

Medical sketches of the expedition to Egypt from India / by James McGrigor, A.M., Member of the Royal College of Surgeons, of London.

Contributors

McGrigor, James, Sir, 1771-1858.
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Publication/Creation

London : Printed for John Murray, 32, Fleet-Street ; Edinburgh : Bell and Bradfute ; Dublin : Gilbert and Hodges, 1804.

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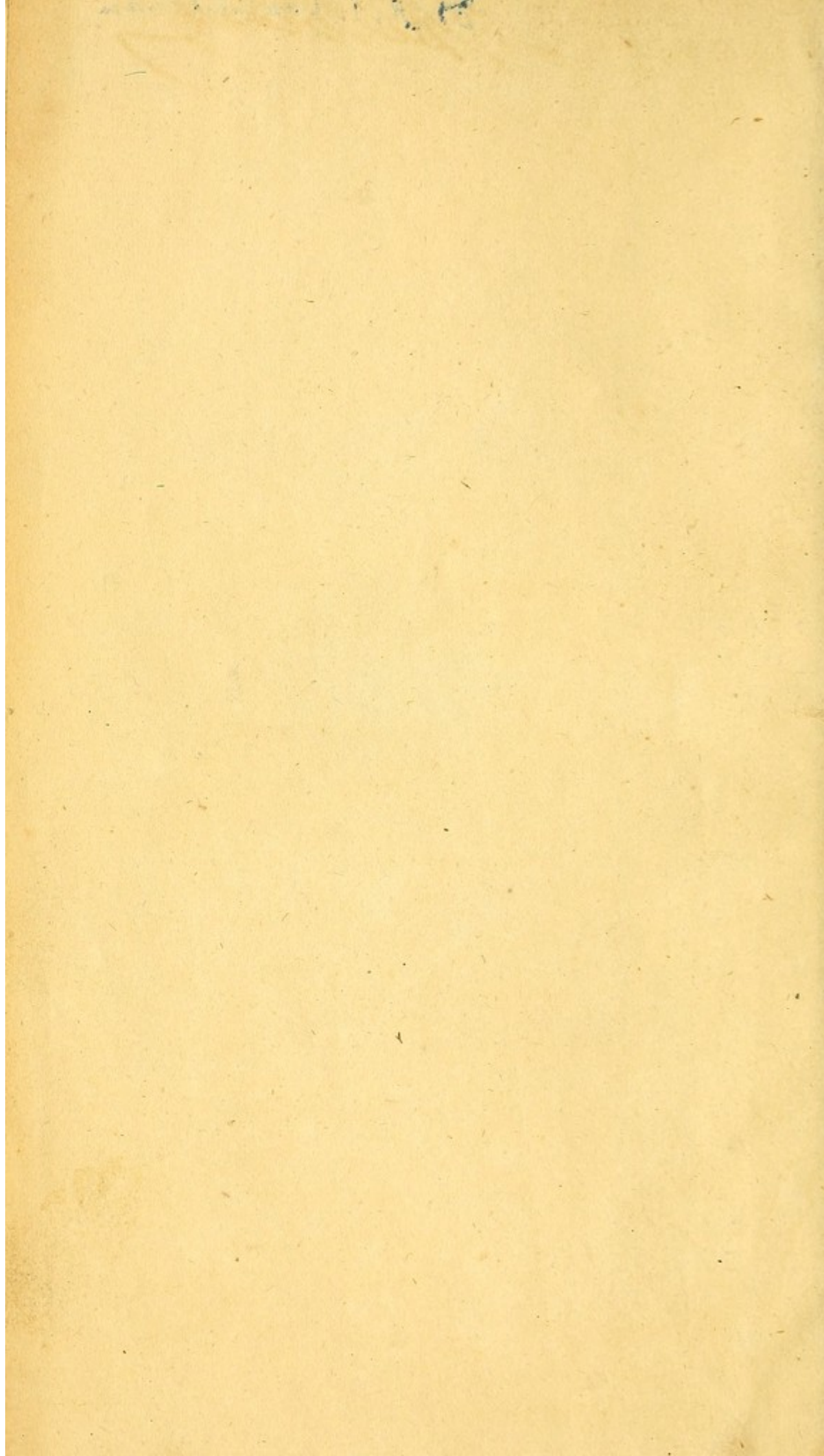
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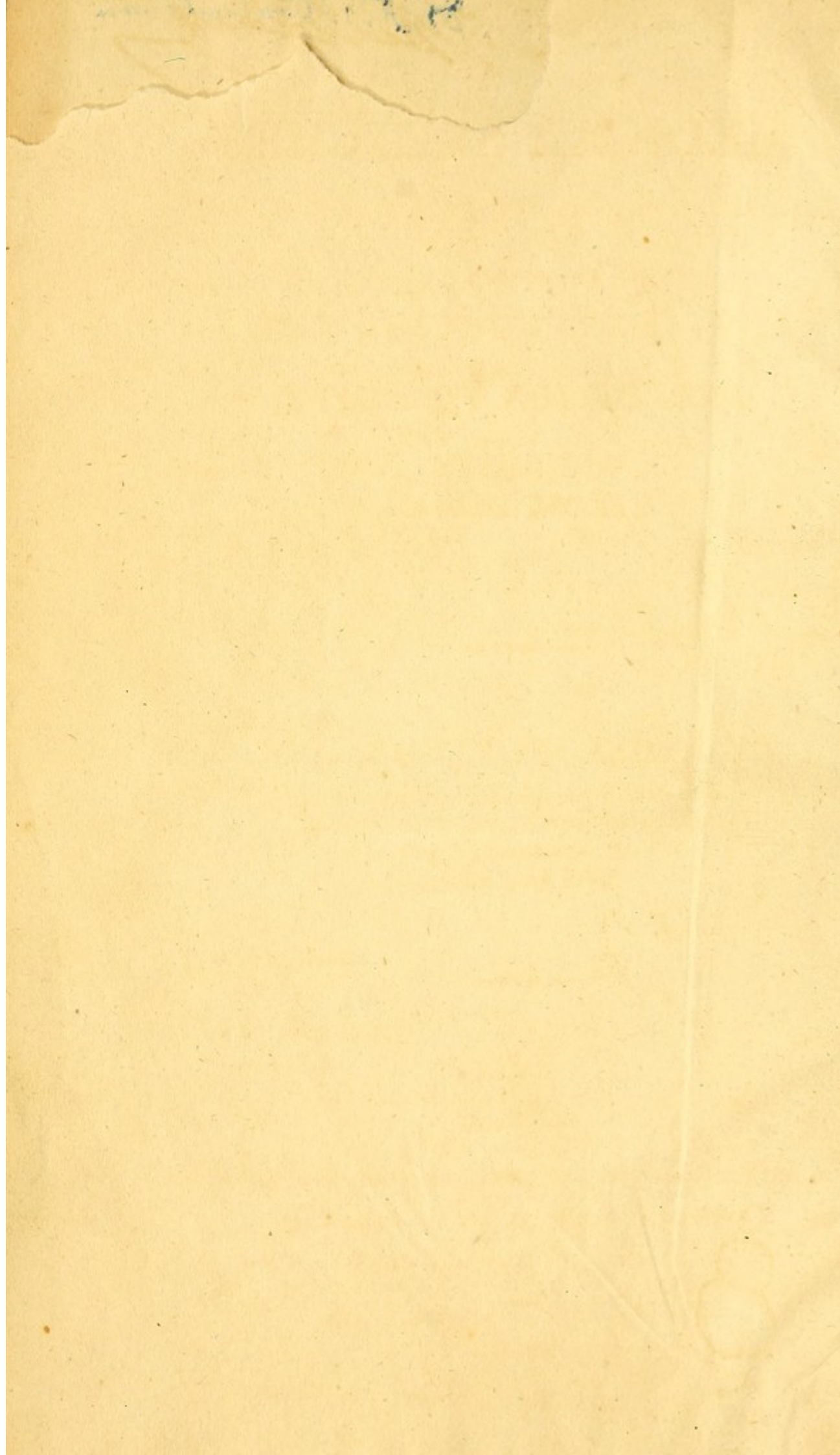


