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ADVICE

TO

OFFICERS IN INDIA.

BY

JOHN McCOSH, M.D.,

GRADUATE OF THE UNIVERSITY OF EDINBURGH.
MEMBER OF THE ROYAL COLLEGE OF SURGEONS, EDINBURGH.
MEMBER OF THE PHOTOGRAPHIC SOCIETY, LONDON.
LATE OF THE BENGAL MEDICAL STAFF.

LONDON :

Wm. H. ALLEN & CO., 7, LEADENHALL STREET.

1856.

ADVICE
OFFICERS IN INDIA

W. LEWIS AND SON, PRINTERS, 21, FINCH LANE, CORNHILL.



TO

The Most Noble the Marquis of Dalhousie, K.T.,

LATE GOVERNOR GENERAL OF INDIA,

THIS BOOK

IS BY SPECIAL PERMISSION DEDICATED, AS A TRIBUTE

OF RESPECT AND ESTEEM, BY

THE AUTHOR.



P R E F A C E.

THE first edition of this book was published when I was last in England, about fifteen years ago, and many a time since my return to duty, I have been gratified at finding it in the libraries of young officers, as a parting gift from affectionate relations. With a sincere desire to render it still more worthy of confidence and adapt it to the changes of the times, I have added line upon line and precept upon precept, till it is now nearly double its original size.

I have had much experience and seen much service during my career in India; indeed no Surgeon has seen more; and have experienced all its vicissitudes of climate, from the snowy mountains of the Kybur, to the tepid marshes of Burmah. I have performed the duties of

various civil stations, and of Professor in the Calcutta Medical College ; I have served with Native Infantry and Irregular Cavalry, been Surgeon of a regiment of European Fusiliers, and of a batallion of European Artillery ; I was Staff Surgeon to General Gilbert during the Punjaub campaign, and Staff Surgeon to General Godwin during the late Burmese war ; I have served throughout four campaigns, been present in nine general actions, received four honorary decorations, viz. Maharajpore, Chilianwalla, Goojerath, Pegu, and twice received the public thanks of the governor General in Council for services in the field.

With such opportunities for observation, and an ambition to benefit a service in which I have spent the best twenty-five years of my life, I have endeavoured to put a useful guide into the hands of Military as well as Medical officers during their years of inexperience ; to put a guide into the hands of older officers, to enable them to recover their broken health at some of the numerous sanatoria within the Indian limits, (for I also have

experienced the blessings of renewed health at such resorts after sickness prolonged beyond hope of recovery,) and I have further ventured to throw out some hints for the consideration of Government, professional as well as extra professional, which may be found worthy of adoption.

I have indeed done my best to render this advice sound and worthy of confidence, in the hope of its being favoured with a welcome reception. Such a compilation must therefore be more or less heterogeneous, but I have endeavoured to avoid the inconveniencies of miscellaneous matter by a careful classification, and an attempt to put the right article into the right place.

J. M^CCOSH, M.D.

LONDON,
1st *July*, 1856.

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ADVICE

TO

OFFICERS IN INDIA.

CHAPTER I.

1. **AN OUTLINE OF INDIA.**—Though every one I knows that India is the brightest gem in the British Crown, and the most important colony on the surface of the globe, yet few young officers arrive in the country with correct ideas of its geographical extent; the amount of its population; the quantity of its resources; the variety of its climate and seasons; or the strength of its army and navy. Its length from north to south, viz., from Peshawur to Cape Comorin, is about 1500 geographical miles, and its breadth from the Kybur Pass to Suddya in Assam about the same distance. Its population is computed at 150 millions (about double the population of Russia); its revenue at

I 30 millions; its army at 400,000 men; its navy of ships equipped for war, at 40; and its European officers nearly as follows:—

Officers of the Line	6000
Civilians	800
Chaplains	160
Surgeons	862
Indian Navy	260
	8082

Its inhabitants are of all shades of colour from the sombre to the fair; of all stamina from the most slender to the most athletic; and of all features from the hideous to the most handsome specimens of human nature. At the extreme east—at Singapore—we find the coarse, rugged, bony features of the Chinese. Proceeding westwards, we find the countenance rounding off through the Malays, the Burmese, and the Assamese, till it arrives at the utmost pitch of elegant form and feature, and effeminacy in the Bengali. Turning to the north-west, we find the mould expanding, the stature lengthening by degrees, and attaining the very beau ideal of manly form and feature in the Rohilla. Crossing the Sutlej, we find in the Seikh, men of still further strength and stature, but with less polish; and on entering Affghanistan, still further development of muscle, though with reduced stature and less refinement; fit com-

panions for horses and camels; beasts of burden I as well as stalwart men. Its climate and seasons embrace all varieties, from the tropics to the arctic regions; from the pestiferous savannahs to the most healthy hills. The face of the country is diversified by the most extensive plains and the loftiest mountains in the world; intersected by the mightiest navigable rivers; with a fertility unknown in temperate countries; where vegetation is never suspended; but a series of crops innumerable double upon one another from one end of the year to another.

2. GOVERNMENT.—The Government of this mighty empire may be classed under two different heads: viz., the home authorities, and those resident in India. Under the former are placed the Board of Control and the Court of Directors; under the latter, the Governor-General of India, the Governors of Bengal, of Madras, of Bombay, of Agra, of the Punjaub, of Oude, and of the Straits of Malacca; each of these delegating his authority, viz., the collection of the revenue and the preservation of the peace, to innumerable commissioners, collectors, judges and magistrates, and downwards through the native grades to the peon or policeman of a village.

3. CIVIL AND MILITARY ESTABLISHMENTS.—The armies of the three presidencies of Bengal, Madras and Bombay are as distinct as their go-

I vernments, and differ nearly as widely as if they belonged to different kingdoms. Each presidency has its own commander-in-chief, its own grade of promotion, its own dress, its own code of laws and regulations ; even its own language ; and unless on the frontier, or on general field service, the armies do not come in contact, nor interchange duties. The European officers are picked men who enter the service as a profession for life, with honours and preferment held out as rewards for professional zeal and talent.

4. QUALIFICATIONS AND APPOINTMENTS.—

All appointments to the Service were, till lately, made either by the Board of Control or the Directors. At certain seasons of the year, an estimate was made of the probable vacancies. These were portioned out amongst the Home Authorities, who selected their own candidates. Those destined for the Civil Service had to undergo an efficient preparatory education at Haileybury, those for the military at Addiscombe. Chaplains had to receive their license from Oxford or Cambridge, whilst Assistant-surgeons had to receive their diploma from the royal colleges of London, Edinburgh, or Dublin. Lately these rules have undergone great changes ; Haileybury is now abolished as a preparatory college, and the wants of the Civil Service are supplied by public competition ; candidates, educated wherever they please, pre-

senting themselves at certain times before a Board of Examiners assembled on purpose, and if found duly qualified, they are passed into the Service. All medical appointments are now filled up in the same way by a medical board of examiners ; but all other appointments remain subject to the old mode of nomination. The examination for medical appointments takes place at the India House in July and January ; and all information respecting particulars can be got from the secretary in the military department at the India House.

Besides the professional qualifications required, young officers cannot be too careful to improve themselves in education, in the most comprehensive sense of the word. I am of opinion, that general education is too much neglected, and that cadets are too apt to be satisfied with having passed their curriculum without caring much for anything more. To write a good hand ; a good essay ; to be a good accountant, or a good mathematician ; to play a piece of music, or paint a good picture, are no mean accomplishments. Besides, it will be very desirable to have a favourite pursuit to follow when they have nothing else to do. All officers in India may expect to be much left to themselves, to be cast entirely upon their own resources ; and happiest are they who have some pleasant hobby to mount independent of the world,

and can take a quiet canter along the monotonous high-ways and bye-ways of tropical existence. But the possession of a hobby is not enough; they ought to be able to physic their own horses and dogs; to superintend the construction of their own houses and baggage carts; to know how to manage a farm-yard and a garden; how to cook their own dinner; brew their own ale; how to ride and how to drive; how to shoot and how to sail; how to calculate their pay in vulgar and decimal fractions; and how to balance the debit and credit side of their accounts to the utmost farthing. The cadet, after having passed a creditable examination as a young soldier, may therefore find he has still a great deal to learn.

If an assistant-surgeon, he must be prepared to practice his profession in the most comprehensive sense of the word: no distinction is made between medicine and surgery. Every medical officer must act in either capacity, as circumstances demand, (which is more reasonable after all than drawing a line between two branches which cannot be separated), and perform the duty of aurist, oculist, accoucheur, chemist, and medical jurist, as occasion presents itself.

A cadet cannot enter the service before sixteen, years of age, nor after twenty-two.

An assistant-surgeon before twenty-two years, nor after twenty-eight.

A civilian before eighteen, nor after twenty-three. I

A chaplain before being two years in orders, nor after forty.

5. PHOTOGRAPHY.—I would strongly recommend every assistant-surgeon to make himself master of photography in all its branches, on paper, on plate glass, and on metallic plates. I have practised it for many years, and know of no extra professional pursuit that will more repay him for all the expense and trouble (and both are very considerable) than this fascinating study—especially the new process by Collodion for the stereoscope. During the course of his service in India, he may make such a faithful collection of representations of man and animals, of architecture and landscape, that would be a welcome contribution to any museum. The camera should be made of good substantial mahogany, clamped with brass, made to stand extremes of heat. The flimsy, folding portable cameras, made light for Indian use, soon become useless. It is a great mistake to make things light and portable for Indian use, as if the owner himself had to carry them. Carriage for every piece of apparatus is cheap, safe, and abundant. French paper, Canson frères is the best, and does not get damaged by damp so soon as English paper.

6. MEDICAL LIST.—The present strength of the Bengal list is 414. Of these, the first 22 are

1 called senior-surgeons; the next 120, surgeons; and the remainder, assistant-surgeons. Of the senior-surgeons, the first 3 compose the medical board, and are styled physician-general, surgeon-general, and inspector-general. The next 12 are denominated superintending-surgeons, one of whom is posted to a division of the army, and to whom is intrusted the superintendence of the medical duties; the remaining senior-surgeons and the surgeons are posted to regiments and staff appointments. By far the majority of the assistant-surgeons have independent charges of their own, being qualified to hold regimental and civil stations after having been two years in India, and having passed a colloquial examination in Hindostanee.

LIST OF MEDICAL OFFICERS BY LATEST CENSUS.

Medical Establishments.	Bengal.	Madras.	Bombay.	Service or Promotion.		
				Bengal.	Madras.	Bombay.
Members of Board . . .	3	3	3			
Superintending Surgeons . . .	12	10	5	41	34	31
Surgeons . . .	125	63	47	32	29	29
Assistant Surgeons . . .	274	171	146	14	17	15
	414	247	201	Total, 862.		

* Members of the Medical Board rank as Brigadier General.

Senior Surgeons as Majors.

Surgeons as Captains.

Assistant Surgeons as Lieutenants.

Promotion from assistant to surgeon is regulated by seniority alone. All surgeons of thirty years' standing are promoted to be senior surgeons, but the offices of superintending surgeon and member of the Board were, in 1842, declared staff appointments, to which seniority gave no claim; however, with a few exceptions, these have been filled up by seniority. It is somewhat remarkable, that promotion to the rank of senior surgeon is but an empty name, for by G. O. it "confers no claim whatever to superior allowances, and will make no change whatever in the nature of their employment." They get the rank of major at thirty years' service, but no corresponding increase of pay. In my opinion, this restriction is calculated to injure the public service most materially. An increase of pay, after having served 16 years as surgeon, was urgently called for. No surgeon can calculate upon any future increase of emolument now; and large numbers discouraged by this invidious distinction, retire from the service in the prime of life, when their skill and experience are of the greatest value to the state, and the higher duties of the profession are carried on by the aged and the infirm, or by

Men tied to the service by large debts or large families.

7. RANK.—Previous to embarkation, the assistant-surgeon must take the oath of allegiance to the East India Company at the India House; and then he will receive a certificate of his appointment to one or other Presidency, for which he will have to pay £5. Some months after his arrival in India, he will be presented with two commissions; one signed by the Governor-General and Council, confirming him in the Company's army; the other by the Commander-in-chief, conferring upon him the same privileges in the royal army in India. The fees upon these two commissions amount to about £4.

Formerly, the rank of all Company's officers was limited to India and to the eastward of the Cape of Good Hope; but in Europe, and westward of the Cape, it was null and void, and a major, a colonel, or a general returning home, became a simple layman. Of late, this invidious anomaly was abolished, and the Company's officers are allowed to rank on the same grounds with those of the royal army all over the world. They are thus qualified for entering the royal army.

8. MEDICAL BOARD.—The highest grade in the Medical Service is the Medical Board, composed of the three senior surgeons on the list, with a

secretary, who is either a surgeon or an assistant. I Members of the Board are obliged to vacate office after having held their appointments five years, but superintending surgeons are not so restricted. Their duties are to superintend the whole medical department; to receive health reports; to check supplies; and to make such suggestions for the health of the army as they may think proper; in fact, their duties are almost executive. They are allowed no exercise of patronage; they may recommend medical officers to the favourable consideration of Government; but all nominations are made either by the Governor-General, the Deputy Governor, or the Commander-in-chief. Their influence in their own department is, therefore, very circumscribed, and the Board has become a refuge for the three longest livers, rather than a college of health, omnipotent over their profession.

9. SUPERINTENDING SURGEON.—The grade of superintending surgeon (as has been before mentioned) was, in 1842, abolished, as a step between that of surgeon and the Board. The office is considered that of a staff appointment, to which any one of any standing is eligible to be nominated. However, the twelve seniors have hitherto held office, one being attached to each division of the army. The duty of superintending surgeon is to make an annual inspection of all the hospitals in

In his division; to collect weekly, monthly, or quarterly reports from the various medical offices; to receive and pass indents for articles wanted for the public service; to give such directions to his subordinates respecting the treatment of the sick, as he deems proper; in short, he is commanding officer on medical matters, and communicates the results to the Medical Board. But further than making temporary recommendations for the performance of duty, he is allowed no patronage.

10. SURGEONS AND ASSISTANTS.—It is not possible to draw a distinction between the duties of surgeons and assistants, as both are for the most part independent of each other. In European regiments, every surgeon has two or three assistants under him, but by far the greater number of those enrolled as assistants hold independent charges quite as important as the surgeons. No regiment of Native Infantry has more than one surgeon or an assistant, and the duties of all civil stations are entrusted to assistants. Most civil appointments must be given up on promotion, or promotion must be given up to retain the appointment. Most staff appointments are now open to assistant-surgeons. Numerous appointments, exclusively filled by surgeons, are now filled by assistants. In fact, the greater number

of the prizes of the seniors have been withdrawn, and the duties assigned to the juniors on greatly reduced allowances.

11. SLOWNESS OF PROMOTION.—Of late years, in consequence of the annexation of Scinde, of the Punjaub and Pegu, large additions were made to all branches of the army, and almost every officer received substantial steps of promotion.

'Tis true that corresponding additions were made to the medical list. On one occasion twenty or thirty were added to the bottom of the list of assistant surgeons which benefitted nobody, and on another occasion, twelve were added to the bottom of the list of surgeons which benefitted the surgeons of that day nothing. The juniors alone reaped the advantages and got their promotion in thirteen years, whereas the surgeons who had served sixteen and seventeen years as assistants, were overlooked and got no corresponding promotion. Indeed the spirit of the times seems to be to lower the emoluments of the seniors and reduce the inducements to continue in the service, as the eagerness with which the fund annuities are taken up, amply demonstrates.

The medical officers have again and again memorialized against their grievances but to no purpose; they feel that they have been looked upon as a discontented troublesome set of men, and that they have been treated accordingly with neglect.

I These remarks are penned with no desire to decry the medical service of the Indian army, but with the best intentions of pointing out circumstances that are calculated to lower it in the estimation of the world and to operate against its efficiency. They are written unbiassed by self interest and unprejudiced by any feelings of resentment, and in the hope that the still small voice uttered in this chapter may not be in vain.

12. SUBORDINATE MEDICAL DEPARTMENT.—

The "Subordinate Medical Department" is principally intended for European troops, and consists of Apothecaries and Stewards, the former for the compounding and distribution of medicines and minor surgical operations; the latter for the clothing and diet of the hospitals. Most of them are Europeans, some, the sons of European soldiers who have not had the benefit of an education in Europe. They enter the service as hospital apprentices on the pay of thirteen rupees a month, after two years service they may be promoted to assistant apothecaries or assistant stewards on seventy rupees a month, and after about nine years spent in that grade, they are promoted with pay of 120 or 140 a month. To every European regiment there is an apothecary and a steward attached with one or more assistants, and an important part of their duty is to write the very numerous returns required from all such hospitals.

13. NATIVE DOCTORS.—Every medical officer in charge of native troops and jails, is assisted by one or two native doctors whose duty is to compound medicines and see that they are taken; to attend the sick in the absence of the surgeon; and perform the minor operations of surgery. Previous to 1835, these young men were educated at the Calcutta Medical School, superintended by the late Dr. John Tytler, and all expressly for the public service. About this time the above school was abolished and the New Medical College instituted in its stead.

14. NEW MEDICAL COLLEGE.—This institution was founded in 1835 as an improvement upon the old Tytler school to supply the demands of the subordinate medical department and to diffuse European skill amongst the native community. At first, there were only three professors appointed to it, but these have from time to time been increased in number, till the College is placed on a scale of efficiency equal to our Home Schools of Medicine. The professors now amount to twelve, all members of the medical service; the students amount to about 240, and there is a magnificent new hospital attached, capable of containing two or three hundred patients. The prejudices of the natives against the taint of dead bodies has been overcome, and practical dissection is carried on at all seasons and with alacrity; degrees and

I diplomas are granted, and the course of study is acknowledged by our English schools to qualify for English degrees. The students of highest attainments, are styled sub-assistant surgeons, and are appointed to the numerous dispensaries established in most large cities, or to minor civil stations; during their course of study most of the students receive subsistence from Government, at the rate of five or more rupees a month. Their education costs them nothing, and their pay as sub-assistant surgeons runs from two to three hundred rupees a month.

All lectures are given in English, and the students exhibit a degree of zeal and application and even of proficiency highly creditable to them. Having officiated for a year as lecturer in clinical medicine in the College, I have had the best means of judging of native talent guided by European tuition. In the provincial dispensaries, I have seen them perform the capital operations of surgery with a degree of coolness, and self possession and dexterity worthy of all approbation.

Several of the Calcutta students have highly distinguished themselves and taken high honours in our London schools, and one of their number lately passed a successful examination for a commission, and now is enrolled in the Bengal list of assistant surgeons—Dr. Chuckerbutty.

In all the principal cities of the Bengal Presi-

dency there are dispensaries supported by Govern- I
ment, and placed under the medical charge of a
sub-assistant-surgeon. By a recent return, I find
that the following is the result for one half-year
only, inclusive of the Punjaub :—

Patients (out-door) *	127,778
„ resident	4,719
Surgical operations	1,127

It is remarkable, that the natives generally have
a great aversion to vaccination, and prefer the old
mode of inoculation; for I believe this is still
allowed, without any infringement of the law, as
it would be if practised in England.

15. NATIVE SKILL.—The healing art has been
practiced from time immemorial, amongst the na-
tives, by self taught practitioners, and their pre-
cepts have been handed down from generation
to generation as a valuable inheritance to their
children. Every village has its doctor, and every
village doctor has his thousand cures for all the
ills that flesh is heir to. Many of their remedies
are worthy of a place in our more enlightened
codes, and have indeed been adopted, and their
success in surgery in cases of cataract and calculus
is wonderful, considering their ignorance of anat-
omy. Of course superstition, charms and philters
form a large portion of their treatment.

16. MEDICAL LITERATURE.— This, like other
branches of periodical literature in India, has

I hitherto not been of that healthy progressive character peculiar to temperate climates where its contributors have fixed abodes and are dependent in a great measure upon the position they can occupy in public journals; Calcutta once had a medical society with a numerous list of subscribers and a very creditable series of transactions, but, like most other societies it declined with the demise of its original members and long has ceased to exist. Since then, various journals conducted by individual enterprise have followed, but even these died prematurely.

Lately a valuable new journal, called the *Indian Annals of Medicine*, published half-yearly, has been established in Calcutta, and is at present the only representative of the profession in Bengal, its pages being occasionally enriched by official communications sent to and presented by the Medical Board.

About 20 years ago, the Supreme Government called upon the medical service for topographical reports of their respective charges holding out patronage and promotion to distinguished contributors. Contrary to what was expected, comparatively few came forward, and not more than half a dozen treatises met with approbation, the first of the series being the topography of Calcutta, by Dr. Martin. These were published at very considerable expense by Government, and distributed throughout the public offices of the pre-

sidency, and my topography of Assam was one of that number, but I fear the rewards bestowed on such successful candidates, were not such as to encourage the Service generally to go and do likewise.

When men win prizes in the race of competition and receive nothing but the ordinary rations served out to those who never entered the lists, it is not encouraging towards the performance of extra professional services, and the Government is a loser by the neglect. The medical department as a body yield to none in a well grounded education, and a diversity of talent well fitted to advance the cause of science in all its departments, but where extra professional labours are required, and satisfactorily complied with, some adequate remuneration is necessary to insure a continuation of them.

17. MEDICAL ETIQUETTE.—A very good feeling generally prevails throughout the profession, remarkably contrasting with the fierce rivalry and wrangling so often seen at home. Medical etiquette forbids the surgeon of one corps attending the officers or families of another corps without the knowledge and consent of its surgeon. Officers who do not wish to give offence to their appointed medical attendant, will always express to him their wishes if they want the opinion of another surgeon, and a ready compliance will always be found, and a consultation the result. At the same time it must be borne in mind that it is the duty of any surgeon

I to visit any patient on any emergency when called on to do so, transferring the case afterwards to the surgeon of the corps that the sick officer belongs to.

18. DUELLING.—This has now become an obsolete practice. The world and the legislature have put it down, officers have seen the folly, the barbarity of the old mode of demanding satisfaction, and a duel is now a much rarer occurrence than a deliberate murder. It is now a branch of military law to fight a duel. In all cases, both principal and seconds must undergo the ordeal of a court martial, involving the risk of loss of commission, and in fatal cases the risk of being indicted for manslaughter or murder. Nor are insults and outrages more frequent from the suppression of the duello; on the contrary, I believe they are reduced in number; nor is the vindication of insulted honour the less, but satisfaction is obtained by other measures. When an insult is offered, the usual course to follow is to leave the spot immediately and without altercation, and either by letter or the medium of a friend, to demand explanation and apology. In most cases, this is complied with, but if it is not, then the alternative is to make a public complaint to the commanding officer and leave the affair in his hands. To take no measures to obtain reparation for insulted honour, subjects the officer insulted to the ordeal of a court martial.

19. PAY.—The pay of an Assistant Surgeon at a half batta station, is C. R. 225 12 per month, and at a full batta C. R. 256 10, and if in medical charge of a regiment, C. R. 165 is added as staff allowance, medical officers in charge of departments, are allowed C. R. 12½ rupees for every 100 natives per month, and 25 per cent. for Europeans. All stations within 200 miles of Calcutta, are considered as on half batta, and the difference of an assistant's pay between half and full batta, is C. R. 30 a month.

The following table will show the rates of pay of surgeons and assistants in the different branches of the Service.

MONTHLY ALLOWANCES OF MEDICAL OFFICERS, BENGAL.

Branch.	RANK.	Horse Allowance.	Tentage.	Staff Allowance.	Pay and Indian Allowances.	Extra Batta.	Total.
Horse Artillery.	Surgeons	90	75	300	306 11 4	91 5 0	863 0 4
	Assistants	60	50	..	194 6 0	60 14 0	365 4 0
Foot Artillery.	Surgeons	..	75	300	267 5 0	91 5 0	733 10 0
	Assistants	..	50	..	154 14 0	60 14 0	265 12 0
Cavalry.	Surgeons	90	75	300	306 11 4	91 5 0	863 0 4
	Assistants	60	50	..	194 6 0	60 14 0	365 4 0
European and Native Infantry.	Surgeons	..	75	300	249 1 0	91 5 0	715 6 0
	Assistants	..	50	165	145 12 0	60 14 0	421 10 0

Members of Medical Board, C. R. 2409 13 per month.
 Superintending Surgeons, upper provinces, " 1600
 Ditto ditto, Bengal, " 1266 10 8 "
 Europeans, " 25 per cent.
 Natives, " 12½ "

I From the preceding table it may appear a very simple matter to know what one's allowances are, but experience will show that it is indeed a very perplexing one and subject to many anomalies. All accounts of pay, must sooner or later have the sanction of the Military Auditor General. In general, these accounts do not come under his eye for a year or two after their disbursement and retrenchments are made upon pretexts most unlooked for, and upon interpretations of orders, assented to no where but in the audit office.

The audit office is a sort of Court of Chancery, as well known in India as Doctor's Commons is in England, where equal skill is brought into play to ward off the just claims of its constituents by prolonged litigation, until forced to disgorge by an appeal to the Governor General in Council.

The Auditor-General's hand is in every man's pocket, and the good intentions of a liberal Government are often thwarted by the vexatious despotism of this official. Few officers have passed through the service without at one time or another feeling aggrieved by these retrenchments.

20. PRIVATE PRACTICE.—Young men come to India with the idea that they will soon make their fortunes by private practice, but generally speaking, fees are rare. Now and then a well paid staff-officer or a civilian gives something handsome, but even such are much rarer than they went to

be. Regimental surgeons have no right to demand a fee from any officer of the regiment or for his family, but Government have passed an order that civil surgeons have a right to remuneration for attendance on the families of civilians. As for native practice virtue alone is often its own reward. The natives are bad payers, and those who make anything of consequence by it, obtain it only by haggling and getting paid in advance, a system that few officers can submit to. Now and then their gratitude is expressed by a bunch of plantains or a fat kid, but that virtue is of a very evanescent character.

At one time, Government prohibited Europeans from receiving fees from natives, but that restriction has now been withdrawn. In most cases, the natives prefer their own countrymen as their medical attendants, and take the advice of European skill only in extreme cases or where they hope to profit by the influence of their medical attendants.

To one not initiated in the customs of the East, the mode of attendance on native ladies of rank must appear very absurd. The doctor is rarely, indeed, allowed to see his fair patient face to face. In most cases, the lady throws the door slightly open and extends her hand through the slit for him to feel her pulse, or in the event of his being admitted into the Harem, the patient lies in bed

I shrouded in curtains and exposes the tongue or the seat of disease through a hole in the curtain made expressly on purpose. Nor is this modesty confined to the young and the beautiful, but the old, and for what is known to the contrary, the ugly also are equally shy in exposing their person.

In Calcutta, private practice forms the principal source of income, and though the pay of a presidency surgeon is far below that of a regimental one, yet their appointments are eagerly sought for. The scale of remuneration varies with the income of the family attended, and runs from 200 to 800 rupees annually, or one week's pay of the head of the family.

Formerly, all surgeons at the presidency had the privilege of having the prescriptions for their patients, whether of or not of the service, made up free of expense at the Government Dispensary. Of late, this boon has been withdrawn, the doors of the dispensary have been closed against all dispensation and the wants of the sick are supplied by numerous druggists who drive a very flourishing trade in consequence. Very few practitioners not in the service, contrive to maintain a favourable position in practice in Calcutta unless through their capacity of druggists.

CHAPTER II.

1. MEDICAL FUND.—The object of this fund is II
to afford every year seven annuities of £300 each
to all surgeons who have completed a period of
seventeen years' service in India, as also to increase
promotion by withdrawing so many annually from
the higher grades of the list. It was established
in 1833 and was joined by every member of the
medical service with only a few exceptions. As
its prospects improved most of the dissentients
gave in their adherence, and now only ten or twelve
are non-subscribers, for all assistants who joined
subsequent to its establishment, were by orders of
Government obliged to join the fund.

No surgeon is allowed to claim an annuity until
he has paid at least C.R. 15000 (interest at 6 per
cent. upon the amount of his donations and subscrip-
tions liberally allowed by Government included)
The demand for annuities has of late years been
about three times greater than the supply, and
none have hitherto got one in less time than
25 years standing. The average applications of
the last 5 years, have been about 20, the greater

II number being men in the prime of life. The subscriptions and donations vary according to rank, that of assistants being recently raised to 39 13 1 rupees, and of surgeons 69 10 11 rupees per month, regularly deducted in the pay office and placed to account in the Treasury, at 6 per cent. interest. The subscriptions and donations though heavy are paid with alacrity, and the most improvident are forced to make a provision for their declining years. After all, the annuities are got at only half their actual value, the lapsed subscriptions making up for the other half. The annuities are paid half-yearly at the India House.

The Medical Fund is now in a flourishing condition and is of the very utmost importance to its members, for without it their prospects would indeed be forlorn. At present the number of annuitants amounts to 101.

2. MILITARY FUND.—This is a very valuable institution and every officer in the service is obliged to subscribe to it. Of late years its finances have become embarrassed, and to adjust these, considerable additions have been made to the subscriptions. Its chief intention is to provide for pensions to widows, and assist young and poor officers when obliged to return to England on medical certificate.

An assistant on joining the fund, if single, must pay a donation of C.R. 202 8, and a subscription

of 5 10 per month; a further donation of C.R. 75 II on promotion, and a further one of C.R. 225 on marriage and subscription of C.R. 12 8. Surgeons if single pay C.R. 9, and if married C.R. 20 per month.

All subscribers proceeding to Europe on sick certificate and not possessed of property to the amount of 5000 rupees are entitled to 1200 rupees to provide a passage home. They are also allowed 400 rupees for equipment if not possessed of property to the amount of C.R. 2000. Assistants are further entitled to £50 a year while in Europe, if not possessed of an income exclusive of pay to that amount.

The widow of an assistant-surgeon is allowed 1200 for passage to England, and an annuity of £102, and if deceased has subscribed as a Captain, a Major or a Colonel to £136, £205 and £342 respectively.

This fund is not so well managed as could be wished; the managers are constantly changing, the votes are irregularly collected and given without due consideration; charity and benevolence seem to guide the voters, rather than that stern sense of duty exacted by the actuaries, and hence disbursements beyond their calculations, and embarrassments beyond the resources of the fund.

3. ORPHAN FUND.—All medical officers are obliged to subscribe to the Orphan Fund, assistant-

II surgeons pay 3 12 subscription and surgeons 6, whether married or not. From this fund, the orphans of all subscribers are provided for either with their relations in England, or at the schools at Kidderpore and Alipore near to Calcutta; Kidderpore is the asylum for the orphans of officers only; a spacious and elegant building, in an extensive park, where the orphans, both boys and girls, have a comfortable home and the means of a good education.

The allowance for each child remaining under the care of its mother or guardian, is C.R. 20 a month while under five years of age, and C.R. 35 after that age.

4. **LAWRENCE ASYLUM.**—Great as are the advantages of the upper and lower orphan schools of Calcutta, yet it is a subject of regret that they are not greater. Children born in India and brought up to puberty in the relaxing climate of Bengal are poor weakly creatures, without energy either of body or mind and fit only to blow a fife and beat a drum or sit at a desk as a section writer, and these are the professions generally aspired to by the scholars. A very philanthropic and noble example is now before the public in the Lawrence Asylum at Sunawur amongst the Himmalayahs well worthy of imitation. There, in a climate altogether European, nearly 200 boys and girls of a class similar to the pupils

of the orphan schools, are being brought up, II imbued with English ideas by an English method of education, full of English health and energy, and likely to become efficient members of society, remarkably contrasting with their unfortunate compatriots of Kidderpore and Alipore. I feel assured that a greater blessing could not be conferred upon these orphans than by transferring both schools to the hills, and that the service at large would willingly subscribe to meet the expense of removal.

5. LORD CLIVE'S FUND.—This fund is supported by a sum of money presented to Lord Clive, but set apart to provide pensions for officers wounded or worn out and unfit for service before they have completed their time for regular pension, as also to provide annuities for the widows of such officers. Its advantages are open to all officers, and without subscription.

Assistant-surgeons unfit for service	
receive per annum	£45
Surgeons ditto ditto	£91

The widows of medical officers receive one-half of the above sums.

To be entitled to the above annuities, assistants must make affidavit that they do not possess property to the amount of £1000, and surgeons of £2000.

6. PENSIONS, Regular.—The following retir-

II ing pensions are now in force without reference to rank as formerly.

	Years' Service.	Per Annum.
Medical officers after	20	£191 0 0
" "	24	250 0 0
" "	28	300 0 0
" "	32	365 0 0
" "	35	500 0 0
" "	38	700 0 0
Officers of the Line after	23	191 15 1½
" "	27	292 4 0
" "	31	365 5 0

Three years' furlough included.

Without reference to the rank attained.

7. **WOUND PENSIONS.**—Government are most liberal in granting pensions for wounds received in action. Every officer severely wounded, is allowed compensation or "blood money" proportionate to the extent of his wound, and those who have lost an eye, an arm, or a limb, or injuries equivalent to such a loss, receive extra pensions for life. After every general action, a medical committee is assembled to report upon the nature of officers' wounds. At one time the medical committee was allowed to recommend the amount of compensation, but that privilege has of late been withdrawn, and they are now restricted to giving a circumstantial account of wounds, leaving the amount of compensation to be settled by higher authority. Gratuities for severe wounds less than the loss of an eye or a limb, vary from three to eighteen months full pay of the regimental rank

of the officer wounded. Pensions for the loss of an eye or a limb are also regulated by the rank of the wounded officer; Lieut. Generals receiving £400, Colonels £300, Majors £200, Captains and Surgeons £100, Lieutenant and Assistant-surgeons £70 per annum for such injury. II

8. OFFICERS KILLED IN ACTION or dying of wounds within six months after an action.—The widow and legitimate children of such officers, or failing them the mother, or failing her the sisters of such deceased officers, on whom they depended for support, shall, in addition to pensions from other funds, receive the following pensions:—The mother or sister of a colonel, £90; of a major, £70; of a captain £50; and of a lieutenant, £40 per annum. The above pensions do not debar them from donation batta in the event of such being granted to the troops for actions in which the officers fell.

9. DONATION BATTA.—In most campaigns six or twelve months' donation batta is allowed to all officers; that for a Surgeon for six months, being C.R. 1095 12, for an assistant C.R. 710.

10. INVESTMENT & REMITTANCE OF MONEY.—It may be well for the young officer to know that when he has any spare cash he can at any time and without trouble deposit it through the paymaster in the Government Treasury, where it will accumulate by interest without risk of bank-

II ruptcy ; and that all officers are allowed to remit home to near relations a limited sum, annually payable at the India House. Surgeons are limited to £100, and assistants to £70 per annum. This may also be done through the paymaster with but little trouble and no risk, and in general at a favourable rate of exchange.

11. **DEBT.**—I would strongly advise every young officer to lay it down as a sacred maxim not, if possible, to live beyond his pay; and at first he will be able to do so only by great moderation and economy, but if he can escape that rock at first he may expect an easy course thereafter. Nothing is more tempting than the possession of rich plate, a handsome Arab, or a stylish buggy ; no pleasure is so fascinating as entertaining one's comrades at frequent champagne parties, or taking a lead in the expensive gaieties of the fashionable world ; and nothing is more easy than to raise money for such purposes ; but all these he must deny himself for a time till he can afford them, if he would preserve his independence. Some are so far deluded as to hope to make money by horse dealing, horse racing, cards, and billiards. Perhaps one man in a hundred may succeed, but his notoriety is most unenviable!

It is a lamentable fact that a large proportion of Indian officers are deeply involved in debt, and that the monthly stoppages made from their pay

in the pay-office to meet bank loans, leaves them II but a scanty sum on which to exist. The banks are always open to the contract of loans on the security of two other officers. A B and C are hard up for money, and agree to give mutual security. A borrows 1,000 rupees from the Simlah Bank, giving B and C as his securities; B borrows 1,000 from the North Western Bank, giving A and C as his securities; C borrows 1,000 from the Agra Bank, giving A and B as his securities, all binding themselves to pay ten per cent. interest till the loan is paid off. Soon after, perhaps, A dies, and B is killed in battle, and their estates being insolvent, C is made liable for their debts when struggling to get rid of his own. Nothing is more injurious to an officer's character than to be constantly summoned before a Court of Requests; and taking the benefit of the insolvent act disqualifies for further service.

Borrowing money from soldiers or native subordinates in public offices is a crime, liable to be tried by court martial.

12. WILLS AND ESTATES. — When an officer dies in India, a committee of adjustment, composed of three officers, is immediately assembled to search for a will, to make an inventory of the property, sell off the live stock, and pay all regimental debts. Should the deceased have made a will, and the estate besolvent, the executors carry out the wishes

II expressed in the will. Should no will be found, the estate falls under the administration of the registrar of the supreme court, whose duty it is to administer to all intestate estates, and withhold a per-centage for his trouble. Unfortunately, great delay takes place in this mode of administration, the funds may lie for years in the hands of the administrator ; and hence the urgent reason for every officer to make his will, and appoint two or more of his brother officers his executors.

13. FURLOUGH.—Great alterations have lately taken place in the new furlough regulations, but as these are still in a state of transition and may still undergo modifications, it would be premature to enter into particulars. However, the old rules by which officers were allowed three years' furlough to Europe after ten years' service in India, are still open to officers who were in the service previous to the introduction of the new rules. Every officer ought to take his furlough as soon as he can get it, even though his health be unimpaired. A return to Europe will enable him to renew associations with home, to rub off the rust of the tropics and bring his experience and knowledge up to the standard of the times. Three years judiciously spent on furlough, ought to be considered the three best years of one's life.

14. E. I. U. SERVICE CLUB.—Before closing this chapter on the institutions of the service, the

Club is entitled to a few remarks; already the subscription list amounts to upwards of 2,000, and its daily visitors on an average to 150; the situation is most convenient, and all the luxuries and comforts of London Club life are there. It is very agreeable to the stranger, otherwise lost in the wilderness of London, to find a habitation and a home immediately after his arrival, and to feel that he is as much at ease in the Club as in his own mess-room, where he meets so many old friends with fellow feelings and associations; from the member of council to the junior magistrate; from the major-general to the ensign, from the member of the medical board to the assistant-surgeon. It is to be regretted that more officers in India do not belong to the Club, for only a fourth part of the United Service have joined it. This is not quite consistent with the esprit de corps so generally met with in Indian officers. II

The club house with all its advantages, is however only a family mansion and is but a humble representative of the Indian army compared to the club palaces of the Royal United Service in its immediate neighbourhood. The managers would very willingly have a better house, but, with due regard to the finances of the club, their best intentions are neutralised by the want of funds to enable them to meet the expenses of a worthy representative of the East India United Service.

CHAPTER III.

III 1. DATE OF RANK AND PAY.—Government make no allowance for passage out to India, nor does the pay commence nor the service count till the arrival is reported to the town major at the presidency. The sooner, therefore, the officer gets on board ship the better. Another inducement is that the rank in the army is dated from the sailing of the ship, and a day or two lost at this period might greatly retard his promotion at a future time. When two or more officers embark in the same ship, their rank is regulated by the seniority of the director who presented the appointments.

2. PASSAGE.—Though most officers sail from the port of London, there is no objection to their sailing from any other port, as Liverpool, Glasgow, or Cork. There is now no inducement to make a long voyage of four or five months round the Cape of Good Hope, so much time being lost both as to service and pay. The passage money is so very little less, that even upon that score there is but little saved. I would

therefore recommend all young officers taking III the overland route, which they will make in five or six weeks. This will be a much better introduction to the world than a long monotonous voyage at sea.

Medical officers may occasionally get a free passage on condition of performing the medical duties of a ship or a detachment of recruits, particulars of which he will learn at the India House, and he will find the passage-money saved and the head-money of the recruits (15s. a-head) of great assistance on his arrival in the country.

3. WARDROBE.—He ought to be careful not to overload himself with baggage. There are few things that cannot be got as cheap or even cheaper in India than in England at convenient opportunities. He cannot go wrong in taking a well-filled wardrobe; and as to uniform, a forage cap, a shell jacket, blue surtout, and red-striped pantaloons, with sword and belt, patterns of which he can see at any house of agency in London, will answer his purpose till he is certain of his regiment and of its uniform. Lately a standing uniform was ordered for medical officers of all branches; but orders in dress are in India so very variable that it is not easy to anticipate them even for a few months. All will do well to leave their measure and establish a correspondence with some re-

III respectable London tailor, from whom they can procure clothes at half the enormous prices charged by tailors in India.

4. INSTRUMENTS.—Government furnish for the public service all instruments and medicines of the best description, from a lancet to an amputating knife, from calomel and opium to arrow-root and tapioca. All medical stores are kept in the presidency dispensaries, with branch depôts at convenient places in the interior. All instruments and the greater part of medicines are imported from England. However, the Assistant-surgeon will do well to provide himself with a complete pocket dressing case and a small portable medicine chest, which he will find very useful when unattached, and when he has no access to the public stores; and if he has good mechanical hands, a portable tool chest will be of great service.

5. BOOKS.—A select little library of the latest medical books should not be forgotten. Books on general literature he will find cheaper in India than at home; and as for periodical literature, he will find a book-club in every station and in every regiment, well supplied with the latest information.

Civilians and officers of engineers, of artillery, and cavalry, will do well to be guided as to their particular equipment by some officer of their own

particular branch ; opportunities of consulting III
whom will frequently occur after their nomination.

