamped. These it is unnecessary I should give in detail. Suffice it to say that the floods of last year, as described by that officer, entirely swamped, from the 5th to 19th August, 27 villages in the taluka of Kussmore. In the taluka of Thull, between the 4th and 20th August, 10 villages were wholly swamped, and 6 partially so. And from the 11th to the 28th of that month Colonel Loch enumerates 26 villages entirely destroyed, and 5 partially so, in the taluka of Jacobabad. That no doubt, however, may remain regarding the extent of the floods and the damage they caused, I transcribe below Colonel Loch's report—

"The Sind Dhoras (natural outlets of the Indus)—which take their rise about 5 miles below Kussmore, and intersect the country, and are chiefly parallel to the Indus as far down as Kurree ka Gote, near the Choree bridge on the Begari canal, and the principal branch of which is the main feeder of that canal—commenced flowing on the 8th of May, and by the 10th the Begari was flowing to its tail, although its mouth remained closed up to the 23rd. On the 21st the Oonerwah, which takes its rise from the main Sind Dhora (here known as the Sind Hollow) and flows in the direction of Thull, 20 miles east of Jacobabad, overflowed its banks and inundated parts of the country lying east and west. Similarly the Doolika Dhoras overflowed and swamped the country south-west. The Indus about this time fell suddenly, and only commenced rising on the 8th of July, but very slowly, as within a space of 16 days it rose only two feet and three inches. It was not until the 30th idem that the floods fairly left the Indus and the Dhoras, before adverted to, north and west. The floods from Gobla, 26 miles south-west of Kussmore, joined these; and as this part of the country is intersected by these water-courses, and as these were soon afterwards joined by floods higher up the Indus near Kussmore from Mussooralla, which flooded also the country in a northerly direction, nearly reaching the Toj outpost, they gained strength, and by the 31st of July broke across the Sonewah canal, pursuing their westerly course towards Mirpur. The Begari at this time broke through its northern bank at the village of Moorad Ali Powhár, and the country north-west and south was soon under water, destroying and swamping villages as it went along. On the 6th, Oodi, 6 miles north-east of Mirpur, was destroyed, and on the 7th Meerulabad, 13 miles east of Jacobabad, was flooded. Here the floods went further north and south, reached and swamped the country about Dilmorad, Beboochabad, and struck the Noorwah canal on the 9th, reached the Lurkee bridge on the 10th, where this flood was joined by the flood from Dilmorad. Thus strengthened it broke into the Noorwah; the mass of water thus conveyed down the canal burst its eastern bank immediately opposite the Rajwah canal, 3 miles from Jacobabad. This canal flows straight through the cantonment and town. Working parties were incessantly engaged on this spot from the 11th to the 18th August, working night and day, assisted by divers, boatmen, and the troops in cantonment under the command of British officers. As it became, however, apparent that the pressure of water in the Noorwah was too great, breaches were opened in the eastern bank. A great quantity of water was led into Dickenson's Beylah, to the west of the numerous outlets from the Noorwah, and lessened materially the force of the flow in the Noorwah; and as breaches in the western bank took place, successful efforts were taken in hand to close the Raj and Boodwahs with all available hands, and the work was completed on the 14th, at 8 o'clock P.M. The floods were highest on the 13th, and the country south of Jacobabad became flooded for miles. The inhabitants of Janee Dera had to be removed, as the floods at Kussmore and Thull were threatening. By the 16th the floods reached Mamul, west of Jacobabad, on the Khelat boundary, and swamped the place, and pressed further west and east towards Rohjan and Jacobabad. A large breach occurred at this time in the Noorwah near the Shahpore bridge; the discharged waters joined the above flood, and threatened from the south and west the bund erected last year; but as the Indus perceptibly fell on the 30th, there was not strength enough to drive on these floods. They also divided, flowing further west towards Khyri Gouree, which was reached by the 23rd, but being protected by a bund it was saved. The water now fell rapidly, and by the 30th of August the canals flowing in the direction of Jacobabad were again opened. The country remained under water for a considerable time afterwards, and in places where the ground had been dug up by the force of the current, pools were formed where the water remained for months afterwards.

* From 1861 to the present time, i.e. during twelve years, there have been heavy floods in seven years, viz. 1861, 1862, 1863, 1864, 1871, 1872, and 1873; partial ones in 1866 and 1868; and none at all in 1865, 1867, 1869, and 1870.





"With a view to prevent the recurrence of a similar danger to the cantonment and town of Jacobabad, and which was with the greatest difficulty averted, it has been proposed by the Political Superintendent, Upper Sind Frontier, to erect protection works for Jacobabad, consisting of—

- "1. Increasing the width of the Noorwah bank between the Jumaliwah and the Alipor^e bridge; distance about 3 miles, north-east of Jacobabad.
- "2. Constructing new sluice-heads to the Raj and Budduwah.
- "3. Running a bund along the northern bank of the Jumaliwah from the mouth to a point half a mile below the Mowladad bridge, being a distance of 5 miles.
- "4. Kuniahs taking off from the Noorwah to the south-west of Jacobabad to be closed, and an extra supply of water to be afforded from a new cut from the Muklimwah.
- "5. Wuddo Khan's canal, running parallel to the Jumaliwah, to be closed from the Noorwah to within one mile west of the Mowladad road, and water to be supplied from the Jumaliwah.

"These works, together with the bund erected to the north of Jacobabad, will protect the cantonment and town to the south-east and north, and were sanctioned at a cost of Rs. 25,520, under Government Resolution dated 9th January 1874; and Lieutenant Osborne, the Executive Engineer of this district, has commenced carrying them out with vigour. Rs. 12,000 will be expended during the current year."

27. The Commandant Sind Field Force states that "his recommendation to close Wuddo Khan's canal has not been approved of; and the bund now being erected is to the south of the Jumaliwah, in place of between that canal and Wuddo Khan's, as first proposed." How far the measures devised by the local authorities and Engineer Department, which include a Desert canal, commencing north of Kussmore and following more or less the route recommended by the late General Jacob, will be successful in protecting the country around and to the east of Jacobabad, time alone will show.

28. In connection with the inundations in Upper Sind, and the influence they exercise in ordinary seasons, on the rates of sickness and mortality prevailing in the districts thus affected, and more immediately in reference to the health of the troops in Jacobabad, it has been asserted in some quarters that, while it may not perhaps be possible entirely to stamp out *malaria*, yet it may be diminished to a great extent, and even reduced to a minimum. In these anticipations I confess I am unable to participate. Even supposing that, for the future, the inundations can be guarded against, and the Indus water confined to the various canals and water-courses, and kept from bursting their channels, and in this manner cause floods to be remembered only as connected with the past; yet—considering the great difference of level between Jacobabad and the Indus at Kussmore—67 feet, the vast net-work of canals, the generally light character of the soil intervening, with percolation continually going on, and the water gradually rises higher and higher—it becomes merely a question of time in how many years hence the water will be so near the surface as to render the station no longer tenable. It is not denied that during the past 10 to 15 years the sub-soil water has been steadily coming nearer the surface; and the following statement, communicated to me by an officer by the 30th Regiment N.I., will go far to support the opinion I have advanced. In the beginning of 1869 this officer sank a well in his compound at a distance of 10 yards from the present Bhoodwah canal, and at 30 feet he found water. Towards the end of last year another well was sunk in the same compound, distant 50 yards from the former one and about 60 yards from the canal. In this case water was struck at 12 feet from the surface. And should it unfortunately so happen that the water level continues still further to approach the surface, it may be confidently expected that, besides an increase to diseases of a malarious origin, dysentery and diarrhoea will become endemic. Indeed, as it is, the former disease has of late years been on the increase. For the past three the admissions from the above cause were—

1871.....	32
1872.....	59
1873.....	66

that is, double of what they were two years ago, and also more numerous than for 1872, which was a particularly unhealthy year.

29. Reviewing all the circumstances in connection with this subject, and the bearing they must necessarily have on the amount of sickness and mortality among the troops at Jacobabad, I can only refer to the opinion I stated in my last year's report, and now repeat,—how extremely necessary I consider it is that all the regiments stationed there should be sent away from Sind for a period of not less than three years.