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MEDICAL SKETCHES

OF THE

EXPEDITION TO EGYPT,

FROM INDIA.

BY JAMES M^cGREGOR, A. M.

Member of the Royal College of Surgeons, of London;
Surgeon to the Royal Regiment of Horse Guards;
and lately Superintending Surgeon to the
Indian Army in Egypt.

LONDON:

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Printed by W. Marchant, 3, Greville-Street, Holborn.

W. Marchant, Printer, 3, Greville-Street, Holborn.

TO

SIR LUCAS PEPYS, BART.

Physician General, &c. &c.

THOMAS KEATE, ESQ. F. R. S.

Surgeon General, &c. &c.

AND TO

FRANCIS KNIGHT, ESQ.

Inspector General of Hospitals, &c. &c.

THE MEMBERS OF THE ARMY MEDICAL BOARD,

THESE SKETCHES

ARE DEDICATED, WITH THE UTMOST RESPECT,

BY THEIR MOST OBEDIENT

AND VERY HUMBLE SERVANT,

JAMES M'GREGOR.

TO

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ERRATA.

- Page 6, line 17, for *time* read *service*.
- 9, — 6, for *Ghenna* read *Ghenné*.
- 15, — 3, from bottom, for *Ghiza* read *Damietta*.
- 23, — 1, *et passim*, for *Thiza* read *Ghiza*.
- 26, last line, for *typhaid* read *typhoid*.
- 47, — 11, for *prevent* read *prevents*.
- 48, — 7, for *Hepiopolis* read *Heliopolis*.
- 48, — 7, for *B El Hadje* read *Birket El Hadje*.
- 50, — 12, dele *the*.
- 73, — 14, for *the matter* read *it*.
- 73, — 15, for *quantity* read *piece*.
- 83, — 12, dele *where*.
- 86, — 12, for *gums* read *germs*.
- 94, — 4, for *inspired* read *imposed*.
- 101, — 3, from bottom, for *prevent* read *preventing*.
- 103, — 4, from bottom, for *goal* read *jail*.
- 122, — 12, from bottom, for *appears* read *appear*.
- 128, — 6, from bottom, for *viluces* read *vibices*.
- 129, — 5, after *often* a comma.
- 129, — 6, after *perceptible* a comma.
- 133, — 13, for *patient* read *patients*.
- 137, — 9, dele the first *as*.
- 151, — 11, after *flowed* insert *down*.
- 166, — 5, for *healthiness* read *unhealthiness*.
- 171, — 7, for *decubities* read *decubitus*.
- 190, — 8, from bottom, note, for *instantly* read *constantly*.
- 191, — 10, for *man* read *men*.

INTRODUCTION.

IN consequence of orders, from the Court of Directors to the Government in India, it became my duty to give some account of the health of the troops employed on the late expedition from India to Egypt, and to describe the prevailing diseases.

The sources of information, to which I had recourse, were the reports made to me, and an extensive correspondence with the medical gentlemen of the army; particularly those employed in the pest-establishments. Besides these, to which

my situation, at the head of the medical department of the army from India, gave me access, other sources of information, regarding the plague, were open to me, as a Member of the Board of Health in Egypt.

Some may think the present a very short, and many may think it an incomplete account; but, I trust, it will not be found incorrect. I have purposely avoided doubtful speculations and hypotheses. Anxious, above all things, to adhere closely to facts, and keep these unmixed with any notions of my own, I have, in most cases, published the extracts from letters to me, without altering a word of the correspondence.

Of the numerous imperfection of these Sketches, I am abundantly sensible. The life of a medical man in the army is at no time very favourable to literary pursuits; mine has been peculiarly unfavourable; and I have had little time

or opportunity, since I first entered the army, to attend to the ornaments of diction. For the last fifteen years of my life; mostly spent in the East Indies, West Indies, or at the Cape of Good Hope; sometimes at sea, sometimes on land; my time has been occupied in a laborious attention to my duty in the army.

Some necessary avocations oblige me to dismiss this tract in a more imperfect form than it might have appeared in, perhaps with more leisure. As it is, it conveyed to government, in India, all the information which they required; and I must mention, that it comes before the public very nearly in the state in which I presented it as a report in India. From materials in my possession, I could have enlarged most parts of it, and rendered the whole more complete; but, when I drew up the following account in India, it never occur-

red to me, that my imperfect Memoir would be the only medical account of the Egyptian expedition. I expected, on my arrival in England, to have found complete histories of the climate and diseases of Egypt, during the time that it was occupied by the English, from some of the medical staff of the British army; several of whom were known to be fully equal to the task. If any of these gentlemen should hereafter give to the world the medical history of this renowned campaign, my Memoir may stand in some stead: it gives some facts and it will supply some information to which no one but myself had access.