6. **WIFE**.—There still remains one part of equipment on which to say a word, a WIFE ; it is rather a delicate subject, and I have, on many occasions, been twitted by fair spinsters for my opinions on early matrimony, and as they are the same now that they were when the first edition of this work was published, I must run the same gauntlet again. Nevertheless, my advice upon this head has been in vain. Young fathers, and young mothers, and large families, on slender means, now teem in every regiment, and young widows, and young orphans have increased in due proportion. Their numbers have far exceeded the computation of the actuaries of our Military and Orphan Funds. Their finances have been overdrawn to supply pensions, and they were, not long ago, saved from bankruptcy only by large additions to the subscriptions. Again insolvency threatens these noble institutions, and it is now in contemplation to reduce the pensions of the widow and the orphan no less than 10 per cent.

If the young officer has the means of supporting a wife, with all the comforts and luxuries indispensable in India, by all means let him marry the object of his affections ; but if he has not, let him remain single, for he must unavoidably get into debt, the greatest curse that he can inflict

III upon himself and family. In no country are the advantages of female society more appreciable than in India, for much time is necessarily spent at home which, without a companion, would be dull and lonely; and with a wife and family all that could be desired. But, with more ample resources than his pay, not one young officer in a hundred can live (free from debt), as he and his wife would wish to live. Let him, therefore, reserve his hand till after he has been some years in the country, till he has secured himself some staff appointment equal to the support of the matrimonial state. Even then there are many drawbacks to married life peculiar to India. The children are obliged to be sent to England before they are eight years of age, as few thrive well after that age. The parents are bereft of their offspring at a time when they were most dear and interesting, and they may not see them again till they are bearded men and maidens fair, with many of the paternal ties loosened or broken, and mutually unknown to one another on their reunion.

Should the mother fall sick, she too must be sent to England, leaving the father in a state of widowhood, and unavoidably involved in expenses which almost no young officer can afford.

7. **EMBARKATION.**—The day of embarkation is an eventful one in the career of all men, and to

many pregnant with sorrow and regret. One feels an indescribable anxiety and impatience to be away, apparently at variance with the domestic ties that bind him to home; one feels like a thriving sapling torn up by the roots and about to undergo the period of transplantation; all the tendrils of his family circle—the twigs of his acquaintance—the buds of affection, and the full blown blossoms of youthful friendship, are dried up and withered; the channels of his kindred associations are contracted, and the very heart seems to labour in passing the vital current through the system. The past is all a dream, the present a chaos of doubts, and hopes, and perplexities—and the future beyond the scope of his comprehension. He feels himself in a state of transition between the past and the future and till he takes root in the land of his adoption, and puts forth new roots, new branches, and new foliage, he will not be himself again. There is a time when the remotest point of our native land beams upon the eye of the absentee with joy and delight, and the more hardships and adversities he has undergone, and the greater the dangers and escapes from the winds and the waves, the rocks and the shoals, he may have encountered on his return, the higher he appreciates the blue headland looming in the distance. But there is also a time when our native shore

III hangs upon the eye with weariness and pain: when one has wound up his resolution to become a wanderer and an exile, when with a tear on his cheek, but no word on his tongue, he has looked a long and a last adieu to all that were dear to him; any cause of delay is borne with impatience, and he could almost wish his beloved isle transported to a more remote quarter of the Northern hemisphere.

8. PLEASURES OF EXILE.—But let him not despond, he has, from the weighing of the anchor, enrolled himself as a citizen of the world, and carries his home and all its associations like the penates of the ancients, encased in his bosom. He will find that these will protect him in all his wanderings, that exile is not so bad a thing as he anticipated; nay, that the exile has an enjoyment of his country, that the gentlemen of England who live at home at ease know nothing of. The hospitable man who would gain most upon the good opinion of his guests, places before them some national dish of cookery; the favourite picture in the drawing room of the amateur is some homely landscape, descriptive of the days of his boyhood; the most admired character at a fancy ball is some old costume of the bygone time. I have seen the man who was indifferent to the higher compositions of music, struck with delight at hearing a pet bird whistle six or eight notes (being

all it knew) of some old Scottish song. I have III
seen the eye of the veteran as he lay at anchor on
the shores of the Irrawaddy, fill with tears of
ecstasy, on listening to a once familiar tune, played
by one he knew not, in a boat floating down the
stream. I have seen the son of the mountain and
the flood, burst into a transport of joy on espying
the snowy peaks of the Himmalayah after long
years of residence in the plains, and hail them as
the friends of his boyhood. Such concentrated
essences of enjoyment are worth years of the
maudlin sentimentality that often creeps through
the sensorium of the stay-at-home, and no sweeter
incense is offered on the altar of patriotism, than
by the exiled wanderer in a tropic land.

9. VOYAGE BY THE CAPE OF GOOD HOPE.—

A fine ship, a first class Indiaman of 1500 tons, is
by no means so cribbed and confined a place as
the uninitiated would suppose, nor is the voyage
round the Cape so very monotonous. One's ideas
become wonderfully accommodated to peculiar
circumstances; he who on shore would not be
satisfied without two good airy rooms, would, on
board ship, think himself well off with a cabin nine
feet square and high enough to stand in with his
hat off. Streets of cabins, below and above, are
inhabited by an extensive society of beauty and
fashion; the cuddy table is the place of rendezvous
three or four times a day, in good fellowship and

III harmony, if they are so disposed, and like members of the same family. The poop or the quarter-deck affords ample space for air and exercise; the forecastle and the top contain interesting studies of character, while the farm yard, the poultry yard, the piggery, the dairy, may each be made to enliven an idle hour. In general, much shyness and reserve prevail amongst the passengers on first starting, and probably a good deal of this may prevail during the voyage, but this, when not based upon unfriendliness, or a desire to give offence, is likely to contribute more to the comfort and good understanding of the shipmates, than too much familiarity. Misunderstandings and personal quarrels, and party feuds are no uncommon things on board ship, and the outward voyage is more remarkable for these, than the homeward. When there is such a disparity in the years, and pursuits and associations of the passengers, a certain degree of discretion and reserve is almost desirable, and like the envelopes in a case of oranges, or the dunnage of the cargo, prevents incompatible elements from chafing one another, and keeps every one in his proper place.

The changes in the weather, the shifting of the sails, the calms, and breezes, and storms and hurricanes vary the scene, if they don't add to the pleasure. Different latitudes have their varieties of fish or fowl, or something else. Showers of

flying fish, shoals of dolphins, the sun fish, or the sword fish, or the leviathan whale; boobies roosting on the yard arms and getting caught; Mother Carey's chickens fluttering under the stern, and giving us warning of a coming storm, or the stately albatross soaring along from horizon to horizon without once flapping his wing. The aspect of the sky and the sea has each its own peculiar attraction. Brooding hurricanes, bursting water-spouts, rolling thunder, drenching showers. In southern latitudes, the sunset presents a sight of wonderful beauty and magnificence, representing the most picturesque landscapes in the most gorgeous colours, which but for their evanescence might be mistaken for reality. Even the starry vault of heaven has undergone a sea change. Our old familiar constellations have sunk beneath the wave and new clusters have taken their place, of equal splendour. Besides, trifles light as air fortunately attract attention. A passing sail, a distant headland, a branch of seaweed, or a floating spar, all contribute to the amusement of the party. He who has a taste for study, and a desire to improve himself, may turn his time on board ship to very good account. He ought to devote a portion of every day to revising his professional studies, to reading works on general literature, and those bearing upon India. Should any of his fellow

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III passengers acquainted with Hindostanni be willing to oblige him with a little assistance, he cannot spend two hours a-day better than in acquiring the language of the country of which he must soon become a resident.

10. OVERLAND ROUTE.— The overland route differs altogether from the voyage round the Cape. Instead of being one of a family, the voyager becomes one of a multitude, composed of all professions, and of all nations, and bound for every port of the Eastern hemisphere. The stupendous vessel screws her course, dropping ten or fifteen here, and twenty or thirty there, and picking up equal numbers, so that on arriving in Calcutta the party, though not diminished in numbers, is completely changed. The overland route is full of interest, and he who has not made it has yet to see the most wonderful epitome of human life in the world.

11. THE PENINSULAR & ORIENTAL COMPANY.— The fleet of steamers of the Peninsular and Oriental Steam Navigation Company, of the P. and O. as it is known by, is, I believe, the largest and the most splendid and the most efficient mercantile marine in the world, officered by men of the highest qualifications, and furnished with the most improved machinery, and affording accommodation to one or two hundred passengers. The saloons are ornamented with everything the fine arts can

supply; and though the sleeping berths are very III
circumscribed, one becomes reconciled to them
if the occupants are well suited to one another.
It appears to me that, generally speaking, the
sleeping berths have not received that considera-
tion to which they are entitled; that they are
deficient in a few necessary fittings-up that would
contribute much to the comfort of the passengers,
such as fixed seats, hooks for clothes, shelves,
drawers, and especially a strong hook in the deck
over the bed to swing in by. How ladies contrive
to get into the upper berths and down again, unless
upon the shoulders of their cabin-mates, is to me
a mystery. If ten shillings a-head were ex-
pended in such conveniences, it would be well
bestowed. Complaints are occasionally made re-
specting the table; but it must be remembered
that there is a continued series of eating and
drinking from morning to night; one party
sitting down as another rises up; each party
having its own meal separately cooked, and all of
them being cooked in the same caboose of 8 feet
by 6. The wonder is that such dinners can be
supplied so good as they generally are, considering
all the difficulties to be encountered. Passengers
sometimes forget this!

CHAPTER IV.

IV 1. **ARRIVAL IN HOOGLY.** — Dreary as the passage may be, and frequently as he may have wished it at an end, yet, when the voyage draws to a close the voyager often wishes it were otherwise, and feels averse to quit the dear old ship; he will feel that he has become a member of a new family; that he has contracted new ties and new associations, the strength of which he was not aware of, till they were put upon the stretch. The stranger awakes some morning and finds the colour of the ocean changed; the azure blue is gone, the wake is muddy as a duck pond; a gaudy butterfly is seen resting upon his cabin windows; and one or two land birds may be flitting around the ship—yet no land is in sight. As the morning clears a sail is seen, hull down to the northward, every telescope is brought to bear upon it; it is the pilot brig hove to with ensign at the peak, and the triumph of navigation is complete. Every stitch of canvas is now stretched upon the old ship, she closes with the little brig, a boat is lowered, the weather-worn, and yet well-worn pilot comes on

board, and takes command of the ship, and the IV captain, late the despot of the deck, is superseded. Tops of palm-trees soon begin to show themselves, pinnacles of light-houses and land-marks resting on the watery horizon. Onward sails the ship for hours, yet no land is seen; the channel narrows, the shore for the first time becomes visible, and he finds himself in one of the numerous mouths of the great Ganges—the Hoogly. On nearing Kedgerree, the post-boat comes alongside and distributes its welcome budget of letters, fishing boats and fruit boats, laden with cocoa nuts, pine apples, bananas, and pummaloos, and pomegranates, attach themselves to the stern, and their grotesque crews, in nearly primitive nakedness, attract attention. A Sampson steamer ranges along side, an engagement is made, the two ropes are made fast, and swift the vessel glides into the interior on the flood tide, saluting the numerous homeward bound ships anchored in the stream. The channel now narrows till the natives can be distinctly seen on either side, groves of many sorts of palm trees fringe the shores. An alligator may be seen basking on the mud like the dry trunk of a tree, possibly a tiger sneaking about in the distance, and dead bodies excite his horror as they float by, forming rafts for the vultures that are devouring them. Native music, and noise of dance and revelry resound from a village bazar. The houses

IV are mere wigwams of reeds and thatch, shrouded in bamboo foliage, and loaded with immense water melons. The people are almost naked, or clothed in muslin robes, with silver rings on their wrists and ancles, their fingers and their toes, and golden ornaments in their ears and noses, and their caste and rank painted or enamelled on their foreheads, like escutcheons over a gateway. The stranger is agreeably surprised to find them so fair, and even so handsome, with more regular and finer turned features than those of his own countrymen; graceful in their gait, easy and polite in their manners, and in their intercourse with one another highly polished and civilized; speaking in an unknown language yet making themselves understood; kneeling in prayer along the highways, regardless of turmoil around them, or pouring out libations into the sacred stream. Garden Reach, with its suburban villas, now heaves in view, and the ship soon anchors off Fort William, with Calcutta and its palaces all before him.

2. **LANDING AT CALCUTTA.** — The stranger now lands houseless, homeless, friendless, companionless, and partly helpless, a stranger for the first time on the shores of a foreign land. The strand is crowded in the extreme with natives bathing, the coolies pounce upon his baggage like robbers, yet with no intention of stealing it; the palanquin-bearers rush into the water,

fighting for the honour of conveying him to his destination, and his want of power to make himself understood perplexes him sadly; and he will, therefore, be fortunate if he can land under the protection of some one of experience. Should he have invitations to live with a friend, he will find his friendship doubly valuable; should he not, the best thing he can do is to go to Spence's Hotel, where he will be comfortable and can mature his plans for the future. If a cadet, he will be taken under the protection of the superintendent of cadets in Fort William, have quarters assigned him in the fort, and have a good mess to go to with other cadets as mess mates. On the day of his arrival, he must wait, in sword and surtout, upon the Town Major, the Assistant Adjutant General and report his arrival, and if an Assistant Surgeon, on the Secretary of the Medical Board, the Superintending Surgeon, and the Surgeon of the General Hospital. He must not expect much condescension or fellow feeling on such occasions, nor anything more than formal civility. What is the most important act of a young soldier's life is an every day occurrence to an old one in office. I have known sensitive young men hurt at the coldness of such receptions, and returning to their hotels in disgust. There have been bears in public offices, but such a generation has now passed away, and if a bear

IV is by chance found, he is at least a tame one. If officers, holding such appointments, knew the comfort imparted to a Griff. by a kind demeanor, they would not be niggardly of such trifles.

Cadets are seldom allowed to remain long in Calcutta, but are ordered up to Benares or some upper station to do duty and pass their drill, preparatory to being posted to a regiment. They are generally placed under charge of some senior officer, and their passage is provided at the public expence. Assistant Surgeons are for the most part ordered to do duty at the General Hospital for three or four months. Civilians are also detained in Calcutta to study and pass in the languages.

3. **SOCIETY.** — Most young officers on arriving in Calcutta see but little of its society, and they may think themselves fortunate in having the *entrée* to some family circle. Nobody knows a stranger unless he makes the first advances, and calls; and this is so novel and so repugnant to modest young men, that they often prefer living aloof rather than obtruding upon the residents' notice. Moreover, no society undergoes a greater fluctuation than that of Calcutta. Most people are birds of passage, and the greater number are frequently changing appointments, to be replaced by others from the Mofussil (as the interior is called), so that in a few years

the society is completely changed. Hence, even among the residents, many are indifferent about cultivating acquaintances that they are liable to be always losing; and certainly less sociality exists than would be the case were all permanently settled.

Calcutta may be aptly compared to a grand hotel, where travellers meet not only from all parts of India, but from all parts of the world. There assemble the young cadet, high in hope and eager to launch out into the career he expects to conduct him to glory and to fortune; the veteran, wearied with the weight of honours, grey and worn out before his time, panting to return to the land of his boyhood; the invalid—with the hectic flush upon his cheek, his sinews unstrung, and his raiment a world too wide for his shrunk shanks, preparing to embark for a more congenial climate; the spinster with the rose of England still upon her cheek, bent upon conquest; and the maiden, all forlorn, dispirited and despondent, after an unsuccessful campaign under the banners of Cupid; and there may be seen the young widow in her weeds and in her teens, and the fatherless orphans in mourning and in smiles, preparing for the homeward voyage; and there may be seen the Mofusselites taking their annual spell of recreation; some sending children to England that they may never again see; others receiv-

IV ing children they sent home fourteen years ago, that on first seeing they do not recognise; some parting with sick wives, others receiving wives whose plighted troth they had received ere they left their fatherland.

4. LETTERS OF INTRODUCTION.—In few things is the stranger more deceived than in the returns he receives for letters of introduction, or tickets for soup, as they are called. He will do well never to calculate on more results from them than a little formal civility—and at most a dinner; and where more than that is forthcoming, he should consider it as surplus gain. Nor can he be surprised that this is the case, considering how letters of introduction are usually got up; that they are mere attempts to transfer interest from one to another, through the influence of a third party, perhaps, unknown to the bearer, that like bills of exchange, they are often overdrawn, and when presented for acceptance, no assets are found. In fact, I consider most letters as dampers to genuine hospitality; the resident gives the stranger a good dinner as a thing almost imposed upon him without the gratification of thinking it a free gift; and the stranger receives it, not as a proof of any quality of his own having given rise to the compliment, but as a debt transferred to him by some other person, perhaps, only known by name.

I by no means wish to insinuate that Indian IV society is deficient in hospitality. On the contrary, no part of the world excels it in this virtue; and the frankness with which it is extended is one of the most agreeable features of the country. This is particularly conspicuous in the interior, where, from the scarcity of inns, such is most needed. The door of every house is open to the traveller, and a hearty welcome is found within. Indeed, most people esteem it as a compliment to have a draft made upon their hospitality.

5. PATRONAGE. — All military patronage is divided between the Governor General and the Commander-in-Chief; but the line of distinction is not easily discerned. All civil appointments are filled up by the Governor General, or the Lieutenant Governors, with a line of demarcation equally obscure to the general observer.

Patronage in India, as in most parts of the world, is too often dispensed, not according to merit, but according to the interest, in the ordinary sense of the word, possessed by the candidate for preferment. Nepotism is the most certain means of getting on; strong letters from influential parties at home is another; some are promoted for talent; some by mere accident, and some convert their brass into gold by their impudence and importunity; patronage is a sort of property, and the holders of it are as sparing of it as if it

IV were so much hard cash. It is quite amusing to see the fluctuations of interest upon a change of a Governor General or a Commander-in-Chief; the blasted hopes of some, totally irrespective of any transgression; and the improved prospects of others, equally irrespective of any claim to promotion. But such things have influenced the distribution of patronage in all countries and in all ages, and the stranger must not expect human nature in the tropics to form an exception; he, who would pioneer his own way to preferment, may console himself with the conviction that merit is more likely to meet with reward in the Company's service than in any other public Service, and he will find that the greatest ornaments of their armies have been men who by their own talents rose to fortune and renown, and carved out their own patronage.

6. **SERVANTS.**—Should the young officer enter into quarters, he will find it necessary to entertain the following servants, viz., a bearer, or footman, at seven rupees a month, a kidmutgar, or table attendant, on seven rupees, a mussalehee, or cook, on four rupees, a washerman on six rupees, a water-carrier, on five, and a sweeper on four, costing him thirty-three a month. Though this is the smallest possible establishment of servants it will no doubt appear a good deal, yet the curse of caste renders such unavoidable. Each man has

his particular duty to which he adheres most religiously. One man will brush boots and shoes, but would not wash a plate though threatened with a drawn sword. He who cleans knives and forks would think it an unpardonable outrage to be obliged to sweep the floor; and the washerman and the water carrier would think it equally outrageous to be obliged to do any indoor work. They are in general honest in the weightier matters of the law, but most of them will cheat a little; and not be satisfied unless they pocket six or eight per cent. of all the cash that passes through their hands. It is customary to trust the bearer with all the spare cash of the month; the master seldom sees a rupee, but keeps a running account and closes it twice a week. Besides keeping the cash, the bearer keeps master's keys, wardrobe, and almost everything else, and very rarely, indeed, betrays his trust. His washerman he will find a very serious evil, and that his pay is a trifle compared to the damage he does monthly. He will bring home the linen white as snow and dressed to perfection, but before it has passed four times through his hands it will be in rags. On inquiry into the cause, he will find that his doby washes his clothes by battering them with all his might on a grooved plank or a smooth stone, and so effectually as to ruin a wardrobe sewed English fashion in twelve months. Such

IV is the inveteracy of the native character that though every one once a-week protests against the damage done, yet no one has been able to effect reform. I need not say how inadvisable it is to beat native servants, as some irritable young men are apt to do. This practice should be seriously avoided, as it is certain sooner or later to get him into trouble. I have on many occasions known natives killed by a blow that was intended only as a chastisement, and courts martial on a charge of manslaughter the consequence.

7. GENERAL HOSPITAL.— The Assistant-surgeon may expect to be two, three or four months in Calcutta, with little or no duty to perform, but merely to accompany the Surgeons of the General Hospital in their visits, and gain experience in the diseases peculiar to the country. He will have one or two rooms allotted to him as quarters, but entirely unfurnished. He must therefore buy a small set of camp tables, two chairs, a brass basin and stand, a bed, a few pots and pans, and some crockery, and set up a bachelor's establishment. He must now consider himself in the vortex of Indian society; must conform to the manners and customs of his compatriots; must submit to the numerous prejudices of caste amongst the natives, and be contented. He will be somewhat disappointed in the small number of

patients in the general hospital, and wonder why IV such magnificent buildings and so large an establishment are not turned to more account. He will find the Native Hospital and Medical College Hospitals well worthy of frequent visits, as also the meetings of the Medical, and Asiatic, and Agricultural Societies. But he should weigh his income well before he becomes a member of either. He should not fail to attend all other public meetings; for though they may not be quite in his line, they are good schools for initiating him in the customs of the country and rubbing off the shyness and reserve not uncommon amongst young men fresh from school.

8. PROBATION OF ASSISTANT SURGEONS.—It is a subject of regret that the time spent by Assistant Surgeons after their arrival is not turned to better account. Doing duty at the general hospital is a mere misnomer; for they have no duty to perform, further than to kill time, beyond a discretionary attendance at the morning visit; and they generally leave it as unacquainted with the practical duties of their profession as when they left the university. A reform here is much wanted. The surgeon of the general hospital, with but little duty to perform, ought to have as active and efficient superintendence over young assistants, as the superintendent of cadets in Fort William has over young officers of the line; and

IV Government would find it their interest to have a mess and establishment at the hospital corresponding with that for cadets. During their period of probation, they should attend as regularly as they did when at college the following institutions, for four or six months, viz., the General Hospital, and the hospital of the royal regiment there placed, the College Hospital, the Lunatic Asylums, European and native, and the Alipore Great Jail and Hospital, besides devoting two hours daily to the study of Hindostanni, under a Moonshee appointed for that purpose. At the expiration of the allotted course, they ought to undergo a regular examination, and if satisfactory, be allowed to enter upon the active and responsible duties of the profession, and not till then!

The Great Jail at Alipore ought to be a model jail; ought to be under the superintendence of a medical officer, where prison discipline, penal, industrial and financial, in the most improved manner, ought to be studied by the assistants preparatory to their performance of Zillah jail duties. At present, that enormous institution is, I believe, never visited, and its great advantages as a preparatory school are lost to Government. They should, further, be obliged to attend all courts martial, courts of inquest, and committees assembled in Fort William, in which medical evidence is concerned; and all corporal punish-

ments; due notice of which would readily be given IV by the town major; and further, all coroner's inquests in the city, due notice of which would be given by the coroner.

To enable officers to give the desirable attendance at these institutions, it would be necessary to give them travelling allowance of sixty rupees a month, the regulated hire of a palkee carriage. Most Assistant Surgeons spin out their time in Calcutta, and see very little of its society; there are so many big wigs, that the tyro is lost in their shade. Nobody knows a stranger, unless the stranger makes the first advances, and calls; and this is so repugnant to the feelings of young men, that they prefer living aloof. They, therefore, often lead a solitary life, and before their time of probation is over, are glad to get off to the interior.

This is the time to become acquainted with the native language; and if at this period he neglects it, he will in future repent of it. It is a humiliating thing not to be able to speak Hindostanni fluently, and not be able to make oneself understood in the general routine of duty. Let him, therefore, engage a Moonshee, and devote four hours a-day to study.

9. ENNUI AND HYPOCHONDRIASIS.—The first six months is the most trying period of an Assistant-surgeon's career, perhaps the most cri-

IV tical of his life. Hitherto, he has been kept in a state of agitation — every hour has presented to his wondering eye something new and something gratifying; he has been sated with variety almost to intoxication, and has had only one drawback to complete his happiness—the want of some dear friend or companion to enhance his enjoyment, by socially sharing it with him. But the novelty of his arrival has now passed away; the flood-tide of excitement has turned, has ebbed, and neaped—left him stranded upon the sands of ennui. He sees every one around him busy but himself; every one too eager in the pursuit of his own affairs to pay any attention to a stranger. He has delivered his letters of introduction, and some of the addressed have left their cards at his quarters, or invited him to a dinner; and there the acquaintance has been suspended. He feels himself idle, indolent, solitary, and unfriended, and becomes unsettled, dispirited, perhaps home-sick and miserable.

There is a tide in the spirits of men as there is a tide in the affairs of men. There are in the sensorial ocean as many fluctuations as in the great Atlantic; the spring-tides of prosperity, and the neap-tides of adversity; the currents of self-interest, and the counter-currents of others' interest; the tornadoes of passion, and the calms of contemplation; the electric flashes of excitement,

and the dark clouds of melancholy ;—and each, IV
and all of these, are so much affected by passing
events, revolving in eccentric orbits, that the
mental capacity is, as it were, churned into foam
by the commotion, effervesces and evaporates,
leaving the brain dry, the sensorium a moral
quagmire, a hotbed of morbid phantoms and
metaphysical miasmata, that poison the springs
of life.

On a careful examination, it will be found that
most people's spirits rise and fall with the baro-
meter—a dull day or a clear day equally affect
them; and perhaps every glimpse of sunshine, and
every passing cloud, make some corresponding
impression on our sensorium.

It would be very instructive to peruse a faith-
ful journal of the various emotions which glance
through the mind, even of the best-regulated in-
dividual, for one single day. How often would
he be unable to assign any substantial reason for
a flow of good spirits or a fit of the blues. What
trivial events would be found to kick the beam of
his mental equilibrium, from one extreme to the
other. How often would he find that one portion
of his intellectual faculties is preyed on by the
other, as if the real ills that flesh is heir to were
not enough to embitter sufficiently the cup of life,
but that he must needs conjure up the creations
of a morbid fancy and transpose his position, un-

IV consciously comfortable, into one beset with all the infirmities of humanity.

So far is this uncontrollable propensity carried, that I believe we are more afflicted by imaginary and preconceived evils, than by those that actually befall us. In so far as we are personally concerned, there are two fixed points between which our anxiety is constantly vibrating, viz., our worldly prosperity and our bodily welfare. When we are in perfect health, how often do we apprehend misfortunes that never happen, reverses of fortunes that never have occurrence, and fret ourselves into an actual fever in consequence. When our worldly affairs are most prosperous, then we grow diffident of our health, and imagine the seeds of the most formidable diseases of the country, sown in our constitution, and these embryo ideal creations we watch with utmost circumspection, till some other, more palpable symptom of some other disease engrosses our attention, to be in its turn displaced by some equally visionary and deceptive.

This is an endemic under which a large proportion of medical students labour, and from long experience, I believe it to be more common amongst new-comers, than at any future period of their career. While a proper degree of precaution is absolutely necessary, too much nursing and anticipation of nature's mysterious laws is often

injurious. I have seen this carried to ridiculous extremes; one was afraid to walk off the high road, lest he should tread upon a cobra, another, would not eat a mango lest it should give him dysentery, nor drink a glass of wine for fear of fever, nor sleep in the hottest weather with a door open for fear of rheumatism, nor sit under a punkah with Fahrenheit at 90, for fear of catching cold, nor bathe in the Ganges for fear of alligators. Nothing is more common than for them to construe a slight cold into a galloping consumption, a headache into the commencement of remittent fever, a bilious diarrhœa into cholera, ringing of the ears into threatened apoplexy, and a spasmodic twinge under the ribs into inflammation of the liver. In fact, every trifling tumefaction is magnified into a mountain; but the mountain instead of being parturient of all the evils of Pandora's box, generally ends in misconception, or in bringing forth nothing but its legitimate mouse. IV

Such meagrimis are very natural, at least they are very prevalent, and they will leave the stranger with increased experience, but he may save himself a deal of anxiety by being forewarned of their approach. I don't mean to plead exemption from such nonsense. On my first landing in India, I had also my share of them, but never knew them end in anything serious. The most formidable illness I ever had, was a jungle fever. It came

IV upon me in camp like a thief in the night without any premonitory symptom, and when fast asleep. I had as narrow an escape with life as possible, yet I have looked forward to the issue of some trifling ailment with as much concern.

Experience will show that too much solicitude about one's health is seldom of any service. One is never so apt to catch a cold, as when guarding most against predisposing causes, and it is a well ascertained fact that none are more frequently victims of cholera than those who are always taking precautions against it. Another great error strangers are liable to fall into, is the habit of taking medicine, and drugging themselves into a state of disease. Not contented with letting nature take her own way they force her to take a way of theirs, and drive her so hard in their new regime, that she in time forgets her own, and only recovers her normal functions with great difficulty.

10. **THE VIS MEDICATRIX NATURÆ** is an imperious dame that won't bear dictation, and seems to resist any officious interference with her constitution; a regular coquette, not to be won by direct addresses and straightforward courtship. Ask her for sleep at a given hour, and she will most likely deny it, and perhaps perversely pester you with it at a time when most wanted; when you are most thirsty you will be farthest distant from the well, when

most hungry you will have a long hour and a half IV
to wait for dinner, and when most fatigued you
will have still a "gude long bittock" to travel.
On the contrary, this *vis medicatrix* is never more
provident than when accident takes us by surprise.
If a grain of sand fall upon the eye, a gush of tears
is instantly discharged which washes away the
offending body; if any extraneous substance be
received into the windpipe, violent coughing ensues
and ejects it; if any dangerous poison be taken
into the stomach, it will most likely be thrown out
again by vomiting. If a man lose the sight of
one eye, or the hearing of one ear, the sense of the
remaining one will become much more acute;
people born deaf and dumb have generally remark-
ably good eyesight, and the senses of hearing,
touching, tasting and smelling of the blind, strike
us with astonishment at their perfection.

Nature is a good surgeon as well as a good
physician, and will amputate a limb, or unite a
fracture, or salve a wound, or close a bleeding
vessel with very creditable skill. She even goes
far beyond physic and surgery, for if an animal
lose a member on which it is dependent for its
existence, she now and then supplies a new one;
a new claw to the lobster, a new tail to the lizard,
new teeth to the alligator, new claws to the leopard.
We cannot make a stumble without being con-
scious of her efforts to avert a fall; and if we do

IV fall, she will so arrange matters as to make the fall as soft as possible; and should we be exposed to great hardships and privations, she will enable us to surmount them with impunity, when under ordinary circumstances they would be followed by the most untoward consequences, or perhaps with death.

11. **STANDARD OF HEALTH.** — It would no doubt be a very desirable thing to lay down a standard of perfect health with which to compare the cases of one's patients as he would compare their lineaments and proportions with those of the Venus de Medici and the Apollo Belvidere, and be able to demonstrate their different anomalies. But every man has a sliding scale of his own, by which his health must be measured, and which would be inapplicable to every other. One man may have a pulse ten beats above the average and another ten beats below the average, and yet both may be in perfect health. An indulgence that is conducive to the health of one man would be the cause of certain disease in many another. One man may smoke his thirty cheroots a-day, drink his dozen of beer, and yet for years live, laugh at the doctor and get fat upon it, while another would sink under a fourth of these allowances. One man may require some drain upon his constitution to preserve him in health that would be detri-

mental to most of his acquaintances enjoying as good health as he. IV

On arriving for the first time in a tropical climate, the stranger must be prepared to expect some trifling complaints, but temperance and discretion are his best directors. Above all things, let him be on his guard against the epidemic of new comers — hypochondriasis — as the greatest enemy to health and happiness, as the mildew that nips the bud of his new existence in its opening. But more let him guard against idleness, as the parent of hypochondriasis. It is essential to the enjoyment of a sound mind in a sound body that both be kept in constant exercise; and if duty be light, other resources must be brought into play. Nothing is more common than for official men to complain of the irksomeness of duty; but a month's idleness generally makes them glad to be back at their desks.

12. INDISCRETIONS. — Man's own indiscretion is perhaps as frequent a cause of bad health as climate. One man gets *coup de soleil* shooting snipe in the heat of the day; another catches fever beating the jungle for heavy game; another gets mauled by a tiger or a bear; and another breaks his leg hunting. Some drink themselves, some eat themselves, some sleep themselves, some gamble themselves, some drug themselves into a state

IV of disease; yet the climate gets a great part of the blame.

The passions of manhood and the penalties entailed upon their gratification are causes of more broken constitutions than all other indiscretions put together. *Lues* everywhere abounds and occupies a large figure in every sick report. This is the Scylla of European life in India; the Charybdis is left-handed alliances with native females; and the "*medio tutissimus ibis*" is either through the Straits of Continencc or of Matrimony.

If sickness should supervene, the young Assistant-surgeon should take the advice of his seniors. Few medical men are good patients, and they are still worse prescribers in their own cases. They are very liable to run into extremes either to underdo or to overdo, and rarely have that composure of mind, that impartiality of judgment, that uncompromising system of treatment which would guide them in similar cases entrusted to their own care. Should he, as will often happen, have no one near to consult, then he must, if possible, divide himself, the intellectual from the corporeal, and endeavour to weigh matters impartially and correctly; neither putting off necessary operations that may be painful, nor procrastinating the taking of medicine that ought to be taken without delay.

13. RISK OF LIFE.—The risk of life in India **IV** is very considerably greater than in Britain; and three per cent. premium above the English rate is required on the insurance of lives. The average rate of mortality amongst European troops is five or six per cent. per annum, and of native troops, only one or two per cent. The mortality amongst medical men in all climates is greater than that of most others, and from authentic tables it is ascertained that of 100 medical men only 24 attain the age of 70; of so many lawyers, 29; and of so many clergymen, 42. The risk of life amongst new-comers is no doubt higher than amongst those inured to the country, and that risk is greater amongst those arriving late in life than amongst those of the age of puberty. Hence a reason why the stranger should be more cautious in his whole economy than the acclimatized. The climate of India is very inimical to children; most parents that can afford it send them to Europe about the age of six. The offspring of Europeans born and bred in the country is weakly and unhealthy—each successive generation becomes degenerated—even when the British blood has been kept pure, and unless re-invigorated by a European climate, the whole race would, before the fourth generation be extinct or good for nothing. How fallen from the status of their ancestors are

IV the descendants of the old Portuguese since their first sojourn on these shores.

It might be expected that I should lay down a few practical hints for reference by officers not of the profession ; but to do that in a way so as to be useful would be incompatible with the present book. A little learning is a dangerous thing in medicine even more so than in other departments. Besides officers, even when travelling, are never far removed from the reach of good advice.

So much for a first consultation !

CHAPTER V.

1. CLIMATE AND SEASONS.—This is a very extensive subject to handle ; and from the immense extent of the Bengal presidency alone, no one description would be applicable to all its parts. I shall, therefore, dwell more particularly upon its four grand divisions,—Bengal (proper), the North-western Provinces, the Punjaub, and Burmah.

Much difference of opinion exists respecting the climate of the lower and the upper provinces. This most probably arises from some idiosyncrasy, rendering a sojourn in the one or the other prejudicial to health. One man may enjoy better health in the one than the other, and *vice versâ*. If I could command a choice I should prefer Bengal in the summer season, and the north-western provinces in the winter. Bengal is less debilitating in summer, but less invigorating in winter. Those who have resided long in the upper provinces are strongly prepossessed in their favour, and on visiting Calutta, their robust persons and ruddy countenances contrast strongly

V with the sallow complexions and unstrung sinews of those long resident in Bengal.

It is somewhat curious that strangers do not feel the heat so oppressive for the first year after their arrival as they afterwards do, a proof that their constitution becomes enervated; and, on the same principle, an invalid is more overcome by the heat than a man in good health. On the other hand, it is generally believed that Indian residents on returning to England are not so sensitive to the cold as those who have never left their native shores. This has been quaintly explained by supposing a quantity of latent heat, absorbed during their broiling in India, acting as a sort of Promethean fire which, until dissipated, protects them from the cold. Whatever may be the cause, I think I can affirm from personal experience that it is a fact.

Public health is often affected by epidemics without any apparent change in the locality; and stations generally healthy sometimes change their nature and become so sickly as to be abandoned. Kurnaul is a remarkable example of this; the abuse of irrigation converting the neighbourhood into a marsh.

2. OF BENGAL.—The seasons throughout Bengal are divided into the Hot, the Rainy, and the Cold. The hot season in Calcutta may be considered to begin about the middle of March, increasing in

intensity during April May and June. The rains V generally begin about the 20th June, and end with September. The 20th October may be taken as the beginning of the cold weather.

The best season to arrive in India is December, January and February, and it is desirable not to enter the country before the 15th November, nor after the 15th March. Of course, circumstances will oblige many to arrive at all seasons, but the hot season is a very fiery ordeal to a newcomer, and to be avoided.

In Calcutta during April, May, and June, the thermometer is seldom under 86° at any hour, and in the afternoon is as high as 90° or 100° in-doors, and 120° or 130° in the sun. During the day this is found very oppressive, but a fine sea-breeze generally sets in about eight o'clock in the evening, and blows cool and refreshing all night. At this season there are occasional north-westerns, accompanied with rain and sometimes with hail, which cool the air for a day or two, and allay the dust, and are as welcome and as grateful as an oasis in a desert. Great care should be taken to avoid exposure to the direct rays of the sun, for few people, unless called upon by duty, go out of doors during the heat of the day.

Carriages of all sorts ought to have a thick cover of white, quilted with cotton to shield them from the sun; and the rider or pedestrian

When emergencies require it, will do well to protect himself by a double umbrella and a warm great coat, for the same means that are necessary to keep off cold are equally effective in keeping off heat.

The thermometer, though a correct register of heat, is by no means correct as to our feelings. One feels more oppressed in a stagnant atmosphere with a temperature of 80° than in a breeze with it at 90° , as, on the other hand, one is more affected with cold in a windy day with the thermometer at 32° than in a calm day at 22° . It is very remarkable how small the range is between what is agreeable and what oppressive, not more than 5° or 7° *cæteris paribus*; all heat under 80 is pleasant, at least not complained of, but all above 86 oppressive. Prickly heat is very generally felt in the hot season. It shows itself in form of a rash or papillary eruption on all parts of the body most liable to perspiration, with a very uncomfortable disposition to scratch. Though very annoying, it is consoling to think that it is one of the best certificates of good health.

The nature of the wind also modifies our feelings very materially, though the temperature remains the same. Of all winds, the east is the most oppressive when the thermometer stands high, as it is also felt the coldest when the thermometer is low. This is the wind that blows nobody any good, and

it must be an ill wind. It has little or no effect V in cooling a tattie. Convalescence is retarded by it, putrefaction hastened by it, and animals as well as vegetables are acutely sensitive to its baneful influence. A horse perspires in half the time when at work in an east wind than he would do in any other wind, and the leaves hang flaccid on their stems as if heated by steam. The electric state of the atmosphere has no doubt a great effect upon the constitution, though its mode of action may not be well ascertained. The moon in all countries is blamed for her evil eye, but heat and electricity must exert an equal influence, and the moon is blamed for all; predictions of the weather founded upon the phases of the moon are vague and uncertain, and I think that her effects upon public health are equally difficult to be anticipated.

During the months of May and June there is seldom a fleecy cloud upon the sky to screen the inhabitants from the intensity of the solar ray. A tide of flickering exhalations is seen streaming from the plains, assuming the fantastic forms of the mirage; resembling lakes where no water exists, and trees and forests where no vegetation exists. The earth is parched up, rent and riven as if baked over a volcano; the luxuriant leaves and gigantic flowers upon the trees are collapsed and suspended from the branches, as if they had been some hours lopped from the parent stem. Not a

V breath is in motion, and one becomes conscious of an increased frequency of inspiration to make up for the rarefaction of the atmosphere. The slightest exertion fatigues one; streams of perspiration trickle down the back while sitting writing at table, and at night the very bed clothes are wet, notwithstanding the indispensable punkah.

Appetite fails one, food becomes loathsome, sleep deserts the couch, strength leaves the muscle, life is an existence little better than a vegetation, and as Bishop —— has been heard to express himself from the pulpit “one feels like a boiled cabbage.”

The European now shuts up his house to keep out the heat as carefully as the Laplander does his, to keep out the cold; and not content with that, he shuts out the light of day also, allowing no more to enter than suffices to read or write by, and spends a good part of the day recumbent. After dark he throws open his doors as a besieged garrison throw open their gates when an invading army has withdrawn, and luxuriates in the welcome sea-breeze that whistles delightful music to his ear as it rustles through his chamber.

3. OF THE N. W. PROVINCES.—In the Upper Provinces, contrary to what might be expected, the hot weather is much more intense than in Bengal. The hot winds blow with all the ardour of a blast from a furnace, and, what adds to their

annoyance, so laden with dust, that it insinuates V
itself by every crevice, and encrusts every article
of furniture; the tables are very convenient for
teaching children their letters: the nostrils become
encrusted with it, the lungs themselves are open
to its deposit, and frequent expectoration is neces-
sary to get rid of it. The doors now warp, the
furniture twists and cracks as if exposed to the
heat of a fire; and if iced water be poured into a
glass, it is as liable to break, as if boiling water in
a cold temperature were poured into it. Nothing
can exceed the sterile, burnt-up appearance of the
country; during the prevalence of the hot winds
the trees keep their foliage, but the earth is
stripped of all herbage as if a flood of lava had
flowed over it, drinking its rivers dry and leaving
it calcined and strewed with ashes. As the wind
generally lulls at night, the house is heated to a
degree not to be endured, and many have their
beds carried out of doors under the open sky with
no other covering but the starry firmament. No
regiments move at this season unless under great
emergencies, and if a march is made, many fatal cases
are unavoidable. With all the inconveniences of
the hot winds, troops in cantonments are more
healthy than in the cooler season of the rains
which succeeds them. Fortunately, the hot winds
carry their own antidote along with them and

V their action upon a wet tatty, keeps the house comparatively cool.