30. In respect to the lines of the two Beluch regiments there has been no change. The old dépôt barracks, which were given over to the regiment at Kurrachee in 1871 after being thoroughly cleansed and disinfected, have turned out most satisfactory. The men have abundance of accommodation, and of a description that rarely falls to the lot of a Native regiment.

31. At Haidarabad the lines are good and are well ventilated, both as regards their general aspect and the pendalls separately. The accommodation is, however, rather limited. Nothing has been done to increase the space allotted to the Native commissioned officers, which I last year reported as wanting in both comfort and respectability. They are also without sufficient ventilation.

32. On visiting Jacobabad I was glad to find that the new lines sanctioned for the 1st and 2nd Regiments Sind Horse were rapidly approaching completion. They are on the model of those already built for the 3rd Regiment, which are well ventilated, and excellent in every way. Being for mounted corps, a desideratum is, however, still wanting, which is a separate place in which to put the men's saddles and accoutrements. It was surely an oversight that this was not provided for, as it is anything but conducive to the health of the men that they should keep their saddles, &c., in the same rooms in which they live.

33. The lines of the 30th Regiment N.I. are fairly good. But they would be greatly improved by having outer verandahs to the blocks to keep off the sun; also ventilation in the roof. In all respects the lines are as reported last year.

34. With regard to hospitals, the accommodation for the 27th and 29th Regiments are, under ordinary circumstances, ample. The objections in reference to position and minor matters are unremedied, and will probably remain so. The quarters for the 2nd class establishment of the 27th Regimental hospital are far too limited.

35. The hospital accommodation for the regiments of Sind Horse would certainly not suffice were similar regulations in force which in other regiments require all men unfit for duty to remain in hospital. In former reports I have shown that considerable indulgence prevails in this matter, and that, as a rule, it is only those whose illness is of a serious nature, requiring their being kept in bed, who remain in hospital. By degrees a greater assimilation in this respect to that of other regiments may be expected; and before many years the sick of these corps will, I trust, be required to place themselves under the usual medical surveillance as seen in other hospitals. I do not, therefore, at present, remembering the repeated instructions of Government that the strictest economy must be exercised in every department, see the necessity urged by Surgeons Banks and MacRury, to provide additional accommodation for the men of the Sind Horse, by building—as recommended by the former—an additional ward, and—by the latter—a new hospital for the 3rd Regiment, and handing over the entire building—half of which is occupied by his patients—to the 2nd Regiment. The sanitary defects of the hospital, so well described by Surgeon MacRury, I have already in former reports pointed out. But these are inseparable from faulty position and original construction, and under present circumstances must be made the best of.

36. The 30th Regiment N. I. has less to complain of on the score of hospital accommodation. The Medical Officer objects to its being insufficient; but during the past year this has certainly not been apparent. A stove has been lately fitted up in this hospital, which has proved a source of great comfort to the sick, and has contributed towards their recovery. The blocks of houses occupied by Commissariat followers, and which are in far too close proximity to the hospital, remain untouched, and all the nuisances they occasion exist as before.

37. There is room for great improvement in matters of conservancy in connection with the hospital latrines, as also in some of the regiments. It is, I allow, a somewhat difficult matter to get the patients to follow even the few trifling and simple directions necessary for insuring the efficiency of the dry-earth system. The hospital orderlies are not inclined to give any assistance in looking after this matter; nor are the hospital assistants sufficiently alive to the advantages attending the plan to insist upon the sweepers being more frequently present, and obeying orders. That the method can be carried out, and in so perfect a manner as to leave nothing to desire, I had opportunities of witnessing when Acting Deputy Inspector General of Hospitals in the Northern Division of the Army in 1870, and I recorded with pleasure the complete success which had attended the efforts of three Medical Officers in charge of Native regiments. It

is surely not beneath the dignity of an educated man—a Surgeon—to give his attention to any matter which has in view the health and comfort of the sick committed to his care. And what can be done in one regiment can, I suppose, be accomplished with equal facility in others. The principle is known to every one; and at every hospital I have shown how simple are the arrangements necessary for its being carried out. All that is needed to insure complete success is that the Medical Officer should interest himself in the matter, and not desist until he has made his latrine as sweet-smelling as his hospital. And if doubt should exist in the minds of any one as to the plan being perfectly feasible, I would recommend them to visit either of the jails of Haidarabad or Shikarpur. In the former there are some 559, in the latter about 619 prisoners. Dry-earth only is used in these latrines; and the system is so thorough, so perfect, that a person might wander through every part of these jails, and if he trusted only to his sense of smell he would come away without having discovered the position of the latrines! I am led to make these remarks because I am far from being satisfied with the state of the latrines attached to the military hospitals. The 27th Regiment N.I., under Dr. Nolan,

Hospital Latrines, 27th Regiment N.I.

gether dispensed with. The

Hospital Latrines 29th and 30th Regiments N.I.

latrines of the Sind Horse

Latrines, Sind Horse Hospitals.

thrown about in anticipation of my visit; otherwise, to meet daily demands to the extent I witnessed, the powder would require to be supplied by the cart-load. In my opinion the whole of it was unnecessary, and consequently was wasted. Since the discovery of the dry-earth system, and the perfection to which it can be carried, any latrine conservancy which requires such lavish expenditure of a disinfectant must be conducted on a radically erroneous and unscientific principle.

38. The position—one on each flank—of the latrines for the infantry regiments, is

Latrines, Regimental.

dalls there are three small separate enclosures, having no special arrangement, and these are used by the men occupying the adjoining pendalls. They are cleaned out twice a day; but no amount of cleaning can prevent the ground within and around becoming saturated with filth. For the 3rd Regiment Surgeon MacRury reports that two latrines, one on each flank of the lines, are being constructed, and when finished the present ones should be abolished and the ground disinfected. It is to be hoped this plan will be speedily followed in the two remaining regiments Sind Horse. Before concluding my remarks in connection with the troops at Jacobabad, I am constrained to again notice the subject of continuing a leechman with each regiment on a monthly pay of Rs. 10 each, or a total of Rs. 480 per annum. In para. 32 of last year's report I showed that, owing to the very infrequent use of leeches at that station, the 5 dozen used in the year 1872 had cost Government Rs. 480. During the past year 22½ dozen have been used, costing the same sum, or about Rs. 20 per dozen! I would refer to the remarks formerly made in favour of discharging these servants as a legitimate method of saving so much money to the State, which, as it appears to me, is at present simply wasted.

39. Sanitary matters, in so far as these can be attained in the absence of a good supply

Sanitation.

of pure water, are duly attended to in the cantonments of Kur-rachee and Haidarabad. With reference to the former station, the observations made in my previous report are as applicable now as they were then. At Haidarabad matters under this head are unchanged, except that a large shallow tank—which used annually to be flooded by rain-water and the overflowing of the Indus, and thus added largely to the area of the marsh always formed here during the rains—has been entirely filled in, by which to a certain extent this prolific source of malaria annually affecting the health of the troops has been curtailed. A considerable number of the trees in Jacobabad have been cut down, and some of the lower branches of others lopped; but where the former can still be counted by thousands, there is much more to be done in this direction before the sanitary improvements, pointed out in para. 48 of my last year's report, can be accomplished. Only a few of the smaller water-courses in camp have been filled up. To keep these open, now that the roots of the trees have all reached the subsoil water, is not only unnecessary but is maintaining sources of miasma from the accumulation and retention of decomposing animal and vegetable matter with which they abound. The other points to which I formerly referred when speaking on the subject of sanitation for the camp at Jacobabad are still unremedied.

40. The water-supply for the troops at Kurrachee is neither better nor worse than was previously reported. It was hoped that the encouraging reply given by the Viceroy to the municipality during his visit in November 1872 would have led to some decisive measures being taken for introducing the long-talked-of scheme of supplying Kurrachee with a never-failing supply of good water from the Indus or neighbouring hills; but, as far as I can learn, no decision has been arrived at. The prospects as regards Haidarabad in this matter are, however, much more hopeful. The water-scheme for that town has been sanctioned, money to the extent of upwards of three lacs of rupees has been provided, and it is calculated that in two or two and a half years the whole work will be completed. At Jacobabad good drinking water is abundant, and obtained with facility.