At the present moment, I have not leisure to enlarge or alter it; and some friends, who have seen the manuscript, press its publication at the present time.

In the execution of my duty, during a long and perilous voyage, and after the

most fatiguing marches, I sometimes laboured under difficulties ; but my duty was in every instance much facilitated, and it would be unjust in me not to mention it. I acknowledge my obligations to all the medical gentlemen of the Indian army, by whom I was most cordially and well seconded in all that I undertook.

From the nature of the prevailing diseases, the campaign in Egypt was, in a particular degree, a service of danger. To their regret, the Indian army arrived too late in Egypt to share in any other dangers than those arising from the diseases of the country ; and here, the medical gentlemen had the post of honour. The zeal, attention, and perseverance, displayed, particularly by those employed in the plague-establishments, deserve every praise. Nothing can so powerfully incite the exertions of medical men, in such circumstances of danger, as the

consciousness of co-operating with the best and most enlightened of mankind, for the alleviation of human misery. Intrepidity is more a military than a medical virtue; but seldom I believe has there been a greater display of it than among the medical officers, in Egypt, whose duty it became to reside in the pest-houses.*

There are two names which I cannot pass over with general praise. At a period of universal alarm, and of real

* A plan established in the army proved so useful, that I will here mention it. The letters and reports of the medical gentlemen in the pest-houses, I constantly sewed together, made them up in monthly volumes, and kept them at my quarters, where every medical gentleman in the army was invited to come and daily peruse them. The disease became thus the subject of daily discussion; and, from these discussions, I was enabled daily to propose queries in my letters to the gentlemen in the pest-houses. Thus, the history of the disease, in most of its points, came to be investigated; and, previously to entering a pest-house, before his tour of duty came round, every gentleman had acquired some knowledge of the plague, and of the success of other practitioners.

danger, when the plague was committing the greatest ravages, two gentlemen stepped forward, and generously volunteered their services in the pest-houses. It so happened, too, that, from their acquirements, these two were the best calculated, of any in the army, to succeed in this dangerous duty. Dr Buchan had acquired a perfect knowledge of the disease in the former year; and while on duty at the pest-house, at Aboukir, had got the infection there, soon after the memorable landing of Sir Ralph Abercrombie. Mr Price had made the history of the plague his particular study, and, from his acquaintance with the oriental languages, was peculiarly calculated to be master of every thing relating to it. As will be seen hereafter, in the execution of his duty at El-Hammed, he, likewise, caught the infection. To the exertions of these two gentlemen, the service owes much; their country very much. I

would fain hope, that from them, who are so able to do it, we may look for something like a history of the plague in Egypt.

Dr Shapter, who was for some time in charge of the medical department of the Indian army, and who succeeded Mr Young, as head of the medical staff of the English Army, deserves our thanks for his very ready accommodation on every occasion, and compliance with every request for assistance, and for many things, of which an army which had traversed an immense desert was necessarily destitute.

Thus far I have discharged debts which I felt that I owed. I must add a few words more, in explanation.

To some, it may appear that, in the following Sketches, I have given too large a space to the journal; and that I have been too copious in my extracts from letters. Both of these are, no doubt,

to many, dry and uninteresting; but, as statements of facts, from which every one can form deductions for himself, as they stand, they appeared to me much more useful than any conjectures which I might hazard to advance. It is to be feared that, too often, facts and details are made to bend to preconceived opinions and theories.

On the causes of diseases, I have dwelt a shorter time than to some may have appeared necessary. But I thought that, while the general causes of the diseases of soldiers and sailors have been so ably handled by a Pringle and a Lind, a Cleghorn and a Huxam, a Blane and a Hunter --- from me, little could be expected. All that appeared necessary for me to do, was, to assign the extraordinary causes --- those incidental to the expedition, or peculiar to Egypt; those, in fine, which rendered the service treated of different from former services, either

on the continent of Europe, or in tropical climates.

It will be observed, that the diseases which occurred in the Indian army were but few; and, except on the plague, I detain the reader but a short time on this part of my subject. A long description of the symptoms, or of the history, of dysentery, diarrhæa, hepatitis, or ophthalmia, appeared to me superfluous; when, besides the very clear and perfect nosological account of the illustrious Cullen, we have many complete histories of these diseases, in books which are in the hands of every person.

Finally: in justice to myself, and in extenuation of errors in these Sketches, I must mention, that, when they were preparing for the press, I laboured under many and very considerable disadvantages. I was on duty in a remote corner of the kingdom, and have been, necessarily from the same reason, at a distance

from the press, since, and while the printing went on: circumstances which, I hope, will conciliate the indulgence of readers in general, and shield me from the severity of criticism.

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MEDICAL SKETCHES,

&c. &c.

—○—
PART I.
—○—

IN complying with the orders of government in India, I have sincere pleasure in being able, from original documents, to present them with a correct account of the diseases and mortality which occurred in their army during the late expedition to Egypt. From the period of the first sailing of the expedition, and my appointment to the medical superintendence of it, I retained both the reports of the different medical gentlemen employed in it, and my own memorandums written on the spot. During the period in which Dr Shapter acted, and until I was re-appointed, I likewise kept states of the sick and mortality of the army,

and thereafter, till the return and landing of every corps of the army at Calcutta, Madras, and Bombay, or at Ceylon.

The India government has ever been peculiarly anxious about every thing that related to the health of their troops, zealous in collecting any fact and circumstance touching the causes of diseases or the means of obviating them, and most liberal in every thing that regarded the health of the sick soldier.

During an uncommonly long voyage, in a march over extensive deserts, and in a country and climate described as the most inimical to the human race, the Indian army enjoyed a considerable degree of health, and suffered but a small mortality. The causes of this I shall attempt to develop: the investigation may be useful.

The prevention of disease is usually the province, and is mostly in the power, of the military officer; the cure lies with the medical: in the expedition to Egypt very much was done by both.

The medical officers deserve my grateful thanks, and I readily acknowledge my obligations to them. For every assistance in their power, I am under not fewer obligations to the military officers. In no army, perhaps, was the health of every soldier in it more the care of every officer, from the general downwards, than in the Indian army.

It would be doing violence to my feelings not to mention how much my duty was abridged by having such a commander-in-chief as General Baird. His military abilities are well known. His extreme attention to every thing which regarded the health and comfort of the soldier, I must mention, was a principal cause of the great degree of health enjoyed by the army.