4. THE PUNJAUB.—The climate of Lahore is very different from that of the Central Provinces along the Ganges, and is quite uninfluenced by the monsoon. The prevailing wind during the hot season is from the east, its cooling properties on a tatty are very feeble, and the delicious coolness and comfort derived from tatties in Upper India are little known at Lahore.

An occasional shower, perhaps once in eight, ten, or fifteen days, falls during April, May and June, and though it cools the atmosphere for a couple of days, yet the dampness it engenders prevents the action of the tatty. The heat is consequently very great, and the thermometer ranges from 85° to 95° , or even 100° , in the best houses, rendering punkahs, both night and day, indispensable. The hot weather, really distressing hot weather, however, does not commonly commence till 15th April.

The dust is something incredible. People in England, or even in the Upper Provinces, will not believe, that for days and weeks together the azure vault of heaven, with not a cloud upon it, is as completely eclipsed by impalpable dust as during the densest London fog; and when the wind is high, an elephant might pass by unseen

only a few yards away. The slightest wind raises V it in clouds, a string of camels darkens the horizon, a cavalry parade obscures the whole hemisphere for hours after ; once or twice in a month, in a week, or sometimes in a day, a storm of dust takes place that baffles all description ; yet the following transcript from my note book may give some idea of it :—

“ The weather had been unusually calm and sultry for some days previous ; during the forenoon the sky was heavily overcast, a slight breeze only was fanning the date trees at intervals, and now and then a magnificent column, like a vidette of the approaching hurricane, wheeled spirally over the parade, and with its foot upon the earth, and its head in the heavens, disappeared upon the horizon. The thermometer was only 85° ; the weather-door was left ajar to invite in a gentle current of air ; the punkah was hanging motionless from the ceiling ; the tatty reclining dry and dusty against the pillars of the verandah ; and the punkah-walla and the bheestie were taking their *araum* in the open air, and plying their hookah. Old tyrant Sol never looked so bewildered before, he could not show his naked face anywhere ; one could form no conception of his locality : no shadow followed his footsteps ; his standing orderly, the sundial, had a perfect sinecure of it, and stood at ease all day long. It might have been morning

V or evening twilight for any evidence he gave to the contrary, and one felt a sort of independence and impunity in stalking about under a sola topic at noonday, without the dread of being stared into night blindness, or knocked to the ground by one of his vertical beams. About 2 p.m. the breeze had died away to a perfect calm; not a leaflet was in motion; but a low dark arch of dust became perceptible on the northern horizon, gradually approached the zenith, and descended the southern hemisphere without being felt below. The hum of the crowd hurrying to their homes portended a coming storm; and man and beast were seen running for shelter in all directions. On came an army of clouds rolling, reeling and tumbling over one another in silent yet stupendous grandeur. Now it began to blow, increasing to a perfect hurricane, so laden with dust that neither man nor beast could stand against it, nor see to move a step; but lay down on the ground or in a ditch, where they happened to be. Day seemed suddenly changed into night; candles were lighted to see one's way across the room; on blew the wind for an hour, and on seemed to run a horizontal stream of dust: on looking out of the window the sky, if such could be called sky, presented a lurid blood-red hue as if it were charged with red-hot dust and ashes. Such might have been the last days of Pompeii and Hercu-

laneum, and had the same quantity of material V fallen from the heavens that drifted along with the wind, Lahore would no doubt long ago have shared the fate of these celebrated cities. Not a flash of lightning illuminated the darkness, not a clap of thunder broke the monotony, not a drop of rain nor a hailstone fell, and even the wind was silent, as if stealing a march on some distant province; the storm sank exhausted towards evening, and the night became cool, calm, and serene. Next morning every article of furniture was embedded in dust, and if it had had adhesion enough, it would have furnished correct casts of domestic economy. The besom of destruction seemed to have swept the earth of every particle of dust, leaving only coarse gravel, konkur and brick bats, and one felt inclined to hope that matter for such another storm could not be pounded up for a month thereafter. But the sun of the Punjaub, and the sons and daughters of Lahore produce dust enough for such a storm once or twice a week. The roads of the old regime are ankle deep in dust, it plunges under the horses' feet like so much water, a carriage moving along at an easy pace reminds one of the old paintings of Aurora, the wheels enveloped in clouds and the rider only free.

Whirlwinds are very common in these arid regions; and in a calm day, when not a breath of

V air is stirring, four, six or more of such columns may be counted at one time. A spiral column of dense dust first makes its appearance on the ground, with a base of ten or twelve feet diameter, and gyrations from twenty to forty in a minute. Every light body is caught in its eddies, and twisted up with great velocity to the sky. Its onward motion is crooked and irregular, perhaps only one or two miles an hour, and the noise as it advances resembles the crackling of a large fire. The atmosphere beyond the gyrations is not in the least agitated; and one may walk in company with it, only a few yards apart, and watch its phenomena without being sensible of its force or sprinkled with its dust. After traversing the earth for a mile or two, it gradually becomes expended, and its tract remains on the sky for some time after all is quiet on the ground. I feel at a loss to account for such winds by any known theory, though the cause is probably the same as that of the waterspout: they occur only in calm weather, and are not known in a stormy day, nor does either thunder or lightning accompany them, or any change of weather follow them. These whirlwinds strikingly exemplify the lately-discovered law of storms, though only in miniature; and I have no doubt if their scientific authors were in the Punjaub, they would be able to make most valuable notes in their horn book.

The mirage is also seen in great perfection in V the Punjab, and an arid waste of sand is apparently as if by magic transformed into a beautiful lake, fringed with foliage.

Meteors are very frequent, with a degree of splendour and duration seldom equalled; thunder and lightning are less frequent and less vivid than in other parts of India.

The rains that afford so much relief in the Central Provinces, and are looked forward to as an oasis in the desert, are merely nominal at Lahore, and very little more falls during July, August and September than during the three previous months. Withal the rivers rise high, owing to supplies from the mountains, and if two or three days' rain take place, when it is so swollen by the snow, a large part of the country is inundated, as the following extract from my Note Book of July, 1847, will show:—

“A change is now come o'er the spirit of the dream; the rebellious dust that wont to fly into every body's face is now become a kneaded clod, a plastic mass of clay, fit for the mould of the brick-maker, or the trowel of the sculptor; the windows of heaven have been opened wide, and copious showers of welcome rain have fallen upon the fevered earth and the no less fevered inhabitants. The Ravee is full to overflowing, and has extended its dimensions up to the city walls and

V entered some of its gates; every ditch is now become a canal, every hole a pool of water, every hollow a placid lake; islands, isthmuses and peninsulas have started into existence, and given new forms and features to the arid landscape, otherwise so tame and dreary. Large boats navigate the public thoroughfares, and excite nearly as much curiosity as an alligator or a dolphin would do; and if the water rises only three feet higher the whole cantonment of Anarkullee will be under water, and become a peopled jeel."

Again, on the 13th July, I find—

"A week only has passed since a heavy fall of rain took place, yet the weather has become oppressively hot. The thermometer 87° to 90° ; the atmosphere is loaded with vapour, so that objects cannot be seen a mile off. One feels as if in a vapour bath; and when sitting on a chair under a punkah, the perspiration trickles down the back in streamlets. I have no strength nor spirits to do any thing, both being below zero, and roll upon a couch most of the day."

By the middle of September the heat begins to moderate, and by the 1st October the weather is temperate and agreeable. By the 1st November the temperature is delightful, sharp and frosty, and until the middle of April nothing could surpass the climate, yet six or eight months pass away without an inch of rain falling. Much

cloudy weather occurs in the cold season, sometimes for weeks together, every day betokening rain, but it either ends in a dust storm or a few drops.

The peculiarity of the climate of Lahore, I may say of the Punjaub, is the extraordinary drought that exists throughout the year, so that where artificial means are not used to irrigate the soil, the country becomes a desert, hence the excessive aridity, the dust and heat. It has lately become a speculation whether the absence of vegetation and forest is a cause of drought, or whether in the event of these being increased to a large extent, rain would be more copious. That they stand in the relation of cause and effect, I think most certain, but which takes precedence, I imagine it is very difficult to decide. I have studied the phenomena of clouds and rain in the Himalayah, but have not been able to trace any difference between what fell on a bare range of mountains and what on a range covered with forest; both seemed to partake of it alike according to their elevation; the higher the mountain the more cloud and rain; not the greater the forest the more rain.

Still we have well authenticated instances, where the cutting down of extensive forests greatly reduced the average fall of rain, but we want the counter argument to prove that the extension of forests added to the humidity of the climate;

V nevertheless, the presumption is that it would, and were it possible to overrun the Punjaub with forest or vegetation more rain would fall, and the climate would be cooler.

As to the seasons of the Punjaub, they are nearly similar to those in upper India. The crops of wheat and barley, &c. being cut down in April, and those of the hot season in October.

The climate of the Punjaub does not seem favourable to animal life, especially of those parasite classes that frequent large cantonments in the north-west provinces. Mosquitoes are few, as well as fleas and bugs, white-ants, and ants in general; lizards, scorpions, jackdaws, hawks, vultures, jackalls, are far below the average; but flies, (the common black-fly), fire-flies, sand-flies, and crickets, swarm in every house. By means of good chicks the house-fly may be kept at bay, but the sand-fly abounds in every room. Though mere phantoms of material creatures, imperceptible to the ear and nearly so to the eye, and best discovered by their own shadow on the wall, and so fragile as to be broken into pieces by the stroke of a horse's hair, yet their bite is like the prick of a red-hot needle; and so venomous that the part swells to the size of half a cherry, remaining for days intolerably itchy, and requiring the greatest self-restraint to refrain from tearing it open: without noise, their assaults are unheard; their size

enables them to enter curtains where a mosquito V would not penetrate ; and a thin covering of silk, or cotton or woollen gives no protection, for their fangs penetrate them all. A mosquito is a trifle to it, a bug or a flea easily repelled in comparison. More sleep is lost by this little wretch than by all other domestic plagues put together, and nothing but a punkah gives one a chance of a night's sleep.

Next to the sand-flies, the crickets are the great annoyance ; they keep up a deafening chatter all night long ; nor are they free from offence, but gratify their palates upon most things that lie about the room ; boots and shoes, brushes, combs, backs of books and leather and cloth of most kinds ; nay, I believe, they attack the very nails of our toes and fingers, for I never could account for the notches being made in any other way.

Next in precedence of annoyance comes a species of insect known from their shape by the name of " fish." They are equally modest and retiring as the sand-fly and the cricket, but do not prey upon humanity. Their particular taste lies in dress coats and warm clothing, paper, and pastry work and furriery ; and, unless the owner is constantly on the alert and musters his wardrobe, he will most likely require a new outfit next cold season, when he comes to stand muster himself.

5. OF BURMAH.—The climate of Burmah resem-

Vbles a good deal that of Bengal Proper, the country within the delta of the Irrawaddy being equally flat and liable to inundation; but the monsoon sets in much earlier, generally about the 12th of May, the rains continuing with occasional glimpses of sunshine, until the middle of September; during the rains the atmosphere is so excessively moist that every article in the house becomes mouldy, and unless dried once a week over a charcoal fire, one's clothes would rot in their trunks. Hence, every careful man, who consults his health and his economy, has a standing brazier of burning charcoal with a large frame of basket-work, to place over it, which he uses as a kiln to dry his clothes and everything else of value. For a month previous to the monsoon the heat of the day is very great; every article is of a temperature above blood-heat, and on sitting down on a chair one has the idea that some playful person has been heating it as a practical joke. However, the nights are at all seasons cool and admit of a sound night's sleep. Though most of the trees shed their leaves and remain bare during the cool weather, yet fires are unknown, and an Alpaca coat is warm enough even in what is called winter.

6. THE RAINS.—During such an ordeal, as the hot season, the rains are looked for with intense interest, and the exile awaits their approach as

the captive does the tread of the deliverer that is to set him free, and hails the first nimbus cloud upon the horizon as the traveller does the oasis in the desert—as the cast away mariner does the coming sail. The first roll of the thunder is welcome to his ear, as the signal gun of approaching assistance to the almost despairing warrior, and the first drops are as refreshing as a cup of cold water to a feverish patient, as auspicious as the first dew of perspiration on his burning forehead.

In Bengal, about the 20th of June, a change comes o'er the spirit of the atmosphere, and symptoms indicate the approach of the South West monsoon. The view is circumscribed with mist and haze: the air feels damp, and the tatty loses its cooling properties, the punkah is insisted on more urgently; the system feels more relaxed, the perspiration more clammy and profuse, and prickly heat more annoying. A nimbus cloud, with a fine cauliflower head, is seen on the western horizon, gradually ascends, accompanied by a whole army of others, which soon occupy the whole hemisphere. A portentous stillness prevails; the leaflets upon the trees hang motionless; the cattle of the field startle home; the birds of prey soar far aloft above the clouds; the natives are seen running for shelter in all directions, and the hum of the multitude in the bazars denotes active

V preparations being made for a coming storm. Soon the forked lightening flashes among the clouds, the thunder rolls high over head, the sun is eclipsed with dust, and darkness prevails, rendering candles in the house indispensable.

The storm now breaks with great fury, unroofing houses, upsetting carriages, tearing up trees by the roots; the electric fluid not unfrequently striking the earth and causing loss of life. The first drops of rain hop upon the dust like globules of mercury, and hailstones, as large as pigeons' eggs, come tumbling down like grape shot. Now the monsoon is begun in real earnest, and the arid soil drinks deep of its abundance by its thousand fissures. Few people can contain their joy upon this occasion, and many rush out bareheaded into the shower, and saturate their clothes to the skin before they return.

The thermometer which wont to stand about 90° or 96° now falls 10° , and if the rains continue abundant seldom rises above 80° at sunrise and 85° at noon. Strangers are apt to believe that during this season the rain pours down incessantly by night and day. But so far is this from being the case, that it seldom rains for twelve hours in succession, and on an average seldom more than six hours out of the twenty-four. The forenoons are generally dry. The greater part of the rain falls in the afternoon or at night, and two or

three days of continued rain do not happen above four or five times during the monsoon. Withal, the quantity of rain that falls is almost incredible in some provinces amounting to no less than eighteen or nineteen feet.

7. INUNDATION.— The Ganges now rises from forty to fifty feet, overflows its banks and inundates the country, like a sea. Boats pursue their course through the interior of the country, over corn fields and orchards, along the highways, or through lately populous streets, the streams of population being replaced by muddy water. The natives embark their goods and chattels to keep them dry, and tie their boats to the door posts; where the oxen lately trod out the corn, they swim across to higher pasture; the timid deer is driven from its haunts and glad to claim protection in a cow-house; the elephant and the wild hog swim from island to island and are often captured in the transit; and even the sulky tiger, tamed of his ferocity, has on such occasions sneaked into a cottage, and, docile as a dog, laid himself down an unwelcome guest in a corner.

Contrary to what might be expected, these inundations carry little devastation and no care nor despondency along with them. In proportion to the inconvenience suffered now is the abundance of the coming harvest; according to the height to which the waters rise, so high rise the hopes of

V the husbandman: for a copious sediment of rich alluvial earth is deposited on the lately cropped soil, which requires only to be stirred and sprinkled with grain to return fruit, some thirty, some sixty and some a hundred fold. The earth now teems with vegetation; the arid soil becomes a jungle; the growth of plants may almost be watched with the naked eye; and tender shoots run up into stems sixty or eighty feet in height in one season. Animal life is equally prolific; the soil is literally encrusted with toads and frogs and creeping things of every description, and the noise of insects is quite deafening.

The rains are more and more scanty and irregular towards the north-west. In the Punjaub very little falls during the hot season, and beyond the main chain of the Himalayah the monsoon is unknown.

8. THE COLD WEATHER.— About the middle of September the rains begin to intermit; about the 1st of October there is only an occasional shower; about the middle of October the monsoon generally changes, often with as much violence as it set in with; the wind settles in the north-east; and the weather becomes calm, cool and clear. By the 1st of November the temperature is very congenial, and till the middle or end of March no climate in the world could surpass it, especially in the north-western provinces. The

thermometer ranges from 40° to 60° . The invalid V leaves his couch; the convalescent rapidly recruits his condition; the European feels new health and vigour diffused through his frame; enters upon a new lease of life, and feels a buoyancy of spirits and an elasticity of gait that is most delightful; he now glories in his strength; exercise is the greatest enjoyment; he becomes in a great measure reconciled to the fiery ordeal from which he escaped, and thinks it was all worth enduring to obtain such heavenly weather. The climate of the north-west provinces is, from 15th October to 15th April, unsurpassed by any region in the world.

CHAPTER VI.

VI 1. MODE OF TRAVELLING.—Before the Assistant-surgeon has been two months in Calcutta, he will be glad to leave it, and most probably will be ordered to some of the large stations of the upper provinces, Benares, Cawnpore, Merut, Umballa, Lahore, or Peshawur, to do duty under the Superintending-surgeon. This is the best thing that could happen to him, his pay will be increased to 256 a month, and he will be granted boat allowance, or have a free passage provided in one of the river steamers.

2. BOATING ON THE GANGES.—The best sort of boat for the river is a small beauleah or budjerow, with eight or ten oars; this contains two comfortable cabins, and a flat planked roof, where one can take exercise. A larger boat is generally unwieldy and too heavy for the crew allowed it. Up-country men are always preferred to Bengalese, and Hindoos to Mussulmen. Before engaging a boat, examine if she is sound, well found in cables sails, ropes, and a good iron anchor. Boats are engaged by the month or by the trip, the latter

is the best way. A written agreement should be made, and not more than one-third paid in advance, the rest by instalments at different parts of the voyage. Those not experienced in boating ought to allow the boatmen to have all their own way; for though the stranger may be convinced of their doing many things wrong, yet he will be a loser in time and temper by attempting to introduce improvement. The most important thing to be attended to is the place of spending the night. They should always, if possible, be made fast in a creek, where shelter may be got in the event of a storm; for a boat made fast on a lea-shore, with a great extent of water to windward, especially if the wind be against the current, is sure to be swamped. The means in use for ascending the river are sailing and tracking. When the wind is fair and strong enough, sail is set, and thirty or forty miles are sometimes made good in one day. When there is no wind, the crew walk along the shore, and drag the boat on by a long rope made fast to the top of the mast. In this last way ten or twelve miles a day is good work. When neither sail nor tracking can be had recourse to, the boatmen take to their oars, or push along with bamboos at the rate of only one mile an hour.

To one not acquainted with the navigation of large rivers, a voyage up the Ganges in country

VI boats may possibly be considered a mere pleasure-trip; but much experience convinces me that it is full of risk both to person and property. The rate of insurance for a four month's voyage on the Ganges is about the same as that from Calcutta to London. Indeed, the management of a boat during such a voyage, and with the appliances in use, is more precarious than that of a fine ship to England. One might imagine that nothing more was necessary than to continue to ascend and descend the stream, and he cannot go wrong; but the whole country is for three or four months of the year covered in a great measure with water and is more like an inland sea than a river without current or permanent landmark, where old channels are filled up every year, and new ones are formed; where the banks that resist the sapping of the river appear under so many different shapes; where at one time a large thriving town is created, and a month thereafter not a stick of it remains; in two or three months more an extensive tract is found covered with slime and alluvial deposit, and a month thereafter the villagers return and reconstruct their city of fresh reeds and bamboos as before. Even in the dry season, the Ganges is divided into so many channels and islands that it resembles a net, and renders it very difficult to determine the navigable channel. Then the voyager meets with rapids,

where all the strength of his crew is insufficient to VI
drag the boat up stream, and often in such rapids
the tracking rope breaks, when there are only two
or three persons on board; the boat descends the
stream like an arrow at the mercy of the current;
perhaps it strikes upon a bank and upsets, or it
may be that a mass, large as an elephant, tumbles
from the high bank and swamps it. Then there
are storms and lea-shores, and dashing waves
equally formidable to the crazy craft and the
primitive crew, as to a ship well manned at sea,
and, what is worse, the boatmen on any emer-
gency become panic-struck and desert the boat
and the voyager at his utmost need, and worse
still, the inhabitants on shore will render him no
assistance. In the event of his boat's going to the
bottom they will not allow him to enter their huts,
no, not even their cow-houses, and he is driven to
the shift of taking up his quarters in some un-
inhabited ruin. The natives of India with all
their gentleness and inoffensiveness are probably
the most inhospitable race on the face of the globe
to all but those of their own caste. When
wrecked, the stranger will run no risk of being
injured in person or robbed of his property,
but he must calculate on no fellow-feeling for his
destitute condition.

But travelling by country boats, especially up

VI stream, is now very rarely practised ; and I shall introduce the stranger to the river steamers.

3. RIVER STEAMERS.—There are many steamers regularly running up the Ganges from Calcutta to Allahabad, but neither the Jumna nor the Ganges admits of their going beyond it. Government first took the lead in internal steam navigation, but now the greater number of their vessels have been withdrawn to Pegu, and the river is in a great measure left open to private speculation. The voyage from Calcutta to Allahabad is made in from fifteen to twenty days, and no better opportunity can be found of seeing Indian life and scenery than in such a trip. The stranger not pressed for time, cannot do better than engage a passage in one of the steamers. He will have a comfortable cabin to himself, as much tonnage as he requires, he will have a good table, plenty of society, a spacious deck to exercise upon ; every evening the steamers anchor ; and at most stations they halt a few hours, admitting of a run on shore, and an inspection of what is best worth seeing in the neighbourhood.

4. DAWKING.—There are no mail coaches in Bengal, but there are several transit companies, where one can take his passage along the grand trunk road almost to the banks of the Sutlej. The carriages are compact oblong ones, made to carry

two passengers, one in front and one behind, with VI
an intermediate frame to fit in between the seats,
so as to admit of the recumbent position. Most
people prefer paying extra, and having a carriage
to one's-self. Enough baggage is allowed to sup-
ply one's wants on the journey. Travellers may
either run along night and day, at the rate of seven
or eight miles an hour ; or they may halt a few
hours at the numerous staging bungalows upon
the route, paying a charge of one rupee for the
accommodation. These bungalows are placed at
from ten to fifteen miles distant along the whole
trunk road. They all contain two or four suites
of apartments, with an establishment of servants,
and the means of getting comfortable meals at
moderate rates. The first eighty miles are now
performed by railway, which is open as far as
Raneegunge.

Journeys off the line of the trunk road are per-
formed by palanquin dawk ; arrangements can
be made with the postmaster at every station.
The traveller provides his own palanquin, and
Government the bearers, at the rate of eight annas
a mile. He is allowed two men to carry his bag-
gage, and can either move along continuously, at
the rate of three or four miles an hour, or halt at
staying bungalows, as may be convenient ; for
there are bungalows at convenient distances on
the route to every station, even off the trunk line.

VI This is the easiest mode of conveyance, and best adapted for an invalid, and admits of his having a comfortable bed, and a nap all the way.

Travelling, throughout Bengal, is attended with as little risk, either to person or property, as in any country in Europe; and ladies and children travel from Calcutta to the Indus without escort, and without apprehension, either from robbers or from wild beasts; and even the accidents from native horses or breaking down of carriages are not greater than the average on all roads.

5. MARCHING.—On ordinary occasions, when there is no hurry, long journeys are made by marching ten or twelve miles a day, either from bungalow to bungalow or by means of tents. One tent is sent on in the evening to the new ground, where it is found ready to receive its owner next morning. The sleeping tent and the heavy baggage follow their master at daylight, and generally arrive about noon. Of all modes of carriage, camels are the best, and carts or hackeries the worst: the latter are constantly liable to accidents; and it is no unusual thing for one to come up late in the afternoon, having been detained by an axle-tree breaking and the cutting down a tree to make a new one.

6. HOTELS are rarely to be met with in India, and only at larger stations, such as Allahabad, Cawnpoor, Agra, Meerut.

7. POSTAGE.—The rate of postage is as rapid VI
in Bengal as in most countries where it is not conveyed by rail. The pace along the trunk road is nine and ten miles an hour; and a letter travels from Calcutta to Peshawur in about twelve days. The boon of cheap postage is now extended to all India; and one may send a letter from Simlah to Cape Comorin for half an anna, which a few years ago would have cost eighteen or twenty annas.

8. ELECTRIC TELEGRAPH.—The electric telegraph is now open all over India. The events at any one presidency are known at any other presidency an hour or two after they have taken place; and messages can be transmitted by the public at large at the rate of one rupee for sixteen words.

CHAPTER VII.

VII 1. CANTONMENTS. — It is time that I should introduce the stranger to the life of cantonments in the interior; and I cannot do that better than by following the career of an Assistant-surgeon.

The disposition of the Bengal army consists of eight divisions, each under a general officer, viz., that of the Presidency, Dinapore, Benares, Cawnpore, Meerut, Sirhind, Lahore, and Peshawur, subdivided into minor brigades, regiments, wings, or companies, cantoned at convenient distances apart from the head quarters of the division.

The European troops are all quartered in barracks erected by Government, the native in huts of mud and mats and thatch, partly at their own expense, partly at that of Government. The officers live in houses, either their own property, or rented at from thirty to sixty rupees a month; but in garrisons they have public quarters assigned them at a moderate rate. The extent of a large cantonment is surprising to a stranger, being from six to eight miles in extent.

2. EUROPEAN BARRACKS. — The European

barracks and hospitals are all of the most spacious size, with walls of brick and mortar, floors of tiles or flags of stone, or of a composition of mortar and brick dust, beat up when wet into a consistence as hard as stone, called PUCKAH; the roofs flat, and made of the same material—puckah — sometimes tiled and sometimes thatched. The consumption of timber in such buildings is enormous, requiring a whole forest of saul and teak; and the destruction by the white-ant is so great and so rapid that annual surveys to detect their ravages, annual withdrawal of beams, and substitution of new ones are necessary; thus entailing an immense expense to Government that might be avoided.

When making a recent tour in Palestine where timber fit for building is unknown, I was struck with the ease and economy with which the roofs of houses were arched over with pottery — little conical pots, about six inches long and two to three inches in diameter, being used in the construction of the arches, and covered over with *puckah* and made waterproof.

It struck me that the roofs of all houses in India ought to be constructed of such materials; they would be impregnable to the white-ants. Good clay is everywhere abundant. The original construction would be much less than buildings of timber roofs and the annual repairs

VII would be avoided; the roof would be a better non-conductor with such a series of air cells. It will be said that the rampart barracks of Fort William, with its arched roofs, are the least desirable quarters in the fort, the echo alone being an intolerable nuisance; but the echo might be easily avoided by facading the arches in the Moorish or Italian style, thus combining elegance with economy.

No barrack better adapted to India could be constructed than one with a centre line of archway and two side ones — a nave and two aisles, combining strength and elegance, light and ventilation, coolness and convenience, and no roof could be constructed, combining greater coolness and economy.

3. NATIVE BARRACKS. — These are of a very inferior description, being long lines of mud huts, covered with thatch or tiles, just high enough to stand in, and just long enough and broad enough for a bed either way. Being on a level with the ground, the floors and walls are excessively damp, and the unhealthiness is increased by exuberance of vegetation in the lines.

The penurious economy of the native character is carried to the utmost extent by the sepoy. Every pice is begrudged in the construction of their huts; and though Government, on every change of a regiment, grant what is called hutting

money to repair the lines, yet this does not seem VII
to be expended on the houses. The present system of cantoning native troops is an antiquated one, and Government would save the expense of better accommodation by reducing their invalid and pension list.

4. MODE OF LIFE.—On arriving at a large station, such as Agra, Meerut, or Umballa, he must wait upon the Superintending-surgeon, the General commanding the division, and the Brigadier commanding the station, and report his arrival; and will most likely be ordered to do duty in the hospital of some European corps. The medical staff generally attached to a European regiment is a Surgeon and two or three Assistants. At such division stations there may be four or six or more regiments cantoned, a European regiment of the line, a regiment of native cavalry, two, three or more regiments of native infantry, and a considerable body of artillery, each having its own medical establishment. The mode of life is rather monotonous; duty is in general very light and occupies but a small portion of the day; and balls, concerts, races, hunts and theatricals are valuable resources for spending time. There is less general sociality than might be expected. Each regiment forms its own little section of society; and it often happens that one half of the residents remain strangers to one another, though meeting daily,

VII for months or years. Nor is this much to be wondered at, considering the great extent of a large cantonment; the houses being scattered over an extent of six or eight miles, and the difficulty of keeping up acquaintance in hot weather at such distances; for all visits, even in the hottest weather, are made during the heat of the day, and all new arrivals are expected to make the first visit.

The signal for rising is the morning gun which is fired at day-break. Then every one starts to his feet, performs a hasty toilet, has his cup of coffee, or tea, or chocolate, mounts his horse, and takes his constitutional ride, goes to parade, or visits his hospital. About eight the officers of the regiment assemble at the mess-house, have a cup of coffee, read the newspapers, discuss the politics of the day, or the events of cantonments, or play billiards. About nine o'clock they retire to their own quarters, have a cold bath and breakfast. During the day they may have to attend courts-martial, courts of requests, courts of enquiry, courts of inquest, boards of survey, committees of examination, &c., &c.; or should none of these require their attendance, they spend their time at home. About sunset every one, ladies and all, turn out upon some public course well watered on purpose, and exchange recognizances with their friends; or assemble round some regi-

mental band; then, at dusk, home to dinner, and VII about ten o'clock retire to bed.

The expence of living, compared with that of England, is very considerably greater. Though income, and window, and road tax, and wheel, and horse, and dog taxes are unknown; and though the staple articles of food are extremely cheap, yet every article of European produce is at least cent. per cent. above the home tariff, and it requires considerable economy for any officer, under the rank of captain, and not of the Staff, to live well on his pay.

5. EUROPEAN REGIMENTS. — On joining a European regiment the Assistant-surgeon will be issued into an extensive society of officers, have the *entrée* to a well found mess; sit down to an excellent dinner, served up in elegant style, where politeness and decorum preside. He will not be long connected with the regiment until he learns that the majority of cases in hospital are directly or indirectly caused by intoxication, induced in many cases, by the dull, listless, routine of a barrack life. There is, in fact, a constant struggle between the men rushing to their graves and the Surgeon trying to keep them out of it—and his best intentions are often defeated.

If officers, with all the resources of a refined education, and all the indulgences of easy circumstances, so often fall victims to ennui, what must

VII be the situation of the private soldier, whose life during half the year, is little better than solitary confinement; whose duty is little more than a plausible pretext to keep him out of idleness; whose idle hours are wearisome and monotonous to an excessive degree, owing to a general incapacity for intellectual pursuit. It is not surprising that men so situated become listless, gloomy, and melancholy; that they should cultivate the seeds of disease; chop off their fingers; put out their eyes; and mangle incorrigibly, in the hopes of getting invalidated; that they should drown their senses in intoxication and die of delirium tremens; that they should commit some act of felony with the express object of being emancipated from military duty by transportation; or, failing in attaining their object by any of the above means, that they should put an end to their sufferings by committing suicide.

Much has been done to improve their condition. Excellent barracks have every where been erected without regard to expense; supplied with both punkahs and tatties; cricket grounds, racket courts, and skittle alleys, are open for the playful, schools for the illiterate, libraries for the learned, temperance societies for the temperate; theatres for the comic; chapels for the devout; promotion and rewards for the well conducted, and dry rooms and solitary cells for all offenders. The

best hospitals are open to the sick, supplied with every comfort that science or humanity could suggest for their recovery, and when these fail, the sanatoria on the hills are had recourse to. VII

With all these, much still remains to be done to render the life of a soldier in India an agreeable one. The canteen system is, by many, looked upon as the source of many miseries, but its abolition would, I fear, be more correct in theory than in practice. Many of the men have learned intemperate habits before joining the army, and, needing more stimulus in India than at home, will get spirits somewhere; and if they cannot get good grog from the canteen they can always contrive some means of getting bad grog from natives about the lines. Even in the canteens a great improvement has been made by the introduction of wholesome beer and porter, which has greatly reduced the consumption of ardent spirits, and improved the tone of health and the conduct of the men. But the grandest field for improving the condition of the soldier remains still untilled, and that is their mind. An effective medical establishment is, no doubt, a good thing, but a prophylactic mental establishment would be a better. Exercise is valuable, but when combined with what is agreeable and interesting, it would be doubly more so. A system of recreation should be organized as regular as

VII their regimental drill. Some may say that amusement, when compulsory, is no longer amusement; but there is a wide difference between being compelled to amuse ones'self and having no amusement at all. Every European regiment should have its gymnasium under cover and protected from sun and rain, where the men might play rackets, bowls, billiards, concerts, comedies, &c., at all hours of the day. If the racket courts, in almost every cantonment, were covered with roofs, they might be made much more useful than they are at present when without roofs.

Soldiers in all countries assist in the construction of public works; more especially those connected with their own cantonments or barracks. Fatigue duty is common in other British colonies, even in hot ones, as Malta, Corfu, and Gibraltar; but in India, unless at some urgently required field-work, it is unknown. There the British soldier does nothing for himself but clean his accoutrements—every thing else is done for him—whilst, like an unused musket, he becomes rusty and enervated by sheer idleness.

6. **SOLDIERS' GARDENS.**—Perhaps the best way of giving exercise and occupation to the soldier would be the establishment of regimental vegetable gardens, and telling off a certain number to gardener it. These institutions would be useful in two ways; they would afford healthy exercise

to a large number, and wholesome vegetables to VII
the whole regiment; and where vegetables are scarce, as in the Punjaub, would check the predisposition to scurvy, a disease more common in India than is generally believed. A very excellent example of what may be done by such gardens is to be seen at Lahore, constructed under the superintendence of Sir Henry Lawrence, C. B., where an extensive native garden, overgrown with weeds and brushwood, was converted into a place of public resort for the amusement and instruction of the European soldier; where they could spend the day in the shade, or read or play at all sorts of gymnastic games according to their tastes.

I had lately an opportunity of seeing what soldiers could do, and I have no doubt did of their own accord, especially in the camp of the Royals at Komara, and in the French camp before Sebastopol; ornamental, and even useful, little gardens filled with flowers and wholesome vegetables were common amongst their bell tents; and in the fertile valley of the Tchernya, the Zouaves had very extensive ones of a more substantial character. Many a weary hour must have been pleasantly beguiled in the construction of such gardens, though the sowers had so many chances against their surviving to reap the fruits of their labour. If, under such difficulties, such recreations could

VII be found, and such works constructed, what might not be done in a quiet cantonment in India.

There is abundance of waste land in the neighbourhood of every European cantonment. The only expense would be the wells and the tools.

7. NATIVE REGIMENT.—After doing duty with an European regiment for a few months the Assistant-surgeon may expect to be posted to the medical charge of a native regiment at some out station. This is a desirable change for a young officer, and he may now, for the first time after his arrival, consider himself settled; he will become a member of the regimental community, an adopted son in a large family, and consider the commanding officer as his father, and each other officer as his brother; and lucky will he be if he finds all things going on harmoniously. But he may find all things the very reverse; he may find many of the officers at variance with one another, a civil war raging in the cantonment, and find it no easy matter to preserve his neutrality. But this he must do if possible, and it is possible, by great discretion, listening to all but repeating nothing. Everything should be confidential where all sides tell their complaints; as confidential as the professional complaints of his patients, WHICH should be sacred.

A regiment of Native Infantry consists of 1,000 men, partly Hindoos, partly Mussulmen,

—the former preponderating,—all men of high VII
caste, and proud of their profession. The European officers attached to it are, 1 colonel, 1 lieutenant-colonel, 1 major, 6 captains, 10 lieutenants, 5 ensigns, 1 surgeon, or assistant. Such is merely the nominal strength; there are seldom more present than 1 lieutenant-colonel or major, commanding; 2 or 3 captains, 3 or 4 lieutenants, and 4 or 5 ensigns; the rest being absent on staff employment. There are corresponding grades of rank amongst the natives as among the Europeans. Sepoy corresponds with private, naik with corporal, havildar with sergeant, jemmadar with lieutenant, and subadar with captain, the last two are called commissioned officers, but rise from the ranks, and are subordinate to the junior ensign. A European quarter-master, sergeant, and sergeant major are also attached to each regiment and a numerous band.

In most regiments there is a well regulated mess, at which most of the bachelors dine; also a good book club, a band, and a billiard table. It is somewhat remarkable that it is not compulsory on all officers, when present, to join the mess, for nothing contributes so much to the good-fellowship of a regiment as a well ordered mess, and when there is no mess, or when that is attended by only a few, there must be something wrong. A great reform has of late years been effected

VII in the convivial habits of messes ; and it is a very rare thing to see an officer in a state of intoxication ; and he who so far forgets the respect due to himself and others as to get drunk at the mess table, will, sooner or later, be called to account. What is not tolerated in general, will be unpardonable in a medical officer, who may at any moment be called upon to save a patient from death, and, if drunk on such an emergency, nothing can save his commission.

In the interior, especially at small stations, there are no barracks, but each officer rents a house of his own, or buys one ; the latter is the best system, as the owner may in most cases sell it for as much as it cost him, and thus live rent free. However, in the event of the station being abolished, the owners of houses are allowed no compensation for the loss of property, the allowance for tentage being considered equivalent to meet all contingencies.

There is one part of the establishment of a house which newcomers find very annoying, that is, being obliged to entertain one or two watchmen to prevent being robbed. These are called chokeydars, in most cases members of a caste of thieves ; their wages are a sort of black mail imposed upon the residents, and, provided that is paid regularly, there is very little risk of being robbed. When such is the custom, I would ad-

wise every one to follow it. The natives, when VII inclined, are the most expert thieves in the world ; to remove the contents of the bed-room in which the master is sleeping is considered an easy matter, to steal the sword from his side, or the revolver from under his pillow requires but the dexterity of a journeyman, and an accomplished artist will succeed in stealing the very bed clothes from under him, leaving the chill of the night to apprise him of his loss.

The uniform of officers of Native Infantry is almost the same as that of H. M. service, the chief distinction being in the button and the red stripe of the trouser. That of the medical officers was formerly the same as other officers of the regiment, but of late a fixed uniform has been assigned the service, the same in all branches, a great improvement upon the old system, which imposed a new uniform upon every change of regiment, and a great extra expense. Still there is something wanting in the dress of medical officers to identify them in action ; but of this anon.

8. IMPORTANCE OF MEDICAL OFFICERS.—To a right thinking man, few positions in life are more serious or more responsible than that of a medical officer in charge of an out station, with the lives of two or three thousand individuals entrusted to his care, where he may, at any moment, be called to attend cases of imminent danger without time

VII for deliberation, with no other to consult or assist him with advice, or aid him in an operation. Nevertheless, the doctor, under ordinary circumstances, is sometimes looked on as an idler—as one that does but little for his allowances. His pursuits, private as well as professional, remarkably different though not the less important, meet with but little sympathy; nay, in some degree isolate him from the rest of the officers; and though linked in the same regimental chain, he often forms an extreme link—as a hook or an eye. The young surgeon must not expect to get on without occasional annoyances. He will be importuned for sick certificates when his own conscience tells him such were not required, and if they are refused resentment may follow. He may detect a skulker in malingering, and his commanding officer may shield him from punishment. He may give a certificate to an officer to go to the hills, and the commanding officer, jealous of such power, may vent his jealousy in petty spite. The commanding officer may be so indiscreet as to meddle in the performance of his medical duties, and this he must respectfully decline. He must not expect to please all parties, but the *mens conscia recti* must console him for such rare exceptions.

However, opportunities will arise when he will be amply repaid for occasional petty annoyances;

to rescue the young, the brave, and the beautiful, VII
from an untimely tomb, and restore them to the society of their afflicted friends; and their usefulness to the world is no small source of self-congratulation; and it is the most gratifying retrospect of my service in India, that I never lost a lady patient, and that I passed through the late Burmese war without losing an officer of my charge. When some scourging epidemic crosses the frontier, enters the camp or the cantonment, panic strikes the little community, thins the ranks of the soldiers, crowds the hospitals with sick, and threatens to sweep away the native and the European, indiscriminately, to an unexpected grave, the doctor will be looked up to as the guardian of the public health, as the protector, to whose skill one and all may soon be indebted for the preservation of their lives. Then is the time to have his merits duly appreciated; then all his professional science is called into action; then all his physical energy, and all his moral courage, find full scope;—then is the time to gather in a rich harvest of good opinions, that will afford food for envy, malice, and all uncharitableness for years thereafter, and lay a solid foundation for his professional character. Should he himself be attacked by the malady, fortunate will it be for him if he retain his reasoning powers unimpaired, and be able to conduct his own case to a success-

VII ful issue. And if it should be his fate to fall a victim, he will have the consolation of dying in the cause of humanity, in the protection of his friends, and the service of his country.