41. The amount of rain which fell at Kurrachee during the past year has been small. The quantity registered was only 2 inches. At Haidarabad the amount noted was 3 inches and 15 cents, while at Jacobabad it measured 4 inches 17 cents. At this last station I have already noticed the low range of the thermometer, and the comparative mildness of the past season. This has been observed also at Kurrachee and Haidarabad; at the former station the highest reading of the thermometer was 96°, the lowest 51°. The mean maximum gave 85°, the mean minimum 71°, and the mean of both 78 degrees. I have no statement of temperatures from the Medical Officer at Haidarabad, but from other sources I am able to report of a similarly favorable season at that station.

42. The returns of venereal disease for the entire brigade, European and Native, quartered at Kurrachee, where the only lock hospital in Sind exists, show for the past year a slight increase over the preceding one; they are 104 to 92. The average number of prostitutes on the register was 211, against 200 for the previous year; but of these only 144 attended the periodical examinations. This would admit of a considerable number being possibly diseased, and thus escaping detection. The inference would not, however, be a correct one, for the Surgeon in charge reports that the names of several women have been purposely retained on the register until it could be clearly ascertained they had left the station. In this manner 80 names were subsequently struck off the register, while 49 new ones have been added to it, which is an increase of 8. Still, the result of the examinations show an average of 19 found diseased, against 16 for the previous year; and the total treated was 244 against 201 for 1872. Of these, 240 were discharged and 4 remained at the close of the year. The number of days spent in hospital has varied, but the average for the year was 7.5, which is an improvement over the preceding one, when it averaged 9 days; and in respect to the increased number of women treated during the past year, it is to be noticed that they were not all exactly diseased. As many as 50 of them were entered in the "Record of Diseases" under the head "observatio", which was a precautionary method adopted in cases where doubt existed in regard to their symptoms. Although the returns of the brigade show for the past year a slight increase of admissions for venereal disease over the previous one, yet a great improvement is visible when these are compared with the number treated in 1871, which amounted to 148. And what, perhaps, is of even greater importance is, that the type of disease, especially as observed among the Europeans, presents itself of a much milder character, and is more amenable to treatment than was the case before the establishment of the lock hospital. Breaches of paras. 14, 16, and 19 of Act XIV. of 1868 have been punished by the Surgeon in charge, and the fines realized amounted to Rs. 102-7. The custom, at one time adopted of giving the women a money rate of subsistence, was found unsatisfactory and led to abuse. Their food is now supplied by the Commissariat Department at the average cost of 2 annas and 6 pies per each. When Eurasians are inmates of the hospital, which is rarely the case, the cost per head is 6 annas a day. Until lately a difficulty has been experienced in the want of co-operation on the part of the police; but for some months past a considerable change for the better in this respect has been observed, and several women who had hitherto escaped registration have been now obliged to do so. The police, it is hoped, will still further lend their aid in this direction; as it is in exact proportion to the help they afford in detecting and bringing to notice women who are secretly practising prostitution, that the benefits arising from an institution of this description can be secured. The building occupied as the lock hospital is the same as reported last year. It is in fair repair, but small, badly ventilated, and in some other respects not very suitable. But, all things considered, it is the best procurable at the sanctioned rent, which is limited to a small sum.

APPENDIX A.

ANNUAL RETURN of Native Troops in the Sind Division for the Year 1873.

Regiment, &c.		27th Regiment N. I., Kurrachee.	29th Regiment N. I., Haidarabad.	30th Regiment N. I., Jacobabad.	1st Sind Horse, Ja- cobabad.	2nd Sind Horse, Jacoba- bad.	3rd Sind Horse, Jacoba- bad.	Total.
Strength.		657	641	595	355	342	360	2,950
		T. D.	T. D.	T. D.	T. D.	T. D.	T. D.	T. D.
General Diseases.—								
A.	11 Simple continued fever	...	1	...	...	...	...	1
	15 Ague	244	1	306	1	341	...	1870
	16 Remittent fever	4	...	1	...	3	...	11
	21 Mumps	1	...	2	...	4	...	11
	30 Erysipelas	...	...	...	...	...	...	4
	34 Acute rheumatism	...	...	4	...	2	...	11
	38 Chronic "	6	...	31	...	16	...	110
	39 Gout	...	...	1	...	...	...	1
	43 Syphilis, primary	...	...	10	...	5	...	19
	A. Hard chancre	2	...	...	...	1	...	3
B.	Soft " "	5	...	2	...	1	...	9
	Suppurating bubo	1	...	...	...	...	...	1
	B. Secondary	7	...	18	...	3	...	33
	49 Scrofula	...	...	2	...	...	...	2
	54 Scurvy	5	...	2	...	1	...	10
	57 General dropsy	12	1	1	...	...	...	4
	37a. Lumbago	4	...	1	...	6	...	20
	37 Muscular rheumatism	...	...	...	...	...	...	3
	65 Apoplexy	...	...	...	1	1	...	1
	66 Sun-stroke	...	...	...	...	1	...	1
Diseases of the Ner- vous System.								
	59 Encephalitis	...	...	...	...	...	...	1
	84 Paralysis	1	...	...	...	...	...	1
	85 Hemiplegia	...	...	...	...	...	...	1
	89 Paralysis, facial	...	...	...	...	...	...	1
	101 Neuralgia	...	...	...	...	1	...	1
	101b. Brow ague	1	...	...	...	...	...	1
	105 Mania	...	...	1	...	...	...	1
	111 Conjunctivitis	23	...	21	...	14	...	69
	129 Opacity of cornea	...	...	1	...	...	...	1
	136 Iritis	...	...	...	...	1	...	1
	152 Cataract	...	...	1	...	...	...	1
	130 Conicalis	1	...	...	...	...	...	1
Diseases of the Eye, &c.								
	190 Inflammation	...	...	...	...	2	...	5
	192 Accumulation of wax	...	...	1	...	...	...	1
	196 Inflammation of the membrane.	4	...	...	...	...	...	4
	Otitis	...	...	1	...	...	...	2
Diseases of the Circu- latory System.								
	219 Pericarditis	2	2	...	...	...	...	2
	244 Palpitation of the heart	...	...	1	...	...	...	1
	266 Varicose veins	1	...	1	...	...	...	3
Diseases of the Ab- sorbent System.								
	269 Inflam. lymphatics	...	...	1	...	...	...	1
	293 Laryngitis	...	...	...	...	...	...	1
	306 Bronchitis	42	2	35	1	17	...	103
	314 Asthma	...	...	3	...	...	...	4
	315 Pneumonia	7	2	3	3	22	8	67
	325 Pneumonic phthisis	...	...	1	1	1	...	2
	331 Pleurisy	7	...	6	...	...	...	13
	319 (a.) Hemoptysis	...	...	2	...	...	...	2
	491 Consumption	...	...	1	...	...	...	1
	348 Stomatitis	...	...	...	...	...	...	1
Diseases of the Respi- ratory System.								
	352 Abscess of the cheek	...	...	1	...	...	...	1
	366 Caries	...	...	...	...	...	...	6
	377 Gum-boils	1	...	2	...	...	...	4
	381 Ulceration	...	...	...	...	...	...	1
	422 Quinsy	...	...	...	...	...	...	5
	419 Sore throat	1	...	...	...	...	...	1
	423 Tonsillitis	2	...	...	...	...	...	5
	460 Dyspepsia	1	...	...	...	...	...	1
	466 Dysentery	5	...	10	...	11	...	81
	480 Hernia	1	...	1	...	...	...	3
	465 Syphilis	2	...	...	...	...	...	2
	484 Diarrhoea	1	1	25	1	12	...	61
	486 Colic	50	...	16	...	34	...	113
	491 Hemorrhoids	...	...	5	...	...	...	5
	501 Hepatitis	1	...	1	...	...	...	2
Diseases of the Digestive System.								