To Brigadier-General Beresford the army owes very much likewise. It is not my business to say how much all were indebted to the man, who, under circumstances the most discouraging, led the advance over

the desert. In my official capacity I cannot but notice how much the British army, as well as that from India, were indebted to him, as President of the Board of Health, and as Commandant of Alexandria. The excellent police established by him gave security to the army as well as to the inhabitants; and, more than any other circumstance, tended to the exclusion of the plague from Alexandria.

The route which we took from India to Egypt is remarkable for having been that by which, in the earliest ages, the commerce of Asia, its spices, its gums, its perfumes, and all the luxuries of the East, were conveyed to Tyre, Sidon, Carthage, Rome, Marseilles, and in a word to all the coasts of the Mediterranean, from Egypt, a country rendered extremely interesting by various recollections.—The situation of the army from India has accordingly excited no common share of interest.

It penetrated Egypt by a route over the desert of Thebes, a route unattempted by

any army for perhaps two or three thousand years. Independently of late circumstances, Egypt and Arabia peculiarly interest every man of science, and more particularly medical men, from the occurrence of the plague, and the ophthalmia, or the disorder of the eyes, in Egypt.

On one account the situation of the Indian army in Egypt is not a little curious. It consisted of about eight thousand men; of which number about one-half were natives of India, and the other half Europeans. We have often seen the changes effected on a European habit by a removal to a tropical or to a warm climate, but not, till now, the changes in the constitution of an Asiatic army brought to a cold climate: for such were the bleak shores of the Mediterranean to the feeble Indian.

The following Sketches I have divided into three parts. The first gives the medical history, or rather the journal, of the expedition: in the second, after attempting

to assign the causes of the diseases which prevailed, some modes of prevention are offered: and in the third there is some account of the diseases.

The first division of the army intended for the expedition to Egypt, under Colonel Murray, sailed from Bombay in January, 1801. Their voyage was rather a tedious one, and the small-pox and a remittent fever broke out among them. They touched for refreshments at Mocha and at Jedda, and on the 16th May, 1801, came to anchor in Kossier-bay; the prevailing winds in the Red Sea, at this time, rendering it impossible to get so far up as Suez.

The second division of troops, (originally intended for another time,) under Colonel Beresford, sailed from Point de Galle, in Ceylon, on the 19th February; and on the 19th May disembarked at Kossier.

The last division, under Colonel Ramsay, sailed from Trincomalée, in Ceylon. They were later of arriving at Kossier, and were not able to cross the desert before July.

At Kossier there is a fort and a town, if they deserve the name. They are built of mud, and the Arabs inhabit them only at the season when caravans arrive with the pilgrims for Mecca, and with corn for that and the other ports on the opposite Arabian coast.

Like every other place described by Mr Bruce, that we have seen, we found Kossier most accurately laid down by that traveller in lat. $26^{\circ} 7''$, and long. $34. 04$.

Kossier is situated on the western coast of the Red Sea. Here, vessels for the expedition were daily arriving, and the troops in general landed in a very healthy condition. In one column of an annexed table, intended to show the diseases and mortality of the army, will be seen the strength of the different corps employed in that service.

JUNE, 1801.

At the beginning of this month we were in camp near the village of Kossier. Soon

after the arrival of the troops at Kossier, all were attacked with a diarrhœa, occasioned by the water, which contained much sulphate of magnesia. At first it greatly debilitated the men; but, as they became used to it, the water ceased to affect the bowels. On the whole it appeared to have produced salutary effects, and the army was, for some time, uncommonly healthy.

On the 19th, the 88th, with two companies of the 80th regiment, under the command of Colonel Beresford, as the advance of the army, commenced the march across the desert. Having the digging of wells and other duties to perform, the advance did not reach the banks of the Nile until the next month. The rest of the army marched on the following days, the marches being always performed by night; and the army, with a very inconsiderable loss, reached the banks of the Nile in a very healthy state. The course which we took was nearly that travelled by

Mr Bruce. For a considerable way after we left Kossier, the road had the strongest resemblance to the bed of a river. As we advanced from Kossier, the water became daily less salt, and less bitter. At Le Gita, and at Bir Amber, the two stations nearest to Ghenna, it was not much complained of.

The winds in Kossier camp, from nine to twelve o'clock, generally blew from the N.W. accompanied with torrents of sand.

On the march, a very hot suffocating wind from the W. set in about ten and continued till three o'clock. The thermometer at Kossier could not be attended to.

On the 29th, at Le Gita, in my tent, at three P. M. the mercury stood at 114° . In the soldiers tents it could not have been less than 118° . At six o'clock in the morning, in a well three feet deep, it was at 69° ; and, after taking it out, it fell to 63° : but evaporation must have had a share in the reduction. In other places, on the march, the degree of heat must have been higher. Le Gita is not a situation favourable to the cen-

tration of heat: it is situated in a large open plain of many miles extent.

There was but little sickness in this month, and yet almost every exciting cause existed. The heat was intense. In the currents of dust, much of it went into the stomach and lungs, and occasioned nausea, which was likewise occasioned by the destructive hot wind. To this the Arabs and even the camels always turn their backs. The men were frequently exercised, and the duties of fatigue in India, usually done by black natives, were performed at Kossier by the soldiers. The fatigue on the march has perhaps never been exceeded in any army. Diarrhœa, and a few cases of ophthalmia, and nyctalopia, were the only diseases in the army. The native corps from Bombay were recovering from a fever, with which they landed. These corps were the last that crossed the desert.

JULY.

During almost the whole of this month, the army was encamped on the banks of the Nile, which now began to overflow its banks, near Ghenné. On the opposite bank are the magnificent ruins of Tentyra, or Dendira, and the fine temple of Isis. The situation of the army near Ghenné was very healthy. There was excellent water, and an abundant market of vegetables, of fruit, and of the best provisions. We prepared to move, and detachments of the army went up to Thebes, Luxor, and to the cataracts, to press all the boats. About the end of the month, the army began to move to Lower Egypt. The 10th regiment marched to Girgé, the capital of Upper Egypt, sixty miles below Ghenné.

On the 27th and following days, the rest of the army was embarked in boats. The wind at Ghenné was not regular from any quarter, and sand was blown from all quarters, particularly at the time of the springs. The thermometer had a wide range at Ghenné. In my marquee from 71° to 108°.