No small share of courage is required to encounter an attack of cholera; yet the world seldom give medical men credit for it. The officer who heads a successful attack against a powerful enemy, or sustains their charge unflinchingly, is looked upon as a hero, and rewarded, as he deserves, with honour and promotion. The physician, who with no less courage encounters the assault of death, when scores of stronger men than himself fall around him, is too often passed over unheeded, unhonoured and forgotten.

9. HOSPITAL ATTENDANCE.—The hospital visits are made at sunrise and sunset. All medicines should, if possible, be taken in presence of the surgeon; and, with proper arrangement, this, in the majority of cases can be done, by having a stock of doses likely to be required ready prepared and carried round in a tray, each patient having his *lota* or *katora* ready to receive it. Sepoys have a prejudice against drinking out of a glass; but they will not object to the contents of the glass if poured into their own vessel, and by a man of good caste.

The authority of the Surgeon is paramount in his hospital, and though the commanding officer

may inspect, yet he is forbidden by standing orders VII from any official interference in medical duty.

Sepoys are in general very tractable patients, and the best possible subjects for either physic or surgery. Their diseases are fewer than those of European troops, much more manageable, uncomplicated with excess in either eating or drinking. The low state of their constitutions is most favourable for the treatment of bodily injuries, and their recoveries are quite wonderful. They are quiet, orderly men, most temperate in their living, cleanly in their habits, well-formed and well-featured, and far above the standard height of Europeans; respectful to their officers, proud of their profession, but most bigotted to their religion and most intolerant of all interference. The young Surgeon must therefore learn to respect their prejudices and their superstitions, for they are the fundamental principles of their faith, and as sacred in their own eyes as the Ten Commandments are in his. He must even consider himself an unclean being, and not venture to touch with his own hands the medicines he prescribes. Of all things, he must guard against coming near them when cooking. Every man cooks his food with his own hands, generally out of doors; and to guard against contamination, marks out a circle about six feet in diameter, in the centre of which he cooks and eats. Even in the hospital, the

VII sepoy's make their own arrangements for their meals ; and if too sick to cook for themselves, one of their comrades is allowed to wait upon him. Medical comforts only, such as wine, sago, arrow-root, sugar or tea, &c., are supplied at the public expense. A greater outrage could not be offered them, than by stepping into this tabooed circle ; and were even the commanding officer of the corps to do so, a strict Hindoo would consider his meal polluted and cast it to the dogs. I have seen a poor villager stop in the midst of his repast and scatter his morsel of rice upon the ground, because I inadvertently passed so near that my shadow fell upon it ; and I have witnessed an old woman returning from the Ganges with a jar of water on her head, pour it out as an abomination, because I suddenly met her on the foot-path. He must not be annoyed, if now and then some patient, in *articulo mortis*, distrusts his prescriptions and prefers being treated by charms and sacrifices in his own way ; for in extreme cases they are very apt to return to their birth-right notions, and invoke the aid of some of their numerous deities.

In fatal cases, the Surgeon must dispense with autopsy, as sepoy's have the most inveterate prejudice to that being done ; and consider such an act an affront and disgrace inflicted upon the surviving relations.

When change of air is thought necessary, the Surgeon's recommendation for leave to visit his home for six or more months is almost always granted; and the invalid generally returns to his regiment in robust health. VII

10. RECRUITING.—One of the most important duties of medical officers is the examination of recruits, for without their certificate of efficiency no sepoy is enrolled in a regular regiment; and his firmness will often be put to the test by the men of his regiment trying to pass inefficient youths, their relations, into the service. Every recruit should therefore be stripped and carefully examined from head to foot, in private, of course. The natives of the upper provinces from which recruits are chiefly drawn, are not liable to many constitutional disorders unfitting them for arms. Scrofula, that blight of British climate, is little known amongst them. Few races have so little deformity; and young lads of fourteen or sixteen, though tall, slender, and even feminine, provided they are straight and have well-developed chests, will improve wonderfully after having eaten the Company's salt for a year, and turn out effective men.

11. MALINGERING.—This is not a common practice amongst sepoys. When such is suspected, the state of the pulse, the temperature of the skin, the colour of the eyes, or of the tongue, (if not a pawn eater) are good guides to a diagnosis. One

VII should, when any obscurity exists, give the man the benefit of the doubt, for it is better to be imposed upon for a time than run the risk of refusing admission to a man actually unwell, and who might die in the lines. The sepoy is at no period of his service so apt to malingering as when he has served long enough to be entitled to his pension, for he has perseverance enough to induce stiff joints, contraction of muscles and tendons, and shrivelled limbs, by sitting doggedly in one posture. On such occasions, I have seen both natives and Europeans convicted of gross malingering by chloroform, the contracted joints that resisted all means of extension immediately becoming relaxed. *Eck mussuck thunda panee*, prescribed *a posteriori*, is with sepoys a fundamental cure for many doubtful ailments, and can do no harm.

12. GENERAL CHARACTER OF SEPOYS.—I believe I am correct in saying that in no army of the world is there less crime and less punishment than in a regiment of native infantry. Courts martial are therefore very rare. Flogging, though at one time abolished and since made legal, is so uncommon that I have never seen a sepoy flogged. Their fidelity to their colours is as conspicuous as their good conduct in cantonments and their courage in the field. During the late Punjaub war, the strongest temptations were held out to them to desert; but, I believe, not, half-a-dozen

men went over to the enemy. The sepoy is born VII
a soldier, and the *esprit de corps* grows with him
as he grows; his father has, perhaps, died in
battle, and his mother and his sisters are com-
fortably pensioned by Government. He looks to
the Company's service as the means of an easy
and honourable livelihood, to his pension as the
support of his old age, and to his old regiment as
the sphere in which his sons and his sons' sons
may follow his example. Such men are, there-
fore, worthy of our respect and esteem!

13. RELIEFS.—Regiments seldom remain longer
at one station than three years, when they are
removed to some other, two or three months'
march distant. The order for the relief of all
troops for the season generally appears in August,
and few subjects give rise to so much speculation
and excitement. In Bengal all marches, unless on
emergencies, are made in the cold weather, the
15th November being the general time for break-
ing ground and the 15th March as late as is
found agreeable in tents. Most officers look for-
ward to a long march, not as an inconvenience,
but as an agreeable tour and a welcome release
from the dull monotony of a life in cantonment.
Probably the regiment may be ordered to take
the field, and form part of a grand army against
some powerful enemy.

CHAPTER VIII.

VIII 1. **SERVICE IN THE FIELD.**—Within the last fourteen years, the armies of India have been engaged in no less than seven great wars; viz., in Afghanistan and China; in Gwalior and Scinde; in the Sutlej and Punjaub campaigns; and latterly, in Burmah; and honorary distinctions have been granted for no less than eighteen general actions; viz., Kelat-i-Gilzee, Candahar, Ghuznee, Cabul, Jellalabad, Meeanee, Hyderabad, Maharajpore, Punniar, Moodkee, Ferozeshahur, Alliwal, Soobraon, Mooltan, Chillianwalla, Goojerat, to which may be added the numerous actions in China and Burmah. Extending over the same period, nearly as many little wars have been carried on within our own refractory provinces, of which Fame now takes no account. Few armies in the world have therefore seen so much service, or had their discipline and efficiency so urgently put to the test; and hence the reason for their being at all times, and in all places, ready to take the field.

2. **RENDEZVOUS.**—When a campaign is about to open, a point of rendezvous is given, and troops

are ordered thither from distant stations throughout India. Time enough is in general allowed to provide extra camp equipage, and the medical officer takes care that his own department is complete. He makes indents on the engineer or the barrack department for doolies; on the commissariat department for bearers and carriage; and on the nearest medical depôt for instruments and medicines, special directions for which will be found in the Medical Code. VIII

3. BAGGAGE.—For his own personal use, an assistant-surgeon, entering upon his first campaign, will find a single pole tent, nine feet square inside, with a verandah of three feet, and double kanats or walls, the best description. This gives perfect protection against heat and cold, wind and rain; is easily pitched and loaded, and is easily carried by a couple of camels. I think the regulation tent of twelve or fourteen feet square inside, with a four-foot verandah and outer walls, unnecessarily large, and so much more unwieldy, as not to be worth the great extra trouble attending it. When camels are procurable, a couple of camel trunks, a low legged charpay or bed to fit over the trunks, a good tarpaulin, a folding table and a chair, form the usual load for another camel, while the crockery, pots and pans, &c., &c., form a load for a Cooly, who carries them in a couple of baskets, called petarahs, suspended from the ends of a

VIII bamboo, called a bangy. With a horse, three camels and a Cooly, and a well regulated mess in his regiment, an officer is fit for any campaign, and few enter upon one with less baggage.

4. **LINE OF MARCH.**—Troops upon the march in India always start very early, so as to be at their journey's end before 8 A.M., or before the heat of the day is disagreeable. The reveillie sounds in the darkness of the night, at four, three, or even two in the morning, when every man starts to his feet, and before he has had time to dress, the tent is unlaced, ready to be struck, and before the hour has expired, the whole canvas city is down, packed up, and fast upon the camels. Each regiment forms line upon the front of its own camp; and, when the advance is sounded, takes its place in the order of march. The surgeon falls in in rear of his regiment, along with the adjutant, closely followed by his doolies. The baggage follows in rear of the whole force, and when that is large, the last camel has not left the old camp when the first enters the new, the line of march being one continued stream of beasts of burden. Nor is there the least confusion on the march, nor delay in finding their position in the new camp.

5. **CAMP.**—Every regiment has its large distinguishing flag; every tent its perch stuck into the place for its pole, all laid off by line and compass the evening before, by the quartermasters of corps, who

always go forward in the afternoon; and, before nine, VIII
or at latest ten o'clock, the new camp is again complete, in all the order and regularity of the preceding day, with its streets and squares and bazars; its baking ovens, and its shambles. The camp of a large army is a sight worth seeing, and may extend, from flank to flank, two or three miles, and with as much, or even more, regularity and order than that of a city. Each regiment occupies its place in front of the line, the tents for the soldiers first and those for the officers, one continuous street from right to left, the baggage and bazars in rear. Fresh meat, fresh butter, warm loaves and new laid eggs, are as easily got as in a cantonment. Tradesmen of all sorts ply their trades; cutlers, shoemakers, tinkers, blacksmiths, carpenters, tailors, corn dealers, cloth merchants, confectioners, jewellers and money-changers; in fact, all the necessaries, and many of the luxuries, of life, are procurable in every large camp. Nor are amusements wanting. After the fatigue of the march is over, in the afternoon, quoits, cricket, &c., are practised. Some stroll out with their gun, and supply an extra dish of game to the mess-table, whilst others transfer the features of the landscape to their portfolios. Upon the line of march, it is remarkable that very little sickness takes place, and the Surgeons never have so little professionally to do.

VIII 6. **FOREIGN SERVICE.**—A campaign, under the above circumstances, will appear mere feather-bed work; but affairs undergo a wonderful change on foreign service, and the tug of war is then felt in real earnest. Every idea of luxury and comfort must then be left behind, and a new regime must be submitted to, consistent with the nature of the country, the seat of war. On board ship, the utmost discomfort is to be expected; such a thing as a cabin is entirely out of the question; room on deck for a chair by day and a mattrass by night, and a seat at the dinner-table, is the utmost accommodation to be looked for. The deck, from stem to stern, is crowded with soldiers, and the very ship heels from side to side with the top weight.

Government pay liberally on account of officers embarking on foreign service. They are not charged for passage, and their table expenses are also in a great measure paid by Government. Great confusion in embarking and disembarking, is almost unavoidable; tents and stores are in the hurry mislaid, or unapproachable, and on landing are not to be found. Hence, exposure to the intense heat of the sun by day and the comparative cold at night; to wind, and rain, and damp, and malaria; to hunger and thirst, and great bodily exertion and fatigue in getting into position to meet the enemy. As the army advances into the interior, its difficulties probably increase. Car-

riage may not be procurable, unless for a very VIII
limited quantity of essentials, and the means of
transporting a tent out of the question. The
country may be found desolate and deserted; the
crops destroyed; the cattle driven far beyond
reach; the towns burnt to the ground; the roads
broken up, and the bridges broken down; the
wells poisoned by putrid carcasses; the means of
subsistence—the rough rations of the commis-
sariat; and the bivouac the only alternative; and
even that disturbed by midnight attacks along
the line of outposts.

7. DISCIPLINE.—Military discipline is as rigidly
adhered to, even in the presence of the enemy, as in
a cantonment. If a petty theft be committed by a
camp follower, the thief, if caught, is immediately
punished; if a soldier be detected plundering, he is
liable to be flogged by a provost sergeant, upon
the spot; if an officer be guilty of any gross
breach of duty, he may be brought before a court
martial, and be cashiered; if even a Cooly be
found dead in camp, a court of inquest is imme-
diately assembled, to ascertain the cause of his
death. Even divine service is performed when
the bugle may summon the congregation to dis-
perse, and stand to their arms; and a funeral
party may be hurried from the graves of their
comrades that fell in battle, to meet the enemy in
another battle equally destructive of life.

VIII 3. **ROUTINE.** — The amount of official correspondence on all matters of duty is in India very great, but on emergencies in the field these are not invariably exacted. Supplying the wants of the service is the first duty. Official adjustment of accounts the second! For example, when in medical charge of a brigade of troops at the outpost of Sultanpore, Oude, I indented amongst other things for — quinine, and the quantity was sanctioned by the Superintending-surgeon, though only a portion could be spared from the medical depôt. I knew that there was plenty of quinine in the private dispensary at Cawnpore, and ordered the remaining portion from it, and forwarded the bill to the proper authorities for payment, and it was paid. Again, on my assuming medical charge of the civil station of Gowhatty in Assam, I found scurvy epidemic amongst the prisoners, and that many had died of it. In the Kassy Hills, adjoining, limes are indigenous. I bought them by the basketful, served them out as a daily ration to the prisoners, with the most beneficial effect, and was reimbursed by the payment of the contingent bill. Again, after the capture of Rangoon, and before I had access to my hospital stores, cholera broke out in a very violent form, and I had most of my wants supplied from the commissariat on my simple receipt roughly written in camp. Had that department acted up to the

strict order of duty, many days might have passed VIII before I could have got the supplies, and disastrous consequences might have ensued. Afterwards, when an extensive ruin was allotted as an hospital for the artillery, instead of making official indents for repairs, and pressing the already overworked barrack department to have done what they could not do for weeks, I borrowed a lot of tools, set all my dooly bearers to collect materials, engaged carpenters, bought what I could not find in the ruins of the town, and by personal superintendance, in a few days, made a comfortable hospital. My own house I began on the 4th of May and took possession of it on the 12th of May, and I was better quartered than most officers. No surgeon who knows his duty is embarrassed by the dread of responsibility, and when the public stores are not available, he buys what he wants if he can, and his contingent bill, when forwarded through the proper channel, is paid.

9. CONVEYANCE OF SICK.—The usual mode of conveying the sick and wounded is the same now as in the days of Clive, viz., by the dooly—a sort of bed, with four low legs and corded bottom, suspended on a bamboo pole, over which is fixed a waterproof top with dependant curtains; the patient reclining at full length. For the conveyance of a dooly six men called bearers are allowed; two in front and two in rear, the other two

VIII relieving them alternately. When an army takes the field, one dooly is allowed for every hundred natives, and for every ten European soldiers; so that the bearers alone of a European regiment of 1000 strong amount to 600 men.

If the bearers were equal to their work and the doolies always serviceable, officers would not complain of the dooly as a mode of transport, for it has the advantage of being waterproof and of forming a good bed in camp. But the system is notoriously inefficient. The doolies are all supplied by contract from the barrack department—most rickety constructions, always breaking down and always undergoing repairs. Indeed it is the interest and the practice of the bearers to render them unserviceable, for a broken dooly is much easier carried than a sound one, with a wounded soldier in it. The bearers are men collected by the commissariat by a sort of press-gang or conscriptive system—men who never carried a dooly before, mere Coolies; and passed into the service to be discharged at the end of the campaign, their number, not their efficiency, being the chief object. I have rarely found the bearers equal to their work, and have often been obliged to set apart two sets to one dooly, having the other conveyed on a cart. They are a troublesome, unmanageable set of men, at all times a great incumbrance to an army, and in a general action,

when most needed, they are too often dispersed VIII
in search of plunder. They are told to look on
the superintending surgeon as their commanding
officer, and the regimental surgeon, who ought
to have the control over them, with magisterial
power to inflict corporal punishment for neglect
of duty, finds his authority quite limited.

Several great improvements upon the dooly
have at various times been suggested to the au-
thorities by officers of experience, but the old
rotten antiquated system is to this day adhered
to. When lately at Sebastopol, I could not help
admiring the transport system of the French
army, and copied from it into the English army,
the Cacolet and the Ambulance. The Cacolet is a
sort of iron chair, folding up like the step of a
coach, with arms, belts, and cushions, either for
the sitting or the recumbent posture, one being
fixed on each side of a mule, by which a brace
of sick men are carried smartly along with ease
and comfort to themselves and credit to the
transport establishment. The ambulance is a
large waggon on springs, and on four wheels
drawn by four mules, capable of containing four
patients in the recumbent posture in rear, and
four or six in the sitting posture in front, with
compartments under the front seats for medicine
and instruments. The interior is fitted with four
portable beds, two above two, that slide into

VIII grooves and admit of being pulled out in rear and carried like a hand-barrow to a distance to receive a wounded man, and again of being slid bodily into their places. It struck me forcibly that both of these modes of conveyance were admirably adapted for India, the Cacolet on the back of a camel and the Ambulance drawn by bullocks.

There is another very essential article of which hospitals are much in want, and that is a pair of stout compact trunks with compartments for medicines and instruments, to be carried on a bangy by a Cooly. At present these essentials are stowed away in bulk in a pair of petarahs, of all shapes and sizes, often made of basket work. These ought to be of some regulation pattern. Iron would be the best material, and Government could not supply such things so cheap or so efficient as by sending out from England a pair of such boxes for every regiment in India. The freight would cost nothing, as they could be filled with articles sent out for the public service.

Much as the transport for the sick in the Crimea excels that in India, so much does our tent system in India surpass the Crimean; and the Indian army may congratulate itself in being the best tented army in the world.

10. PREPARATIONS FOR ACTION.—The doo-

lies are entrusted to the hospital sergeant, or VIII
havildar, whose duty it is to see the wounded brought to the rear immediately. The best way of carrying the instruments and dressings, is to have them laid out in order in a dooly, to be distinguished from the rest by a couple of yards of bandage, tied to either end of the pole; a dozen or more rollers should be ready prepared; ligatures waxed, and cut into convenient lengths; the tourniquets made to run easy; the saws found not to lock; the knives and needles oiled; the sponges washed and wet; chloroform and a bottle or two of port wine; and last, and yet of most importance, a mussuck, or sheepskin of good water. A few portable tourniquets should be distributed amongst the officers, with instructions how to apply them, in case of hæmorrhage. An amputating table should not be forgotten, which can be stowed in a dooly. The young assistant will do well to wrap a pillow and a counterpane, a bottle of beer and a few biscuits, up in a bundle, and stow them away in the dooly; he may have occasion to dine on the one, and to bivouac in the other, and think himself lucky in having them. To take care of others the first thing is to take care of ones'self!

It may appear ridiculous to warn him against the risk of losing his regiment in a dark night; but when many columns are moving at the same

VIII time, some direct, some oblique, and some retrograde, and all at a rapid pace, a sharp look out is necessary to prevent losing one's regiment; for, if once separated from it, it is no easy matter to find it again.

11. POSITION OF SURGEONS.—During a general action, the position of the medical officers is immediately in rear of their regiments, far enough away to be beyond the reach of round shot, and yet near enough to see the last graze.

The surgeons of brigades generally unite, and establish a joint hospital in rear of the centre regiment, thus affording the very great advantage of mutual advice and assistance. Should the line advance, the surgeons advance with it; should it fall back, they fall back accordingly; should the rear be threatened, they must advance to the column; or should the brigade be broken, they must take shelter under the nearest regiment, or in the field hospital; for no guard is allowed to regimental hospitals, further than the band boys. Most operations are performed on the spot, either with or without chloroform. Wounded men, of all arms, that come their way, are to be attended to as readily as those of their own brigade, even the wounded men of the enemy. During the Punjaub campaign, wounded Seiks were to be found in most hospitals, receiving the same care as our own soldiers. It must be borne

in mind, that more substantial dressing, and a freer use of the suture are more necessary in the field than in a cantonment, so as to meet the probable failure of straps of plaister on the march. VIII

12. FIELD HOSPITAL.—The field hospital is generally placed about 500 yards in rear of the centre of the line, and is distinguished by a large red flag. A field surgeon, a medical Storekeeper, and a number of Assistant-surgeons, are attached to it; and an ample supply of every article requisite for the sick and wounded. A strong mounted guard is allowed for its protection. After a general action, every exertion should be made to get the hospital tents pitched and the wounded collected and attended to. Should an immediate advance be made in pursuit of the enemy, all the wounded should be sent to the field hospital, or should time not admit of that, they must be left on the ground, sending information to the superintending surgeon, who will make arrangements for their care.

13. A STANDING CAMP.—But a general action is not the most trying part of a surgeon's duty in an enemy's country. Circumstances and seasons may render long halts unavoidable; and the ease and indolence, and suspense of a fixed position, becomes a very serious matter. Seeing no enemy, and yet not thinking it safe to go beyond the picquets; every day rife with its rumours of the approach of the enemy, next day to be contradicted; hoping from

VIII month to month for terms of peace, yet doomed to prolonged uncertainty. All standing camps become unhealthy generally from neglect in the conservancy department. The excitement that kept all well during active service, is now followed by its collapse; suspense becomes burdensome; the soldier's mind rusts like the sword in the scabbard, for want of exercise. Keeping it cheerful and healthy becomes burdensome, and a task that he neglects. "Hope deferred maketh the heart sick;" men's minds become morbid; the body sympathises with the mind, and in its turn becomes predisposed to disease and Cholera, Dysentery or Fever becoming epidemic, may, in a few weeks, decimate the force. During eighteen months' continuance of the late Burmese war, the European troops were decimated three times, a rate of mortality equal to that of the Crimea.

14. EXPOSURE OF SURGEONS.—A prevailing opinion exists that the medical officers in action are never exposed to the fire of the enemy, This is a great mistake; for in the returns of every battle, their names will be found in the lists of killed or wounded. I myself have on different occasions seen men killed and wounded within a few yards of me; and at the capture of the Great Pagoda of Rangoon, two of my party standing round me, were wounded by musketry, whilst I was performing an amputation; yet, be-

cause surgeons are put down as non-combatants, VIII they get no credit for such exposure. Even their attendance upon their patients, labouring under malignant contagious diseases, is not appreciated. No small share of moral courage is necessary to approach the bed side of a patient suffering from confluent small-pox, or typhus, or yellow fever, and administer to his wants. I have known officers who would have led their companies into action with the greatest heroism, shrink from the contagion of a sick room, and even dread coming in contact with a Doctor after such a visit, through fear of contagion.

15. NEGLECT OF SURGEONS.—'Tis strange, but no less true, that the world is unjust to the medical profession; of all the most difficult. A soldier may sacrifice thousands of lives by his ignorance and incapacity, yet no tribunal awaits him. A judge may pass the most unjust sentence, and be convicted of having done so by his superior judges reversing his sentence; yet the world think nought the worse of him for his want of skill. Even in the Church, the greatest heresies are introduced, but the reverend apostate only becomes more popular, and rejoices in his converts; but if a physician makes a mistake, and prescribes a wrong medicine, or an over-dose, or is unsuccessful in the reduction of a dislocation, or the union of a fractured limb, though from no fault of his, but

VIII from some hereditary taint in the patient's constitution, his professional character is materially injured; probably he is prosecuted for damages, or arraigned for culpable homicide.

Even our greatest generals have been neglectful of the services of their medical officers. How seldom do their names appear in a gazette? and, even though mentioned, how seldom does that lead to honour or reward? Every surgeon in India, who has seen much service, has had the mortification of seeing officers of the same standing, and of the same service as himself, promoted by brevet to the rank of major and lieutenant-colonel, probably with C.B. in addition, whilst the batta and the medal have been thought enough for him! Let us look over the medical list of the Indian army consisting of nearly nine hundred officers, and we will find only two with C.B. attached to their names, and only one raised to the rank of Knight.

Every public department has its honours and rewards, as the highest incentive to the effective performance of duty, and the higher these honours are in proportion to its importance.

Who will say that the restoration to health of the sick thousands of all armies is not an important charge? but how few are the rewards! The Surgeon's sense of duty, and his philanthropy, are expected to do for him (and how seldom do they

fail?) what promotion and royal honours do for his brother officer of the line. The fortunes of individuals are often influenced by accidents, and that of departments appears subject to the same laws; and I have often thought that it would have been better for the profession, had Marlborough or Wellington suffered the amputation of an arm or a limb upon the field of battle, and under fire. VIII

The spirit of army discipline seems to be to place the Surgeons in a subordinate position in all public duty. When a medical officer is tried by court martial upon matters entirely medical, such a thing as one or two medical officers being members of the court, is unheard of; and yet it would contribute greatly to the efficiency of such a court that they should form part of it. Even in courts of inquest, where the opinion of the Surgeon is paramount, he must hold a place subordinate to a young ensign as president. Indeed, he is generally ordered to *attend* the court of inquest and give in his report for the comment of the young ensign.

Even in the article of dress, army surgeons have been treated with indignity. About four years ago, Assistant-surgeons wore the dress of lieutenant, and Surgeons that of captain of the regiment to which they were posted. But as the occasional change of regiments entailed the expense of a change of uniform, it was ordered that

VIII the medical officers should have one standing uniform in all regiments. This was a move in the right direction; but it was done, as usual, in a humiliating way! by stripping off their lace and facings and reducing their dress below the respectability of a staff sergeant. No soldier can be indifferent as to his dress. The French army can give us good examples in it.

The time was, when Divinity, Law and Physic stood on the same pedestal on the world's Acropolis; but the latter has been shuffled off into the streets. Yet an unprejudiced examination will show that their fortunes are in inverse ratio to their deserts. We have in these late days seen medicine confer the greatest blessings on suffering humanity that man can confer upon man; viz., surgical operation without pain, and parturition without consciousness, and we have seen the discoverer of that blessing still unhonoured beyond his profession; but we are not aware that law and divinity have made corresponding improvements: that the crooked path to justice has been made more straight, or that the morality of the world has made any remarkable advances. In the days of ancient Greece—in the days of Machaon, Hippocrates and Æsculapius, such men were treated as guardian angels, when pestilence was monthly decimating the population; they were raised to the highest honours when alive, and worshipped

as gods when dead. We are proud to imitate VIII
these refined people in most of their manners
and customs, but on a subject which all men
hold most sacred, the health of our armies, we
haggle with the profession as if we were bar-
gaining for haberdashery or horse power. It is
not so in the French Army neither of the present
day nor of the First Napoleon.

Divinity and Law have their numerous repre-
sentatives in the Councils of the land who watch
over their interests with a jealous eye, and pre-
serve their status in society; but Medicine has no
representative either in Parliament or in the
Court of Directors, and till it has, there seems
no hope of its position being restored to it.

I make these remarks with no disrespectful
feelings towards our Honourable Masters; for if
I had my career to begin again, I should wish for
no better field than entering their service as an
Assistant-surgeon, in hopes of seeing it raised from
its present degraded position. My present object is
the improvement of that service, in which I have
spent the best years of my life; and if I have probed
old sores rather deeply, and applied the cautery
somewhat freely, it is only in accordance with the
precepts of the profession, that must often give
pain in order to cure.

CHAPTER IX.

IX 1. ECONOMY OF EUROPEANS. — HOUSES. —

Those of Bengal are of the Grecian style of architecture, large, airy, elegant, commodious, and self contained; with numerous office houses detached; the whole inclosed with a mud wall, the area of which is called by the name *compound*. They are built of burnt brick and mortar, plastered outside as well as inside; the roofs flat, with a terrace upon the top convenient for walking on; the floors either paved with marble, or made of a composition of lime and pounded brick, hard as stone, called *puckah*; the floors covered with finely woven grass mats, stretched smoothly; the windows all glazed with an internal shutter of Venetians; the ceiling, with the timbers all exposed, in order to detect the inroads of the white ants, and admit of their being easily replaced when destroyed. It is somewhat unaccountable that the roofs of houses in India, especially of government buildings, are not arched and alcovod, as in the Italian style; the original cost would not be much more, the expense of keeping them in repair

would be trifling, their duration would be infinitely greater, and the immense sums spent in the annual renewal of timber would be saved. IX

In the interior of the country houses are generally built of sun-burnt bricks cemented, and plastered with mud, and whitewashed, with a ceiling made of a curtain stretched neatly enough overhead, and a roof of thatch. This style is known by the name of Bungalow. In Assam and in Burmah the houses are constructed of large timbers, let into the ground, on which the roof is supported; the walls made of mats tied to the timbers; the floors planked and raised four or six feet above the ground, with a free ventilation underneath. This construction is well adapted to prevent damp, and as earthquakes are prevalent they suffer no damage when more substantial fabrics are injured or thrown down. There are no bells in any houses, but when any thing is wanted, the person cries out, *qui hie*, and a servant appears. Bolts and bars, and door knockers, are also unknown, but a porter sleeps at the door and, when awoke, receives messages.

Houses are generally built with their front to the north and in so far as the sun is concerned, this is, no doubt, the best. In the hot weather, the sun passes from east to west in an arch almost vertical, the northern and southern aspects are sheltered from the direct rays, and the ends only

IX are exposed to the full strength of the morning and evening sun. But no small share of the comfort of a house depends upon its being freely pervaded by the wind, and as the north-east and south-west winds are the prevailing ones, I am of opinion that the front should be towards the north-east.

Every one who has lived in the royal barracks of Fort William must be aware of their disadvantages, their northern and southern facades not admitting of a current of air through the quarter.

2. SUBTERRANEAN CHAMBERS, or *Tai-khanahs* are excavated beneath the ground floor, on the same principle as a cellar, and in hot weather these are occasionally resorted to for relief, more especially by natives. They are, no doubt, considerably cooler than rooms above ground, but they are damp, unpleasant, and unhealthy; no effectual means are taken to ventilate them, the air soon becomes deteriorated by the consumption of its oxygen in respiration, and the accumulation of deleterious carbonic acid gas. I cannot help thinking that much might still be done to improve them, the chief object to be kept in view is to ventilate them. If the principles scientifically practised in ventilating the holds of ships were applied to them, viz., by placing a winnowing machine at the bottom, and blowing the foul air up by a tube, allowing it to be replaced by cool pure air passing

through a wet tatty ; I believe they might be rendered much less objectionable. The Kyburries supply very good examples in the construction of their houses, which we might imitate, by excavating a chamber in the face of a hill, with only a small opening for ingress, and a hole in the top for light and ventilation.

3. EFFECTS OF CLOSED DOORS.—It is a common custom in the hot weather to shut up every door and window soon after sunrise, and not to open them till an hour or two after sunset ; nor is the exclusion of all fresh air thought enough, but every Venetian is also closed, and the darkness is so great, that visitors on first entering a drawing-room cannot see the inmates. In a very large room, where the residents are few, and the consumption of air trifling, this practice may not be very injurious ; but where the family is large, the domestics numerous, with, perhaps, two or three dogs requiring their breathing room, the vital air must before night be greatly deteriorated. Inspiration in a hot temperature is more frequent than in a cool one, as are also the pulsations of the heart : hence more cubic feet of air pass through the lungs in a hot day than in a cold day, and the room is sooner exhausted of its *pabulum vitæ*. Besides, each inmate may be considered as a living laboratory of heat, and not of heat only, but of carbonic acid gas, which neutralizes all the ad-

IX vantages of four or five degrees of coolness gained by closed windows and Venetians, for the difference is no more. But breathing impure air is not the only inconvenience of closed doors and Venetians; the prevailing darkness is equally as prejudicial to health: the parallel between animal and vegetable life is too generally true not to hold good in the circumstance of light. That darkness is injurious to the healthy growth of vegetables is well ascertained; plants that live in darkness remain pale, flaccid, and feeble, and those accustomed to sunshine, if removed to a dark situation, rapidly lose their health and droop and die. The bills of mortality clearly show that the inhabitants of dark lanes and alleys are more unhealthy than those in well lighted streets, and nice investigations have proved, that the tenants of the shady sides of streets are less healthy than those of the sunny—moreover, practical experiments have demonstrated that tadpoles do not become mature frogs if kept in the dark.

The indigo planters are good examples of the truth of this theory. They are the most healthy looking people in India, though exposed all day, at all seasons, to the sun; the injurious effects of heat being counterbalanced by fresh air, light and exercise. The contrast between such men at the end of a hot season and those shut up in close dark houses is very remarkable.

4. SHRUBBERIES.—Much contrariety of opinion **IX** prevails respecting the cultivation of shrubs and trees round houses, some going so far as to shroud the house in foliage, and others condemning every plant to transportation or death. The one cultivates trees for the sake of their beauty and their cooling shade, the other forbids their growth, believing them to generate malaria, and afford shelter for mosquitoes. Much may be said on both sides. On the whole, I should prefer living in a house without trees to one surrounded with many. At the same time, I should like two or three, if judiciously placed. A few shady trees, in front of a house, is a great comfort to the whole establishment, and a favourite place of resort for both master and servant.

Trees exert a much more important part upon climate than is generally believed; the aridity of some countries, and the humidity of others being in a great measure caused by their deficiency or profusion. The scantiness of rain in the Punjaub and Sirhind is, I have no doubt, caused by the scantiness of forest; and, when the country is abundantly planted, as I have no doubt it eventually will be, there is every reason to expect more abundant rains.

5. FURNITURE.—The furniture of houses in Calcutta is of a very superb and even ostentatious description; and the different component parts

IX are constantly circulating through society. Upon any change in the members of the family, or change of appointment, the whole goods and chattels are brought to the hammer; and it is found good economy to have every thing of the best description, thus insuring a ready sale. In the Mofussil the furniture is much more scanty and portable, and in bachelor's quarters, a camp table or two, a bed, a couple of chairs, and a couple of camel trunks form the bulk of the property.

6. PUNKAHS.—No house, or rather no room, is thought furnished without a punkah, viz., a frame of wood about three feet broad and nearly the length of the room, covered with cotton cloth white-washed, and suspended edgewise by ropes from the ceiling, just so low as to admit of a tall man's walking under it. To the middle of the punkah a rope is attached, and passed through a hole in the wall, so as to admit of being pulled by a man in the verandah; thus acting as a fan, and producing strong gusts of air.

7. THERMANTIDOTES.—Thermantidotes are frequently used, a machine very similar to the barn fanners of home, with this addition, that the large openings round the axle of the fan are closed with a tatty kept constantly wet. These are most useful in calm weather or at night, when the large tatties in the doorways do not act. Besides

these, there are numerous sorts of hand punkahs, IX all very useful. To live without the punkah in the warm weather would be indeed a severe penance, for it is one of the greatest necessities in India. It is good economy to have it pulled both day and night, relieving the pullers every two hours like sentries on their post; indeed few people sleep without a punkah.

Punkahs have become universal in all European barracks and hospitals, government defraying most of the expense, though the men contribute a certain proportion.

It must be remembered that the punkah does not lower the temperature of the room; the thermometer, either under it or in a corner of the room indicating the same heat.

Punkahs are had recourse to in the North West about the 15th April, and stopped about the 15th October. In Calcutta they are continued nearly the whole year.

8. TATTIES.—A tatty is a frame work of bamboo open like a riddle, covered thinly with the roots of a sort of grass called *kus-kus*, the ends of the grass being upwards. It is fitted neatly into a door on the weather side of the house, and kept constantly wet by water thrown upon it from the outside; another door is opened on the lea side, and the tatty being pervious to the slightest breeze, a current of cold air is produced, which,

IX so long as it blows, keeps the house as cool as can be desired. The following experiments will show the value of the tatty in upper India, in the month of May; during the regular north-west wind at noon, the thermometer, placed on the ground in the sun, stood at 120° ; in the shade of a verandah, 104° in centre of house, 83° , in an earthen jar of water adjoining tatty, 68° , in a deep well, 78° .

Nothing can exceed the delightful coolness of this most refreshing breeze, and, did the wind continue steady all night, the hot winds would be little complained of; but the wind generally lulls at night, and the tatty does no good, though the thermantidote does. Besides, there are frequent alternations of an easterly wind, which have no cooling effects on the tatty, and only fill the house with steam. The climate of Bengal is too moist to admit of any benefit being got from the tatty; and, even in the Upper provinces, all tatties are discontinued as soon as the rains begin. Some discretion and self-denial are necessary in the use of a tatty. Strangers, tempted by the enjoyment, are apt to sit too near them, and subject themselves to colds, cramps, and rheumatism. The safest plan is to sit in the middle of a room, adjoining that of the tatty.

Tatties are now supplied in all European Hospitals and barracks.

9. **FIRE AND LIGHTS.** — Wood and charcoal IX
are the principal fuels used in cooking. Coal, of fair quality, is procured in any quantity, not far from Calcutta; but it is not much used. During the cold weather of Upper India, fires are universal in the houses, but in Bengal they are seldom seen. I think this a mistake; a fire now and then in the rainy season would be very beneficial; most articles of furniture and clothing of all kinds are then damp in the extreme, and a good fire is the best thing to dispel it.

Smoky chimneys are very common nuisances, and it may be useful to know how to cure them. A general mistake is to apply the remedy at the top instead of the bottom. The following plan I have found most effective in curing the most inveterate smoker. Take a common earthen pot, or *naund*, such as is used by native washermen, of a hemispherical shape, and about two and a half feet diameter. Punch a hole in the bottom about nine inches diameter and build it into the chimney, mouth down, about two and half feet above the fire.

In the excessively damp climate of Rangoon a brazier of burning charcoal and a large basket over it is a regular piece of furniture, and clothes, boots, and shoes, and every article perishable in mildew is subjected to frequent airings.

Cocoa-nut oil is chiefly used for lights. In the

XI cold weather it is solid and requires to be melted by fire before using it; but, in the hot weather it is liquid and transparent, and gives a very fine light. It is burned either in Argyle lamps or in plain glasses with a wick floating on its surface. The common Argand lamp is extinguished under a punkah. Wax and sperm candles are often used. Gas has, hitherto, not been introduced in India, though preparations are far advanced for lighting up Calcutta by it.

10. CLOTHING.—In the cold weather clothing, warm as in Europe is worn; but in the hot, nothing but white cotton all over. Calico shirts, jean jackets and vests, drill pantaloons, all white as driven snow. Linen is very seldom worn, it is too easily affected by change of temperature, and after perspiration it becomes cold as lead. Most people wear flannel under their clothes, and a very prudent practice it is, and the best protection against sudden alternations of weather. When flannel irritates the skin, as it does, and is not endurable to some, silk is an excellent substitute. Manufacturers have not supplied the Indian market with under garments of silk as they have of merino, and they have overlooked their own interest by this oversight, for if procurable there would be a very extensive demand for them, and they would be found a great improvement upon those now in use. Since my return to London

I have seen and worn the above silk under-gar- IX
ments, and found them very pleasant. They are
light and elastic, and a valuable addition to the
wardrobe in hot climates. A couple of silk hand-
kerchiefs sewed together, leaving intervals for
the head and arms to go through, forms a very
convenient and most comfortable under dress.
Silk pyjamas, a sort of wide pantaloon, tied
round the waist, is a common in-door dress, and
is generally worn when in bed, and in the hot
weather is the only covering.

In making up clothes for Indian wear, it is of
the utmost importance that every raw edge of
the cloth be hemmed and secured with extra
sewing, for if sewed as if for home wear, the
seams will be torn open in one or two washings.
In India all washing is done by men, by beat-
ing the clothes against a stone or grooved plank,
and the destruction caused by the *dhoby* is much
greater than the ordinary tear and wear. So great
is this that in families a tailor is constantly en-
tertained to repair his damages, yet we submit
to the mischievous practice. I have had the
curiosity to weigh a complete suit of clothes worn
by me in the hot season, and found that the
jacket, vest, and pantaloons weighed only six-
teen ounces. This is about the one-sixteenth
part of the weight of a winter dress in England.

Cotton quilts, lined with silk, are the usual bed

IX covering. The silk, besides being a pleasant wear, is also a non-conductor of electricity, and I have heard of persons being by its use saved from the shock when all around them was struck by lightning. Mattrasses are rare things in India, and feather beds unknown, the general substitute being a lace-work of stout tape stretched on the bed frame, with a quilt over it. Every bed has its mosquito curtains, composed of thin gauze, which is useful in keeping off insects, in moderating the current of wind when sleeping with open doors, affording protection against damp, and even against miasma, when that exists, and no one should pass through a feverish belt of jungle without being engaged in mosquito gauze.

In violent fevers great relief is got by lying in bed *corpore nudo*.

At formal parties one is expected to appear in cloth, but that is generally made of so light material as not to be oppressive, unless on very great occasions. Full dress uniform is now rarely worn, indeed, uniform of all sorts is seldom seen off duty, a great improvement upon the old pipeclay and martinet system. Alpacca has been found an admirable article of clothing in the hot weather, and ought to be universal.

On ordinary occasions mufti, in all its varieties, is indulged in, various as the tastes of the owners, and not a bad idea may be formed of the

character and disposition of parties by a survey of their morning dishabille ; such savage cuts, such exquisite ties, such fantastic hats, such immeasurable continuations, such comprehensive shooting coats, pea coats and cut-aways, all so comfortable and on such easy terms with the wearers that would drive a Buckmaster crazy.