Regiment, &c.		27th Regiment N. I., Kurrachee.		29th Regiment N. I., Haidarabad.		30th Regiment N. I., Jacobabad.		1st Sind Horse, Jacobabad.		2nd Regiment Sind Horse, Jacobabad.		3rd Regiment Sind Horse, Jacobabad.		Total.	
Strength.		657		641		595		355		342		360		2,950	
		T.	D.	T.	D.	T.	D.	T.	D.	T.	D.	T.	D.	T.	D.
Diseases of the Digestive system—continued.	513 Jaundice ...	...	...	1	...	5	...	4	...	1	...	1	...	12	...
	524 Splenitis ...	...	...	8	...	...	...	12	...	...	...	4	...	24	...
	526 Congestion ...	...	...	1	...	...	...	...	...	1	...	6	...	8	...
	529 Lardaceous spleen ...	...	...	...	...	12	1	...	...	...	...	...	...	12	1
Diseases of the Urinary System.	532 Ascites... ..	...	...	...	...	...	...	...	...	...	...	1	...	1	...
	570 Calculus of bladder ...	1	1	...	...	...	...	...	...	...	...	...	...	1	1
	577 Retention of urine ...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Diseases of the Urinary Organs.	538 Acute nephritis ...	...	...	...	...	...	...	...	...	...	...	2	...	2	...
	585 Gonorrhoea ...	23	...	16	...	4	...	5	...	6	...	7	...	61	...
	587 Phimosi ...	...	...	1	...	...	...	...	...	...	...	1	...	2	...
	589 Bubo ...	...	...	6	...	...	...	...	...	1	...	1	...	8	...
	591 Epididymitis ...	2	...	...	...	...	...	...	...	...	...	...	...	2	...
Diseases of the Generative System.	593 Condiloma ...	2	...	...	...	...	...	...	...	...	...	...	...	2	...
	613 Varicocele of cord ...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
	617 Hydrocele of tunica vaginalis ...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
	620 Orchitis ...	3	...	4	...	4	...	...	...	1	...	3	...	15	...
Diseases of the Organs of Locomotion.	588 Paraphimosis ...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
	768 Acute synovitis ...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
	769 Chronic " ...	4	...	...	...	...	...	...	...	...	...	...	...	4	...
Diseases of the Cellular Tissue.	812 Enlarged bursapattellae ...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
	818 Inflammation ...	...	...	...	...	...	...	...	...	3	1	...	...	3	1
	819 Abscess... ..	16	...	22	...	11	...	2	...	19	1	36	...	106	1
Diseases of the Cutaneous System.	825(a) Dracunculus ...	...	...	2	...	...	...	2	...	1	...	2	...	7	...
	827 Erythema ...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
	838 Psoriasis ...	...	...	...	...	2	...	...	...	...	...	3	...	5	...
	841 Herpes ...	1	...	2	...	...	...	...	...	...	...	2	...	5	...
	843 Eczema ...	1	...	1	...	1	...	5	...	...	...	3	...	11	...
	859 Ulcer ...	4	...	19	...	9	...	15	...	38	...	57	...	142	...
	861 Boil ...	9	...	14	...	65	...	32	...	5	...	39	...	164	...
	862 Carbuncle ...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
	865 Whitlow ...	...	...	3	...	6	...	12	...	4	...	3	...	28	...
	888 Tinea tonsurans ...	2	...	...	...	...	...	...	...	...	...	...	...	2	...
	894 Scabies ...	...	...	10	...	1	...	...	...	2	...	2	...	15	...
	842 Pemphigus ...	5	...	...	...	...	...	...	...	...	...	...	...	5	...
	844 Impetigo ...	9	...	1	...	...	...	...	...	...	...	...	...	10	...
	863 Onychia ...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Conditions not necessarily connected with General or Local Diseases.	900 Irritation by wasp sting ...	...	...	...	...	...	...	...	...	...	...	2	...	2	...
	905 Debility ...	...	...	2	...	22	1	1	...	9	1	3	...	38	2
Poisons.....	985 Snake-bite ...	...	...	1	...	...	...	...	...	...	...	1	...	2	...
	943 By stramonium ...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Injuries.....	992 Burns and scalds ...	3	...	3	...	2	...	2	...	1	...	1	...	12	...
	1000 Contusion ...	5	...	...	...	...	...	...	...	...	...	...	...	5	...
	1001 Wound scalp, bone not exposed ...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	1011 Contusion ...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
	1012 Wound of the face ...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	1021 Contusion ...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
	1048 " ...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
	1058 Rupture of the heart... ..	...	...	...	...	...	...	...	...	...	...	1	1	1	1
	1093 Sprain ...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
	1092 Contusion ...	18	...	22	...	...	...	18	...	10	...	24	...	29	...
	1094 Wound sword-cut ...	...	...	...	...	...	...	...	...	...	...	...	...	4	...
	1101 Fracture of the clavicle ...	...	...	1	...	...	...	...	...	...	...	1	...	2	...
	1104 " fore arm ...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	1110 Dislocation ...	...	...	1	...	1	...	...	...	1	...	...	...	3	...
	1113 Fracture of the thumb ...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
	1115 Contusion ...	111	...	...	...	31	...	58	...	30	...	82	...	312	...
	1116 Sprain ...	1	...	...	...	3	...	...	...	1	...	...	...	5	...
	1117 Contusion ...	...	...	37	...	...	...	...	...	1	...	...	...	38	...
	1127 Fracture of tibia bone... ..	...	...	...	...	...	...	...	...	1	1	1	...	2	1
	3 Punitus... ..	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Total...		668	10	704	7	674	11	603	6	442	11	812	6	3903	51

APPENDIX B.

SUMMARY of the Annual Return of Native Troops for the Year 1873.

General Diseases.	A B		Diseases of the Nervous System.	Diseases of the Eye, &c.	Diseases of the Circulatory System.	Diseases of the Absorbent System.	Diseases of the Respiratory System.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Urinary Organs.	Diseases of the Generative System.	Diseases of the Breast.	Diseases of the Organs of Locomotion.	Diseases of the Cellular Tissue.	Diseases of the Cutaneous System.	Conditions not necessarily connected with General or Local Diseases.	Poisons	Injuries.	Punishments.	Grand Total.
	A	B																		
Treated during the year 1873	1897	226	9	85	6	1	193	349	4	75	18	...	6	116	392	38	3	484	1	3,903
Died during the year 1873	7	1	3	...	2	...	25	6	1	...	...	...	...	2	...	2	...	2	...	51

APPENDIX C.

ANNUAL RETURN showing the Number of Sick and Percentage for the Year 1873.

	Strength.	Remained.	Admitted.	Total.	Discharged.	Died.	Remaining.	Total.	Percentage.		
									Treated to Strength.	Deaths to Strength.	Deaths to Treated.
27th or 1st Beluch Regiment, Kurrachee	657	13	655	668	646	10	12	668	101.6	1.5	1.4
29th or 2nd " " Haidarabad	641	39	665	704	676	7	21	704	109.8	1.0	0.9
30th Regiment or Jacob's Rifles, Jacobabad	595	50	624	674	644	11	19	674	111.5	1.8	1.6
1st " " Sind Horse "	355	33	570	603	583	6	14	603	171.2	1.6	0.9
2nd " " " " "	342	52	390	442	421	11	10	442	129.0	3.2	2.4
3rd " " " " "	360	26	786	812	800	6	6	812	225.5	1.6	0.7
Total	2,950	213	3,690	3,903	3,770	51	82	3,903	135.6	1.7	1.3

APPENDIX D.

STATEMENT showing the Sickness and Mortality among the Native Troops serving in Sind, in the Bombay Presidency, during the Year 1873.