On the 20th, it rose to 110° . In the open air the heat was from 70° to 115° . There was more sickness than in the last month. There were several cases of hepatitis, particularly in the 10th regiment, and cases of dysentery were not unfrequent towards the end of the month. In the beginning a considerable number of cases of fever appeared, and not a few of ophthalmia and pneumonia: but all these soon did well, after being removed to a good hospital. The Catchief, the officer next in rank to the Bey, gave up his own house for an hospital, and General Baird likewise gave up his quarters to the sick.

AUGUST.

By the 12th of this month, the greater part of the army, after a navigation of the Nile, of nearly four hundred miles, arrived at Ghiza, where we found one regiment of the English army, the 89th, and a general hospital, under charge of Dr Franks, the inspector. The troops at first were put into

quarters there ; but an encampment was afterwards formed on Rhoda, a small island made by the Nile, very nearly in the centre between Cairo and Ghiza. The Nilometer is on this island. As they landed, the troops were uncommonly healthy. Most of the hepatic and dysenteric sick had recovered on the passage, and the only disease with which they landed was slight fever, of which the cases were not numerous. This state of health continued but a very short time after the landing. In the course of the first week, most of the corps sent one-twelfth and some one-tenth of their strength to the hospital.

In three weeks, the sick of the army exceeded one thousand. A considerable number of ophthalmic cases appeared, but the prevailing disease was fever. In every corps it prevailed, and very few escaped it. In general it was of short duration, of two, three, or five, days at most, and rarely proved fatal. Ghiza appeared then to have been an unhealthy quarter, and the ground of the

encampment was found to be swampy. We found the 89th regiment in garrison at this place, and so very sickly was that corps, that they could not muster fifty men on the parade. The sick of the army was sent into Ibrahim Bey fort, pleasantly situated on the bank of the river on the Cairo side. It had been occupied by the enemy as an hospital, and had been completely fitted up by them for the purpose. But it was neither (if accounts could be believed) a healthy nor a safe situation. A little before our arrival, the French had some cases of the plague in a ward of this hospital. On hearing this, every measure of precaution was taken, and the disease did not appear. It was remarked, that those sent to the hospital, ill of ophthalmia, dysentery, and hepatitis, rarely left it without an attack of the prevailing fever.

About the end of the month, preparations were making to embark the army for Rosetta, and not less than twelve hundred sick were embarked.

During the month the wind was most frequently from the N.. The thermometer on the Nile, from the 1st to the 8th, was higher than we had found it at Ghenné. In the fort of Ibrahim Bey it moved from $80^{\circ} 50''$ to 90° . The sickness of the month was very considerable. Though we lost several men, yet the loss bore but a small proportion to the sickness that prevailed. Much of the sickness, and many of the deaths which subsequently occurred, we could trace to the situation near Cairo. Many cases of hepatitis did not appear, but of late many of dysentery; and, in some corps before quitting Cairo, ophthalmia prevailed very generally.

SEPTEMBER.

Early in this month, the greater part of the army was encamped in the neighbourhood of Rosetta. The 86th regiment and two companies of the 7th Bombay regiment went into garrison at Ghiza. Separate regimental hospitals were provided for every corps in Rosetta: but the number of sick appeared

to be gaining ground, particularly the cases of ophthalmia, which disease was nearly confined to the 10th and 88th regiments. The number occurring in the artillery, 61st and 80th regiments, was inconsiderable; and the disease was very rarely seen among the Sepoys. Dysentery and hepatitis prevailed very generally in every corps; but the appearance of another disease occasioned the greatest alarm throughout the army.

On the morning of the 14th, I discovered a case of the plague in the hospital of the 88th regiment: Anthonio, one of the hospital-cooks, who had for thirty hours laboured under febrile symptoms, shewed me two buboes in his groins. He had no venereal appearance, and the fever was now attended with extreme irritability of the stomach. At the same time, I was shewn another hospital-servant, a Hallancore, who lay next to Anthonio. The Hallancore had been attacked in the night time, and, when I saw him, had much fever and pain in the axilla, though I could discover no swelling of the glands.

As speedily as possible these two men, and six other hospital-servants, who slept in the same apartment, were removed to a house at the extremity of the town. A room was immediately allotted, in the hospital of the 88th regiment, for cases under observation.

To this every soldier, or follower, with febrile symptoms, was sent the instant that the symptoms were discovered. A minute examination was made, on the evening of the 14th, of all the men in the hospital, amounting then to one hundred and sixty-two, in order to discover whether any laboured under suspicious symptoms, but nothing was observed.

On the morning of the 15th, I discovered six men with fever, most of them had been attacked in the night-time; they were sent without delay into the observation-room, and most strictly guarded. By frequent observation, in the course of the day, I discovered buboes in one, and pain in the axillary and femoral glands of all the others: all were

therefore sent to the pest-house, which was now established.

Early on the morning of the 16th, the cook and Hallancore, first attacked, died. It was found necessary in the course of the day to send nine more men into the observation-room, where the nitrous fumigation was very liberally used. After an emetic, I gave mercury very liberally to the whole nine; but the symptoms, on the morning of the 18th, were so unequivocal, that I sent them all to the pest-house.

Our situation now became very alarming. There were the clearest proofs of the hospital which the 88th regiment occupied being thoroughly infected, consisting of about fourteen or fifteen rooms, but all the cases had hitherto come only from three of the rooms. Lamps for the nitrous fumigation were kept constantly burning both in them and in the observation-room. A very large building was procured near Rosetta; and, with all possible haste, the men were moved to it.

No man left the old hospital till all his clothes were washed ; his hair was cut short, and himself bathed. On coming to the outside walls of the new hospital, every man stripped himself naked and went into a warm bath before his reception into the hospital. He was then provided with new clothing and bedding; the clothing brought with him was received by a non-commissioned officer, who saw it repeatedly washed and baked, after which it was received into the hospital store-room. On the evening of the 18th, I sent four more men into the observation-room, and, on the 21st, three of them were sent into the pest-house. The other did well in the observation-room.

On the 23d, Littlejohn, a boy, was sent in the morning to the observation-room, having been attacked the night before with rigours. On the 25th, Egan, another suspicious case, was also sent there. In both of them a severe ptyalism was excited in less

than forty-eight hours by mercury and nitric acid, and they afterwards did well.

On the 28th, Craig, with febrile symptoms, was sent from the new hospital to the observation-room of the old. His gums were speedily affected; but it was found necessary to send him to the pest-house. This was the only instance of the plague which appeared in the 88th regiment after their removal to the new hospital.