Very considerable indulgence has of late been allowed in the article of dress, still there is room for greater improvement, and perhaps the long expected reform may embrace all that is desirable. The most objectionable part of the present uniform is the forage cap and shako ; the former has shrunk into the dimensions of a night-cap, the crown and the peak being only nominal, and the latter is so heavy, as to require the left hand to keep it on, and neither of them give any adequate protection against heat and glare. There is no want of excellent models from which to choose a good cap. The Grecian helmet, with a large peak in front and a fantailed peak behind, in general use as a solar topie, appears to me perfection both in comfort and appearance.

11. BATHING.—Next to a glass of cold water a cold bath is the most grateful luxury, and most persons indulge in one after their morning's exercise. Some use the cistern-bath, others the shower-bath, but the most common and the best is to pour five or six jars of water over head while

X standing in the upright position. If earthen jars, filled with water, be kept out of doors all night, and brought in at daylight, the water will be as cool as can be desired. Not a few use the tepid bath, but I do not recommend it to one in good health, it is too relaxing, and not to be compared with the cold douche. Few bathe oftener than once a day, and most continue bathing during the coldest weather, when they shriek aloud at the shock.

Cold bathing is one of the most healthy pieces of discipline practised in India, and no small part of its advantages is a free use of soap all over, and the brisk friction in drying the skin with a hucka-back towel. The cold bath is the best protection against sudden changes of temperature, the tepid against internal chronic affections.

The watercloset should be visited every morning at a fixed hour, as regularly as the bathroom. Such habitual visits are the best preventative against constipation, a very common complaint in India.

12. DIET.—As most people get up early, it is customary to take a cup of coffee or newly-drawn milk, a couple of plantains or a wine biscuit before going out. This I believe to be a good system, it has part of the effects of a dram without its bad consequences, and prevents that squeamishness—that sinking of the heart as it is

commonly called—which is apt to ensue if nothing IX
be eaten before breakfast. The general hour of breakfast is between nine and ten. Bread and butter and tea or coffee satisfy some ; others have rice and fish, with eggs and butter, or cold meat and curries. Tiffin is served about two, and often consists of merely a glass of wine and a biscuit ; dinner is served after dark, and consists of nearly the same materials as seen on an English table. Some prefer dining at three p.m. ; most married parties do. The milk in use is either cows', goats', or buffaloes. Butter is made every day, the milk being churned as it comes from the cow. In the cold weather it is very good ; in the hot, white, curdy and insipid, resembling concentrated foam. Bread is in general excellent, and is leavened by being kneaded with the juice of the date palm tree, which ferments immediately after being drawn from the tree. Very good bread is made by flour and water kneaded into a thin cake called a chou-patty ; and if an egg and a bit of butter be added, it is still better. Beef, mutton, and pork are very good ; all being carefully fed on grain some months before being killed. In the hot weather it is necessary to cook the meat the same day on which it is killed, for it will not keep two days. English preserved provisions are common, and Stilton or Dunlop cheese always has its appropriate corner. Fish is universally to be

IX got of very good quality, and game in great variety—wild hogs and venison, quails, partridges, pheasants and peacocks. Some keep a native game-killer on purpose, and have a plentiful supply at a moderate rate. In fact, there is no lack of good fare, and the stranger must be careful and abstemious till he becomes acclimatised.

As a curry is a standing dish on every table, it may be well to have an idea of its constituents. It is a most heterogeneous compound of ginger, cloves, and cinnamon, cardamums, coriander, and cayenne pepper, onions, garlic, turmeric, and even assafœtida, all in quantities consistent with peculiar tastes, ground to a powder by a pestle and mortar, and made into a paste with *gee* (clarified butter) or mustard oil, and stewed up with a piece of kid or a fowl. It is, therefore, well adapted to stimulate the appetite after a hot day, when most articles of diet are not cared for.

Almost all the cooking utensils are made of copper, tinned on the inside. It is customary to have the tinning renewed once a month, but from the native custom of scouring the vessels with sand in cleansing them, the tin is often worn off before the month is over, and the food cooked is apt to be tainted by copper to a hurtful extent. Acid preparations are not the only things that act rapidly on copper if allowed to remain in them, but oily ones also, and none more

so than oleaginous messes. Every pot should be IX
 cleaned and dried immediately after being used,
 and those who consult their health will do wisely
 in making occasional visits to their cook room.
 Enammelled iron cooking-pots are admirably
 adapted for India; but opposition may be ex-
 pected, as the monthly tinning is a general source
 of peculation to the Khansaman, and the en-
 amelled vessels are not.

13. FRUITS AND VEGETABLES.—As I have
 elsewhere mentioned, many people have a strong
 prejudice against the use of fruit. I would so far
 coincide in this opinion as to advise every new-
 comer to be sparing in their use and discriminating
 in his choice. He will soon find out what agrees
 or disagrees with him, and will act accordingly.
 Ripe grapes, peaches, guavas, custard, apples,
 pine-apples, oranges, pummaloos, pappias, and
 plantains are all wholesome, and a green cocoa-
 nut affords a delicious draught. Mangoes, though
 the best fruit in India, he must eat with great
 circumspection, and gourds, water-melons, and
 cucumbers he will do well not to taste. Most
 English vegetables grow very well in the cold
 weather, potatoes, turnips, cauliflower, beans, peas,
 carrot, and beet-root. The agricultural society
 has conferred a great boon on the public by their
 expense and exertions in providing seeds from

IX Europe, and distributing them throughout the country.

Apples from America, grapes from Cashmere, dates from Arabia, and figs from Smyrna, are all in the market, and China ginger, English jams and jellies, Scotch marmalade, and French peaches preserved in brandy are equally procurable.

A few words respecting teeth may not be out of place here. The tooth-powder generally used is made from the charcoal of the betel nut. It is pleasant to use, and effective in keeping the teeth white, and the sirdar-bearer makes it well and saves all trouble, but it is as hard and attritive as pounded emery, and after ten or fifteen years it saws into the necks of the teeth and destroys them. A powder, composed of chalk, camphor, and myrrh is much preferable.

14. DRINKS.—The beverage most in use, is Bass or Allsop's pale bitter ale; and, no doubt, it is the best. A bottle at dinner is reckoned a moderate allowance; and, in fact, an essential article of diet.

Much bad wine finds its way to India; and, therefore, most messes get their wine direct from the vineyards of Europe. Though I would recommend as sparing a use of liquors to the stranger as animal food and highly-spiced dishes, yet I am not an advocate for meagre fare and water-drinking. I have seen many a man drowned by pouring cold water into him, and am, therefore,

not a hydropathist. I believe much harm has IX been done by indiscriminate abstinence, and consider the one extreme as hurtful as the other. The water drinker in avoiding the diseases of the intemperate contracts an opposite train; no less intractable and no less fatal the asthenic and chronic instance of the plethoric and acute. Some stimulus is actually necessary in the hot weather when the heart labours and the vital energy is exhausted, and I have recovered patients from the brink of the grave, and was once so recovered myself (thanks to a kind confrere) by judiciously administered wine glasses of beer repeated every hour.

Fortunately intoxication is now a rare vice in India: the old system of hard living has been exploded, the hard livers have died off or taken themselves off to safer quarters. It is a very rare exception to see an officer the worse of liquor at a mess table, and he is a marked man who is so. Nothing is more injurious to an officer's character than sottishness: nothing more quickly estranges his comrades, and no misdemeanour is more severely punished.

Sodawater is freely used by old residents, and I think is carried to a hurtful extent. It is often taken under the impression that it possesses alkaline properties, as its name indicates, and consequently that it is good for acidity of stomach,

IX whereas it contains no alkali whatever. Its property as a simple diluent is lost by the profuse perspiration that follows the draught; and its advantages counterbalanced by the stomach and bowels being surcharged with flatus.

Liquids of all kinds have a tendency to increase perspiration, the urgent thirst is only temporarily allayed by drinking, for as fast as a liquid is drunk an equal quantity of fluid passes off by the skin. Hence, a reason why a mouthful of cold water now and then will moderate thirst almost as effectually as an equal number of tumblers. Liquors of almost all kinds are imported from Europe. Some attempts on a small scale have been made to brew beer at Missouri, and very good beer it is, for I have drunk it; but the beverage has not been patronised in the plains.

Though the grape grows luxurious in most parts, it has not been made into wine. This may be owing to excess of fertility, and possibly a superior grape might be cultivated on some barren konkar soils so common in Upper India. Arrack, distilled from the juice of certain palm trees, is occasionally served out to Europeans instead of rum.

Potable water is obtained either from rivers, tanks, wells, or from rain. The water of the Ganges is excellent, and although very muddy on first lifting, it soon deposits an abundant sediment

and remains pure. It is further rendered more IX transparent by the addition of a little alum.

The water of most tanks is filled with animalcules, and not fit for use till filtered. A very good filter is easily made by passing water through three earthen jars, half filled with charcoal and sand, with sponge plugs in the bottom, and fitted on a slight frame, one above the other. Those who are very particular about water collect all that falls from the houses during the rainy season, and store it up in large earthen jars for future use.

15. ICE.—In the hot weather, every dinner is closed with ice, and the greatest luxury in India is a glass of cold water. Every larger station in India has its ice pits for the manufacture of ice, and its ice houses for storing it up for the hot weather. Though the temperature of almost no station in Bengal is so low at any season as to cause water to freeze in the natural way, yet an artificial process is contrived to produce congelation. If a porous earthen vessel be filled with water, and exposed to the atmosphere upon straw during a clear night in the cold season, a pellicle of ice will be formed on it in the morning. On this principle, thousands of earthen plates full of water are so exposed during November, December, January, and February. The ice is collected in baskets, and stored up for use. Most residents

IX have shares of ice ; and, by paying forty or sixty rupees during the season, they have as much ice as they require.

American ice is imported in great abundance, and is sometimes as cheap as an anna a pound.

The surgeons of all hospitals are permitted to indent on the commissariat for ice, on its being thought necessary for their patients.

Saltpetre and Glauber salts are extensively used for cooling liquids. These salts are abundantly developed from the soil in Upper India, especially in Oude and Behar, and are consequently obtained at a cheap rate.

When water is once cool, the grand object is to keep it cool, and the best thing is to put it into a bottle, and enclose it in sack of quilted cotton or in a pith case called solar. Many combine their larder and their ice-pail, and thus are able to preserve meat a couple of days.

16. SMOKING.—Tobacco-smoking is a very common habit ; so much so that two-thirds of the European population indulge in it ; nor is the vice contracted in India only. A large proportion of cadets acquire the habit in England, and are not a little proud of their accomplishment, Young men think it manly to be able to blow as big a cloud as their commanding officer. Their breath not only smells of an old pipe, but everything that comes out of their house—a book, a

newspaper, or a letter—does the same; so that IX
the perusal, by any one not seasoned to such
fumes, is sickening; and, to ladies, disgusting.
The very difficulty of learning to smoke, the head-
ache, and nausea, and vertigo with which that is
acquired, are enough to show that the habit is
most injurious; only made endurable by long
habit, and persevered in from want of some more
congenial occupation. Habitual smoking, too,
often leads to habitual drinking; the drain upon
the system must be replenished, and brandy and
water is the succedaneum. Some pretend to
gainsay this, and maintain that they do not spit;
but this only shows the torpor of the salivary
glands; for, if they were in a healthy state, saliva
would be as copious as when they were learning
the habit.

Some smoke from medicinal motives, and to pro-
duce a laxative effect, or from absurd notions that it
neutralises malaria; but these same persons would
grumble loudly at being obliged to take a pill every
evening to produce the same effect. If a general
order were issued, rendering smoking compulsory,
how the fathers of youthful heroes would protest
against so very expensive a habit being imposed
upon their sons, what an outcry there would be
amongst the married ladies for having such an
intolerable nuisance forced upon their domestic
economy. How the surgeons would be per-

IX secuted with applications for certificates recommending exemption from the rule on the score of their constitutions being too delicate to admit of smoking being practised with impunity. Strange infatuation! Great smokers blow away money enough during their career in India to purchase them a moderate annuity; they waste more good health than their pensions can redeem; and shorten the period of their lives several years by this filthy habit.

Hookah smoking, though to appearance less hurtful than cigar smoking, is in reality more so. By it the smoke of the tobacco is inhaled into the very lungs, and, generally, a large proportion of carbonic acid gas with it. Hookah smoking is now gone out of fashion. One seldom sees more than one or two hookahs in a large party, and these in the hands of regular veterans who have grown old in their devotion.

All praise is due to tobacco as a medicine, and I have derived a soothing, sedative, soporific effect from a temporary use of it when opiates failed.

17. EXERCISE.—If early rising were considered a proof of industry, certainly no people would be thought more industrious than Europeans in India. Few indeed (ladies excepted) are in bed so late as sunrise, and most are upon their legs at gun-fire or break of day, and ready for their

walk, their ride, or their drive, or their duty as IX
circumstances admit. The stranger will find few
pedestrians to keep him company, but, as it is
probable that his pay will not admit of his keeping
a horse, let him not give way to the absurd pre-
judice of thinking walking *infra dig*, and injure
his health by remaining in-doors. Let him,
therefore sally out every morning, and take a
moderate walk, enough to tire, but not to fatigue.
He will see many an individual deeply impressed
with the advantages of a morning walk padding
along with their horses led behind them, or their
buggy at their heels; not that they have any in-
tention of using either, but that they dread being
seen by vulgar eyes shorn of their establishment,
or being taunted with niggardliness for trudging
through the dust like a coolie to save their horses
shoes or their buggy wheels.

The evening is the grand season of recreation; every one who can set a couple or two of wheels in motion turns out to his constitutional drive; the course is crowded with carriages of every description; nor do they withdraw till the shades of evening close over them, rendering it difficult to recognise the faces of their friends as they pass.

It is one of the anomalies of India that Europeans think it *infra dig* to take exercise on foot; to walk they are ashamed, even to preserve their precious health; yet many of the ills they com-

IX plain of might be avoided by well regulated pedestrianism. A few sturdy independent characters, men in high office, who can afford to laugh at the fetters that society rivets upon its own ankles, may be seen enjoying their morning and evening walks; and their fine robust figures and healthy countenances give proof of its advantages; but men of moderate status in the service would hardly venture upon an evening walk, and ladies would think it a sin to do so, especially married ladies. Even in the fine cold weather, when active exercise is the greatest enjoyment, they prefer sitting shivering in cloaks and carriages; even in their own houses many of them think it too much trouble to walk up their own stairs, and though not invalids claim the privileges of the invalid, and by this system soon become invalids in real earnest.

Why do not the residents of Calcutta raise a subscription and have a ladies' walk made along the side of the Hoogly from Chandpal Ghaut to Prinsep's Ghaut. If they could prevail upon the partners of their lot to take a turn on such a mall every evening, I feel assured they would be greatly the better for it, and the husbands would save long bills, long voyages, and long absences, caused by sending their wives to England. If the two accomplished ladies, now at the head of Calcutta society, would condescend to set the example

and make pedestrianism fashionable, they would IX effect a reform that would contribute materially to the improvement of the public health in India.

Riding is by far the most common mode of exercise, and many take their morning and evening ride as commonly as their meals. Dumbells and other gymnastics, shampooing and friction, with a flesh-brush or rough woollen glove, are very beneficial. Sponging with cold water and soap every morning is a very good practice. Too much attention cannot be paid to the state of the skin, for its functions are no less important than those of the intestines or lungs. Many persons in good health are apt to neglect these apparent trifles, nor do they think of attending to them until their health is broken.

When restlessness occurs during the hot nights it is best to get up and get cool by walking up and down the room, taking a turn out of doors, or by changing one's night clothes, and going to a fresh bed.

18. AMUSEMENTS.—These, of course, vary with the taste of the individual. Shooting engages the leisure hours of many. Of all sorts of this sport, snipe shooting is the most dangerous. These birds are found only in marshy miry bogs, the very hot-beds of fever, and can only be got at by plunging up to the knees in mud, with a burning hot sun overhead. Many sportsmen thus contract fever,

IX and sacrifice their health, or even their lives, in pursuit of this worthless game.

Boating is a good deal practiced, but from want of skill many accidents attend it, and many are drowned in consequence.

Cricket, quoits, rackets, billiards, all have their votaries, while backgammon, cards, and chess attract the more sedentary.

It is much to be regretted that gambling, under many different forms, is too prevalent, and large sums of money are often staked on very trifling matters, *e. g.* heads or tails, the longest or shortest straw drawn from a thatched house; high points at cards, high stakes on horses to run at the Derby, and betting upon any circumstance that admits of a bet. Some young men render themselves a nuisance at a mess table by their pertinacity in offering bets. I need not say that gambling of all sorts is stringently prohibited by the authorities, and that a fortunate gambler, though a notorious character, is a very unenviable one.

When idleness and inactivity are so common, and apathy and ennui, like the dry rot in a ship of the line pervades the community, and entails disease, both bodily and mental, any rational amusement that would ventilate society, and give a fillip to the languid pulse of passing events, that would break the monotony of time, and set the moral elements into circulation, ought to be

hailed as a public good. Of all the recreations IX
of the home country, and more especially in
London, none rank higher than those popular
schools of art and science, the Polytechnic insti-
tutions. It is truly delightful to see how smooth
the rugged mountains of science have there been
made, how imperceptible the railway gradients
that lead to their summits, how easily the canal
locks lift the vis inertiae of mortality to the clouds,
how happily amusement is blended with instruc-
tion, that people of all ages and all tastes may
gratify their predominant passion, while uncon-
sciously learning something useful. If there be
a royal road to knowledge it is there; for, by
the aid of maps and models, and lectures, as much
may be learned in an hour as in a year elsewhere.

It is much to be regretted that such institutions
are not attempted at all large stations in India.
There would be found no want of talent amongst
officers to officiate in some capacity or another. I
remember the time when the scientific soirees
given at Government House, by the Earl of
Auckland, were anticipated with intense desire.

18. DOMESTIC PLAGUE.—Much has been written,
and a great deal more talked of, respecting the
annoyance of insects; and some would have it to
be believed that all the plagues of Egypt were
let loose upon society, and that their lives was a
constant warfare against red ants and white ants,

IX sand flies and mosquitoes, cockroaches and centipedes, scorpions, lizards, and snakes. Their noise during an evening in the rains is certainly tremendous; indeed, quite deafening; but few of these are allowed to intrude upon the interior, being prevented by the *chicks*, a sort of curtain made of very finely split slips of bamboo, the thickness of a crow-quill, neatly tied together, and suspended in the door-way. If these be tied up after dark, when dinner is on the table, an entomologist might make a magnificent collection without rising from his chair.

The mosquito is the most annoying. In Calcutta they swarm all the year round; but in the upper provinces they disappear during the cold weather. They insinuate their proboscis through one or two folds of cloth, even through a woollen sock; their sting is as pungent as a nettle's, and is immediately followed by a lump as large as a coffee bean, and intolerably itchy. Strangers are liable to scratch this, and often cause very serious sores. Mosquitoes are fond of novelty, and new comers may be recognised by the attentions paid them by the mosquito. The mosquito curtain, or the horse-hair chowrie, are therefore the only alternative. The mosquito is generated in stagnant water; his first appearance is in form of a maggot, zig-zagging about, and when he gets his wings he deserts his native element, and soars

aloft. One may watch the transformation in a IX
glass of water.

The red ant abounds in myriads in every house ; but he is too honest and independent to draw upon the most tender morsel of humanity. He finds sick flies, and broken legged beetles, and wounded mosquitoes, and invalid spiders, and gouty flies, enough to supply his wants.

Scorpions and centipedes seldom take up their quarters unless in very old and filthy houses. Lizards abound in all houses ; but they are encouraged rather than disturbed, and are very active in destroying mosquitoes. In fact, they are all known individually by some particular mark, as they run along the wall in cunning pursuit of their prey, which they seize by suddenly jerking out their long tongue, coated, I was going to say, with bird-lime, but with something quite as sticky.

Even the loathsome spider is allowed to practice his profession undisturbed, provided he does not spread his net within the circuit of the sweeper's broom. Mosquitoes, in full life and vigour, form his staple article of food, and a sagacious spider rids the room of no small head of mosquitoes every day.

Moths are very destructive to woollen clothing, and frequent sunning is necessary to preserve them.

IX Camphor wood trunks are the best places to keep them in.

Sand flies are very common in the Punjaub, and very annoying.

Of all the domestic plagues, the white ant is the most destructive, and as they do all their mischief in the dark or under cover either by mining below ground or by tunnelling their paths with clay when above ground, much watching is necessary to prevent their attacks. The beams of the houses require to be frequently sounded, for they are generally eaten to a shell without any symptom being perceptible outside. I once had an entire trunk eaten up; a deal one; nothing was seen externally; but on opening it I found that the leather alone kept in shape and it broke down in my hands. The very forests are kept in check by this minute insect, and probably every third tree is destroyed and eaten up by them. When white ants abound, every article should have a plate of metal,—copper is best,—between them and the ground.

Immense flocks of locusts appear at certain times darkening the very sun like a heavy fall of snow in a very wonderful manner. Great consternation is caused among the natives by such a visitation, and with just cause, for if they settle even for a night, every blade of grass, and every leaf is devoured by them. On their appearance, the whole

population turns out against them, firing off IX guns, beating drums, burning fires, shouting and beating to drive them off. Now and then, they become exhausted and can fly no farther and cover the earth to a depth of some inches; the natives gather them up in baskets and live upon them for some days. A large flight of locusts is a wonderful sight and is remembered during a life time. These locusts are like large grasshoppers, about three inches long, of a rusty brown colour.

Much has been said about the danger of snakes, but really it has not been my fortune to see any of it. I have occasionally met a large one face to face, but always found them in as great a hurry to get out of my way, as I was in to get out of theirs. Man is not a subject of prey with them, they have too much sense to become the aggressor, but if trampled on, they will no doubt resent it. I have very seldom seen a living snake in my house. On one occasion I found the skin of a large one in the grate, having availed itself of the bars to strip off the old skin, it walked off.

20. WILD ANIMALS.—These exert a very considerable influence upon human life both European and native, and are worthy of a paragraph here.

It is a curious fact that tigers, though so abundant in many parts of India, especially in Bengal and along the foot of the Himalayah are very little heard of and very seldom seen

IX unless by hunters who go into their haunts in search of them. They only frequent heavy jungles abounding in deer, wild hogs, buffaloes, &c., on which they prey. When hard pressed by hunger, they occasionally carry off a cow from a village herd, and when old and unfit to live by hunting, they take to the roads, and now and then carry off a human being. Even when surprised in their own jungles they will sneak off if they can, but when wounded and brought to bay, they fight desperately, and numerous hair breadth escapes and casualties occur. In Bengal, no man is foolish enough to hunt them on foot, though this is done both in Madras and Bombay, but their accidents show the impropriety of the practice.

Elephants are equally shy in coming near civilized society, and unless provoked rarely indeed injure any one.

Leopards are much more daring, and prowl around houses at night, ready to pounce upon any dog or cat, sheep, goat, or calf that they can get within reach of, but I have not known them attack man.

Bears are comparatively harmless, and unless wounded, rarely injure any one; but if they once get a man in their hug his life is not worth much.

Wolves, when they abound, as they do in the Punjaub, are very fierce, and destructive to human

life, and some hundreds of children are carried off IX every year in the Punjaub.

Buffaloes are also very destructive. Where they are wild the tame herds are visited by the wild bulls, and they are always much dreaded.

Jackalls, though very numerous, and alarmingly noisy, rarely do harm, and are not apprehended.

Alligators abound in all the great rivers. They are of two distinct kinds, the long-nosed one, called gurrial or gavial, and the short-nosed one called muggur or bocha. The former is believed to be harmless, the latter quite the contrary. On one occasion, while passing down the Ganges, I was called by an indigo planter to see a boy of about twelve years of age, who was seized on the water's edge by a muggur, and though the flesh was stripped from the bone, from the knee downwards, the little fellow got away with his life, by beating the monster over the eyes with a stick.

21. EARTHQUAKES are not common, and are most frequent on the north-east frontier and in Assam. They very rarely do any harm. The houses there are generally built upon trunks of trees, let into the ground; and though the earth heaves and rumbles, and the roof over head may crack, and the crockery rattle on the table, no one thinks of danger. However, serious consequences sometimes ensue. Much damage was recently done to the houses at Almorah and, the church

IX was so much injured as to be pulled down. At the station of Goalpara, in Assam, a tank is still pointed out where a little hill, with its inhabitants, once stood.

22. STORMS AND INUNDATIONS.—Loss of life is of frequent occurrence during severe storms, the houses being blown down and the inhabitants being buried in the ruins. A good many years ago several barracks at Loodiana were overthrown and many soldiers were killed.

I have mentioned elsewhere that periodical inundations do no harm, but now and then unexpected ones occur from the bursting of a bund or an extraordinary spring tide, and cause great devastation. In 1832 the sea at the mouth of the Hoogly burst in upon the low land for many miles, drowning the inhabitants and their cattle by hundreds and thousands.

23. FAMINES.—Owing to unusual drought and want of the periodical rains, the crops of one or even two seasons are sometimes lost, and great famine and mortality occur amongst the native population.

24. ASSASSINATION.—Few years pass over in India without some horrid act of assassination, the victims being officers in magisterial or political employment, sacrificed to jealousy, vengeance or fanaticism, in the performance of their duty. The names of Latter, in Burmah; White, in Assam;

Richardson, in Calcutta; Alcock, at Agra; Fraser, IX at Delhi; Mackeson, at Peshawar; Macnaghton, at Cabool; Conolly, at Malabar; are lamentable instances of the danger to which officials of high position are unavoidably exposed in the faithful performance of their duty.

25. ACCIDENTS AND OFFENCES.—LIGHTNING.

—During the changes of the monsoon, and even during the rains, accidents and loss of life both of man and animals, is not uncommon, and by it houses are at times set on fire. I have twice been almost in contact with lightning. On my voyage out to India, the main-mast of the ship Farquharson was struck; part of the crew were hauling upon the top-sail chain sheets at the time. Several of them were thrown down, and one man was so severely scorched that he did not recover for many days. His clothes smelled as if he had been thrown upon a fire, and his skin was covered with blisters. No material damage was done to the ship. The top-mast was found slightly splintered; the main-mast was blackened in several places, as if a current of smoke had passed up it, but the top-sail was so damaged that it was necessary to unbend it. The lightning appeared to descend the mast like a ball of fire down the main hatchway, and so convinced were the watch of its substantiality, that a careful search was made for

IX the thunderbolt, as they called it, but none could be found.

One afternoon, at Goalparah Assam, while watching the progress of a storm, a tremendous thunderclap occurred as if the electric discharge had taken place at my feet, and I felt as if enveloped with lightning. Immediately after I heard that the house of a native, about 150 yards from where I stood, had been struck. On going thither I found that the lightning had penetrated the thatch, descended along a post in the wall, and on reaching the floor, had separated into two parts, diverging in opposite directions. The mud walls were torn to pieces, every thing in the house was turned upside down, about a dozen yards of earth were ploughed up to a depth of three or four feet, large stones were splintered, and the fragments tossed several yards apart. The hole in the thatch presented the appearance as if an eighteen pound shot had passed through it, but with no trace of combustion. The man was in the house, a mere hut, of one apartment, when it was struck; and further than being bespattered with mud, and pretty well frightened, received no harm whatever.

All houses, to be safe against lightning, should have conductors. These are very general in Calcutta, but in the thatched bungalows in the interior

they are, strange to say, not in use. During a IX
 thunder-storm, when the thunder is near, the best
 precaution one can take is to sit upon a well var-
 nished chair, with the feet upon another chair.
 Thus the sitter may rest in safety, when the carpet
 underneath is destroyed.

CHAPTER X.

X 1. **CIVIL STATIONS.**—The whole face of the country is mapped out into convenient provinces or zillahs, consisting on an average of two or three thousand square miles, with a population of six or eight hundred thousand, and a revenue of one or two hundred thousand pounds. In the centre, or some more convenient spot, the station is fixed, the residents being a collector of the revenue and a magistrate for the administration of justice, each having one or more European assistants; an assistant-surgeon, numerous native officials, a large jail, containing from six to twelve hundred prisoners, and a small detachment of troops.

In every town and every village the collector and the magistrate have their native representatives. Every breach of the peace, every defection of revenue is immediately made known at the zillah station, and the culprits are liable to be brought before the European courts.

2. **DUTY AND PAY OF CIVIL SURGEONS.**—An order was at one time given that no Assistant-surgeon should hold permanent charge of a civil

station till he had been two years in the service; X but that, from the paucity of assistants so qualified, has been abolished, but a later order, obliging him to vacate his appointment if absent more than six months, even on medical certificate, has not been abolished—a severity of exaction that is imposed on no other commissioned officer in India, and a very strong incentive to him to take care of his own health. 'Tis no trifling matter to find himself, at the end of six months' leave, placed at the disposal of the Commander-in-chief, and be ordered to join a regiment perhaps fifteen hundred miles distant—therefore let him look to himself.

The consolidated pay of a civil Assistant-surgeon is C.R. 300 per month, to which may be added 30 for palanquin and 26 for vaccination, and, if disposed to make himself generally useful, he may have 50 for the duties of postmaster, and, possibly, a little more as register of deeds, and $12\frac{1}{2}$ for every hundred Sepoys committed to his charge; and, if a favourite, he may get a fee now and then for attendance upon the families of Civilians who, by government orders, are obliged to remunerate him for their families, though attendance on them personally is part of his public duty.

He will occasionally be consulted by the natives of the district; and is on such occasions allowed the discretion of supplying them with medicines

X from the public stores; but the consciousness of having done a good action must, in the majority of cases, be his only reward. Those who could afford to give a fee are mean and niggardly in the extreme, and those who cannot are as niggardly of their gratitude.

Government at one time prohibited Civil Surgeons from receiving fees from natives; and I have known a case where the fee was ordered to be returned. That order now does not, that I am aware of, exist, and I have known a case where remuneration was recovered in a civil court.

His duties are the care of the civilians of the station, their wives; and families, the prisoners of the jail varying from 700 to 1500, and the native servants of the court.

By way of making up for his small allowances, civil Assistant-surgeons were at one time allowed to trade, but that has of late been prohibited. The life that Assistant-surgeons lead at an out-of-the-way civil station is not a very desirable one; every one is busy but himself; his own duties do not occupy a tenth part of his time; and, unless he be able to draw largely upon his own resources, he is very apt to fall a victim to his old enemy, *ennui*. Moreover, his pay is less than he would have with a regiment, and, compared with the rest of the civilians, not a third part of theirs. No one likes to be the lowest

paid official in the sphere in which he moves. X Hence most Assistants, if unmarried, prefer the duties of a regiment, and the society of officers on the same scale of pay as themselves. Civil stations are left to married men, or to a new class of indigenous qualifications—Sub-Assistant-surgeons.

The principal medical duty of a civil station is medical jurisprudence. The natives, with all their gentleness, are a most revengeful and blood-thirsty race amongst themselves. Assault, and maiming, and murder, and poisoning, are very frequent; and in a populous zillah few days in the year pass over without some case of the above nature being brought before the magistrate, and referred to the Civil Surgeon. He is, indeed, the principal reference on such subjects, and will do well to keep his knowledge of that branch of his profession fresh in memory. The most frequent mode of poisoning is by the leaves of stramonium, (which grows everywhere,) given in a currie, and the sudden death is accounted for by cholera.

3. PRISONERS AND JAILS.—When a culprit is convicted by a magistrate, and sentenced to imprisonment, corporal punishment, or death, the sentence, if approved of by the sessions judge, and by the Sudder Nazamut Adawlut, is carried out in the zillah jail; if to imprisonment for life, he is removed to the great jails of Agra or Alipore;

X and if to transportation, he is shipped off to Singapore. Prisoners are generally employed at road making, out of doors, or in some manufacture if within doors; the proceeds of which go far to meet the expenses of the establishment. Formerly they were allowed so many pice a day to provide for their subsistence, but lately rations have been served out, ready cooked.

It is worthy of remark, that the magistrate is the superintendent of the jail, and that the civil surgeon's duties are only confined to the prisoners when sick. At present the superintendents of jails in Bengal, Agra, and the Punjaub, are medical officers, and it appears to me that the system would work well if all civil surgeons were appointed to be superintendents of zillah jails, the duties of which should be learned during the period of their probation at the general hospital.

The civil surgeon has ample time to devote to that duty which the magistrate has not, and with due care all jails ought to be self-supporting. Of course, extra pay would require to be granted for the extra duty.

4. NATIVE CHARACTER.—No two nations could possibly differ more completely than the British and the Hindostanni. They have scarcely a sympathy in common, more than self interest and family affection. Almost all their manners and customs are the reverse of the European; they

could not tie a knot nor pick up a pebble from the X
ground without shewing a difference in their mode
of doing it. Yet they are a civilized and a most
polished race, and were as much so two thousand
years ago, when we were barbarians as they are
now. They are gifted with a wonderful power of
self-possession, and their intercourse with one an-
other is the very beau ideal of good manners; dif-
fidence or bashfulness are unnatural to them, and
the child of six years of age, the adult of fourteen,
and the man of sixty, are endowed with an ease
and grace of manner throughout all castes, such as
would be envied by the ornaments of European
society.

The inhabitants of Upper India are a race very
superior to the Bengalies, being tall, stout, and
manly, very handsome in figure, and in feature
as different from the African as these are from the
European. Every man goes out armed with his
spear, his matchlock, or his sword and shield, or
loaded bludgeon, and looks down upon his Ben-
gali compatriot with slight and contempt. The
inferior animals are as superior as the natives, and
the cattle of the upper provinces are alone found
fit for artillery draught.

Much has been written upon India, calculated
to intimidate strangers, but I believe life is as safe
from violence as in any part of the world. Ladies
travel unprotected from one end of it to the other.

X Private property is no where so safe, for bolts and bars are unknown; the doors stand open night and day, and robberies are less common than in England. Much has also been said respecting the dishonesty, the rapacity, and the want of principle of the natives, yet few residents keep even their own keys, or even their own purses, entrusting everything they have to a servant, whose wages are only fifteen shillings a month. But he who has learned to protect himself in person and property in old Albion need be under no apprehension for those in any other region of the globe.

The great mass of the population is either Hindoo or Mussulman. In outward appearance there is but little distinction, but in reality no bond of union, no social intercourse subsists between them. They are equally intolerant of each others religion, repugnant to intermarrying, incapable of sitting down to the same feast, or partaking of the contents of the same cup; so much so that a high caste Brahmin would consider himself defiled by putting a dish used by a Mussulman to his lip, and this only to be expunged by a long course of ablution and devotion. Nor is this intolerance restricted to the two great branches of the population; each has numerous castes among their own order, equally intolerant of each other. A Sheeah and a Soonie Mussulman are as distinct as Catholic and Protestant.

The despotism of caste is certainly exceedingly X high, and carried to such a pitch as to ignore all acts of charity and benevolence, and render the calls of humanity and mercy from all not of their own caste of no avail. But caste is an attribute of all nations, in our own country as well as in all countries, and if society throughout the world were analyzed, there would be found nearly the same amount of exclusiveness and intolerance.

Strangers are prone to form a wrong idea of the natives, and to identify them with the African, or the West Indian, and to call them niggers; but in reality they are a very handsome race, and were it not for their copper-colour, they would be acknowledged as fine specimens of the human species, even in our own exclusive isle. Many think that because they go almost naked, that they must necessarily be pinched with poverty, but their grandees, who drive their own carriages, take their airing with the upper portion of their persons bare, or covered by transparent muslin; and even those of the poorer classes have gold and silver ornaments in use that would purchase raiment for themselves many times over.

5. EDUCATION.—Much has been said about their ignorance; but out of a thousand natives, picked up indiscriminately in the streets of any town, as many individuals would be found able to read and write, and calculate, as in most parts of

X Europe. Their original language, the Sanscrit, is highly refined, abounds in the greatest beauties of literature, and is extensively studied in colleges and schools. The colloquial language, the Hindostanni, is the channel of communication of numerous newspapers. Banking and commercial transactions are carried on upon the most extensive scale, with branches all over Asia, and the poorest shopkeeper, in the poorest bazaar, keeps his accounts on slips of palm-leaves as carefully and correctly as in a wareroom in Piccadilly.

6. SECLUSION OF FEMALES.—It is true that the female part of the population knows very little of these accomplishments, but this is only a peculiarity in their national manners; for such learning is considered as superfluous as it was in the early days of British history, when the maids of honour could not write their own love letters. Much sympathy has been wasted in England, and great commiseration has been expressed at public meetings respecting the secluded lives to which the females were doomed. But the ladies of India do not consider seclusion in the light of a grievance; on the contrary, they would think it the acmé of misery to be subjected to the public gaze and admiration as in English society.

7. WORSHIP.—Much horror has been expressed respecting their idolatry; but the Mussulmen are not idolators, but nearly pure deists, and the Hin-

doos only use their idols as agents or representatives of the deity, for Mahadeo, (the Great God) is their highest point of veneration. The natives are emphatically a religious nation, and pay more attention to its rites than perhaps any other people living, for there is hardly an act of their life that they do not associate with their religion.

8. CONVERSION. — Much disappointment has been felt at the slow progress of conversion to Christianity, but those who have watched the obstacles to be encountered will not be surprised at the small number of converts. The propagation of the gospel in India is attended with many difficulties, peculiar to the country. No Hindoo can embrace Christianity without losing caste, in other words, without being cut by every individual of his caste; who disown him as a renegade and a vagabond; his contact is shunned as contamination even by his own family, and till of late his patrimony went to his next of kin, and he was reduced to beggary. Lately, this law was abrogated by government, and strange to say, the leading natives of Calcutta entered into an association to petition parliament that the old law disinheriting all Christian converts should be restored.

9. EASY CIRCUMSTANCES. — It has become customary in some quarters to hold up the natives as an oppressed, over taxed, ill used people,

X struggling for a subsistence. I confess this does not accord with my experience, and I speak from observations made from Singapore to the Kybur Pass. I feel assured that those who have lived under purely native rule, bless the day when they came under the dominion of the Company, and that those still living under independent native potentates would hail the annexation of their country as a boon. In no country is the public peace more seldom broken; is private property more secure; do the population enjoy the ordinary comforts of life, at less toil and trouble, or enjoy more civil and religious liberty; and if exceptions do take place, they are owing to the perversion of the law, by the natives themselves. A great outcry has of late arisen about the prevalence of torture, more particularly in the Madras presidency, as if that were the usual system of squeezing the revenue out of defaulters. During the whole of my service, and I have been more or less intimately connected with the Civil Courts, I do not remember a single case of torture inflicted, directly or indirectly, either by European or subordinate native authority.

10. MARCH OF INTELLECT.—The march of intellect is making rapid inroads into the ignorance, the apathy, and the time-honoured encumbrances that for so many centuries have obstructed the improvement of society. The improved mode of transport by steam boats has monopolized the commerce of

the great rivers, and the railway will soon run the steamers off the Ganges; for, contrary to all expectation, the natives have shown the utmost partiality for all transit by rail. The schoolmaster is abroad in our universities; our colleges, our city academies, and our village schools; a taste is sprung up for European literature and science, and young Bengal is adopting the costume, the manners and customs of the governing classes.

11. HOUSES.—Native houses are in general very humble dwellings, though of great variety. The Malays build their houses of thatch and bamboo, upon stakes driven into the sand; with the tide flowing under them, approaching them by a boat and mounting them by a ladder. Nothing could be more airy and more cleanly than such an edifice.

The Burmese also build their houses upon large timbers, let into the ground, with an open space below the planked floor, where they generally keep their cattle. The walls are planked, and the roofs either planked or thatched. The Burmese houses are more capacious and more comfortable than those of any native race in India.

The Bengali builds his house on a terrace of mud two or three feet high, the fabric being constructed of bamboos and thatch. The floor is of mud, and is frequently washed over with cow-dung and water, and when dry ornamented with

X various devices, outlined with chalk. In the north-west the houses are built of mud, with flat roofs, also covered with mud, and with slope enough to run the rain off.

The Kyburies follow the example of the swallow, and scoop out their houses out of the brow of the hill independent of masonry or carpentry, and ensured against fire.

12. CLOTHING.—The dress worn by the natives is principally cotton, and generally white. In winter, warmer fabrics of quilted cotton are worn, and by the more wealthy, Cashmere shawls and English broadcloth. The head-dress is an ample turban of cloth; their shoes are mere slippers, generally embroidered, and worn without socks. Their slippers they invariably leave at the door, for it would be considered as disrespectful to enter with their shoes on, as with their turban off.

The hill tribes wear fabrics made of hemp, or of sheep's wool, or of the softer wool of the Cashmere goat; the Punjaubees of camel's hair, or tanned sheep skin, with the wool on it.

The dress is at all seasons very scanty, in summer merely nominal, and in winter quite inadequate to protect them against the cold, so much so, that a European would perish of cold if obliged to wear the clothing they wear.

Their bedding is equally scanty, and the practice of the common orders is to spread a mat on

the ground, on which they slumber soundly, with **X** nothing but a sheet over them, enveloping the whole body, head, and all; the heat of the breath making up for the warmth of a blanket. Tattooing is not extensively practised by the Hindostanees, though many women have a beauty spot on the forehead, or a ring of spots round the arms or ankles.