Regiments.	Station.	Movement in the year.	Average Strength for the year.	Number of Admissions.	Number of Deaths in Hospitals.	Average Daily Sick per Cent. to Average Strength.	Ratio per Cent. of Admissions to Average Strength.	Ratio of Deaths per Cent.		Invalided.		Hindus.		Mussalmans.		Strength of the Regiments on the 31st December 1873	Regiments.	Number of Deaths out of Hospital and Deaths on Leave.	Average Number of Consecutive Nights in Bed.
								To Treated.	To Average Strength.	For discharge the service.	For change of climate.	Strength.	Died per Cent. to Strength in and out of Hospitals and on Leave.	Strength.	Died per Cent. to Strength in and out of Hospitals and on Leave.				
27th Regiment N. I.	Kurrachee...	None.	657	655	10	1.9	99.6	1.4	1.5	31	7	122	0.8	550	1.8	672	27th Regiment N. I.	2	204
29th "	Haidarabad...	"	641	665	7	2.9	103.6	0.9	1.0	3	8	90	1.0	548	1.0	638	29th "	...	44
30th "	Jacobabad ...	"	595	624	11	2.6	104.8	1.6	1.8	31	10	319	3.4	360	1.3	679	30th "	4	6
1st Regiment Sind Horse.	"	"	355	570	6	3.9	160.5	0.9	1.6	18	24	42	...	451	3.3	493	1st Regiment Sind Horse.	6	6
2nd "	"	"	342	390	11	4.3	114.0	2.4	3.2	12	11	95	2.1	386	2.8	481	2nd "	2	5
3rd "	"	"	360	786	6	3.9	218.3	0.7	1.6	23	13	63	...	429	1.8	492	3rd "	2	5
		Total.	2950	3690	51	3.6	125.0	1.3	1.7	118	73	731	1.2	2724	2.0	3455		16	74

STATEMENT showing the SICKNESS and MORTALITY among the NATIVE

N.B.—The Regiments are placed as

REGIMENT.	Station.	Movements in the year.	Average Strength for the year.	Number of Admissions.	Number of Deaths in Hospital.	Average Daily Sick per Cent. to Average Strength.	Ratio per Cent. of Admissions to Average Strength.
PRESIDENCY DIVISION.							
19th Regiment N. I. ...	Bombay and Junjira.	Proceeded to Camp of Exercise at Chinchwad in November.	667	966	4	4.8	144.8
21st do. ...	Bombay	None.	588	458	3	3.4	77.8
Details do. ...	Do.	Do.	43	44	5	6.9	102.3
Detachment 11th Regiment N. I.	Do.	Proceeded to Camp of Exercise at Chinchwad in November.	168	83	1	1.8	49.4
Right Wing 7th Regiment N. I.	Tanna	None.	275	448	1	6.5	162.9
26th Regiment N. I. ...	Surat	Proceeded to Camp of Exercise on the 23rd November.	653	1,214	7	4.1	185.9
Detachment 21st Regiment N. I.	On board the Str. "Dalhousie."	None.	8	16	...	1.5	200.0
Do.	Basadore, Persian Gulf.	Do.	12	138	...	16.8	1,150.0
Do.	On board the Schooner "Constance."	Do.	7	27	...	...	385.6
Do.	Bushire	Arrived in April	16	85	...	6.2	531.2
Total.....			2,437	3,479	21	4.4	142.7
2nd Grenadier Regiment N. I.	Aden and Perim	Changes of Detachments between the two stations.	654	672	4	3.2	102.7
1st Company Native Artillery.	Do.	None.	86	65	1	3.4	75.5
5th Company Sappers and Miners.	Do.	Do.	94	71	2	2.2	75.5
Aden Troop	Do.	Once been out in the Lahej District on field force duty.	87	226	...	5.7	259.7
Total.....			921	1,034	7	3.3	112.2
Grand Total.....			3,358	4,513	28	4.1	134.3
POONA							
1st Gr. Regiment N.I. ...	Poona	None.	698	655	4	2.7	93.9
8th do. ...	Do.	Do.	650	853	1	3.7	131.2

TROOPS serving in the BOMBAY PRESIDENCY during the Year 1873.

they stood on the 1st July 1873.

RATIO OF DEATHS PER CENT.		INVALIDED.		HINDUS.		MUSSULMANS.		Strength of Regiment on 31st December 1873.	REGIMENT.	Average Number of Con- secutive Nights in Bed.	Number of Deaths out of Hospital and on Leave.	Average Daily Sick.	REMARKS.
To Treated.	To Average Strength.	For Discharge the Service.	For Change of Climate.	Strength.	Died per Cent. to Strength in and out of Hospital and on Leave.	Strength.	Died per Cent. to Strength in and out of Hospital and on Leave.						
ADEN, AND BOMBAY MARINE.													
0.4	0.6	28	23	531	0.9	105	1.1	636	19th Regiment N. I.	6½	2	32.8	
0.6	0.5	47	21	509	1.6	108	1.0	617	21st do.	1½	6	20.0	
11.3	11.6	5	2	157	2.5	16	6.2	173	Details do.	...	...	3.0	
1.2	0.6	...	2	168	1.2	11	...	179	Dett. 11th do.	7	1	3.2	
0.2	0.3	6	4	268	0.3	27	...	295	Right Wing 7th Regiment N.I.	4½	1	18.0	
0.5	1.0	29	10	558	1.5	74	...	632	26th Regiment N. I.	5	4	27.3	
...	...	...	...	8	...	...	...	8	Dett. 21st do.	...	...	0.1	
...	...	1	...	11	...	1	...	12	Do.	...	...	2.0	
...	...	...	...	8	...	...	...	8	Do.	...	...	0.4	
...	...	...	2	13	...	3	...	16	Do.	5	...	1.6	
0.6	0.8	116	64	2,231	...	345	...	2,576		...	14	108.4	
0.5	0.6	20	23	554	1.8	72	2.7	626	2nd Gr. Regi- ment N. I.	4½	8	22.1	
1.4	1.1	4	...	67	1.5	16	...	83	1st Company Native Arty.	2½	...	2.6	
2.8	2.1	2	1	82	2.4	15	...	97	5th Co. Sappers and Miners.	3	...	2.1	
...	...	...	3	30	...	70	...	100	Aden Troop.	4½	...	5.0	
0.6	0.7	26	27	733	...	173	...	906		...	8	31.8	
0.6	0.8	142	91	2,964	...	518	...	3,482		...	23	140.2	
DIVISION.													
0.5	0.5	17	6	599	1.1	146	...	745	1st Gr. Regt. N.I.	3½	3	19.1	
0.1	0.1	27	16	546	0.4	117	...	663	8th do.	6½	1	24.9	

STATEMENT showing the SICKNESS and MORTALITY among the NATIVE

REGIMENT.	Station.	Movements in the year.	Average Strength for the year.	Number of Admissions.	Number of Deaths in Hospital.	Average Daily Sick per Cent. to Average Strength.	Ratio per Cent. of Admissions to Average Strength.
POONA							
17th Regiment N. I. ...	Poona and Dhulia	Changes of Wings between the two stations	690	755	1	2.8	109.4
1st Regiment N. L. C. ...	Poona	None.	448	464	4	5.1	103.5
Sappers and Miners ...	Kirkee.	Do.	391	525	...	2.5	134.2
Detachment Horse.	Poona Dhulia	A Detachment of 75 men proceeded to the Camp of Exercise at Chinchwad on 1st November.	131	58	1	1.5	44.2
11th Regiment N. I. ...	Satara	Proceeded to the Camp of Exercise at Chinchwad in December, and thence to Bhuj.	392	342	2	3.1	87.2
28th do. ...	Sholapur	Do.	635	532	4	2.3	83.7
13th do. ...	Ahmadnagar	Proceeded to Sholapur in October.	622	488	1	2.7	78.4
5th do. ...	Belgaum	None.	607	492	3	3.1	81.0
6th do. ...	Do.	Do.	617	281	5	1.9	45.5
Poona Horse ...	Sirur and Kadgi.	Detachment re-joined in October.	831	301	3	3.3	90.9
12th Regiment N. I. ...	Dharwar	None.	646	545	1	2.3	84.3
Detachment 11th Regiment N. I.	Asirghur	Proceeded to Camp of Exercise at Chinchwad in November.	131	98	1	3.8	74.8
14th Regiment N. I. ...	Kolhapur	Do.	583	546	1	3.7	93.6
15th do. ...	Maligam	Do.	637	399	3	1.8	62.6
Total.....			8,209	7,334	35	3.0	89.3
NORTHERN							
3rd Regiment N. I. ...	Ahmedabad	None.	642	957	8	3.3	149.0
9th do. ...	Ahmedabad and Sadra.	A Detachment of 41 in strength, stationed at Sadra from January to October, re-joined; and a Detachment, 180 in strength, proceeded at Surat in November.	610	540	7	2.8	88.5
18th do. ...	Rajkote	None.	625	885	4	2.5	141.6
2nd Company Native Artillery.	Do.	Do.	128	126	1	1.5	98.4

TROOPS serving in the BOMBAY PRESIDENCY during the Year 1873—continued.