The six native followers, first sent off, had no symptoms of the disease for eight days after their arrival at the pest-house; but, on the 9th and 10th days after, all of them were attacked, and none survived the attack three days. Four more of the Indian servants, sent to the pest-house to attend the others, shared the same fate. The case of the Mukadum of the Dooli-bearers was the most rapid.

On the 17th, he was attacked about nine o'clock in the morning with rigours, and died before four o'clock. No instances of

the plague appeared in any other corps of the army during this month. Though they attempted to conceal it, we discovered that some *accidents* (as they call it) had occurred about the beginning of September among the people of the town.

The weather still continued the same during this, as the whole of last, month. The same winds prevailed, without rain or any thing remarkable. On the 15th, 16th, and 17th, it blew from the westward : after this, we had close calm weather.

After the 15th, the Nile at Rosetta began to recede. The general range of the thermometer, in a house in Rosetta, was from 73° to $83^{\circ} 50'$.

After the plague, the most formidable disease in the army, from its general prevalence, was ophthalmia. In the 10th and 88th regiment there were upwards of three hundred and fifty cases. The total number in the army exceeded six hundred. Dysentery and hepatitis prevailed very generally among all the European corps; and the

mortality of the month was very considerable.

OCTOBER.

In the beginning of this month, the encampment was moved from one to five miles distance from Rosetta. The hospitals were gradually removed also from hence. As the men recovered they were sent to a convalescent camp, intermediate both to Rosetta and the general encampment, and precautions were taken to prevent the men from intermingling with the inhabitants of Rosetta.

Thatched regimental hospitals were built in the camp; and, though in the middle of a desert, the sick soldier had a warm, comfortable, and well-ventilated, apartment, and was liberally provided with every thing conducive to his recovery. Early in the month, the garrison of Damietta joined the army. The 86th regiment were healthy and suffered less from ophthalmia than any European corps of the army. About the end

of the month, this corps was sent to Thiza, and the detachments in garrison there were ordered to join their respective corps.

The temperature of the air became sensibly lower than in the former month, the extremes being from $69^{\circ} 50'$ to 80° . The medium was from 70° to 77° . The westerly was still the prevailing wind, and it often blew very fresh. The atmosphere, towards the end of the month, was very cloudy; and, though we had no rain during the month, it seemed often to threaten it. Owing to the very strict precautions taken, little plague occurred during the month.

From the time the sick of the 88th regiment were separated, and from regulations regarding cleanliness and fumigation being rigidly adhered to, the progress of the contagion was effectually suppressed in that regiment. The European corps still continued to suffer from hepatitis and dysentery, while the number of cases of ophthalmia, and the great degree of violence in which

this disease was now seen, were really alarming.

During the month, a case of the plague appeared in the 61st regiment. He had been a patient in the regimental hospital in Rosetta, and caught the disease from straggling through the town. The only other case which occurred was a follower of the commissariate department.

NOVEMBER.

At the commencement of this month, the army was encamped at El Hammed. The sick were in the thatched buildings, and the mortality bore but a small proportion to the sickness. The 86th regiment were very healthy in Thiza. The weather during the month was different from what we had experienced for a considerable time. The sky was constantly clouded, and it often blew strongly from the west. It rained on fifteen days, and the quantity of rain which fell during the month was considerable.

On the 17th, there was much thunder and lightning. The dews were heavy, and there was generally a thick fog which lasted till eight or nine in the morning. The extreme ranges of the thermometer in my marquee were from 57° to 77° .

In the beginning of the month, the whole sick of the army amounted to one thousand three hundred and fifty, or more than one-fourth part of the whole strength of it. In the course of the month there appeared one hundred and seventy cases of intermittent fever, occasioned evidently by the effluvia from the low ground between the camp and the river, which retained the rain, and, before we moved, became a swamp.

On the 8th, we were again alarmed at the appearance of a case of the plague, in the department of the commissary of cattle, which was immediately put under quarantine. On the 12th, symptoms of the disease appeared in a Sepoy of the Bengal battalion, who was in the hospital of

that corps. On the 13th, five more cases were discovered in the same hospital, which was ordered to be burnt, the sick having been removed into a large house near Rosetta, where the same precautions were used as with the 88th regiment, when the disease first broke out. After their removal, no case appeared in that battalion. On the 12th a case of small-pox was discovered in the hospital of the 10th regiment; and, in the course of two days more, four cases appeared in the same hospital. The first, a Portugueze servant, died. At the end of the month, the number of sick was reduced. In the weekly return from the 20th to the 26th, there were six hundred and thirty-two Europeans, and three hundred and eighty Sepoys, making a total of one thousand and twelve.

None of the tents kept the rain well out, which was often heavy. The sand, however, quickly absorbed it in most places. The fever was, in several instances, similar to a type, which we had been little used to, viz. the typhaid.

DECEMBER.

Early in this month part of the army marched to Alexandria; and, by the end of it, all the army, with the exception of the horse-artillery, 7th Bombay regiment, and the department of the commissary of cattle, was collected there. About the time that the first part of the army marched thither, detachments of the 26th dragoons, and of Hompesch's mounted riflemen, joined us from the English army, and were quartered in Rosetta. The plague now gained on us.

On the 1st of the month, Corporal Francis, of the 88th regiment, who had been on the pest-house guard the day before, complained of slight febrile symptoms and giddiness. He had a vibex on the seat of the inguinal glands on one side, with some pain, but no swelling there. I shewed him to Mr Price, who was in charge of the pest-house, and he had no doubt of its being a case of the

plague. Very soon after his admission into the pest-house, a bubo appeared in his groin, and his fever increased. Mercury was thrown in rapidly, his mouth became affected, and, the bubo suppurating, he recovered.

On the 15th, a private of the 8th light dragoons was shewn to me with a bubo in his groin and giddiness, but without quickness of pulse or any other febrile symptom. On being brought to Mr Price he was admitted into the pest-house, and the treatment and result in him were similar to those of Francis.

On the evening of the 15th, it being reported to me that a Sepoy had suddenly died of fever in the line of the 7th Bombay regiment, I examined the body, and found the inguinal glands swelled on both sides. About an hour after, Mr Gris-dale, the surgeon, shewed me a case in the hospital of the same corps, which was evidently the plague, and which I instantly ordered to the pest-house.