Paint is much used by the men; devices of all sorts and forms being painted on the forehead, of red, white, or yellow, to denote their caste. The men are very fond of golden necklaces and rings; and the females actually, load themselves with ornaments; golden rings in the nose, two or three inches in diameter, with a precious stone in the centre; rings all round the ears, necklaces, armlets, anklets, finger rings, and toe rings, beyond counting.

The Burmese practice tattooing to a very great extent, and with great skill; from the waist to the knee the men are covered with all manner of patterns, like a richly embroidered shawl; the owners pique themselves upon their elegance; and the fair sex are as much fascinated by them as by the form and figure of their lovers. The dress of the Burmese ladies is as remarkable as that of the men; consisting of a loose tunic of white cotton, and a rather scanty wrapper of fancy coloured silk overlapping the bosom, and extending to the ground;

X open in front, exposing the knee at every ordinary step, and at every extraordinary step, a good deal more extraordinary.

There is a variety of dress in use among the Nagas, one of the hill tribes of Assam, which, from its exceeding primitive nature is worth notice compared with which even the fig leaf is full dress. The Nagas go literally naked in their native wilds, but are withall not without peculiar ideas of decency. This is marked by having a fold of the preputium drawn through a small ivory ring, and worn in that predicament. They would think it highly indecorous and disrespectful to appear in female society without this appendage.

These rings are sold in the bazars of Manipore, all of which are kept by women; and such is the force of habit and the elasticity of modesty that these ladies think no more of fitting a handsome Naga with this inexpressible, than they would in fitting his great toe with a ring.

13. DIET.—The diet of the natives is of the simplest kind, that of the Hindoos being rice, with a seasoning of ghee (clarified butter) and some dry spice and green vegetables made into a currie, besides milk in its various forms of curd. That of the Mussulmans is more generous, a large allowance of wheaten flour made into unleavened cakes with fish, or flesh or ghee.

Many of the articles of diet are very objection-

able either from the material itself or its mode of X
cooking. None is more deleterious than the half-
cured or wholly putrid fish so much in use by the
poor. Such a mess requires little salt and goes a
greater way than if fresh or properly cured ; but
in proportion as it saves the means of the con-
sumer, it excites a predisposition to disease. Raw
rice, underbaked bread, raw vegetables, deficiency
of salt, or wood ashes used instead of salt, and the
inveterate practice of smoking tobacco mixed
with some intoxicating drug, generally hemp-seed
(called bang), have also a powerful effect in
lowering the standard of health.

But when it is considered, that a great mass of
the population, not only live, but support a family
on three, or four rupees a month, the wonder is
how they exist at all.

But putrid fish is a delicacy compared to what
some natives indulge in.

Aghorpunts, or eaters of dead men's flesh are
occasionally met with. During my service in
Assam, two men of this caste were sent to me by
the magistrate to have my opinion as to their
sanity. One of them was not exactly compos-
mentis, but the other was of sound mind, and
assured me he had been in the habit of eating
human flesh for years. I believe the practice of
appearing in a bazar, picking the flesh off a thigh
bone is often done by way of horrifying the

X natives, and extorting money from them as an inducement to go elsewhere.

14. IMPURE WATER.—No part of diet is more generally objectionable than the water they drink. One would expect that the natives of India, so excessively careful of defilement in their manner of eating and drinking, would be very particular about their water, their only beverage; and that nothing less than distilled water from the spring, or rain water from the clouds, would satisfy them; but no nation is so notoriously indifferent about the water they drink.

If we visit any of the legitimate places for lifting water, any of the ghauts of the river, we shall see a dense mass of naked people of all ages and all sexes standing up to their waists in water; some washing their clothes, some their bodies, and all stirring up as much mud from the bottom as they can; yet when their ablutions are completed, filling their pitchers where they stand for the day's consumption; probably one of the common sewers of a bazar enters the river a few yards above the ghaut; and it may happen that the surface of the water is strewed with the yet warm ashes of some lately incinerated human being, or that a putrid carcase is revolving in an eddy adjacent. If we visit any of the private tanks we shall find a spacious pool of water shaded with trees and embroidered with weeds, the necessary

reservoir of all the surface water in the neighbourhood, a perfect infusion of every thing offensive and filthy, and literally alive with animalcules—here too we shall see the same scene of washing clothes and scrubbing bodies, and other acts of uncleanness; yet from this same pool they draw their supply of water, and no wonder that they often become sick from using it.

15. BATHING.—The universal practice of bathing has, I have no doubt, a bad effect upon the health of the people. In a country such as India where so much of the person is exposed to the accumulation of dust and perspiration, it was no doubt a wise and provident law that instituted ablution as a religious rite, for no other plan so effectual could have been devised to insure cleanliness and a healthy state of skin. But I fear bathing is often abused, that it is considered in the light of an ordinance of their religion, and is practiced without due regard to the season of the year, the state of the weather, or the condition of the body as to health and disease. There are numerous cold, raw, rainy days even in the summer season, and bleak withering days in winter, when people even in good health would be much better in their beds at home than thus doing penance on the banks of a river; and a person labouring under diarrhœa, dysentery, or internal inflamma-

X tion, or under the influence of mercury, would be committing an act of great indiscretion by taking a cold bath *al fresco*, yet natives bathe every day when so affected.

16. EXPOSURE OF THE DYING.—Ill-timed bathing is not the only instance of the religious laws of the country aggravating the diseases of the people, and adding to the bills of mortality. The practice of the Hindoos hurrying persons dangerously ill to the banks of the river, and exposing them in the open air, on a bed, with their feet hanging over in the water, and their bodies besmeared with the slime of the river, till the ordeal puts an end to their existence, must be considered as a frequent cause of death; and there can be no doubt that thousands of lives are by this unfeeling treatment taken away, that with proper nursing might have recovered. This custom, practised every day, equally repugnant to human nature as Sutteeism, is probably ten times more destructive than it was. The friends of a poor dependent, unfortunate widow, incited her to the commission of suicide, in order to rid themselves of a relation who might claim a maintenance among them; the friends of a person hopelessly ill, take advantage of his helplessness and his superstition, and hurry him off to the river as the most appropriate place to die, and if he should

happen to survive the infliction, and recover, he X
is considered an outcast and a vagabond because
he did not die.

We have put down Sutteeism, female infanticide
and human sacrifice, but we forget that in the
most populous cities of India, even in the city of
Calcutta, sacrifices of life no less atrocious are
every day perpetrated.

We have only to go to any of the *Murdah
Ghauts*, above the mint, the public places of in-
cineration, and there we shall see the old, the
middle aged, the young and the beautiful of
both sexes, exposed in their last agonies, with
only three or four hired mourners preparing their
funeral pile, and a party of vultures, grim, gory,
and abominable as harpies, hopping near them,
eagerly watching when the vital spark shall be
extinct.

The following case is so much to the point, that
I make no apology for inserting it, and though it
occurred more than fifteen years ago, yet I believe
similar cases still occur. In Calcutta, on an
evening of January, I accompanied a medical
friend during a visit to a native lady of rank, who
had a miscarriage that day at noon. The patient
was a young woman to all appearance lately in
good health; she lay quite insensible, breathing
laboriously, and pulseless; eyes fixed, and open,
skin of natural warmth: the room filled with

X attendants, hot and suffocating. After prescribing for, and enjoining perfect rest, we went away, promising to return in an hour or two. About ten, when we called again, we learned that they had carried her off to the river side, where she expired. I have no doubt that if this lady had been allowed to lie quietly in her chamber, that she would have recovered. In her condition it was dangerous even to raise her: nevertheless, she was placed upon a bed, carried through a labyrinth of narrow passages and staircases out of a very hot room into the cold night air, and jolted along on men's shoulders through the streets to the river, because Hindoo superstition assures a blessed immortality to all who die on the banks of the Sacred Ganges.

17. EUNUCHISM.—It is somewhat remarkable that this unnatural practice, so common from time immemorial, yet so directly opposed to human nature, and the welfare of the commonwealth, should never have engaged the attention of the legislation. It is notorious that the attendant of every ZENANA, and many of the favourites about native courts, are creatures of no sex at all: emasculated in early boyhood like pigs and rabbits with impunity—and with the same object in view, that of bringing a higher price in the market than ordinary humanity; yet the perpetration of such an act in any other region of the British dominions

would be an act of felony. The time has come X when such unconstitutional practices should be suppressed, by making them penal!

18. COOLINISM.—Another practice equally inconsistent with the increase of the population is that of Coolin-Brahminism. A *Coolin* Brahmin is in Hindoo religion believed to be a quintessence of every thing sacred and mundane; to form a matrimonial alliance with such men is an object of ambition with the highest families, and to admit of the largest extension of such marriages, they are licensed by the priesthood to plenary indulgence in the number of their wives.

They therefore lead a roving sort of life; they get feasted, worshipped, and enriched by the family of the bride, and when the honeymoon is over, they ride away, probably never to return, to enter into similar engagements with other families on their conjugal tour, leaving at every halt a Penelope in her teens, to lament for their loss, and despair of their return.

19. WIDOWISM.—It is somewhat curious that when government put an end to Sutteeism, one of the chief incentives to that sacrifice, viz., the prohibition of Hindoo widows marrying a second time should have been allowed to continue in effect. However, that remnant of barbarism is now under the consideration of government, and will no doubt be consigned to oblivion.

X 20. **POLYGAMY.**—This is another subject at present under judication, but it is a delicate one to meddle with, and a dangerous one. The argument of its being detrimental to the state cannot be adduced against it. It is an essential custom of both the Hindoo and the Mussulman, and the time has not yet come, when it can be safely meddled with. The following remarks extracted from the Friend of India, are worthy of remembrance.

“That polygamy is a mighty social evil, few Europeans will ever be disposed to question. If we could abolish it at once and for ever, introduce a purer morality, and a loftier standard of social life, no sacrifice would be too great for such an end. This is we fear impossible, and it is by no means clear that the good which the legislature can effect is worth either the effort it would require, or the suspicion it would certainly excite.

“This privilege cannot be abolished without abolishing Hindooism with it. The whole creed is based upon the supposition that the line is perpetually kept up, that there is always a son extant to perform the shraddh. To abolish the privilege would be to enrage every professor of the creed from Peshawur to Travancore, and excite a degree of suspicion fatal to a cordial co-operation in reforms at least as important.”

I could easily enlarge on this subject, and point

out in vivid colours how often the religious X opinions of the Hindoos operate destructively on the lives of the people who profess them; their pilgrimages, their penances, their mutilations, their self-inflicted tortures, and self-sacrifices, but that would swell this Essay to an inconvenient extent, and shall conclude this chapter with only one more example.

21. **THUGGEEISM.**—Amongst the many causes that in India shorten the span of life, and add to the rate of mortality is the system of Thuggee. This system, which has horrified the world by the heinousness of its guilt, and exhibited a picture of human depravity unparalleled in the history of any nation, has been practised in India for more than two hundred years, and though greatly checked, continues even till this day. The blackest page in the records of the rudest and most savage state of mankind vanishes, and becomes white as snow when contrasted with the enormity of villainy inseparable from the trade of Thuggee, and our astonishment is only increased when we find it practised by the courtly Mussulman and the timid Hindoo; and, that a nation that could, out of compassion or charity, establish hospitals for sick animals, and even crawling insects; and the greater portion of whom would shrink with horror from shedding the blood of any living creature, even for their own subsistence,

X can, nevertheless, exhibit a numerous sect of professional ruffians, who, with subsistence as their object, the murder of human beings as the means, and religious fanaticism as a palliation for their crimes, wander over the country like demons of destruction, regardless of the laws of God or man.

It is a remarkable fact, that these diabolical wretches, whose subsistence was procured at the sacrifice of two or three men per month, had, nevertheless, a fixed habitation in some Native state, where their wives and their families resided, and to which they retired with their plunder after a fortunate expedition; and what is most unaccountable, their dreadful profession was known by every inhabitant in their village, and they were regularly mulcted of part of their ill-gotten spoil, by the chief of the village, who occasionally threatened to deliver them up to justice, unless they paid him a handsome bribe. From these head-quarters gangs of Thugs, went to set out on expeditions, towards all parts of Hindostan, from the Sutlej to the Brahmappootra, and from the Himalayah mountains to Cape Comorin.

The extent to which Thuggee has been carried on for many years, appears altogether incredible, and the drain upon human life, in any other country less populous than India, must have been manifest and unaccountable. Previous to the noble

and benevolent system for the suppression of Thuggee, now in force, every high-road was infested by prowling gangs of merciless murderers: every traveller, whose appearance gave evidence of his being possessed of the value of a few rupees, was waylaid by one or more of the confederacy: his confidence was gained by well-disguised protestations of friendship, and ostensible acts of kindness; or his fears were imposed upon, so as to make him claim protection from those bent upon his destruction; secret retreats, for the perpetration of their deeds, were fixed like stages along a line of march; to one or other of these places of execution, the unsuspecting victims were conducted, and, on a pre-concerted signal being given by the leader of the band, each traveller was instantly seized by two, three, or more of the crew, and strangled.

The persons of the victims were plundered immediately after death; their bodies invariably stabbed in some vital place, the breast or the eyes, so as to destroy all chance of re-animation, and thrown into graves dug upon the spot where they were murdered—into wells, or deep pools, or into thickets, where they were devoured by tigers. In some parts of the country, where the soil is so shallow as not to admit of a grave deep enough, the bodies were cut to pieces and buried piecemeal; for, if buried entire, the decomposition that

X ensued would cause them to enlarge, so as to force up the soil, and lead to detection.

One should have thought, that the first object of the Thugs would be to fly from the place of blood ; but, no : they often encamp over the very graves, cook their food, eat and sleep upon the spot, and thus efface all trace of their crimes. There are as many grades of distinction in a band of Thugs, as in a troop of disciplined soldiers. None but the most expert, whose hands are stiff with the blood of a hundred victims, or whose address in the art of decoying has shone forth pre-eminent, dare aspire to the honour of commanding a gang ; in point of rank to the chief, come the stranglers, or decoyers ; while those who have never had the prowess to put a human being to death, are condemned to perform all menial offices ; to cook, act as scouts, dig the graves, and complete the burial. The Thug considers his trade quite as legitimate, in his own estimation, as that of any other calling ; he practices it with as little compunction as a butcher or a gamekeeper ; offers sacrifices to the goddess of destruction, Kali, to grant him success ; and dedicates a fixed portion of his plunder to her altar, in gratitude for her protection. He venerates his profession, as the means of providing for the comfort and happiness of himself and family ; pity or compassion has no hold upon his mental faculties,—horror no power

to alarm him,—remorse never deprives him of an X hour's sleep. He considers himself a superior being to a thief or a robber, and would not condescend to speak to such wretches; he values himself according to his dexterity in putting an end to his fellow-creatures; and dwells upon any act of unusual atrocity, with unbounded delight. When the laws of his country demand his life, as an expiation for his crimes, he mounts the scaffold with the air of a martyr, and, scornful of being contaminated by the touch of a common hangman, adjusts the fatal cord with his own hands, and launches himself into eternity.

I have dwelt so much upon Thuggee, because cases connected with it are not unfrequently submitted to the Civil Surgeon, in a medico-legal point of view. Lest the stranger should feel alarmed at the accounts of Thuggee, I may state for his consolation, that Europeans are not included amongst the prizes for plunder. They have, from fears of detection, and, perhaps, from fears of their means of self-defence, been hitherto unmolested

CHAPTER XI.

XI 1. DISEASES IN GENERAL.—The principal diseases to which natives are liable, are Intermittent and Remittent fever. Cholera, Diarrhœa, Dysentery, and Small-pox. Many of them are so accustomed to ague, that they do not feel much inconvenience from it, they lie down for an hour or two till the paroxysm is over, and then get up and return to their occupation. In long continued cases of ague, the spleen becomes enormously enlarged, and so fragile, that a blow or a kick on the belly very often causes its rupture and death. In all such cases, the use of mercury is strictly forbidden.

Dysentery is probably the most fatal of all diseases, and carries off the largest portion of the population.

2. CATARRH.—This is a frequent complaint, and it is not uncommon during the hottest weather. Persons predispose themselves to it by undressing immediately on returning home after a visit during the heat of the day; leaving an out-door temperature of 102°, and sitting down in shirt and pyjamas

in an in-door temperature of 82° without due pre- XI
caution.

Colds are also frequently caught by the punkah-bearer going to sleep, till awoken by his master, bathed in perspiration. Anxious to make amends for his neglect he pulls with double vigour, and entails a cold upon the sleeper.

3. CALCULUS.—This was at one time thought to be a rare disease amongst natives but late experience shows it to be as prevalent as in temperate zones. Many civil surgeons have operated in hundreds of cases within their own districts, and with remarkable success. Even natives, uneducated at any school, ignorant of anatomy and self-taught, operate with a degree of success that surprises the educated practitioner.

4. GOITRE—is frequent along the outer range of the Himalayah, especially on limestone formations, but it is not considered a very grievous evil further than the inconvenience of its size and weight. Both sexes seem equally liable to it. It is unknown in the plains.

5. ELEPHANTIASIS—in one or both legs is almost peculiar to Bengal proper, and is more common in the male sex than the female, and in mature age rather than in youth. It also is looked upon as an inconvenience rather than as a serious evil. The disease is almost unknown in the north-west provinces.

XI **6. LEPROSY.**—Cases of this horrid disease are common all over Hindostan, and in both sexes, but confined especially to those of low castes. It does not seem materially to shorten the span of life, but to confine its ravages to the extremities; lopping off joint after joint, toe after toe, and finger after finger, and eventually the entire hand or foot, while the outcast victims drag out a lengthened existence in loathsome misery. It is firmly believed by the natives to be hereditary as well as contagious; no one thinks of intermarrying with a leper, and contact of any sort is abhorred.

7. CHOLERA.—Cholera is the most alarming disease, and when epidemic, its ravages are like those of a destroying angel. I am inclined to think that it is much less frequent now, than it was twenty or thirty years ago, though not less virulent. Hence a visitation from it causes universal alarm. I have a theory of my own upon Cholera, which it may be well to mention here; it may not be new, and it may not be true, but by it I can account for most of its concomitant symptoms; and its adoption renders the numerous names used to express a supposed different type superfluous; such as Blue Cholera, Cholera Asiatica, Cholera Asphyxia, Cholera Spasmodia, &c., for I believe, all these are merely different stages of the same disease. I will not pretend to

say, which is the first cause of Cholera, nor do I XI think we shall arrive at that knowledge till the analysis of the atmosphere is carried to infinitely greater perfection than it is at present ; till we are able to separate the principles of small-pox, plague, and intermittent fever from the air we breathe, and bottle them up as we do oxygen, nitrogen, and carbonic acid gas. I consider cholera essentially a disease of secretion, of immoderate secretion of serum from the skin and the intestines. In the first few hours so much liquid is withdrawn from the blood, that it becomes too much inspissated to pass through the capillaries from the arterial into the venous system ; the whole course of circulation is stopped nearly as effectually, as if the arteries were filled with treacle or tar, for the blood soon becomes of that consistence. Hence engorgement of the arterial system, suppression of all glandular secretion, of bile, of urine, of saliva ; hence congestion of the lungs and asphyxia, imperfect oxidation of the blood, and lividity of countenance, cramps and spasms, clammy coldness and death. I believe, I am correct in stating, that during an experience of twenty-five years, I have not met with cholera in an epidemic form more than five times.

I do not intend to enter upon the *questio vexata* as the contagiousness of cholera, but shall merely

XI give a slight sketch of its visits on three principal occasions when I had to contend with it.

The first time I saw Cholera as an epidemic, was in the campaign against the Coles, in 1832. Soon after leaving Barrackpore, in November, it showed itself in the camp to which I was attached. For nearly a month it assumed the sporadic form, selecting for its victims the camp followers, and the weaker Sepoys only. Though a good many of those attacked were carried off, still it did not excite much alarm; and we hoped, by constant change of ground, and the cold weather increasing, to leave it somewhere behind. However, after we had penetrated about twelve marches into the interior of the enemy's country, it burst out at Luckipore with all the violence of an epidemic, and raged for several days with most appalling mortality. The hospital became crowded to excess; two, three, or four poor fellows were carried in every hour; and so rapid was the progress of the disease, that many died a few hours after they were attacked. Many of the followers, rather than run the risk of living longer in camp, fled into the forests, and attempted to find their way home; running the risk of meeting upon their path the numerous beasts of prey, and the enemy, as savage as merciless, and still more dangerous than the wild beasts, through many a

weary mile. The retching of those attacked— XI
the groans of the dying, and the lamentations for the dead, occupied the ear incessantly night and day; graves were seen a digging in every direction, and funeral piles smoking all around, tainting the very atmosphere with human empyreumatic odour, flocks of kites and vultures hovered over the dismal scene, screaming to be deprived of their expected prey, troops of jackalls prowled about at night, tearing open and robbing the newly-tenanted graves of the Mussulmen; and the short hoarse bark of the hyena, like a knell from a death's head, grated upon the startled ear; warning us of our mortality, and of his, perhaps, groping for our bones before another day's dawn. Public religious processions were frequently performed by the natives, each caste separate by itself, with all the noisy solemnity characteristic of Hindoo and Mussulman rites, the one trying to out-do the other in their supplications to their favourite deities, to abate the dreadful calamity; and, to complete the tragical scene, the savage enemy, apparently exempt from the disease, looked on composedly, from the skirts of the jungle ready to empale with their arrows any one who ventured beyond the picquets, and anticipated our extermination without any efforts of theirs to assist.

When things were in this condition, we broke ground, marched two days in succession, and

XI halted at Boonga. We had not a case of cholera after leaving Luckipore. It is pretty well ascertained, though not easily accounted for, that if cholera break out in camp, and if that camp be broken up into parties, the chances are, that the greater number of parties will be exempt. This was strikingly exemplified in two companies of the 34th native infantry, that were detached: they had not a case of cholera after, though it continued with the head-quarters. The number of deaths on this occasion amounted to about seventy: about three-fourths of these were camp-followers. Most providentially, not a European officer was attacked: such is the caprice of this awful disorder.

The second time it was my fortune to meet with epidemic cholera, was in May and June, 1834, while in medical charge of the civil station of Goalpara, in Assam. Its progress up the Brahmapootra was very well marked, but slow. I first heard of it at Dacca, some time after at Jumalpoore, next it reached Goalpara, then it proceeded to Gohatti, thence to Bishnauth, and all in regular succession. Several weeks elapsed during its progress from Dacca to Bishnauth. In the town of Goalpara, with about 4,000 inhabitants, about 300 died of it. It continued to rage for six weeks. Its virulence seemed to have abated at Bishnauth, where only a few died.

The last time I saw cholera as an epidemic,

was after the capture of Rangoon, in April, 1852. XI
At the great pagoda, within the stockade, in the field hospital, and on board the shipping, it raged with appalling mortality. I have never seen it in so aggravated a form, and of thirty-three European artillery men attacked, I lost nine, most of them the finest and strongest men of the battalion.

Though cholera so rarely assumes the epidemic form, an occasional case happens at all seasons.

8. SCURVY.—Scurvy has of late years become much more prevalent in India than formerly, or rather I am inclined to think that that disease has previously existed under some other names. On my assuming medical charge of the civil station of Gohatti, 1836, I found it prevalent amongst the prisoners, under the name of gangrene, and that many of them had, previous to that time, died of it. The mouth was the chief seat of the disease. It manifested itself by a pale sponginess of the gums, and looseness of the teeth; or by a foul ulcer inside the cheek. All the symptoms of profuse salivation rapidly ensued; the gums became a mass of suppurating matter, the teeth dropped out, the ulcer spread over the mouth, the cheeks sloughed away, the patient sank exhausted—or, if he recovered, he was frightfully deformed. The hospital stores contained almost no anti-scorbutic. Oranges and lemons, indigenous to the neighbouring hills, were

XI then plentiful in the bazaar. I bought them in basket-fulls, prescribed them *ad libitum* in every case, and found them a perfect specific. I was fortunate in losing only one or two cases, and they were far advanced before they came under my care. No symptom of this disease showed itself amongst the Europeans at the station.

At Lahore, in 1848, I had no less than 425 cases of scurvy amongst the Sepoys of the 31st regiment native infantry. The ulcers generally began by a thickening swelling and engorgement of the cellular substance, soon after assuming the nature of an irritable boil, which, when cut into presented a spongy mass of cells infiltrated with pus. These sometimes remained in a chronic state, covered with a hard raised horny crust, or they ran into a phagydemic ulcer extending rapidly on all sides, dividing muscles and tendons, and laying bare the very bones. No part of the body was free from them, though they were chiefly confined to the lower extremities. When most prevalent every open sore took on the same ulcerative character, and a bubo, an abrasion, or a blister, as in hospital gangrene was speedily changed into a phagydemic ulcer, threatening to involve the whole limb in mortification. Such ulcers generally went by the vague name of Scinde boils, but I came to the conclusion, that all such sores so common along the course of the

Indus, were merely types of scurvy, and treated XI them as scurvy with the greatest success.

In 1849, I had medical charge of the 2nd European Fusiliers at Lahore, and found about one-third of the regiment afflicted with scurvy. In them it was not of an ulcerative character, but marked particularly in the gums with swelled legs, and general anemia; and when diarrhœa set in upon such a constitution, it was of a very intractable and fatal character. My impression was that the general scantiness of vegetable diet so common in the Punjaub and Scinde, was the cause of this scorbutic diathesis. As the best means of improving the tone of health of the regiment, and eradicating the disease, I recommended that half a pound of fresh vegetables should be added to the daily rations of the soldiers, and it was sanctioned by government, and the same concession has since been extended to all European troops in the presidency with the best effects.

Scrofula is a rare disease amongst the natives, as is also phthisis; and it is generally allowed that India is very favourable to Europeans affected with these diseases. Elephantiasis, leprosy, hydrocele, are common; syphilis and gonorrhœa are prevalent every where.

9. MAHAMURRY.—It is very remarkable, that in the Himmalayah mountains, especially in Kumaon, at elevations of from five to seven thou-

XI sand feet, a disease frequently becomes epidemic with most of the characteristics, and all the fatality of plague, and known there by the name of Mahamurry, or the Great Mortality. As soon as the disease manifests itself, the people leave the place, and take up their temporary abode a considerable distance from the infected village; the dead are left unburied where they fall, the sick deserted where they lie, nor do the survivors venture back to their homes for months and years, when decomposition and time is supposed to have purified the infected spot. So strong is their conviction of the Mahamurry being contagious, that a cordon is immediately made round a community suffering from the disease, and if one of their number were to venture beyond the boundary, he would be stoned to death.

10. PREDISPOSING CAUSES OF DISEASE.—A sound mind in a sound body, has long been known to be the best prophylactic against disease; a man in good health and of a cheerful train of mind, may be many times exposed to contagion or malaria with impunity, whereas one labouring under any bodily ailment, or depressing passion, is very liable to catch infection. Hence poor diet, bad water, scanty clothing, wretched houses, famine, fatigue, misfortune, melancholy, prepare the body for the seeds of fever; and the weak and inanimate are more frequently its victims than the

strong and the active. Hence the propriety of a **XI** more generous diet, and an extra glass of wine during the prevalence of an epidemic, especially cholera.

11. MALARIA.—It is a generally received opinion that the greater proportion of the diseases of India is the consequence of malaria generated in the decomposition of animal or vegetable matter: that a certain ethereal essence, whether a gas or a vapour, a film or an aroma, is evolved by such substances, when exposed to putrefaction in moist high temperatures, which has the property of causing fever when inhaled, or absorbed externally. The germs of disease are so ethereal, that they have hitherto baffled all art and all science to identify them, either in air, earth, or water. We can separate the component parts of all three, and bottle them up like May-dew; we can handle electricity, galvanism, and magnetism as we would material agents; we can divide the light of day into its constituent elements, and convert the red, and the yellow, ray into peculiar uses,—and the violet ray into a photographic pencil, far surpassing in truth, the paintings of the most able artists. But who can analyze a cubic foot of air, and be able to ascertain whether it be good or wholesome, or contain the essence of small-pox or cholera, or plague, or intermittent fever? Yet our belief is that these must exist as distinct

IX elements in the atmosphere; and till chemistry attains to that extreme perfection, we must be content to use the old fashioned terms malaria and contagion to explain our meaning; and our theories without meaning. This miasma is generated more readily in Autumn than during other seasons of the year; is more potent at full and new moon than at other periods of lunation; and more active between sunset and ten o'clock, than during the rest of the day. Miasma seems to possess gravity; soldiers that sleep on the ground-floor are more sickly than those that sleep on the second or third story. European settlers preserve their health in the Sunderbands of the Ganges by living in lofty houses; and in the forests of Malacca, some wild tribes actually roost upon lofty trees; indeed, the distribution of miasma is directed by the same laws that are applicable to smoke or fog.

Miasma is liable to be dissipated by heat; a moist atmosphere is more favourable for its action than a dry one, and a person may sleep in a marsh with impunity, if beside a watch fire. Miasma may be conveyed by the wind to a considerable distance, with its properties unimpaired. A ship may anchor, and a regiment may encamp a mile distant to windward of a marshy island without suffering; whereas, if so situated a mile to leeward, both would suffer from fever. An army may encamp with safety on the sea-shore of a pesti-

lential island during one monsoon, when the wind XI is from the sea, but if the monsoon change, and blow from the interior, sickness invariably follows. Miasma loses its property of producing fever in its progress on the wind, as if it became too volatile to have effect. Localities within one mile of a marsh may be feverish, whereas others five miles distant may be healthy. People born and bred in a malarial country become inured to it, and enjoy comparatively good health, where new comers would suffer. The Garrows, one of the hill tribes, on the frontier of Assam, are the most powerful, athletic race I have seen in India, yet they inhabit a country, into the interior of which no European could penetrate without the certainty of a most dangerous fever. In some parts of South America, a slave escapes from bondage, and finds a safe asylum in some well-known deadly jungle, knowing that his master would follow him thither at the risk of his life. Landholders frequently take advantage of their being seasoned to marshy situations, renting their farms at a very low rate, when a succession of casualties to new comers has prevented people in general from having anything to do with such supposed unlucky spots.

In most cantonments in India, there are certain marked houses, known from their unhealthiness, and waste; or only occupied for a month or two

XI by strangers. There are in general good grounds, for the reputed character they bear, and though it be only a popular opinion, it is the safest plan to retain it.

The state of sleeping or waking materially affects the liability to miasma: a person may pass through an unhealthy country with safety if awake, whereas if asleep he will most likely be attacked; as if the *vis medicatrix* that protected the constitution when awake, went to sleep along with its master, leaving him unprotected.

It is also curious that miasma may be effectually shut out by tying up the head in a gauze veil, which acts like the wire-gauze of the safety lamp. Hence an advantage of the native mode of sleeping with the head and body wrapped up in a cloth, which no doubt saves them from many a fever. A belt of high trees intervening between a marsh and a town, is known to afford a similar exemption to the inhabitants. Numerous instances exist of towns becoming suddenly unhealthy after the cutting down of such high belts of trees, as well as other instances of towns being protected by having a grove of trees planted between them and the marsh. Miasma seems capable of accumulation in the soil, and the breaking in of old forest land is generally attended with much sickness. Hence cantonments suddenly established on the site of a cut down forest are at first very unhealthy,

of which the new cantonment of Namean, on the Irrawaddy, is a noted example, and has been abandoned in consequence of its unhealthiness, yet Namean seemed to possess all the advantages desirable in a cantonment. It is ascertained that all the types of intermittent fever may be occasioned by the same exposure to miasma; four persons may pass through a jungle at the same time: one may get a quotidian fever; one a tertian, and one a quartan, and one may escape; and the one may be attacked an hour or two after the exposure; another a day or two; another a week or two, the seeds of fever lying dormant in the constitution.

12. MARSHES.—These are the principal sources of miasma or malaria, and hence the name of marsh—fever; and hence the propriety of draining marshy ground, and the impropriety of excess of irrigation, converting good soil into a nursery for fever. That Calcutta is so much more healthy now than it was in the olden time, when the survivors held a jubilee when the sickly season was over, is chiefly owing to the drainage of its marshes and jeels, and clearing away jungle; and that cultivated lands may be depopulated even by marine inundation, was manifested in the awful mortality from fever that followed the irruption of the sea into the districts of Balasore, and the

XI twenty-four pergannahs, sweeping away thousands and thousands of the population.

The stations of Hansi and Kurnaul, are good examples of the generation of fever from excess of irrigation; the country is naturally dry and unfertile, so as to give little crop if dependent on the scanty rains of the seasons. An abundant supply of water for cultivation was furnished by a canal, but without due discretion, this was allowed to overflow the country to excess, converting it into a hotbed of fever. The consequence was, that Kurnaul, one of the largest and finest cantonments, was abandoned; and its hundreds of elegant houses in ruins, and its endless ranges of barracks, not yet in ruins, are lasting monuments of the abuse of one of the most essential elements of life. The superintendents of the Great Ganges Canal, and of those of the Punjaub, have, therefore, good reason to be on their guard against similar abuse. But the abuse of the new canal by excess of irrigation is not the only evil to be apprehended; the bed of the old river must not be overdrained so as to stop the current, and leave nothing but a chain of stagnant pools; for if this is done, great sickness is unavoidable, and the blessing intended to be conferred upon the country may turn out a public calamity.

All water, to remain wholesome must be in a

continued state of circulation; agitation is not **XI** enough, and no one can taste water that has stood in a glass for a week unmoved and unchanged, especially in a hot climate without being convinced of the truth of the theory. Hence also the reason why the months of August, September, and October are so unhealthy. In these months the periodical floods are subsiding; the country is covered with a stratum of slime, and mud, and decaying vegetation: the inhabitants of many such districts abandon their houses at that time, nor venture to go back till the unhealthy season is over. The Tarai along the foot of the Himmalayan mountains; the Delta at the mouth of the Indus; the Sunderbunds of the Ganges, are in a great measure deserted at this season, few remaining exposed that can effect their escape. Many parts of the interior are, during these months, insulated by cordons of jungle, and no one who values his life would willingly pass through them.

13. RICE FIELDS.—The same laws that operate in rendering marshes miasmatic, also act, though perhaps in a less degree, in the rice fields of India. Towards the end of the rains and while the fields are still flowing with water, the ears are cropped and the straw is allowed to remain to ferment and form malaria. This is not a visionary idea, for so strong is this belief, that in many parts of the continent of Europe, far less favourable for

XI the development of miasma than India, the laws of the realm prohibit the growth of rice contiguous to towns.

14. TANKS, POOLS AND DRAINS.—But marshes and rice fields are but two of the many sources of disease to be seen on every hand in India. Every native of rank has a nursery for fever in the immediate vicinity of his house called a tank, and every poor man a pool, from which he dug the mud to build his house, which seem as if made on purpose to supply them with malaria, as well as with muddy water. I do not mean to attribute any blame to tanks and ponds, if kept properly clean, they would then be both useful and ornamental, and the soil excavated in forming them would serve to raise the adjoining land and render it dry; but from the weeds and jungle that in most cases are allowed to infest them, they exert the most prejudicial effects on the health of the inhabitants. If the ditches of Fort William were allowed to remain filled with stagnant water, and become a field for the study of reeds and rushes, its present healthy character would soon leave it, and were the numerous tanks throughout Calcutta left to nature, the consequences on the public health would be calamitous.

Things are bad enough as they are. Calcutta is probably the worst drained city in the British dominions; its present drains are nothing better

than elongated cesspools, indescribably filthy and offensive; without the necessary fall to give a current to the rain water when it falls, and absorption and percolation are the chief agents in checking the bad effects. Nor are the injurious effects confined to the most filthy parts of the native town, but they taint the health of the inhabitants of its palaces. XI

A considerable reservoir of river water, filled by a steam pump, stands upon the esplanade, with a canal extending into Chowringee; but it is useless as a detergent for the public sewers; the original object of it was to water the streets, and to fill the tanks; but the chief use made of it is by sweating natives and sweating horses to bathe with.

For the last twenty years, we have had one committee after another sitting upon the conservancy department of Calcutta, but bringing forth nothing vital. All of them have lamented the most unhealthy state of the public sewers; all have suggested something being done, but the original evils remain to this day unmitigated.

Nevertheless, the drains of Calcutta admit of being as well purified as any town in the world, the rise of the tide is from twenty to thirty feet; indeed, a great part of Calcutta is below the level of the spring tides, and it is only necessary to sink the present drains ten or twelve feet to have

XI most perfect drainage, and have a rush of pure water twice a day. Tollys Nulla, the circular canal, and the river, are most conveniently situated for opening the necessary number of arteries.

15. FLOATING CORPSES.—These form another source of sickness. Though the Hindoos profess to burn the bodies of the dead, and throw the ashes into the sacred Ganges, or any of its million branches, yet the poorer classes either cannot afford fuel for this purpose, or do not incinerate. They are satisfied with singeing the body with a bundle of straw, and sinking it by means of an earthen pot filled with mud, and tied to the neck of the deceased. As soon as decomposition takes place, and the development of gas, the body rises to the surface, and drops down the stream for hundreds of miles, tainting the atmosphere as it floats along, till maceration and birds of prey strip the flesh from the bones, and cause it to sink to rise no more.

Not long ago this Hindoo practice became the subject of a public inquiry; but I believe the evil was thought to be too deeply rooted in native superstition to be put down by the order of the magistrate

CHAPTER XII.

1. SANITARIA.—I come now to treat of medical **XII** certificates, and the different plans resorted to by European officers when change of air is thought advisable. To an invalid labouring under chronic disease, and exhausted by slow but long-continued fever, change of air, as it is commonly called, brings about the most wonderful effects. I do not pretend to explain how this change operates, or to demonstrate whether there is any actual difference between the atmosphere of the two places ; or whether the good effects are indirectly produced by working upon the mind alone, but well assured I feel of its great efficacy in the restoration to health when convalescence has begun ; as also of its giving a favorable turn to disease before convalescence has begun. Change of air, from a good to a bad climate, is often attended with advantage ; and this is even perceptible in removing from one house to another, from one room to another, or further still, from one bed to another. For the correctness of these remarks, I appeal to every one who has had the misfortune to suffer from long illness.

XII 2. THE SICK ROOM.—If the most painful and dreary hours of our lives are spent in the sick room in England, even though surrounded with affectionate relations and every comfort that can mitigate disease, how forlorn must be the position of the bachelor in India in his solitary room, prostrated by sickness, unable to rise from his bed, unable to lift a glass of water to his lips, and hardly able to express his wants to his unsympathizing attendant, who feels aggrieved at the extra demand made upon him by his afflicted master. How often have I heard a patient utter, would that my sister were here ! Would that my mother were here ! Would that my wife were here in their days of trouble.

It is very much to be desired that a band of sick nurses should be available for officers and their families in times of sickness. These are not wanted in our hospitals, where every arrangement is as complete as circumstances admit of.

It is gratifying to see that the wants of the sick room of officers in India, are attracting so much public attention, and I cannot advocate the cause better than by giving the following extract from the *Bengal Hurkaru*, being part of a review of a public meeting held in Calcutta, in honour of Miss Nightingale.

I have witnessed that lady still young, accomplished and beautiful, throwing aside the luxuries

that she was born and bred to, roughing it in a ward of a public hospital, and superintending the wants of the sick and wounded soldier at Balaclava, and gladly bear testimony to the intrinsic value of such ministration. XII

“ When pain and anguish wrung the brow,

A ministering angel thou !”

“ It is not in hospitals alone, however, that nursing is required. India, of all countries in the world, must demand a band of trained nurses for private houses. In England disease is mild, and every man, but the most solitary, possesses kind and earnest private relations to soothe his sufferings in the dark hour. What a contrast India presents is only too well known to those who have experienced the miseries of the bachelor’s sick room, where solitude the most profound prevails, only disturbed by the occasional hasty visits of the physician, whose skill is rendered half nugatory by the impossibility of intrusting any one with the administration of medicine, or if the hour of death approach, by the vulture-like crowding of the servants to seize what booty they can lay their hands on. Impressed by these reflections we think it is much to be regretted that Mr. Hume did not embody his opinion in an amendment. We are quite sure that the measure we support would be equally honourable to Miss Nightingale, who might be invited to lay down her own laws, and

XII if need be, send out one of her own trained assistants to superintend the institution we advocate. We sincerely trust it is not yet too late to effect some modification of this kind. The substance of the third resolution of our meeting might be submitted to Miss Nightingale's London committee, with a request that they should sanction the devotion of the sum to be collected to local purposes."

To establish such a staff of nurses is less difficult than may be imagined, now that the means appear forthcoming.

One lady superintendent, six nurses for Calcutta, two for each of the division stations of Barrackpore, Dinapore, Benares, Cawnpore, Merut, Umballah, Lahore, Peshawur, say twenty-five in toto would be enough to try the experiment, with a good prospect of success in the Bengal presidency.