RATIO OF DEATHS PER CENT.		INVALIDED.		HINDUS.		MUSSULMANS.		Strength of Regiment on 31st December 1873.	REGIMENT.	Average Number of Con- secutive Nights in Bed.	Number of Deaths out of Hospital and on Leave.	Average Daily Sick.	REMARKS.
To Treated.	To Average Strength.	For Discharge the Service.	For Change of Climate.	Strength.	Died per Cent. to Strength in and out of Hospital and on Leave.	Strength.	Died per Cent. to Strength in and out of Hospital and on Leave.						
DIVISION—continued.													
0.1	0.1	19	14	648	0.3	47	...	695	17th Regt. N. I.	4 $\frac{1}{2}$	1	27.8	
0.8	0.8	8	15	269	1.8	179	0.5	448	1st Regt. N. L. C.	8	2	23.5	
...	...	11	4	364	...	60	...	424	Sappers and Miners.	2 $\frac{1}{2}$	1	10.9	
1.4	0.7	...	2	67	...	64	1.5	131	Detachment Poona Horse.	...	...	2.1	
0.5	0.5	11	3	335	0.3	53	1.8	338	11th Regiment N. I.	5	...	12.2	
0.7	0.6	9	9	614	0.4	73	1.3	687	28th do.	5 $\frac{1}{2}$	...	15.0	
0.1	0.1	9	8	617	0.1	81	...	698	13th do.	6 $\frac{1}{2}$	2	17.0	
0.5	0.4	27	10	525	0.3	82	3.2	607	5th do.	4	1	19.1	
1.6	0.8	33	5	477	1.0	95	...	572	6th do.	3	...	12.6	
0.9	0.9	38	9	127	0.8	278	0.7	405	Poona Horse.	9	...	11.0	
...	...	14	4	543	...	123	...	666	12th Regt. N. I.	9 $\frac{1}{2}$	1	15.0	
0.9	0.7	7	...	132	0.7	6	...	138	Det. 11th do.	15 $\frac{3}{4}$	...	5.8	
0.1	0.1	17	19	362	0.2	96	...	458	14th Regt. N. I.	14 $\frac{1}{2}$	...	22.6	
0.7	0.4	13	2	610	0.3	88	1.1	698	15th do.	9 $\frac{1}{2}$	...	11.8	
0.4	0.4	260	126	6,835	...	1,588	...	8,423		...	12	250.4	
DIVISION.													
1.2	0.8	40	11	503	1.1	139	5.1	642	3rd Regt. N. I.	5 $\frac{1}{2}$	...	21.6	
1.2	1.3	48	13	412	1.4	74	1.5	486	9th do.	5	...	17.2	
0.6	0.4	28	15	572	1.6	100	...	672	18th do.	4 $\frac{1}{2}$	5	16.1	
0.7	0.7	9	1	105	0.9	15	...	120	2nd Co. Native Artillery.	4	...	2.2	

STATEMENT showing the SICKNESS and MORTALITY among the NATIVE

REGIMENT.	Station.	Movements in the year.	Average Strength for the year.	Number of Admissions.	Number of Deaths in Hospital.	Average Daily Sick per Cent. to Average Strength.	Ratio per Cent. of Admissions to Average Strength.	
NORTHERN DIVISION.								
Squadron 2nd Regiment L. C.	Rajkote	...	None.	111	142	...	2.7	127.9
Head-quarters 7th Regiment N. I.	Do.	...	Do.	193	300	2	4.7	155.4
20th Regiment N. I. ...	Bhuj	...	Do.	618	637	4	5.0	103.0
2nd Regiment L. C. ...	Disa	...	Do.	293	313	2	2.5	106.8
24th Regiment N. I. ...	Do.	...	Do.	617	1,034	7	4.5	167.3
Head-quarters 10th Regiment N. I.	Mhow	...	Do.	837	1,123	1	4.3	134.1
16th Regiment N. I. ...	Do.	...	Do.	480	812	...	4.7	169.1
3rd Regiment N. L. C. ...	Nimach	...	Do.	280	299	1	3.9	106.7
22nd Regiment N. I. ...	Do.	...	Left Wing proceeded to Nasirabad in November.	608	1,178	2	6.9	193.7
23rd do. ...	Nasirabad	...	None.	616	1,201	4	4.7	194.9
Squadron 3rd Regiment N. L. C.	Do.	...	Arrived in February, and a strength of 207 proceeded to Deolali in October.	110	148	2	1.8	134.5
Left Wing 25th Regiment N. I.	Augur	...	None.	268	427	1	5.9	159.3
4th Regiment N. I. ...	Baroda	...	Do.	620	947	1	3.3	152.7
Dett. 3rd do. ...	Sadra	...	Do.	47	29	...	2.1	61.7
Dett. 7th do. ...	Dwarka	...	None.	87	181	1	8.9	208.0
Dett. 10th and 16th do.	Indore	...	Detachment 10th Regiment N. I. was relieved by the Detachment 16th Regiment N. I. on the 11th February, and the Detachment 10th relieved the 16th on the 10th August.	234	424	...	4.3	181.1
Dett. 7th Regiment N. I.	Burda Chowkey	...	Proceeded to Porebunder in November.	89	360	2	13.4	404.5
25th Regiment N. I. ...	Mehidpur	...	None.	337	1,435	2	13.1	425.8
Total			8,450	13,498	52	4.6	159.7	

TROOPS serving in the BOMBAY PRESIDENCY during the Year 1873—continued.

RATIO OF DEATHS PER CENT.		INVALIDED.		HINDUS.		MUSSULMANS.		Strength of Regiment on 31st December 1873.	REGIMENT.	Average Number of Con- secutive Nights in Bed.	Number of Deaths out of Hospital and on Leave.	Average Daily Sick.	REMARKS.
To Treated.	To Average Strength.	For Discharge the Service.	For Change of Climate.	Strength.	Died per Cent. to Strength in and out of Hospital and on Leave.	Strength.	Died per Cent. to Strength in and out of Hospital and on Leave.						
...	...	6	5	72	...	58	3.4	130	Sqn. 2nd Re- giment L. C.	6 $\frac{4}{10}$	2	3.3	
0.6	1.0	9	1	132	1.5	45	...	177	Head-quarters 7th Regt. N. I.	3 $\frac{1}{2}$	...	9.1	
0.5	0.6	19	11	471	2.7	52	2.1	523	20th Regt. N. I.	24 $\frac{5}{8}$	10	31.1	
0.6	0.6	13	3	150	...	142	1.4	292	2nd Regt. L. C.	8	...	7.5	
0.6	1.1	33	15	416	1.4	126	6.6	542	24th Regt. N. I.	5 $\frac{2}{3}$	1	28.0	
0.1	0.2	69	11	285	1.0	55	...	340	Head-quarters 10th Regt. N. I.	6 $\frac{10}{100}$	2	36.2	
...	...	36	7	585	0.2	118	...	703	16th Regt. N. I.	17 $\frac{3}{4}$	1	23.2	
0.3	0.4	6	1	139	...	62	3.3	201	3rd Regiment N. L. C.	3 $\frac{1}{2}$	1	11.2	
0.2	0.3	32	1	332	0.9	61	...	393	22nd Regiment N. I.	5	1	42.3	
0.3	0.6	13	28	530	0.5	152	5.4	682	23rd do.	7 $\frac{1}{2}$	2	29.0	
1.3	1.8	...	3	71	1.4	68	1.4	139	Squadron 3rd Regt. N. L. C.	5	1	2.5	
0.2	0.3	25	7	256	0.3	37	...	293	Dett. 25th Re- giment N. I.	4 $\frac{1}{2}$	...	16.4	
0.1	0.2	13	17	294	0.3	40	...	334	4th Regt. N. I.	5 $\frac{3}{4}$	...	20.1	
...	...	...	...	37	...	10	...	47	Dett. 3rd do.	3	...	1.0	
0.5	1.1	...	...	78	1.2	9	...	87	Dett. 7th do.	10	...	8.0	
...	...	31	...	149	...	85	...	234	Dett. 10th do.	4 $\frac{1}{8}$	...	10.2	
0.5	2.2	...	...	85	4.1	4	...	89	Dett. 7th Regi- ment N. I.	3	2	12.5	
0.1	0.5	34	41	273	0.7	46	2.4	319	25th do.	5 $\frac{1}{2}$	1	44.2	
0.3	0.6	464	191	5,947	...	1,408	...	7,445	.....	...	29	392.9	