In the course of the month 38 more cases of the same disease, most violent and rapid in their progress, appeared in the same regiment. Three died, either in the hospital or on the lines, before they could be conveyed to the pest-house, and one died in his way thither. One man of the 1st Bombay regiment died of the same disease, who had clearly got the contagion from the former corps, near which their hospital was situated.

The weather during the month was changeable; towards the end it was boisterous. The thermometer in tents was sometimes so low as 49° , and rarely rose above 70° . The sky was cloudy, but rain fell only once in eight days. In the beginning of the month there was a considerable number of cases of continued fever. There were fewer intermittents than in the last month. The number of cases of dysentery was decreasing.

Towards the end of the month there were many cases of catarrh, pneumonia,

and rheumatism. The diseases of the eyes were greatly on the decline. In the weekly return of the 3d are three hundred and twelve cases, whereas in that of the 31st there appear only ninety eight.

JANUARY, 1802.

With the exceptions already mentioned, all the army, during this month, was in Alexandria, where they attained a degree of health they never had at Rosetta. No case of the plague had been known at Alexandria when the Indian army arrived there; and the strictest precautions were taken to cut off the communication with Rosetta and the 7th regiment.

In the beginning of the month the weather was extremely boisterous: the wind, generally from the north and north west, was very high. For eleven days there was rain, and often very heavy. The thermometer was once below 60°, and never above 70°, in a house in the centre of the city. The number of sick was much

smaller, but the mortality greater, than in any preceding month. On the 1st, Mr Price, who was in charge of the pest-house near Rosetta, was himself attacked with the disease, which with him proved very violent.

On the following day, three of six Arabs, who acted as in-servants to the pest-house near Rosetta, were also attacked.

On the 6th, a Sepoy of the 1st Bombay regiment died suddenly in the hospital of the corps at Alexandria; the sick of this corps having arrived from Rosetta but a few days before.

On the 7th, two cases of the plague, from the same regiment, were detected in the camp at Alexandria.

On the 8th, the 1st and 7th Bombay regiment marched to, and encamped at, Aboukir-bay, where a pest-establishment was placed for them.

On the 2d, symptoms of the plague were discovered on Dr Whyte, who the day before had inoculated himself, and he died on the 9th.

On the day following, a soldier of the 61st regiment, a servant of Colonel Barlow, Commandant of Rosetta, was sent into the pest-house there, now under the charge of Mr Grisdale and Mr Rice, with the plague.

On the 13th, two of six Arabs, out-servants at Rosetta, were attacked with the disease. Two men of the department marched the same road, and halted at the same stages, as the 7th regiment had done a week before.

On the 22d, two men of the 10th regiment, from a permanent guard on-board a vessel under quarantine, were sent into the pest-house at Alexandria. There occurred this month 72 cases of the plague in the Indian army, viz.

2	Officers, Dr Whyte and Mr Price.
2	Cases in the 10th regiment.
1	. . . . 61st ditto.
22	. . . . 1st Bombay regiment,
30	. . . . 7th ditto.
4	. . . . department of the com. of cattle.
1	. . . . Pioneer-corps.
10	. . . . Arab servants.
<hr/>	
Total....	72
<hr/>	

Continued fever prevailed in the army. It was the synocha of Cullen. Inter-mittents were still on the decline, as were likewise dysentery and hepatitis. Pneumonia and rheumatism prevailed but in a small degree.

FEBRUARY.

This was a very cold and wet month; yet the number of sick continued to decrease, except in the 1st and 7th regiments, in which corps the plague continued to rage. Throughout the month, the sky was cloudy: we had high winds, on 19 days it rained, and on some of these as heavily as in the monsoons in India. The thermometer moved between 55° and 63° . On the 13th, for the first time, the following cases of the plague were dismissed cured from the quarantine-hospital; viz. two Sepoys, one drum-major, and one woman, from the 7th regiment, and two Arab servants of the pest-house. At this period,

too, six were dismissed from the pest into the quarantine-hospital.

Till this day no native of India, who had entered the pest-house, ever returned. But so much was the dread of the distemper now lessened, that a volunteer in-steward, for the pest-house at Aboukir, came forward from the 7th regiment.

On the 24th, the commissary's clerk at Rosetta got the disease. Of five Europeans, whom we had left at Rosetta, two caught it and died. The disease here raged with the utmost violence.

On the 28th, Signior Positti, an Italian, came from Rosetta, and lodged at the house of Mr Fantouchi, the Swedish consul in Alexandria. It was discovered two days after that he had the plague, and he, with the surgeon attending him, was immediately sent to the Lazaretto. Signior Positti died on the day of his admission. Almost all the cases of plague, which subsequently appeared in Alex-

andria, could be traced to this case as a source.

The whole number of cases of plague, which occurred in the army during this month, was only twenty one. Fever appeared in all the reports. It was accompanied with the inflammatory diathesis, and it was in general slight.

Of hepatitis and dysentery, the number of cases was still less than in former months. Ulcers, which in the Indian army were hitherto very rarely seen, prevailed at this period. Of rheumatism and pneumonia there was an increase.

On the whole, in the course of the month, there was a decrease of sickness, and a considerable decrease of the mortality. On the 1st of the month there were seven hundred and five in the report; and on the 28th only three hundred and twelve, or about one in twenty-six.

MARCH.

The weather was milder than in February. The thermometer was gradually

on the rise. During the month it never was lower than 50° nor higher than 69° . The wind was most frequently from the west, from which quarter it blew very strongly on the 13th, 14th, 15th, 16th, 19th, 20th, and 21st. It rained on 12 days; and on some of them, about the middle of the month, very heavily. The atmosphere was in general cloudy. On the 19th we had claps of loud thunder. But for the existence of the plague the army might be said to have been very healthy during the month; and, though this disease was more diffused through the country and in the army, yet more cases did not occur in the Indian army than in last month, and the mortality from this disease was much less considerable than formerly.

The garrison of Ghiza had been, for some time, the most healthy part of the army. During the present month the corps there presented long reports of sick. The small-pox broke out among the Sepoys

there; and in the 86th regiment there was an immense number of venereal cases, several of which, from their standing, were inveterate.

The following is a list of the number sick of the plague in March.