3. MENTAL AFFECTIONS.—I have often been at a loss to account for the indifference shown by the world, as well as by medical officers, towards affections of the mind. When misplaced censure, or unmerited disgrace, or pecuniary loss, or blasted ambition, or disappointed love, or hope long deferred, or death of kindred or consort have disquieted the soul, and steeped the senses in melancholy and despair, when the appetite refuses sustenance and the couch affords no repose, when the mind preys on the body, and the body

preys upon the mind, and health, like a shuttlecock, is bandied from the one to the other, finding a resting place in neither; when the whole system, physical and metaphysical, becomes irritable and disturbed, and the physician is perplexed to determine which is the seat of the disease; it often happens that no active remedy is thought of, and the morbid diathesis is entrusted to time alone to effect a cure. Nor are any further steps taken till the patient sinks into hypochondriasis; till the overstretched mind threatens imbecility; or till the moral shock recoiling upon the corporeal frame, gives rise to symptoms of acute disease, that bring the unfortunate man to the margin of the grave, from which nothing but a long residence in his native country can rescue him. I fear many medical officers would scruple to give a sick certificate for such mental affliction, and that Government would look gravely before they sanctioned leave of absence in such cases; yet such seem to me as much entitled to indulgence as the more palpable distempers of the body. XII

I am not prepared to prove the frequency of insanity in India compared with that of Britain, but I am convinced that the climate and mode of life strongly predispose to that most dreadful of all disorders, and I would dissuade every one with any strong hereditary tendency, from settling in

XII the east. When an officer unfortunately becomes insane, he is immediately put under careful surveillance, and sent either to the asylum in Calcutta or to Europe; this same surveillance being continued throughout the voyage.

4. **LOVE OF CHANGE.**—The love of change is inherent in the breasts of all men, and the more it is subjected to it the more it is desired. In fact, a constant change is necessary throughout our whole economy to preserve it in health; in our thoughts, our words, and our actions; our dress, our diet, our manners, and our customs, nay, in the very elements of our bodies, from the hair of our heads and the nails on our fingers, to the valves of the heart and the membranes of the brain; and if this change is suspended, disease in some form or another ensues.

From the nature of service in India, officers are never permanently settled. In the most peaceable times they are every second or third year obliged to migrate, and if longer stationary, they are apt to become weary of their monotonous life, and long again to be on the move. When they become sick, this ruling passion increases; and its good effects being so well ascertained, the invalid's desire is to try change of air.

5. **MEDICAL CERTIFICATES.**—The young Assistant-surgeon should consider the giving a medical certificate a sacred privilege; and be fully im-

pressed with the responsibility of his position, **XII** viz., his duty to the State on the one hand, and his duty to his patient on the other. There is no denying that Medical certificates have been abused; that the confidence of the surgeon has been abused; and that certificates have been obtained by plausible pretences, or by exaggerated statements, or by ill-founded apprehensions, when in reality there was no occasion for the patient to leave his station. Still, when the public service does not suffer, indulgence is commendable rather than too strict an interpretation of general orders. Government are most liberal upon this point; nor is this inconsistent with the good of the service; for an officer returning from sick leave is, in nine cases out of ten, a more efficient man than if he had remained lingering off and on the sick list in the plains with his regiment, where his duty was merely nominal.

When an officer is at an outpost, a trip on the river, a month or two's sojourn at a large station, or a visit to the Sand-heads, will often set him on his legs again; the sequestered life he led being the origin of the disease, and the pleasures of society being the best remedy for the effects of monotony. In more severe cases a residence during the hot season in some Hill Station; or a short voyage to Singapore, or China, or Ceylon or the Mauritius may be advisable. In cases still

XII more severe it may be necessary to repair to the Cape of Good Hope or Australia for a couple of years; while in the worst cases nothing less than a return to Europe for three years will restore the patient to health.

When the Surgeon thinks it advisable to recommend change of climate to a patient, he must make out a statement of the case according to rules laid down in the medical code; and forward this to his commanding officer, with a letter calling for a medical committee to report upon the case; and should the committee concur in the opinion of the regimental-officer, the patient forwards the statement through the commanding officer to the Commander-in-Chief, and the recommendation of the committee is invariably complied with. As many days or even weeks, are at times necessary to obtain the sanction of the Commander-in-Chief; the commanding officer has the power to allow the invalid to leave at once, in anticipation of general orders, upon the immediate departure of the sick officer being declared necessary.

At small stations, when a committee cannot be assembled, the personal certificate of the surgeon is sufficient.

It may often happen that the Surgeon himself falls sick at an outpost, far removed from any medical assistance, and change of climate may be urgently necessary. In such cases the surgeon

makes out his own case, and submits it to his commanding officer, who has the power to grant him permission to proceed to the head quarters of the division, where a regular committee can be assembled.

6. HILL STATIONS OF BENGAL.—The Sanitaria resorted to by officers of Bengal are Darjiling, Nainee-thal, and Almorah, Missouri and Landour, Simlah and Subatoo, Dhurmsala and Murree. These are all seated on or near the outer range of the Himalayah, they have nearly the same altitude, 7,000 feet above the sea; and nearly the same climate, though many hundred miles apart, and many degrees different in latitude; for it is remarkable that latitude has less influence upon the temperature of the atmosphere than the altitude.

These Hill Stations are the brightest spots in our Indian service, the oases in the desert of our tropical exile, the lands of promise in the wilderness of our weary wanderings, where one and all at some period of their pilgrimage hope to resort to, as a refuge in time of trouble. A summer residence in these hills is quite delightful compared with the fiery ordeal of the plains. The climate is indeed European, even Italian. In the hottest weather the thermometer rarely rises above 76 in the shade, and frost and snow prevail in the winter; a fire in one's room is at all seasons

XII agreeable, two or more good English blankets on one's bed, and personal clothing as warm as one would wear at home.

7. SCENERY OF THE HIMALAYAH.—The scenery of these hills is, I believe, the most stupendous, the most sublime in the world;—valley scooped out of valley, hill raised upon hill, crag hung upon crag, and mountain piled upon mountain, far above the limit of man's existence; far beyond the reach of the wild ass or the ibex; far above the existence of all vegetation; the glacier and the perpetual snow the only occupants; the avalanche, the thunderbolt, and the sunbeam the only visitants. In one summer's day one may taste of the climate of every region of the globe. One may start at early dawn with the heat oppressive, the thermometer at 100, and ascend before dark to the freezing point; through a succession of zones from the palm tree, the mango and the banana; through forests of the pine tree, the cherry, and the walnut; the oak, the rhododendron, and the yew; the chesnut, the cedar, and the cypress; the box, the holly, the mountain-ash, the alder, and the birch; and enjoy his evening dinner on a carpet embroidered with mosses and lichens, on the border of the vegetable world, with a glacier for his table, and a handful of snow to cool his wine.

The tiger, the leopard and the bear; the bison, the elephant and the rhinoceros; the ibex, ante-

lopes, and deer of various varieties ; the wild goat and wild sheep, and wild donkey, there find food and protection. XII

Its rivers are worthy of the mountains that give them birth ; roaring, raging, impetuous, irresistible floods ; dashing over precipices, and cutting through rocks ; at one place breaking into streams, where one might fish for trouts ; at another expanding into pools, where a whale might lodge or a navy might ride : here sweeping away the giants of the forests, root and branch, like straws upon a rivulet ; there washing away whole estates in landslips ; undermining the very mountains themselves, hurling their fragments audibly along their bottom like thunder, and piling up their colossal bones in boulders, that excite wonder and astonishment ; compared with whose masses the stones of our Druidical circles are but putting-stones.

The slopes of these hills are studded with neat and commodious villages, tenanted by a primitive population in easy and comfortable circumstances ; its uplands are sprinkled with numerous flocks and herds, and where the surface admits of being cut into terraces, with a command of water for irrigation, fertile crops of grain are produced. The greater part of European fruits and flowers grow spontaneously : the blackberry, the raspberry, the gooseberry and the currant ; the cherry, the hazel-

XII nut, the chesnut, and the walnut; while in their shade bloom the primrose, the clover, and the thyme, geraniums, jasmines, woodbine and eglantine. Apples, pears, plums, and apricots, come to perfection in the gardens; and of late years extensive tracts have been converted into tea plantations, supplying an article equal to that of China. Almost every English vegetable comes to perfection, and potatoes are transported in large quantities to the plains.

Such is a sketch of the Himalayah made from personal observation, and a residence of several years on duty there.

8. **CLIMATE.**—The most delightful months in these hills are April, May and June, September and October. The rainy season has its peculiar drawbacks. Few invalids reside there in winter. The climate of the plains is far superior. The 15th of April is the best season to repair to the hills; the 15th of October to leave them.

I am of opinion that all the Sanitaria on the Himalayah are pitched at too high an elevation, viz. :—7 to 8,000 feet; and that a much preferable climate is to be found at from 5,500 or 6,000. Tempted by the low temperature of the higher sites, their founders seem to have overlooked their inconveniences; their excessive rain, and fog, and severe winter. This is not the case at 5 and 6,000 feet. The temperature at that height is

quite low enough to answer all the purposes of a XII
sanitarium; the clouds that brood on the higher spots rarely fall so low, the rains are much lighter, and the winter most enjoyable. I will grant that a month previous to the rains and a month thereafter, the higher stations have the advantage, but as a residence throughout the year, the lower ones are decidedly preferable.

But let not the invalid rush to the hills unprepared for fatigue or inconvenience. A long dawk journey is not the only difficulty to be encountered: for when he has got to his destination, he will find many others he did not calculate upon. Even in a good hotel he will not be much at his ease: the want of baggage, of servants, of little domestic comforts, so essential to a man in delicate health, he will at first greatly miss; and if he take a house, he will, even though furnished, have many things to procure. Let him be prepared to meet these with patience and resolution.

It is a general, and I think a well-founded opinion, that all hill stations are better adapted for preserving good health, than for restoring it when lost. When organic disease has occurred, such as diarrhœa, or dysentery, or hepatatis, or consumption, they are decidedly objectionable. Diarrhœa is epidemic in the hot weather, and few people visiting them even when in good health

XII escape the "trot," but which is not a very serious affair.

Convalescence is a very delightful feeling at all times, and its delights partly recompence the patient for his past sufferings, and so long as it lasts he will be happy and contented. But when he is once more restored to his accustomed vigor, he will begin to feel the want of occupation, and idleness and ennui will render his days tedious and tiresome.

When the rains set in, and fall to the extent of 120 inches before they are over ; when everything is enveloped in clouds ; when confinement to the house for days and even weeks is unavoidable ; when nought is to be heard but the splash of the rain as it falls from the roof, and the heavy drops pattering from leaf to leaf of the old oak trees ; when nought can be seen through the impenetrable fog, still as a lake, and feeling so liquid that one almost fancies himself living under water ; when the fog flits into the house like an unclean spirit, settles upon every article of furniture, and the body as well as the mind becomes blue with mould ; the newly regained health, like a newly built house, is exposed to a severe trial, and many then wish themselves back in the plains. On those occasions it must not be forgotten, that though confined to the house for days, they would have

been equally confined in the plains; and instead of sitting by a roaring pinewood fire in a snug room, they would be stretched on a couch fanned by a punkah, overwhelmed with heat and dust, and perspiration, with no hope of relief for many months. But every dark cloud has its margin of silver; and a week or two of dismal weather is generally followed by some glorious breaks. There is generally a lull at sunrise or sunset; presenting a panorama of dissolving views that no power of the pen, or the pencil, could describe. XII

I might throw out a few general hints for the invalid during his stay in the hills; but shall content myself with only one; and that is to put himself, immediately after his arrival, under the advice of the medical officer of the Sanitarium, there being one or two appointed for the express purpose of attending visitors.

9. DARJILING.—Darjiling, the most eastward of the Sanitaria of Bengal, is in the Sikhim country, (lately absorbed,) in N. lat. 27° E. long. 90° . Distance from Calcutta about 370 miles; elevation 7,220 feet above the sea. Range of thermom. 29° to 74° . Annual fall of rain 128 inches, (enormous.) Its aspect is to the north; the view of the snowy range from it is very magnificent, and the highest mountain in the world, Kun-chinjunga, 28,000 feet high, is about 50 miles direct distance.

III Darjiling may be approached either by land or by water. The following is the best route for an invalid, and can be made in from six to nine days, according to the rate of halting.

From Calcutta—

	Miles.		Miles.
To Kishnaghur ..	62	To Punkabarry..	16
„ Berhampore ..	54	„ Kursion	6
„ Bergatcha ..	30	„ Chattackpore.	12
„ Parbuttypore.	34	„ Darjiling. . . .	12
„ Dinagepore ..	57		—
„ Roogah	47	Total	371
„ Tetalyah	25	Expense .. C. R.	250
„ Silligoree ..	16		

At each of these stations there is a government bungalow where supplies can be got.

Punkabarry, the first station in the hills, is only 1,600 feet high, and consequently not a desirable place to halt at. Kursion is the second, 4,500 feet high, and a very good place to rest at.

A good boat can proceed as far as Dulalgunge by the river Mahanuddy during the rains, and within 30 miles of Dulalgunge in dry weather, in 20 to 30 days. Dulalgunge is about 30 miles from the foot of the hills, and ready conveyance can be procured thence to Darjiling.

Travellers bound to Darjiling, either up or down the Ganges by steam, should land at Beaulah, and join the above route at Bergatcha.

There was formerly a good hotel at Darjiling, XII but it has lately been given up from want of visitors, and the only public accommodation available is the staging bungalow. Houses equal to the demand, furnished, may be got for rent, but supplies of all sorts must be provided from Calcutta by the residents themselves.

The rains and fogs are excessively heavy, much more so than farther westward. They are almost incessant during June, July, and August, as much falling each month as thirty inches. Severe frost and heavy snow prevail in winter.

Darjiling has not answered general expectation, and has of late retrograded rather than advanced. It is used as a Sanitarium for European troops belonging to regiments in the lower provinces.

10. NAINEE-THAL.—Nainee-thal is situated in the province of Kumaon, in N. lat. 29°36', E. lon. 79°20'; elevation, 7,000 to 8,000 feet. It is distant from Bareilly and Moradabad about seventy miles. Kalidoongee stands at the foot of the hills in a forest of bamboos, &c., on dry hard shingle; its distance from the Thal is 16 miles, and the journey up is easily made in one day either by a pony, a *jampan*, or a *dandy*, any of which could be provided from the Thal. The best conveyance for a lady or an invalid up the hill is a *jampan*, a sort of covered chair, supported upon two poles, and carried by four or six

XII men, two or three in front and behind. The dandy is fit only for people in robust health ; and consists of a sort of hammock strapped to a pole twelve or fourteen feet in length, on which the traveller sits with his arms resting on the pole, and his feet dependent. A palanquin can easily be carried, and if the traveller goes to Kalidongee by dauk, he cannot do better than go up in his *palkee*, even though the bearers may object to its extra weight. The first four or five miles is over the stony bed of a river, the rest is one continuous but easy ascent.

There is a tolerably good hotel at Naineethall, and houses can easily be got for rent at from C. R. 400 to 800 during the season. There may be 80 or 100 houses, now built at the Thal. The commissioner of Kumaon, and one of his assistants live part of the year there. All ordinary supplies can be procured in the bazars, but most residents get up their European stores from Meerut or Cawnpore.

An assistant surgeon and a chaplain are stationed here, but their tour of duty is limited to two years.

The most agreeable months at the Thal are April, May, and June, October and November. During July, August and September, the rains are very heavy, almost incessant, and very unpleasant ; severe frost and heavy snow are prevalent

during the winter, and to avoid these many XII
visitors proceed to Almorah or the plains.

The scenery on the first half of the ascent is not very interesting, but towards the top it becomes very grand, the perpendicular cliffs of Aya-patta being the chief features in the landscape.

The principal attraction of the station is the Lake or Thal; a sheet of water darkly, deeply blue, about a mile long, and varying from a quarter to half a mile in breadth; fringed with the broad leaved lotus, overhung with luxuriant forest trees, and walled in by ranges of mountains rising by moderate slopes one or two thousand feet above the lake. The greater number of the houses are built low down, near the lake, but numbers are perched along the brows of the hills, and many on the summits of the ridges. There is an excellent road all round the lake, and numerous rides in all directions, even to the top of Cheenur, about 9,000 feet high. The views from the top of Cheenur are exceedingly grand; towards the south the plains of Rohilcund appear like a rich carpet spread out for nature herself to repose upon; the towns and the fields, the woods and waters, diminished to spots, pourtrayed like patterns, melting away in aerial perspective till the landscape is lost in the hazy horizon one hundred miles distant.

XII To the north an endless series of mountain ridges come in view, crowned with the snowy peaks of the Great Himalayah, Kedar Nath, and Budrinath, and Nundi-devy, and Juwahir, fit altars to look from nature up to nature's God. No wonder that the Hindoos considered those peaks so sacred, and enjoined pilgrimages to be made to them to offer up their prayers to Mahadeo, with an assurance of a happy immortality to the pilgrims that died of fatigue on the way; or that they offered up themselves as a sacrifice by ascending their heights till they perished in the snow, in "The valley of death." Not fifty years ago, this religious rite was prevalent at Kedarnath, but like many other modes of human sacrifice it was suppressed, when Kumaon became a dependance of the company.

11. **ALMORAH.**—Almorah is about thirty miles distant from Naineethal towards the north; there is a good road between the two; and staging Bungalows at Ramghur and Powree, but the journey with a spare pony can easily be made in one day. Almorah stands on the summit of a range of mountains considerably lower than its neighbours, at an elevation of only 5500 feet. The country within six or seven miles of it is quite naked, the forests having been cut down for firewood during centuries gone by, but the station is well planted by the householders. The soil is gene-

rally unfertile, and crops are rare. Its rocks are XII
composed of slate and quartz, and large boulders
of granite abound. Formerly a corps of the line
was stationed here, but of late that has been with-
drawn, and the duties of the province are per-
formed by a local corps. Houses are consequently
cheap and abundant, and there are four or five
government Bungalows, which officers on sick
leave are allowed to live in rent free, on applica-
tion to the magistrate.

The town is a very respectable collection of
well-built houses, partly of stone and partly of
wood, with the roofs well covered with large
slabs of slate, six, eight, or ten feet square, and
the streets are well paved with the same material.
The bazar is but scantily supplied with European
supplies, and these must be procured from the
plains. There is a well-built modern fort here,
the old Goorkah Fort being converted into a jail.

The climate of Almorah is a happy medium
between Naineethal and the plains, the thermo-
meter rarely rises to 80°, and the frost and snow
in the winter are not severe, and are welcomed
rather than disliked. Its chief advantage is its
exemption from heavy fogs and rains, the great
drawback to places of higher elevation. The
rains there are comparatively mild, a succession
of showers with about equal portions of sunshine
and shower, and the fogs that brood almost con-

XII stantly on the tops of the higher mountains rarely fall so low as its elevation. Almorah has further the advantage of government bungalows in different directions, towards Loohooghaut four marches distant, and Petoraghur seven marches, where the invalid can find change of air and change of scene, advantages not to be overlooked, when the monotony of life renders time heavy on hand. Should he find the cold of Almorah too severe, he can descend 1500 feet to the pretty retreat of Hawulbagh only six miles distant, and where there are several houses for rent; and the lofty mountain of Binsur 9000 feet is only eight miles distant, where he could pitch his tent in a grove of cedar trees, amidst the most picturesque scenery in the world.

Should he wish to visit the Snow line, he can do so at Pinduree which is eight days journey distant. The most delightful tour in these hills is to Kedarnath, at the snow line, and this may be done in one month. October and April are the best months for the snow excursion, giving the preference to the former.

Should he tire of all these varieties, he will find a bridle road along the mountains to Missouri, seventeen days distant, but he must depend upon tents for shelter.

12. MISSOURIE AND LANDOUR.—Landour and Missouri may properly be called one station, as they are in conjunction; the only difference being

that Landour is about 1000 feet higher than the XII
generality of houses in Missourie. They are
placed in N. Lat. $30^{\circ} 35'$. E. Long. $78^{\circ} 10'$. The
elevation of Missourie is 7500, of Landour 8500.

Missourie is not far distant from Merut, and
the journey can be made in two or three nights
dawk. Before reaching the hills, the Sewalic
range must be passed through by a very tedious
road up the stony bed of a torrent, requiring alone
three hours to accomplish it. There-after the
Dhera Dhoon must be crossed ten or fifteen miles
in breadth, in the middle of which is the station
of Dhera. Should the invalid feel fatigued, he
will do well to halt a day or two at one of the very
good hotels here, he will find the temperature very
pleasant, and may consider himself out of the heat
of the plains. Early in the morning, he should
go on to Rampore to breakfast, where there is a
good hotel, and having written to the postmaster
there, to have bearers ready, he may be up at
Missourie in four or five hours either by pony or
jampan. A stranger on arriving at Missourie, is
very ill off for accommodation. There is but one
hotel, and that a very miserable one, and in the
bazar; the club is a desirable resort, but of course,
open only to its members, and early in the season
it is full. The best plan is to have a house engaged
ready for his reception. These are to be got fur-
nished, and vary in expense from 500 to 800

XII rupees during the season. He may depend upon the shops for supplies, and may draw his pay through the collectorate of Dhera.

These stations are situated on a narrow ridge of mountains, with numerous offshoots and eminences, on the summits of which a house is generally built. A great proportion of the houses are built upon terraces cut out of the solid rock; the eaves of the back of the house being lower than the bank. Of these stations it may be said, that man has done every thing for them, and nature very little; they do not contain an acre in all, of level ground, and not a bit of good building stone. At Missourie there is no timber within twenty miles, fit for carpentry, and few trees of any sort; with naked limestone rocks sticking out every where, very little soil fit for vegetation, and no water within 300 feet or more of the ridge. The tops of the rocks have been cut away, or their ribs have been scooped out into flats, to obtain foundations for the houses; and fine roads of many miles in extent have been blasted and cut out of the solid rock at immense labour and expense, affording the most picturesque views; the mountains are very steep, and here and there precipitous with continuous descents of eight or ten miles between top and bottom. The wooding, as I have said, is scanty and only fit for burning, the fine oak trees being for the most part hollow; the rhododendron

though a tree of five or six feet in diameter, is too brittle for service, and the pine and the deodar (cedar) are rare. The neighbouring hills are for the most part bare, and only a few peaks of snow are to be seen on the horizon. XII

Landour, as I have said, is about 1000 feet higher than Missourie, with a very easy ascent by a well made road. It is a depôt for sick European soldiers, and contains barracks for about 200 men, and a very excellent hospital, with an assistant-surgeon in charge. A commanding officer, an adjutant and several officers doing duty reside on the hill. A limited number of invalids is every year sent up by different regiments in the adjoining provinces, where they reside one or two years, and in most cases return to their duty effective men. Of the comparative advantages of Missourie and Landour, much may be said on either side, there is more society, more gaiety, less rain, less fog, and less lightning at Missourie. At Landour there is more retirement, a cooler temperature and more sublime scenery, and if on duty there, rent-free quarters; but articles from the bazar must be brought up from Missourie, and water from 300 feet below its level, for there is no water on the hill of Landour in the dry season.

The Dhoon and the Dhoon breeze, and the Dhoon mist, are the most prominent traits in each landscape. Few scenes in nature can surpass the

XII variety of the sublime and beautiful during one single day. At sunrise the Dhoon is seen, expanded 3 or 4,000 feet below, like a boundless meadow, dappled with forests and fertile fields, cut into sections by numerous rivulets, with every tree and every house distinctly marked. Beyond it appears the Sewalic range, the cemetery of an antediluvian world, exhumed by Cauteley and Falconer, those eminent geologists, who have reversed the order of the march of intellect, and directed it to an era anterior to man's existence, when the mammoth and the mastodon were the monarchs of the world, and the solid rock that now encases their bones, was a plastic mass of mud. Beyond the Sewalic range the fertile plains of Upper India may be traced to an immense distance; the Jumna filled by the melted snow, and the periodical rains, is seen on the right, meandering like a rivulet, or overflowing its banks like a sea. On the left is seen the most magnificent monument of the Company's dominions, the great Ganges canal, the mighty river being turned from its bed, and measured out in streams to fertilize the provinces through which it runs along a course of 7 or 800 miles, with a breadth of 170 feet, a depth of 10 feet and fit also for navigation.

About seven in the morning the dews of the night ascend and congregate in clouds, expanding

and enlarging till the Dhoon is hidden from view. XII
Soon this grand army forms into divisions, each advancing up some of the many ravines, filling every valley, and shrouding every ridge in impenetrable fog. About nine, the leading columns have got to the crests of the mountain, and a grand struggle takes place between the ascending clouds from the south, and the remains of the night wind from the north. Now, as the north wind lulls, the vanguard of a division rolls over the ridge, but as it freshens is driven back again, broken and dispersed over the curling heads of the main body in the centre. About half-past ten the day is generally decided, the south wind prevails, and a whole hemisphere of clouds bursts over the mountains like a deluge, rushes down the opposite valleys, and envelops the highest mountains in gloom. A steady heavy fog continues during the day, so damp, that every hair on one's cheek has its dew-drop. Now and then the sun looks through, the lightning flashes, and the thunder rolls. The windows of heaven are opened, and soon every crevice resounds with the rush of water. Towards sunset the north wind regains the ascendancy, the nimbus clouds are once more beat back to the plains, the lost sun comes out in glorious majesty, illuminating every rock and every ridge with golden light and purple shade, tinting the clouds and the sky in such

XII gorgeous colours as to drive the landscape artist to despair. I have seen many sublime scenes in many lands, but none to be compared to a sunset in the Himalayah.

13. SIMLAH, SUBATHOO, &c.—Simlah is the principal sanatorium in the Himalayah, and has been for many years the resort of the head quarters of the army (now moved to Calcutta), and occasionally of the Governor-General. It stands in north lat. $30^{\circ} 36'$, and east long. $77^{\circ} 10'$, at an elevation varying from 7,000 to 9,000 feet; but most of the houses are placed below 8,000 feet, and overlook the valley of the Sutlej, though at a distance of many miles.

It has a good club, and one or two hotels. Houses are abundant, and at moderate rents, and supplies of every description are procurable. Carriages are unknown there, but it abounds in the most picturesque rides. Umballah is the nearest station to it in the plains, the distance from it to Kalka, at the foot of the hills, is seventy or eighty miles, thence to Simlah forty or fifty miles.

A European regiment is stationed at Kussowlie 6,500 feet high. There is little or no table land here, the sites for the houses and barracks being scooped out of the mountains. A European regiment is stationed at Dugshai, eighteen miles distant from Kalka, eight from Kussowlie, and

ten from Subathoo, at an elevation of 6,000 feet; **XII**
 the country in general bleak and bare, and without
 trees. Another European corps is stationed at
 Subathoo, at an elevation of only 4,000 feet, with
 much undulating ground well adapted for houses,
 and with a climate intermediate between Simlah
 and the plains; its winters are so mild that ice
 and snow are hardly known; its rains and fogs
 are also much more moderate, and its summer heat
 such as not to require a punkah. Many, there-
 fore, prefer it as a residence throughout the year.

14. MURREE.—This is the most recent station
 selected for a sanatorium, and was established so
 late as 1851. It stands in north lat. $33^{\circ} 50'$, and
 long. 73° ; its elevation from 7,000 to 8,000 feet;
 in the Hazarah country, and only forty-five miles
 distant from Rawul Pindee. It has the advan-
 tage of all the other sanatoria in having much
 table land convenient for building, and the means
 of a carriage road all the way up. It abounds in
 wood and water, and has a calcareous formation.
 It is chiefly resorted to by officers cantoned in the
 Punjaub. Its climate and seasons differ but little
 from that of the Himalayah.

15. KUNAWUR.—The severe winters, the
 brooding mists, the excessive rains, and the pre-
 disposition to diarrhœa, peculiar to the whole
 Himalayah Sanatoria, have of late directed public
 attention to some still more favored spot; and the

XII wished-for locality seems to have been found out in the province of Kunawur, in the valley of the Sutlej, beyond the great snowy range. There at Chini, in the midst of the most sublime scenery in the world, at an elevation of 5 or 6,000 feet above the sea, with a summer mild enough to bring grapes to perfection, and a winter cold enough to produce snow and ice, with little fog, no periodical rains and moderate showers at all seasons; in that happy land a climate appears to have been found, with every peculiarity desirable for European invalids.

The Marquis of Dalhousie lately spent one summer in Kunawur, and his Lordship and staff entertained the highest opinion of its advantages. Kunawur is but a thinly populated country, though possessing a most fertile soil, and every convenience for settlements. Chini, the most desirable site for a sanatorium, is only one hundred miles from Simlah, and a grand new road between the two is now almost completed, fit for beasts of burden.

It appears very desirable that a practical experiment should be made of its capabilities as a sanatorium, by locating a hundred invalids there for two or three seasons.

CHAPTER XIII.

1. NEILGHERRY HILLS.— These hills, the **XIII** principal Sanatarium of the Madras presidency, stand in N. lat. $11^{\circ} 30'$ E. long. $77^{\circ} 30'$; they are isolated all round with the exception of one neck that connects them with the western ghauts, and rise from the surrounding country in bold precipices, clothed in dense forests, or cleft by waterfalls into deep ravines. Their summits form an extensive table land, thirty or forty miles in length, by fifteen or twenty in breadth, diversified by innumerable hills and undulations, generally bare, with narrow valleys between, marshy and mossy, or filled with umbrageous trees.

2. OOTACAMUND.— In the centre of this table-land stands the principal station, Ootacamund, in an extensive valley, with numerous minor hills and valleys scattered over it, affording most convenient sites for houses, and every facility for the construction of roads. The houses, about 150 in all, are generally good, some with flat roofs, some thatched, and some tiled; for the most part furnished with a profusion of trees and shrubbery,

XIII and flowers planted round them, and vary in rent from 40 to 80, or 100 rupees per month.

There is a handsome church here, where the bishop in general presides; a resident chaplain, and two medical officers, and a commandant, who is empowered with magisterial authority. There are excellent schools for both boys and girls; a first-rate hotel, and a comfortable club, and numerous shops well furnished with every article of European supplies, so that the visitor need incumber himself with nothing more than his personal baggage.

The roads are excellent, and fit for wheeled carriages all the way up, whilst numerous beautiful rides are cut along the hills that overlook it in every direction.

The vegetation of the Neilgherries is very different from that of northern India. There are no pine trees, no oaks, no walnuts, no chesnuts; but the rhododendron is abundant, growing to a diameter of two or three feet. The woods (the shoalas as they are called,) upon the table-land, are composed of low, stunted, crooked, gnarled trees, always in leaf, prettily tinted with all shades of green, so continuous and solid-looking, that one feels inclined to walk along upon their tops; but useless as timber, and without variety. Along the brows of the mountains the trees attain to a much larger growth, and afford the finest timber.

Fruit trees of all sorts, both tropical and temperate, grow well at Ooty, but the fruit is very indifferent, the rapid change of seasons, and the double spring ripening it before it is matured. Even European vegetables, though they grow well, are indifferent in flavor, with the exception of pulse and potatoes, which latter are very good, and are imported in large quantities to the plains. European flowers, however, thrive very well, and the parterres are rich in variety and luxuriant. Coffee is found to grow admirably at the height of 5,000 feet, and there are many extensive plantations in these hills; and I have no doubt that tea also would be a successful speculation, for this plant thrives very well at Ooty. XIII

Amongst the inhabitants of these mountains there is a very remarkable race called Todars, which is worthy of a few remarks. They are a very primitive, and a very fine people, entirely pastoral in their habits, and move about with their large herds of buffaloes from one locality and elevation to another, according to the season, living on the produce of their herds, and cultivating nothing. They do not intermarry with other tribes, and consequently their type is well preserved, but polyandryism is their system of matrimony; one woman being the joint wife of the sons of the same family, which custom is so unfavourable to progenitiveness, that their num-

XIII bers are fast decreasing, and the very race seems threatened with extermination, unless Government take some means to suppress the unnatural custom.

3. THE LAKE.—The chief feature in the landscape is the lake, a serpentine sheet of water several miles in circumference, formed by throwing a high dam across the principal ravine, around which is the public drive. It is a very extraordinary fact that the authorities of Ootacamund are taking the most active measures to ruin the lake, the greatest ornament of these hills, which preceding authorities have gone to so much labour and expense to construct. A cutting at Kaitee, on a gigantic scale, for a new road to Coonoor is being made across a spur of the elk hill, and to save the expense of cooly hire in removing the earth, a stream of water is brought down from Dodabeth, by which thousands of tons of soil are washed away, a great part of which finds its way into the lake. Indeed, a great part of the head of the lake is already in a state of marsh. This is very much to be regretted, for the lake is being silted up, in order to save a trifle in excavating a road that I feel confident will not remain open two monsoons before it be closed by landslips. It appears to me that the very opposite policy ought to be adopted with reference to this beautiful lake—that the three upper bunds should

be raised about six feet, the present arch-ways XIII through them should be contracted or closed, with a safety sluice at one end, as in the lowest bund, and thus admit of a sheet of water as high as the Botanic Gardens. It is a subject of universal regret that the banks of the lake should to this late day be as bare as a mill-pond, instead of being, as they might be, ornamented with trees. The trees of Australia grow splendidly in these hills, and require only two or three years protection from cattle to become independent. The scenery around Ooty, though tame and wanting in sublimity, is pretty, and the approach to it by the Segoor Ghaut, with its numerous white houses glistening in the sun, and the highest mountain, Dodabetta, forming the background, makes a very pleasing landscape.

4. ROUTES TO OOTY.—The best route from Madras to Ootacamund is *via* Arcot, Pulmanair, Bangalore, Seringapatam, Goondlepet, Segoor, and Kulhutti; distance about 300 miles. From Madras to Bangalore, the distance 208 miles, is performed by horse-transit in a comfortable spring carriage in three nights, resting during the day at Arcot and Pulmanair, where there are staging bungalows and the means of getting rice and a curry. At Bangalore there is a good hotel.

From Bangalore to Ootacamund the journey is made by relays of bullocks in three nights, halting

XIII during the day at Mundium and Goondlepet, where there are good bungalows, especially at the latter. Leaving Goondlepet about midnight, the traveller reaches Segoor, at the foot of the Ghaut, about nine, A.M.; and reaches Ooty in the afternoon, the carriage going up without impediment all the way. However, as the carriage is both tedious and tiresome, it will be well to have a pony in readiness at Segoor, to ride up to Kulhutti to breakfast, where there is a good bungalow, and on to Ooty in the afternoon. Heavy baggage may be booked at Madras, and landed at Ooty with every facility and at a very moderate charge. By the above route there are only two hot stages, for on reaching the high table land of Mysore at Pulmanair, 3,000 feet above the sea, the temperature becomes quite agreeable.

Visitors from the West coast and from Bombay generally approach by the Khoondah Ghaut. They land at Calicut, embark in a boat at Baypore, not far from it, and proceed up the river in one tide to Ariacode, where there is a bungalow; there are other bungalows at Yeddemuttum, Woondoor, Sholakul, the last at the foot of the hill, 26 miles distant from Ariacode; thence to Sispara at the top of the Ghaut, 11 miles; to the Avalanche, 18 miles; and thence to Ooty, 13 miles. At Sispara and the Avalanche there are very good bungalows, but supplies doubtful. Should the

commissariat department admit of it, the traveller XIII will do well to halt a few days at Sispara, for the scenery around it is exceedingly grand. This route is not practicable for carriages, but well adapted for riding.

5. **CLIMATE.**—The elevation of Dodabetta, the highest point of the Neilgherries, is 8,730 feet above the sea, and of the lake at Ootacamund, 7,361 feet; and few of the houses stand more than 500 feet above the level of the lake. The average height of the barometer is 23 inches; average fall of annual rain, 50 inches; average temperature, 58°; the extremes of heat being 32° and 77°. Hoar frost lies white in the morning during November, December, January and February; and people ride and walk about at all hours during the day, in the hottest weather without apprehension from the sun; warm clothing is worn at all seasons, a turf and wood fire after dark, and a couple of English blankets at night are at all times welcome; mosquito-curtains are unknown, and other domestic insects give no annoyance.

Few climates in the world are more equable throughout the year, than the Neilgherries, equally removed from the winter and rough weather of our northern Sanataria, and the scorching heat of the plains. Indeed, there is a buoyancy and exhilaration in the air which is quite delightful, and the spirits of the invalid rise, and the elasticity

XIII of his step increases with the elevation, and, in the great majority of cases, rapidly conduct him to robust health and strength.

The monsoons seem to influence the seasons more than the declination of the sun. The sun is vertical twice a year, and consequently there are two springs, but these by the residents are little noticed, for vegetation is at no time suspended; the setting-in of the South-west monsoon is the most important day of the year. It generally sets in early in June, and continues till the middle of November; some years the rains and fogs are very continuous and disagreeable, and during others there are many intermissions of pleasant weather. The winter months are the most congenial, and this is the season when the Neilgherries are most frequented. Many visitors leave them during the South-west monsoon, averse to the rain and the fog.

6. COONOOR.—Yet the Neilgherries have an advantage peculiarly their own, and afford a transition of climate calculated to please and to benefit almost any invalid. If Ootacamund is found too rainy, foggy, and damp, one has only to cross over to Coonor, which is comparatively exempt from the above inconveniences and is considerably milder. It is only ten miles distant; is 12 or 1500 feet lower than Ooty, and 3° or 4° warmer. There is a very good hotel there, a good public bun-

galow, if it were only kept in repair, and houses may be got to hire at moderate rent. An assistant-surgeon is stationed here, and the bazar is tolerably well supplied. XIII

7. KOTAGHERRY.—Kotagherry has a climate in some respects similar to Coonoor, but there is no public accommodation there; many of the houses are in ruins and very few to be had for rent. There is no medical officer stationed there, supplies must be got either from Coonoor, which is thirteen miles distant, or from Ooty, which is seventeen miles distant. It is a bleak, bare, barren, blasted place, and affords very little inducement for invalids to live there.

8. JACKATALLA.—It is very remarkable, that the advantages of the Neilgherries should have been well known, and appreciated for more than thirty years, and that only very recently they have been thought of as a station for European troops. A wing of a European regiment is now quartered at Jackatalla, about three miles from Coonoor. At present they are living in temporary huts of wattle and daub, but substantial barracks in every way excellent are being built for their better accommodation. The health of the troops here is very good, the proportion of sick to well only 3 or 4 per cent., equal to that of England. It is much to be regretted, that no sanatorium for the reception of the sick of Euro-

XIII pean regiments generally, throughout the Madras presidency, similar to Landour and Darjeling, should be established in these hills, and I feel assured that government would be amply compensated for any expense incurred in its construction, by the saving annually of hundreds of valuable lives. Such an asylum offered to the sick soldier, dragging out a mere existence in the plains, would be hailed as a boon, and a blessing conferred upon the rank and file.

By a census given me by Dr. Currie, senior medical officer in 1853, the following officers visited the Neilgherries on medical certificate:—

From the Madras Presidency	52
Bombay	13
Bengal	5
Hill-Service	5

Total 75

Dr. Currie reports in most favourable terms as to the climate of these hills. The only cases not likely to benefit by a residence there, are asthma, consumption, diarrhœa, dysentery, and affections of the liver.

9. **MAHABLESHWUR HILLS.**—This is the principal sanatorium of the Bombay Presidency. It stands on the ridge of the western ghauts, a range of mountains running parallel to the coast, and at this point separated from the sea by the district

of Concan. The latitude of Mahableshwur is **XIII**
17° 56' north, longitude 73° 30' east, elevation
4700 feet above the sea. Its distance from the
coast is only twenty-five miles, and from Bombay
seventy miles. The range of the thermometer
runs from 61 to 72.

The Mahableshwur hills differ from most other
sanatoria in India, inasmuch, as all invalids leave
them in the hot season. The rains are so exces-
sive, as to render a residence there intolerable.

10. DEFECTS OF HILL CLIMATES.—I have now
concluded a sketch of the Sanatoria in India, re-
sorted to by invalids in search of health. Would
I could say to every sick officer, go to one, or
other and you will get well; but since I cannot, I
may at least say, go there in hope, and get as well
as you can, but be prepared for the rainy season.
Infinite as are the advantages of all, over the
plains, their climate is still imperfect, and the
rainy season neutralizes a considerable portion of
the benefits that would otherwise be derived from
them. Some will be disappointed, and after one
or two seasons spent amongst the hills, without
the desired restoration to health, will be under
the necessity of proceeding to sea.

CHAPTER XIV.

XIV. **1. LEAVE TO SEA—FORMS.**—When a sick officer arrives at the Presidency having been recommended by a division medical committee to proceed to sea, he must present his case to the garrison surgeon, or a presidency surgeon; and if he concurs in the original recommendation, the invalid must appear before the medical board in person, if able to do so; or if unable to leave his room, one of the members of the board visits him, and on the board's giving their final approval, he next applies for leave. Previous to his doing so, he must obtain vouchers from the presidency paymaster, the military auditor-general, the accountant-general, and if of the medical service, from the presidency dispensary; that there are no public demands against him; and furnished with these, he then finally submits his application through the assistant adjutant-general at the presidency, and his leave is granted. These forms of office are a very serious matter to any one in delicate health, and generally require eight or ten days to get through them; but there are army agents

to be got at all the presidencies, who negotiate such affairs for their constituents. XIV

2. PRECAUTIONS. — Though no change contributes so certainly and rapidly to convalescence as going to sea, yet proper precautions are necessary before embarking, and if the invalid hurries on board-ship without these, he will soon have occasion to repent of it, and get worse instead of better.

The P. and O. Steamers, crowded with one or two hundred passengers, are not the conveyances for one seriously indisposed ; where privacy, peace and quiet are unknown, and the whole frame from stem to stern is in constant vibration ; where he must share a space of six feet square, with one or two, perhaps, as great invalids as himself, and where even if he had a cabin to himself, especially on the lower deck, the heat would render it intolerable. Even the magnificent sailing ships in port are not to be fixed upon at hazard, for they differ as widely as their captains in their comfort and accommodation.