STATEMENT showing the SICKNESS and MORTALITY among the NATIVE

REGIMENT.	Station.	Movements in the year.	Average Strength for the year.	Number of Admissions.	Number of Deaths in Hospital.	Average Daily Sick per Cent. to Average Strength.	Ratio per Cent. of Admissions to Average Strength.
SIND							
27th Regiment N. I. ...	Kurrachee	None.	657	655	9	1.9	99.6
29th do. ...	Haidarabad	Do.	641	665	7	2.9	103.6
30th do. ...	Jacobabad	Do.	595	624	11	2.8	104.7
1st Sind Horse	Do.	Do.	355	570	6	3.9	160.5
2nd do.	Do.	Do.	342	390	11	4.3	114.0
3rd do.	Do.	Do.	360	786	6	3.9	218.3
Total.....			2,950	3,690	50	3.1	125.0
Grand Total.....			22,967	29,035	165	3.82	126.42

Summary of the Statistics

YEARS.	Average Daily Strength.	Admissions into Hospital.	Ratio per Cent. of Admissions to Average Strength; Mean of all.	Average Daily Sick per Cent. to Average Strength; Mean of all.	Deaths in Hospital.	Ratio of Deaths in Hospital per Cent. to Average Strength.
1873.....	22,967	29,035	126.86	3.82	165	0.71
1872.....	22,903	36,209	158.09	4.54	226	0.98
1871.....	22,959	29,733	129.50	4.31	236	1.03
1870.....	22,715	28,380	139.08	4.33	191	0.84

TROOPS serving in the BOMBAY PRESIDENCY during the Year 1873—concluded.

RATIO OF DEATHS PER CENT.		INVALIDED.		HINDUS.		MUSSULMANS.		Strength of Regiment on 31st December 1873.	REGIMENT.	Average Number of Con- secutive Nights in Bed.	Number of Deaths out of Hospital and on Leave.	Average Daily Sick.	REMARKS.
To Treated.	To Average Strength.	For Discharge the Service.	For Change of Climate.	Strength.	Died per Cent. to Strength in and out of Hospital and on Leave.	Strength.	Died per Cent. to Strength in and out of Hospital and on Leave.						
DISTRICT.													
1.3	1.4	31	7	122	0.8	550	1.5	672	27th Regiment N. I.	20½	1	13.7	
1.0	1.0	12	8	90	1.0	548	1.0	638	29th do.	4½	1	19.6	
1.6	1.8	31	10	319	3.4	360	1.3	679	30th do.	4	0	16.0	
0.9	1.6	18	24	42	...	451	3.3	493	1st Sind Horse.	6	0	14.5	
2.4	3.2	12	11	95	2.1	386	2.5	481	2nd do.	5	1	14.8	
0.7	1.6	23	13	63	...	429	1.8	492	3rd do.	5	2	14.1	
1.3	1.7	127	73	731	...	2,724	...	3,455	.....	...	1	92.7	
0.56	0.71	993	481	16,477	...	6,328	...	22,805			1	876.2	

for the Year 1873.

Ratio of Deaths in Hospital per Cent to Admissions.	Deaths out of Hospital and on Leave.	Total Deaths out of the Average Strength in the Year.	Ratio per Cent. of Total Deaths to the Average Strength.	Ratio per Cent. to Strength invalided for Discharge the Service.	Ratio per Cent. to Strength invalided for Change of Climate.
0.56	81	243	1.07	4.35	2.11
0.62	95	321	1.40	3.98	2.13
0.74	97	333	1.45	3.12	2.10
0.68	95	286	1.26	3.71	2.33

ANNUAL GENERAL RETURN exhibiting the State of Her Majesty's Native Troops in the Bombay Presidency for the Year 1872, compared with 1871, arranged according to authorized distribution and accumulation.

APPENDIX II.

RETURN showing the Admissions and Deaths, &c., amongst the Native Troops of the Bombay Presidency at the several Stations for the Year 1873 compared with 1872.

1873.							1872.						
Division.	Regiment.	Station.	Average Strength.	Average Daily Sick.	Admissions.	Deaths.	Regiment.	Station.	Average Strength.	Average Daily Sick.	Admissions.	Deaths.	
PRESIDENCY DIVISION, ADEN, AND BOMBAY MARINE.	Detachment 11th Regt. N.I.	Bombay	168	3.2	83	1	Detachment 11th Regt. N.I.	Bombay	158	5.9	140	1	
	19th Regt. N. I. ...	Do.	650	31.4	952	4	19th Regt. N.I.	Do.	630	20.6	667	6	
	21st do. ...	Do.	588	20.0	458	3	21st do.	Do.	563	19.0	474	3	
	Details 21st Regt. N. I. ...	Do.	43	3.0	44	5	Details 21st Regt. N. I.	Do.	46	3.0	39	3	
	Right Wing 7th Regt. N. I.	Tanna	275	18.0	448	1	Right Wing 15th Regt. N.I.	Tanna	295	14.7	646	1	
	Detachment 19th do.	Junjira	17	1.4	14	...	Detachment 19th do.	Junjira	16	1.2	34	...	
	26th Regt. N. I. ...	Sarat	653	27.3	1,214	7	26th do.	Sarat	640	40.6	1,590	10	
	Detachment 21st Regt. N. I.	On board the steamer "Dal-housie"	8	0.1	16	...	Detachment 21st do.	On board the steamer "Dal-housie."	8	0.1	22	...	
	Do.	Bushire and on board the schooner "Constance."	23	2.0	112	...	Do.	On board the steamer turret "Magdala" and "Abyssinia."	16	...	...	...
	Do.	Bassadore	12	2.0	138	...	Do.	Bassadore	11	2.4	114	1	
	1st Company N.A.	Aden	86	2.6	65	1	1st Company N.A.	Aden	85	5.3	187	1	
	2nd Gr. Regt. N. I.	Do.	598	21.2	621	4	5th Regiment N. L. I.	Do.	592	21.4	399	6	
	5th Co. Sappers and Miners.	Do.	94	2.1	71	2	2nd Co. Sappers and Miners.	Do.	96	1.4	41	...	
	Aden Troop	Do.	87	5.0	226	...	Aden Troop	Do.	89	7.0	308	...	
	Det. 2nd Gr. Regt. N. I. ...	Perim	56	0.9	51	...	Detachment 5th Regt. N. I.	Perim	52	1.7	70	1	
Total...			3,358	140.2	4,513	28	Total...			3,297	144.0	4,731	33

Division.	1873.						1872.					
	Regiment.	Station.	Average Strength.	Average Daily Sick.	Admissions.	Deaths.	Regiment.	Station.	Average Strength.	Average Daily Sick.	Admissions.	Deaths.
POONA DIVISION.	1st Regiment N.L.C.	Poona	448	23.5	464	4	1st Regiment N.L.C.	Poona	450	20.2	648	1
	1st Grenadier Regiment N.I.	Do.	698	19.1	655	4	1st Grenadier Regiment N.I.	Do.	677	30.6	1,204	6
	17th Regiment N.I.	Do.	480	19.9	486	1	2nd do.	Do.	668	28.2	1,020	7
	8th do.	Do.	650	24.9	853	1	8th Regiment N.I.	Do.	660	33.8	1,493	3
	Detachment Poona Horse	Dhulia	131	2.1	58	1	Detachment Poona Horse	Dhulia	151	3.2	61	...
	Left Wing 17th Regt. N.I.	Do.	210	7.9	269	...	17th Regiment N.I.	Do.	613	26.0	807	4
	Sappers and Miners	Kirkee	391	10.9	525	...	Sappers and Miners	Kirkee	407	8.0	296	2
	15th Regiment N.I.	Maligam	637	11.8	399	3	Hd.-qrs. 15th Regt. N.I.	Maligam	351	8.8	295	3
	6th do.	Belgaum	617	12.6	281	5	6th Regiment N.I.	Belgaum	631	13.3	302	3
	5th do.	Do.	607	19.1	492	3	12th do.	Do.	648	16.0	604	2
	Poona Horse	Sirur	251	7.4	214	3	Poona Horse	Sirur	205	6.3	194	2
	11th Regiment N.I.	Satara	392	12.2	342	2	11th Regiment N.I.	Satara	385	15.8	576	2
	28th do.	Sholapur	635	15.0	532	4	28th do.	Sholapur	645	33.4	972	7
	13th do.	Ahmadnagar	622	17.0	488	1	13th do.	Ahmadnagar	650	18.8	753	3
	Detachment 11th Regt. N.I.	Asirghur	131	5.8	98	1	Detachment 11th Regt. N.I.	Asirghur	129	5.0	183	1
	12th Regiment N.I.	Dharwar	646	15.0	545	1	7th Regiment N.I.	Dharwar	639	23.3	564	3
	14th do.	Kolhapur	583	22.6	546	1	14th do.	Kolhapur	591	21.2	560	2
	Detachment Poona Horse	Kaladgi	80	3.6	87	...	Detachment Poona Horse	Kaladgi	77	7.8	171	...
	Total...		8,209	250.4	7,334	35	Total...		8,577	319.7	10,703	51
DIVISIONS.	3rd Regiment N.I.I.	Ahmedabad	642	21.6	957	8	3rd Regiment N.I.I.	Ahmedabad	609	27.4	1,494	5
	9th do. N.I.	Do.	569	16.6	525	7	9th do.	Do.	472	14.7	650	3
	18th do.	Rajkot	625	16.1	885	4	18th do.	Rajkot	619	17.2	947	3
	Squadron 2nd Regt. N.L.C.	Do.	111	3.3	142	...	Squadron 2nd Regt. N.L.C.	Do.	118	3.4	96	...
	2nd Company N.A.	Do.	128	2.2	126	1	2nd Company N.A.	Do.	122	2.0	111	1
	20th Regiment N.I.	Bhuj	618	31.1	637	4	20th Regiment N.I.	Bhuj	630	53.7	923	2
	2nd do. L.C.	Disa	293	7.5	313	2	2nd do. L.C.	Disa	301	15.2	634	4
	24th do. N.I.	Do.	617	28.0	1,034	7	24th do. N.I.	Do.	619	52.5	2,086	12

NORTHERN AND MHOW															SIND DIVISION.														
Hd.-qrs. 10th Regt. N.I.	...	Mhow	...	837	36.2	1,123	1	Hd.-qrs. 10th Regt. N. I....	Mhow	...	494	23.0	881	3															
16th Regiment N.I.	...	Do.	...	480	23.2	812	...	16th do.	Do.	...	646	20.7	917	12															
3rd Regiment N.L.C.	...	Nimach	...	280	11.2	299	1	3rd Regiment L.C.	Nimach	...	309	13.8	387	1															
22nd do. N.I.	...	Do.	...	608	42.3	1,178	2	22nd do. N.I.	Do.	...	638	45.5	1,163	6															
Squadron 3rd Regt. N.L.C.	...	Nasirabad	...	110	2.5	148	2	Squadron 3rd Regt. L.C..	Nasirabad	...	138	5.1	196	1															
23rd Regiment N.I.	...	Do.	...	616	29.0	1,201	4	23rd Regiment N.L.I.	Do.	...	626	60.9	1,891	6															
Left Wing 25th Regt. N.I.	...	Augur	...	268	16.4	427	1	Right Wing 25th Regt. N.L.I.	Augur	...	248	9.2	288	1															
4th Regiment N. I.	...	Baroda	...	620	20.1	947	1	4th Regiment N. I.	Baroda	...	644	23.1	1,305	1															
Detachment 7th Regt. N.I.	...	Dwarka	...	87	8.0	181	1	Detachment 9th Regt. N.I.	Dwarka	...	89	0.6	149	...															
Detachment 9th Regiment	...	Sadra	...	41	0.6	15	...	Detachment 9th Regiment	Sadra	...	50	1.0	42	...															
N.I.	...	...	...	...	...	...	...	N.I.	...	...	...	...	...	...									
Detachment 3rd Regiment	...	Do.	...	47	1.0	29	...	Detachment 3rd Regiment	Do.	...	48	0.4	21	...															
N.I.	...	...	...	...	...	...	...	N.I.	...	...	...	...	...	...									
Detachment 7th Regiment	...	Burda Chowkey	...	89	12.5	360	2	Detachment 9th Regiment	Burda Chowkey.	...	90	9.3	292	1															
N.I.	...	...	...	...	...	...	...	N.I.	...	...	...	...	...	...									
25th Regiment N.I.	...	Mehidpur	...	337	44.2	1,435	2	25th Regiment N.I.	Mehidpur	...	311	23.7	910	6															
Detachment 10th and 16th	...	Indore...	...	234	10.2	424	...	Detachment 10th and 16th	Indore	...	233	5.0	352	...															
Regiments N.I.	...	...	...	...	...	...	...	Regiments N.I.	...	...	...	...	...	...									
Head-quarters 7th Regi- ment N.I.	...	Rajkote	...	193	9.1	300	2	Head-quarters 7th Regiment N.I.	...	...	...	...	...	...									
Total...				8,450	392.9	13,498	52	Total ...				8,054	427.4	15,735	68														
27th Regiment N. I.	...	Kurrachee	...	657	13.7	655	9	27th Regiment N. L. I.	Kurrachee	...	668	18.0	985	12															
29th do.	...	Haidarabad	...	641	19.6	665	7	29th do.	Haidarabad	...	652	33.3	1,133	8															
30th do.	...	Jacobabad	...	595	16.0	624	11	30th do.	Jacobabad	...	510	29.0	931	19															
1st Sind Horse	...	Do.	...	355	14.5	570	6	1st Sind Horse	Do.	...	354	13.5	640	13															
2nd do.	...	Do.	...	342	14.8	390	11	2nd do.	Do.	...	453	26.9	581	12															
3rd do.	...	Do.	...	360	14.1	786	6	3rd do.	Do.	...	338	27.3	770	10															
Total.....				2,950	92.7	3,690	50	Total...				2,975	148.0	5,040	74														
Grand Total...				22,967	876.2	29,035	165	Grand Total...				22,903	1,040.0	36,209	226														

APPENDIX III.

COMPARATIVE STATEMENT showing the Health of the Native Troops in the four Divisions of the Bombay Presidency.

	1873.										1872.									
	Strength.	Admissions.	Deaths.	Daily Sick.	Ratio per Cent. of Admissions to Average Strength.	Ratio of Deaths per Cent.		Average Daily Sick per Cent. to Average Strength.	Strength.	Admissions.	Deaths.	Daily Sick.	Ratio per Cent. of Admissions to Average Strength.	Ratio of Deaths per Cent.		Average Daily Sick per Cent. to Average Strength.	Strength.	Admissions.	Deaths.	Daily Sick.
						To Treated.	To Strength.							To Treated.	To Strength.					
Presidency { Bombay Circle. Aden ...	2,437	3,479	21	108.4	142.7	0.6	0.8	4.4	2,383	3,726	25	108.1	156.3	0.6	1.0	4.4				
	921	1,034	7	31.8	112.2	0.6	0.7	3.3	914	1,005	8	36.8	109.9	0.7	0.8	3.9				
Poona Division ...	8,209	7,334	35	250.4	89.3	0.4	0.4	3.0	8,577	10,703	51	319.7	124.7	0.4	0.5	3.7				
Northern do. ...	8,450	13,498	52	392.9	159.7	0.3	0.6	4.6	8,054	15,735	68	427.4	195.3	0.4	0.8	5.3				
Sind do. ...	2,950	3,690	50	92.7	125.0	1.3	1.7	3.1	2,975	5,040	74	148.0	169.4	1.4	2.4	4.9				
Total	22,967	29,035	165	876.2	126.42	0.56	0.71	3.82	22,903	36,209	226	1,040.0	158.09	0.62	0.98	4.54				

SKETCH

OF THE

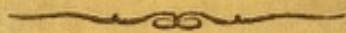
MEDICAL HISTORY OF THE NATIVE ARMY OF BOMBAY,

FOR THE

YEAR 1873.

EXTRACTED FROM THE ANNUAL RETURNS, FROM THE REPORTS OF REGIMENTAL MEDICAL OFFICERS,
AND FROM THE INSPECTION REPORTS OF DEPUTY SURGEONS GENERAL.

COMPILED IN THE OFFICE OF THE SURGEON GENERAL, INDIAN MEDICAL DEPARTMENT, BOMBAY.



Bombay:

PRINTED AT THE GOVERNMENT CENTRAL PRESS.

1874.