No two things differ so widely as a passenger-ship lying at anchor in the Hoogly for the inspection of passengers, and the same ship fully laden and under sail at sea ; in the river all light, and air, and peace, and quietness ; at sea, perhaps all dark, damp and unventilated ; intolerably hot and unwholesome ; the ports instead of admit-

XIV ting fresh air and the light of day, admitting nothing but salt water and the light of the sea, the heat and perspiration rendering the cabin untenable. The situation of an invalid under such circumstances, who requires more free air than a man in health, and is unable to leave his cabin, or his cot, is most distressing, and can be conceived only by one who has witnessed it. It was once my misfortune to attend a brother officer in a violent fever so situated, and during a gale of wind, and he soon became delirious and died. I would strongly dissuade any invalid against engaging a cabin on the lower deck of any ship, not excepting the magnificent ships of Messrs. Green & Co., or Smith & Co. A cabin on the poop will be one-third more expense, but this must not be thought of when the recovery of health is concerned. At the same time, I consider a voyage to England in a poop cabin of one of the above companies' ships, with a good table and a pleasant party of passengers, more likely to restore a person to health than any other possible means he can have recourse to, in the same space of time. Having obtained leave to sea, the invalid will do well to be on board his ship the day before she drops down the river; he will thus have time to put everything in its proper place and lash it down. A small private store of jam, raspberry vinegar, arrow-root and tapioca, and a box of spices, if

in very delicate health, and a native servant will be desirable. A milch goat will also be very useful. She will give little trouble, and can be fed and housed with the ship's stock. Let him by all means take a swinging cot with him. XIV

Making ones will is at all times a serious matter, few people like to think of it, but postpone it to some future opportunity. This is a great mistake, for in the event of the invalid's dying intestate in the Colonies, those most dear to him may, in consequence, have much difficulty, and be subject to years of delay before they can recover his property. Let him, therefore, have his will made in due form, registered, or left with his agents. But every officer ought to have his will made when in good health, so as not to be obliged to add to his despondency when ill.

The usual way of drawing one's pay while absent from India, is to authorise some house of agency in Calcutta to draw it monthly, receiving in return a letter of credit on the different places he may visit, for so much a month.

The last public document to be attended to, is the pilot's certificate. Blank forms will be given him by the adjutant-general, to be signed by the pilot on his leaving the ship, and his leave of absence will be calculated therefrom.

There is every facility in making the vorage to the Straits and China, both by steam and by sail-

XIV ing vessels, but where time is no object, and where the chief benefit to be obtained is at-sea, I think the sailing-vessel holds out most advantages to the invalid.

3. **PENANG.**—The Straits and China is a favourite resort, especially in hot weather, for it is curious, that the climate of the Straits, though under the line, is less hot and less oppressive than during the warmest season in Bengal. Europeans do not dread the sun there as they do in India. Penang, or Prince of Wales Island, was in former years a good deal frequented, but now few visitors spend any time there. George Town, the capital, stands upon a large tract of level ground on the mainland side of the island. It is but of small extent, and the houses of the few residents are widely scattered, but it contains no hotel for the accommodation of travellers. The site of the town is so little raised above the level of the sea, that a large portion of it is flooded at high water; and where the sea is banked out, the soil is flowing with water, and converted into rice fields. Large tracts are planted with nutmegs and cloves, and nearly equal portions are in a state of nature, overgrown with mangrove and other jungle. The mountains are very steep on all sides, and clothed in deep forests. On the summit of the highest mountain, rising to 2,000 feet, stands a Government-house, occasionally

occupied by the governor of the Straits ; there are several other country houses perched amongst the tops of the hills, and available for rent. The rains and fogs are very frequent and very heavy ; and the temperatnre is about ten degrees lower than that of the town ; 72, while below it is 82 degrees, but it is a very dull abode for a stranger. There is much trouble in obtaining supplies, and few people like a long residence there.

The population of Penang is extremely mixed, being Malays, Burmese, Chinese, and Hindostannies. Penang is one of the penal settlements of India, and a large number of felons are there undergoing punishment. A resident magistrate, and an assistant-surgeon are stationed here, and the wing of a regiment from Madras.

4. **MALACCA.** is the next station in proceeding down the Straits. It is very little frequented by strangers ; the country is low and swampy, here and there varied by a little rising hill. The scenery is not agreable, either dense groves of cocoa-nuts or impenetrable forests. The atmosphere is intensely damp ; the sky generally cloudy and overcast, with frequent heavy showers. The town is of considerable extent, of Dutch construction, and may contain 15,000 inhabitants, of whom Chinese and Portuguese form a large proportion. The Chinese are the most wealthy, and

XIV have established themselves here many years; intelligent and liberal in opinion, and polite, and even hospitable to Europeans, who honour them by partaking of their hospitality.

5. SINGAPORE.—This is the principal settlement in the Straits, and the residence of the Governor, and is rapidly rising into a place of very great importance. It is the great half-way house between India and China, and the emporium of the trade of the Eastern Archipelago. The harbour does not admit of ships entering it, but there is an excellent roadstead with a fine sandy beach and no surf to prevent a boat from landing. The town is built upon a plain raised only a few feet above the sea, and large tracts are daily flooded by the tide. The houses of the Europeans are substantially, even elegantly built, and the interior is studded with nutmeg plantations and pretty villas, with numerous roads of the very best description. There are two good hotels here, several good boarding-houses, and houses may readily be got furnished for rent. There is a large European society, principally mercantile, much conviviality and good fellowship prevails; and the visitor in general meets with a hearty welcome. A wing of a Madras regiment is stationed here, and the Recorder holds his court.

The population is exceedingly mixed, consisting of Dutch from Java, Spaniards from Manilla, Por-

tuguese from Macao. The Chinese form the most numerous class, and are men of great enterprize in the commercial world; a large fleet of junks is at certain seasons anchored in the roads, with innumerable boats from the innumerable islands in the Eastern seas. In fact, in no part of the world can be seen a greater diversity of race than in Singapore. XIV

The climate, though a hot one, is considered healthy, every morning has its sunshine and its sea-breeze, and every afternoon its cool refreshing shower, and the nights are so cool and congenial that a light covering is agreeable. Singapore has, however, no cold weather, with a series of cloudy, clear and rainy days, and a temperature seldom under 80° throughout the year. It is, therefore, not a place to halt at, longer than the novelty excited, ten days will satisfy the stranger and make him willing to leave.

6. JAVA.—When at Singapore, a convenient opportunity may be found once a month of visiting Java. The Dutch government have a steamer ready to receive the European mails, and convey them to Batavia. From all I have read and heard of Java, a month's tour throughout the island would well repay the traveller. One may drive post all over it, with every convenience, and at an elevation of 6 to 7,000 feet, with a European temperature. The day has gone by, when Batavia

XIV was considered a pest-house and Java a plantation of Upas trees. I have conversed with many intelligent Europeans who lived many years on the island, and they have invariably spoken of its climate in the most favourable terms.

7. **MACAO.**—The best season to visit China is the month of August or September, going up with the S. West Moonsoon; admitting of ample time to see all that is to be seen in Canton and its outer waters, and of returning in December or January by the N. East moonsoon. A month may be spent pleasantly at Macao and Hong-Kong.

Macao stands on a fine sheltered bay upon a small rocky Peninsula, cut off from all communication with the main land, by a wall thrown across its Isthmus, thus converting it, as it were, into an island. This barrier is carefully guarded by Chinese soldiers, and no European is allowed to pass it. Macao is a Portuguese settlement and is very strongly fortified; the town is most irregularly built, the streets extremely narrow, crooked, up and down hill, paved with large masses of stone of the rudest description, or a series of stairs, quite impassable for carriages or horses, and only fit for foot passengers; but the Strand is a delightful residence and the abode of all Europeans. Macao is nominally governed by the Portuguese, but the Chinese who form the chief mass of the po-

pulation, overlook all their actions, and often thwart XIV their projects. Macao was in former years the family residence of the European merchants of Canton, and still is a favourite abode, even with Hong-Kong as a rival. There are some good hotels here, but extravagant in their charges; I am inclined to think favourably of the climate of Macao; it is by no means a cool place in the S. West moonsoon, but the refreshing sea breeze makes ample amends for the intensity of the heat.

8. HONG-KONG.—Hong-Kong is one of the numerous islands at the mouth of the river of Canton, and at the close of the late Chinese war, became a British colony. Possessing a fine harbour, it was selected as the emporium of Chinese trade, and the very rapid rise of the chief town, Victoria, shews that it was judiciously chosen on that account. The town of Victoria stands upon the steep shores of the harbour, the roads and streets are all scooped out of the solid rock, and rise one above the other in a succession of terraces. Unfortunately, Victoria has turned out very unhealthy; a malignant fever of a bilious character is often epidemic there, and proves very fatal. The European regiment stationed there, is occasionally decimated by it, and the casualties amongst the residents become at times quite alarming. Macao is still preferred as a residence, though very inconvenient for the transaction of business.

XIV 9. CANTON.—This is the last place in the world to resort to in search of health. The confinement imposed upon the residents is excessive, and one might as well live in a prison. Gentlemen in the receipt of some thousands a year are glad to be allowed to rent a pig-stye of a house at the furthest end of a dark and dirty lane, shut out from all ventilation, sometimes without being able to command a ray of sunshine unless at the tops of the houses. Out of doors they have nothing but an acre of ground for exercise in front of the factories; this is during the day used as a market-place, and at night it is polluted with every sort of nuisance.

Strangers dare not, unless at the risk of their lives, venture within the walls of Canton, nor take a walk into the country without getting pelted with stones, they are equally debarred from sailing on the river, unless within certain boundaries, and have the same chance of rough usage afloat as on shore; they are not even permitted to have their wives, or families in Canton.

There is here a large society of Europeans of many nations, and I have no where met with more genuine hospitality. There is little or no intercourse between the principal Chinese functionaries and the foreign merchants; the former shut themselves up in the city and leave all transactions with the Fanquis or foreign devils as they are

called, to the Hong merchants, great men upon XIV
Change, whose word is as good as their bond, and
who can give bonds for thousands, between whom
and the Europeans mutual confidence and respect
prevails.

With all its drawbacks, Canton is a place that
will well repay the stranger for a visit, provided
he has strength of constitution enough to rough
it. He will find himself quite in a new world,
and yet in a world full of originality of enter-
prise and of interest; and feel impressed with
the opinion that we outside barbarians have been
indebted to them for many of the comforts,
conveniences and refinements of society, with this
difference that whereas they have stood still for
the last two or three thousand years, we have con-
tinued to improve upon their antitypes.

I have thus furnished a very brief sketch of the
places towards the East, resorted to by invalids
from India, and as I have spent some time at all
of them, I could easily have drawn more largely
upon my notes, but more details would be out of
place at present. When an officer has no organic
disease and is merely suffering from debility or
slow but long continued fever, or when a long
residence at an out station has rusted the springs
of life and deranged his nervous system, no voyage
of the same duration promises such advantages as
one to the Straits and China. While on board

XIV ship, he will every day see some new phenomena for which these seas are remarkable, and he can no where set his foot on shore without meeting with interesting varieties of the human race, that cannot fail to absorb his attention, and turn the morbid current of his thoughts into new and more congenial channels; six months will suffice for this whole tour.

CHAPTER XV.

1. CEYLON AND MAURITIUS.—These form another XV
tour for six months. By leaving Calcutta by the bi-monthly Mail Steamers Ceylon may be reached in seven days. Galle, the port of landing, is not the place for an invalid to linger at, longer than is necessary to get out of it. It is at all seasons hot, steamy and oppressive, with frequent deluges of rain; and Colombo is very little better. A stage coach runs every alternate day from Galle to Colombo, distance from seventy to eighty miles, and thence to Kandy and Newr-Ellia; and private conveyances are also readily found.

Kandy is 1500 feet above the sea and a cantonment for European troops. Newr-Ellia is 6200 feet on an extensive plain, with an annual range of temperature from 35 to 75. It is a Convalescent Station for European troops, and is frequented by sick officers generally over the island. There is a good hotel there, and some houses for rent, and a short residence in fine weather and amidst the fine scenery is very pleasant; but the severity of the rains is a great

XV drawback to all enjoyment, and few parties who have spent one season there, would willingly spend another. It is therefore very little frequented by officers from India, however much it may be prized by residents of the island.

2. **MAURITIUS.**—This has long been a favourite spot and the grand advantage is, that when the weather is hottest in India it is coolest there, its winter prevailing when it is summer in India. I believe no change during six months' leave could be better than a voyage to it and back; with the intermediate time spent on the island. Each voyage requires about a month to accomplish it. Invalids should take a couple of servants, four months' supplies, and their usual camp equipage, and engage a small house in the environs of Port Louis; a horse or a buggy is not much required where every one walks on foot and at all hours of the day. There are good hotels here, but enormously expensive and beyond the means of a subaltern. The island abounds in the most picturesque scenery, where the forest, the waterfall, the cane-covered slope and the craggy mist-shrouded mountain mingle in happiest combination. The temperature, especially during winter, is most congenial, constantly ventilated by the S. E. trade wind and varied by sunshine and shower. In the hot season many residents ascend to Plain Williams, where even in summer the

temperature is as cool as could be desired. All who know it by experience speak in high terms of the climate of the Isle of France. XV

3. CAPE OF GOOD HOPE.—Of all the places frequented by invalids from India, none is so much resorted to as the Cape; and few have experienced it who have not spoken in its praise. Great facilities are offered by the numerous fine passenger ships of getting there, and the voyage of two months contributes materially to convalescence.

4. CLIMATE AND SEASONS.—The seasons are of course reversed, compared with those of the northern hemisphere. The sun is north at noon. August, September and October are its spring; November, December, and January its summer, February, March and April its autumn; May, June, and July its winter. Upon the whole, its climate may be called a warm one. In winter the thermometer seldom falls lower than 40°. Ice is unknown; and even hoar frost is to be seen only on its mountain tops; the orange, the citron, and the lime ripen their fruit in the open air in winter; and the vineyards bring forth the finest grapes in summer. It is dry rather than moist, and several months together often pass without a shower. The soil is upon the whole dry and arid; fertile spots form the exception, not the generality; a great proportion of the country is covered with bush; a tree higher than one's head is a rarity; the

XV channels of its rivers are wide, but often dry, and when filled by the annual rains, destitute of fish. Animal life in all its tribes is scanty, and that of man is not an exception. In the interior one may travel a hundred miles, and not see more than two moderate sized villages; twenty or thirty miles and not see more than two or three farm-houses, nor meet with more traffic than a chance waggon or a post-boy. Agriculture is little attended to; wool of very fine staple is the chief product of the farm; yet the soil is so poor that it requires a thousand acres to feed a thousand merinos. Withal, the climate of the Cape is a very fine one, and well calculated to restore the constitution of most people, broken by a long residence in India; the fresh clear complexions, the firmness and elasticity in the gait of the fair maids of the Cape, and the bone and muscle and stalwart frames of the men prove that no degeneration has taken place amongst them.

The population of the Cape is principally Dutch, but they have been a good deal Anglicised, and the English language is the chief means of communication. The aborigines, the Hottentots, are in many parts extinct, or are so crossed with other tribes as to have lost their identity. The Mozambique race (emancipated slaves or their descendants,) perform most agricultural and domestic labour, while a large and

thriving colony of Malay extraction exercise the XV
mechanical arts. Want of hands and labour is the universal complaint; wages are very high, and all articles of colonial produce very expensive.

The voyage from Calcutta to the Cape is usually made in six or eight weeks; December, January, or February are the best months in which to sail for it; then the best ships are available, and a passage in a poop cabin may be got for eight hundred rupees; and if a servant be taken, for a hundred more on his account.

There is little inducement to take any conveyance on board ship, as such things may be got at a reasonable rate at the Cape in the event of their being wanted.

Soon after leaving India the weather will become unpleasantly hot, and continue so, almost to the end of the voyage, so as to render the lower cabins most uncomfortably hot and unpleasant.

5. CAPE TOWN.—On arriving at Cape Town, the stranger will do wisely to leave it as soon as possible. He will find the heat great, the glare of the sun dazzling, the wind and dust most annoying, the mosquitoes tormenting, the hotels most uncomfortable; indeed, he will think he has made but a bad exchange of climate, and fancy he might as well have remained in India.

Let him at once go out to Rondebush or Wyn-

XV berg, and there look out for quarters, and settle down at once. Furnished houses and boarding-houses are there to be got in abundance. A good furnished house, fit for a small family, may be got for ten pounds per month, and board and lodging for a bachelor for about the same sum. Rondebush is four miles from Cape Town, and Wynberg eight; the road is excellent, and omnibuses run out and in every hour of the day, charging a shilling the trip.

6. WYNBERG.—Wynberg is the principal residence of visitors from India, who, of themselves, form a large society, and the new comer will soon find himself at home among them. It is also the residence of most of the officers holding Government employment, who live on friendly terms with their visitors. Wynberg may be called the Auburn of the Cape. Every house is hid in a boundless “contiguity of shade” of oaks and pines, and poplars and willows, perfumed with a profusion of flowers; and festooned with luxuriant vines loaded with delicious grapes. The orchards are well stocked with apple and pear trees, peaches, and figs; while the plantain, the aloe and the prickly pear, will remind him of India. Butcher’s meat, and fish of the best quality, and European stores of all kinds, may be got at moderate prices. The most picturesque walks

wind in every direction, over flowery flats, through densest forests, on upland heaths, even to the summit of Table Mountain. XV

The houses are for the most part of one storey, built of brick, plastered outside in imitation of stone, with papered walls and planked floors, and ceilings. The roofs are thatched with rushes, and raised, so as to afford a high space for garrets, the store rooms of the establishment.

The invalid will find the summer hot, but not oppressive, yet too hot to make a walk in the noonday sun agreeable; but indoors, and with open doors and windows, the temperature is most congenial. A delicious sea breeze, fresh from the southern ocean, will most probably soon set him upon his legs, put flesh on his bones, and a colour on his cheek, strengthen his sinews, raise the dejected spirits, and give a *couleur de rose* to his whole economy.

Some visitors complain of the dulness of Wynberg, and feel time hang heavy upon their hands, so one must be prepared to draw largely upon his own resources; but I should think that the consciousness of returning health and strength, the luxury of exercising one's limbs unfettered by debility, and of one's mind free from care, sufficient to reconcile most people to the absence of the bustle of the gay world.

Wynberg gets the credit of being a damp place

XV in winter, and many visitors leave it at that season, and live in Cape Town. During a winter that I spent there, I saw no reason for thinking it damp, or for shutting oneself up in a noisy town.

7. GREEN POINT.—A few visitors frequent Green Point, about three miles from Cape Town, and on looking at it from a ship's poop, the stranger is apt to become prepossessed in its favour. It is, however, not a desirable summer residence, from being sheltered from the south east wind; it is then uncomfortably hot, and in the afternoon the glare of the sea is very annoying. Even as a sea-bathing place it is defective, there is no sandy beach near, the shore is a continuous reef of rugged rocks, and the heavy surf breaking upon them, renders it dangerous to bathe there. In winter it is free from some of the above objections.

Camp's Bay, about two miles from Green Point, is equally objectionable, on account of the heat and the glare from the sea; but it has a nice little sandy bay, fit for bathing, and a boarding-house.

8. KALK BAY.—This is the principal watering place at the Cape, and is much frequented in summer; yet the shore near it is rough and rocky, with but one little sandy bay, and it is the harbour for boats. Should the visitor tire of these,

he may make a visit to Stillenbosch, or the Parle, XV
 or to the hot and chalybeate springs of Caledon,
 or if health and strength restored, he may make
 a shooting excursion to Cape L'Agullas, or north-
 wards, towards the Orange River.

9. AUSTRALIA.—Public opinion is pretty nearly
 balanced as to the comparative advantages of the
 climate of the Cape, and the Colonies of Australia.
 Both are perhaps equally good and bear a strong
 resemblance, and the choice of the invalid must
 be determined more by private circumstances than
 by any decided preference to be given to the one
 or the other. The length of the voyage and the
 rate of passage-money are much the same, but
 opportunities of getting to the Colonies are rare,
 and must in general be made in ship's of a very
 inferior description, and not at all congenial to an
 Indian officer.

However, he will find the Colonies full of inte-
 rest and enterprise, and be able to trace the ele-
 ments of society rapidly advancing to maturity ;
 individual exertions steadily attaining to afflu-
 ence ; shielings rising into hamlets, hamlets into
 villages, and villages into towns and cities. One
 may walk the streets of Sydney and Melbourne,
 and fancy himself in a second rate city in Eng-
 land, such as Portsmouth or Southampton ; all
 intense bustle and activity, and fierce encounter
 in the pursuit of gold. Since the discovery of the

XV diggings, property, provisions and wages of every description have all risen to double, treble, or quadruple, what they were a few years before it. Gold, like everything else in the world has become depreciated by its very abundance; and what was enough to support an establishment five years ago, is now only one-fifth enough. A ditcher or a breaker of stones on the roads, earns his fifteen or twenty shillings a day; a carpenter, a mason, or a blacksmith, twenty-five to thirty shillings. A boatman will not row a passenger and his light kit of baggage from ship to shore under half a sovereign, a porter will not trundle it to his hotel under five shillings, nor can he exist at a respectable hotel under a pound a day, nor yet a hackney-coach to drive a mile to a friend's to dine under a sovereign. Every body has his head turned with gold; they eat their gold, drink their gold, and dream over their gold; their inns and omnibuses, and steamboats, are called after the golden fleece, the golden fly, and the golden age—but they have no golden mean. The fable of the goose and the golden eggs, and the tree with the golden apples, are no fables here, for every egg and every apple is worth a nugget of gold. Extortion without moderation, and accommodation without comfort, meet the stranger wherever he goes; enormous wages become necessary to meet such enormous demands, and though

the Colonists in possession of these do not feel it, XV
 officers on moderate fixed allowances very soon
 feel that they made a great financial mistake in
 coming to Australia. No captain, a stranger,
 can live as he would wish to live upon his pay,
 and unless he can turn his hands to work, and
 double his income by breaking stones on the road,
 he will require great self-denial to keep out
 of debt.

Nevertheless the climate of Australia is a very
 excellent one, and not to be surpassed; and no
 region of the globe affords more variety from the
 Tropics to the Antarctic circle.

10. **SYRIA** is resorted to as a sanitarium chiefly
 by officers from Bombay; by comparative few
 from Madras, and still fewer from Bengal. There
 is no difficulty whatever in getting to any port in
 Syria by the P. and O. Steamers to Suez, by
 comfortable vans across the desert to Cairo; by a
 railroad on to Alexandria; and by excellent
 French or Austrian steamers twice a week to
 any port in the Levant. The invalid may spend
 a month pleasantly at Cairo, and see more of the
 Oriental than he can see in any one city in Hin-
 dostan. He will there see Asiatic manners,
 customs and costumes, merging into the European;
 the Arab and the Nubian, the Abyssinian, the
 Copt and the Turk mingling with the Greek and
 the Italian; the German, French, and English in

XV most picturesque variety, all full of activity and energy, eager in the pursuit of gain. The climate of Cairo is cool compared with its latitude, and the temperature even of March, sharp and bracing, with a cloudless sky.

The atmosphere is parched and dry, with intense glare, and intolerable dust and sand, irritating the eyes, the nostrils, and the lungs, and keeping up all the feelings of catarrh, therefore, to those suffering from any affection of the air passages or eyes, it is most unfavourable. It does not appear to me that a voyage up the Nile has any commensurate advantages; the progress is slow and difficult: the scenery, with a very few exceptions, such as Thebes and Phyle uninteresting: the desert is seen on either hand, always near enough to annoy with its sand. Indeed Egypt is merely a green streak in a boundless desert—the bed of the Nile.

A visit to the Pyramids is a sight never to be forgotten; for with all the war of elements, the tear and wear of time, and the covetousness and destruction of man, they will live while the world lives, the loftiest and the most stupendous monuments of man's creation. The valley of the Nile will remind one of the valley of the Ganges; abounding with the most luxurious crops of wheat, and barley, and oats, studded with numberless villages, and teeming with population and animal life of

every description. Alexandria, the traveller will find comparatively a modern town, with but little remaining of the Oriental; no city, so ancient, has so little air of antiquity about it, and with the exception of Pompey's Pillar, Cleopatra's Needle, and a few half buried blocks of Egyptian granite, it looks as modern a town as if it was erected not above fifty years ago. Nevertheless, Alexandria, like a Phœnix, has risen probably a dozen times from the ashes of a preceding city; the very soil seems made up of bricks and mortar; the dust of forgotten ages forms a component part of the atmosphere, and renders a residence there anything but pleasant.

The only desirable port in Syria for an invalid to land at, is Beyrout. There he will find good hotels, and every convenience he could wish for, with an extensive mercantile society of all nations. Beyrout is a large Turkish town, situated on a gently sloping ascent, overlooking the darkly, deeply, beautifully blue waters of the Mediterranean, with Mount Lebanon covered with snow in the back ground. The vegetation of the tropics and of the temperate zone, seem to mingle here on equal terms. Though the palm and the pine are scanty and stunted in growth, the aloe and the cactus grow luxuriantly; and the orange, the lime, the pomegranate, the olive and the vine,

XV the mulberry and the fig, ripen their fruit in the open air.

During the greater part of the year the climate of Beyrout is delightful, but in summer it is too hot for an invalid whose chief object is to escape from heat. Many of the residents desert the city in summer, and betake themselves to the spurs of the Lebanon; where any choice of climate may be enjoyed; but there is no adequate accommodation to be got on the Lebanon, and visitors are obliged to content themselves with the rude houses of the peasantry. Nevertheless, the most delightful sites could be found for any number of houses on the ridges of Beth-Marie and Marhanna, only three hours ride from Beyrout.

The inducements to travel in Syria are by no means encouraging. Caravanseries there are none; the pilgrims must trust to the extortions of dragomans, who provide tents, carriages, and provisions, and moreover, compound for the safety of their persons and property by paying *black mail* to the numerous petty Arab chiefs through whose districts they pass. The country is nothing but the skeleton of the land once flowing with milk and honey; ruined cities, naked rocks, or drifting sand; without population, without wood, and without water—desolation everywhere—of the works of man, as well as the works of Provi-

dence. Its principal thoroughfare from Jaffa to Jerusalem is impracticable to anything but a horse or a mule; the road no better than the dry bed of a mountain torrent, filled with stones, from the size of one's head to the size of one's horse. XV

The curse entailed upon the country is also entailed upon the government; there is no healthy vigour existing in the body politic, the Turkish constitution is undermined, and consumption is rapidly reducing it to a skeleton. Bribery and corruption have supplanted honour and integrity; brigandism prevails up to the gates of its walled towns; her laws and institutions are mere dead letters; her officials have lost all *amour propre*, all the *esprit de corps* of patriots; and, provided they can have their pipe, their coffee, their *Buck-shees* and their *hareem*, they are indifferent about the welfare of their nation. Syria, under the above circumstances, is not a desirable resort for invalids from India.

CHAPTER XVI.

XVI 1. THE RAIL, THE SURF, AND THE BREAK-WATER AT MADRAS.—This chapter (unaltered) was published in the *Friend of India* in November last, and transferred to several of the leading journals of Calcutta, and copies of it were presented to the Madras and the Supreme Governments. I am not aware what impression the project made upon these authorities; but as my own impressions remain unaltered as to its entire practicability and adaptation to the wants of Madras, I have thought this a good opportunity to put it upon record in a more substantial form, than by the ephemeral pages of a newspaper; accompanied by a diagram.

“ The following thoughts passed through my mind on a recent visit to Madras, and are at your disposal for a corner of the *Friend of India*. I feel rather confident that the theory here sketched can easily be reduced to practice; and therefore hope this paper may be of use to the public service.

“ Who can stand on the beach at Madras, with

the rail on one side and the roadstead on the other, and not see the difficulties of transporting the enormous traffic that must soon pass between them? Who can look at the present barbarous mode of transit through the surf and not feel humiliated, that all our national skill at sea is superseded by native ingenuity; Britannia does not rule the wave at Madras! but is glad to give up her Trident to primitive bare-bottomed natives, and place herself under their command!!

“ Numerous plans for overcoming the surf have long been debated. A stone breakwater is totally out of the question; a harbour of any sort is equally impracticable; unless we could contract with those most skilful architects, the coral insects, and even they would take a few thousand years to do it well.

“ A floating breakwater of carpentry appears more feasible, but as I will shew, it would be of very little service; for the surf though broken in passing through the carpentry, would speedily be formed again, as the wave rolled in shore, and nearly as high as at first.

“ But it appears that all local attempts to master the surf have been despaired of; as two of our most scientific men are at present advocating a harbour being constructed, ten or fifteen miles distant from Madras. As a place of shelter for ships this harbour may be very desirable, *but I*

XVI *feel assured that it is quite practicable to pass through the surf without inconvenience, and to load and unload cargo without damage or danger even by our own ships' longboats.*

“The theory of the surf is, I believe, simply this:—As the wave rolls landward, the lowest stratum of water is retarded by friction against the bottom; while the upper stratum not so retarded outstrips the lower stratum, topples over and breaks into a surf, high in proportion to the height of its parent wave. This law of fluids is still better observed in air than in water. In a dust cloud drifting along the road, or a rain cloud along the horizon, the upper stratum is always in advance of the lower; and in the dust storms that prevail in the Punjaub, converting the light of noon into the darkness of midnight, the whole hemisphere is obscured long before the hurricane is felt below, the velocity of the wind being retarded by the resistance on the surface of the earth.

“If we could throw the same obstruction continuously on the surface of the water, that it meets with on the bottom, *no Surf could take place*, and the wave, as it rolled on, would gradually subside, and reach the sand in a mere ripple.

“I can quote facts from personal experience in support of this theory. On the great river Megna, far from the protection of land, I have rode out a

storm in safety in lee of a belt of reeds, though XVI
 the water was many feet deep throughout the reeds; whereas but for their shelter the boat would inevitably have been swamped by the wave. *Here a belt of slender reeds was as effective as a substantial breakwater of masonry.*

“ Again, on the coast of Africa, near Cape L’Agulhas, the rocky coast is fringed for a quarter of a mile, more or less, with tangled seaweed secured to the bottom, by long ropy stems ending at the surface in filaments like ribbons that float upon the surface. The Surf as it rolls in, higher than it ever does at Madras, is broken and quite put down before it gets half way through the belt of seaweed. When the weed is not continuous to the shore a second Surf forms in the clear water (*as it would do after passing through an artificial floating breakwater*), lower than at first, but still heavy. I have rowed a crazy boat amongst such seaweed with impunity, whereas had no weed existed, not even a Massoola boat could have lived, *yet the Surf was disarmed of its danger by floating filaments of seaweed!*

“ Now it appears to me that we have only to imitate Nature’s admirable engineering, and bring the same principles into operation on the Madras Surf, to sober its violence down.

“ I therefore propose that a certain number of anchors be dropped outside the surf, connected

XVI together by chain cables, thus forming a line of a quarter of a mile parallel to the beach. To these cables add at distances of one or two or more feet, secured by a few links of light chain, a series of prepared electric telegraph wires; the wires to be long enough to meet the rise and fall of the tide and of the wave unstrained, the upper end to be linked to a light buoy. To these buoys attach one or more coir ropes, or the stems of the ratan (both very buoyant), stretching as far in shore as may be necessary, and along these ropes secure continuously a series of cocoa-nut or date leaves, stem to the Surf; or as these leaves are perishable, secure in their stead a certain number of fimbriated filaments of gutta percha or India rubber, made to resemble cocoanut leaves and equally flotile; *and the same effects may be expected from them as from the bank of reeds on the Megna, or the seaweed filaments on the coast of Africa.* Instead of one line of chain and its attachments, it would probably be better to have two, three or more lines, each having its separate series of ropes and filaments. (As seen in the lithograph.) The extra cost of old anchors and chain cables would be trifling. This would be less liable to entanglement, would be much more manageable, would be less liable to rupture, and would be still more efficient as a breakwater.

“ It may be stated in objection, that both wind

and current, being in both monsoons, along shore at Madras, the above feathered lines would take the same direction, and oppose a serious line of obstacles to the direct approach of a boat; but I imagine that this would be nearly entirely neutralised by the force of the surf. At any rate, the lines never could be deflected beyond the diagonal of the two forces, so as to admit of the passage being made obliquely and between two lines. Or, if the wind and current should drive them parallel to the shore (a thing most improbable) they could easily be depressed in succession by a man or two in the bows of the boat. XVI

“Of course oars could not be used in such a breakwater, and the transit would require to be made from the shore to the line of outer cable, by tracking ropes stretched between them, admitting of much more expedition than oars.

“I again express my confidence that the highest surf would be subdued in passing through a field of such construction, that a pier could be run out the necessary length into such a floating breakwater, without difficulty, and without after-risk from the surf, when formed; and to guard the cargo boats from the rise and fall of the wave, (which though unbroken must be expected to continue,) a series of little docks could be made beneath the pier to receive them and insure their being still enough to admit of loading and un-

XVI loading. For landing passengers our ingenious neighbours, the Chinese, can furnish excellent specimens, such as are in regular use at Canton. A floating pier made of bundles of bamboos extending out as far as necessary, admitting of its rising and falling with the tide and of the wave, and of supporting a moderate number people, would answer perfectly.

“ Thus a floating breakwater could be constructed out of the old stores of Government, one set of palm leaves would probably last a season, and could be easily renewed as occasion demanded it, or if Gutta percha or India rubber fabrics were adopted, these are indigenous to India, and would last for many years.

“ J. McCOSH, M.D.,

“ *Surgeon, Bengal Army.*”

† CALCUTTA, 20th November, 1855.

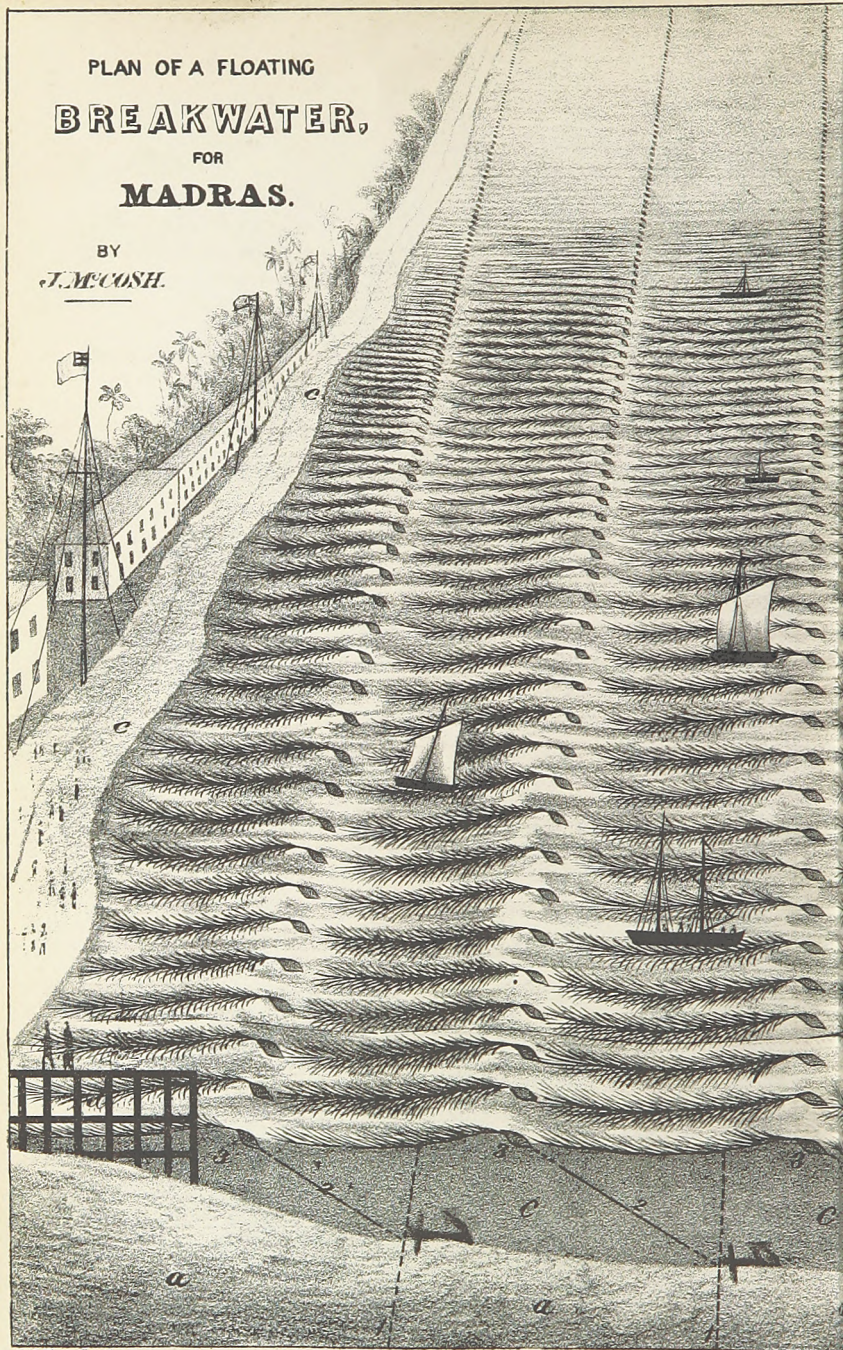


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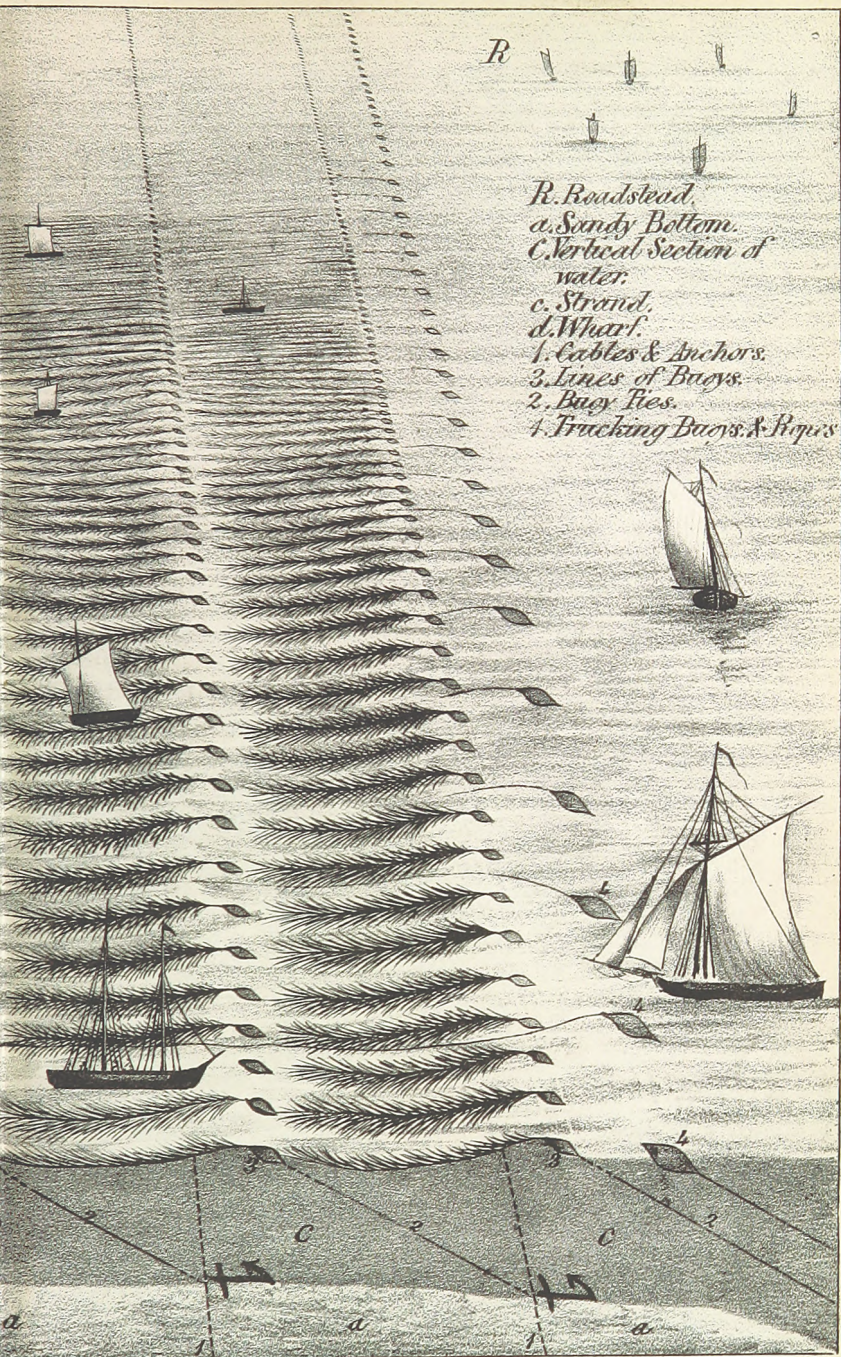
PLAN OF A FLOATING
BREAKWATER,
FOR
MADRAS.

BY
J. McCOSH.



R

R. Roadstead.
a. Sandy Bottom.
C. Vertical Section of
water.
c. Strand.
d. Wharf.
1. Cables & Anchors.
2. Lines of Buoys.
3. Buoy Ties.
4. Trucking Buoys & Ropes



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