Royal Artillery	1
——— Navy	1
26th dragoons	9
10th regiment	2
61st regiment	7
88th regiment	2
1st Bombay regiment . . .	1
7th ditto	8
The Departments	3
Foreign corps	3
Strangers	2
Arab servants	7
Total.....	<u>46</u>

The spreading of the diseases rendered it necessary to multiply our pest-establishments. In addition to those of Alexandria, Rosetta, and Aboukir, one was formed at Ghiza, and one at Rahamania, situated on an island at that part of the Nile where

the canal of Alexandria formerly took its rise. Between Aboukir and Rosetta, a serjeant and twelve men, of the 26th dragoons, were stationed to prevent communication between Alexandria and Rosetta. Nine of these were attacked with the disease during this month. Within the walls of the pest side, or that part of the lazaretto appropriated for the reception of cases of plague, at Alexandria, a serjeant and twelve men were also posted as a guard to preserve order. Eleven of them caught the disease in the present, and the rest in the following, month. They were volunteers from the 10th, 61st, and 88th, regiments, and appear in the above list. The source of this disease appeared to be clearly in Signior Possitti. Four of the Arab servants who attended him were seized; and the Board of Health obtained an order that no more soldiers should be sent on so dangerous a duty.

On the 2d, a deserter from the queen's German regiment, taken up in Alexandria, was sent to the provost's guard. He had only come to Alexandria a few minutes before he was discovered. He complained of being ill; and, on being visited by Mr Blackwell, inspecting surgeon of plague-cases to the Board of Health, it was found that his disease was the plague. He was immediately conveyed to the lazaretto, and all the prisoners at the provost's guard were brought to the observation-ground, and the provost with his guard were sent to the quarantine-ground. The deserter died a few minutes after his arrival in the pest-house. His case was one of the most inveterate.

On the 14th, Broughman O'Neal, one of the prisoners sent from the provost's guard, having symptoms of the plague, was sent by Mr Cloran, who was in charge of the observation-side, in to Mr Price, who was in charge of the pest-side, of the lazaretto. On the 17th a

case of the plague was detected in the hospital of the regiment De Roll. The infection could not be traced; however the surgeon and the sick in the hospital were put under quarantine.

On the 19th a case was detected in the hospital of Dillon's regiment, and the hospital of that corps was also put under quarantine. On the 16th, one of nine Lascars, attached to Major Falconer, deputy quarter-master general, was attacked with the plague at Rahamania. The major had only arrived there from Rosetta a few days before. Subsequently, the remaining eight Lascars, and two of the Major's servants, caught the contagion, and every one of them died. On the 26th a private of De Roll's regiment was sent from the observation to the pest side of the lazaretto; and, on the same day, a sailor, belonging to the agent of transports near Aboukir, was sent into the pest-house, as was also a man of the Royal Artillery from Aboukir-castle.

Of fever there occurred but a very few cases during the month, and the disease was a very mild one.

Of five cases of small-pox two died, both of which were natives of India. Of hepatitis and dysentery there appear fewer cases, and of the total number more than one half were from the 61st regiment; and all the severe cases were of that corps. Of ulcers the number still continued to be considerable and increasing.

APRIL.

At the commencement of this month affairs wore a very unfavourable aspect. The plague, which first appeared in Rosetta, and had hitherto, with little exception, been confined to that place, at the present period had travelled as far as Aboukir on the one side, and as far as Rahamania on the other side, of Alexandria; and we had information that most of the intermediate stages, betwixt us and these two places, were infected. With

so much severity did the disease rage at Rosetta, that, at the end of last month, it was found necessary to withdraw the commandant and every person from it, and the inhabitants shut themselves up. From information received by the Board of Health, they likewise found it necessary to place all those coming from Cairo and Ghiza under quarantine.

It was well known, that, in Upper Egypt, the plague was making dreadful ravages among the Mamalouks. The few cases which occurred in Alexandria made every one alert there, and a very strict police was kept up in the town by the commandant and by the Scorbatches.

The weather in the beginning of the month was variable. The thermometer rose a little. It was rarely so low as 60° , and only once as high as $71^{\circ} 50''$. We had much high wind on twelve days. It rained on fifteen days, but the quantity which fell was not so great as in the last

month. The sky was cloudy throughout the month.

On the 20th there was much loud thunder.

On the 1st, sixty-four invalids, from the Indian army, were embarked for England. The greater part were cases of blindness.

Both Mr Price and Mr Rice, who dissected the body of Signior Positti in the lazaretto, had been ill ever since; and this day they were so ill that Dr Buchan was sent in to relieve Mr Price, and Mr Moss to relieve Mr Rice.

On the 3d, a case of the plague appeared at Ghiza on a private follower, and another case was detected in the hospital of the 26th Dragoons at Alexandria.

On the evening of the 14th, Mr O'Farrol, who had charge of the pest-house at Aboukir, was attacked with the disease. This day all the hospitals were moved out of town, and encamped under the walls of Alexandria.

On the 6th, a Jewess dropped down dead in the streets of the city, and it was discovered that she had been ill for four days of the plague. Her husband, who concealed it from the Board of Health, was bastinadoed; and afterwards was sent, with his whole family, into quarantine. On the same evening an Arab's family reported that one of them was ill of the plague. The person affected was sent to the pest-side, and the rest of the family to the observation-ground, of the lazaretto.

On the 7th, Mr Dyson, who on the 4th went to Aboukir to relieve Mr O'Farrol, discovered bubo and symptoms of the plague in himself.

On the 10th, a serjeant of the 61st, who had had the disease last month, and who, after recovering, officiated as insteward of the pest-house in Alexandria, was again attacked with the plague.

On the 11th Mr Angle died, being the fourteenth day of his disease. He, three

weeks before, went to assist Dr Buchan in the lazaretto.

On the 14th, symptoms of the disease were first discovered on Mr Moss in the lazaretto. Of the Jew family sent to the observation-ground on the 6th, which amounted to seven persons, two were sent to-day to the pest-side.

On the 15th the husband of the jewess died in an observation-tent, having glandular swellings, which were not discovered till after his death. He did not appear to be ill. Mr Cloran was accustomed, once a day or oftener, to examine those under observation, but nothing was discovered to ail this man.

On the 16th, he discovered some symptoms of the disease in another of the same family, and sent him in to Dr Buchan.

On the 17th, a deserter from the 61st regiment, sent to the regimental guard-house, where he was discovered to have the plague, was sent to the lazaretto, and the guard, amounting to nineteen persons,

into the observation-ground of the lazaretto. This man confessed that he had slept one night near the pest-house at Aboukir. On the 19th Mr Moss died. On the 24th the plague was discovered in another Jew family. The plague of the Indian army, during the month, was as follows, viz.

Assistant-surgeons . . .	4
61st regiment	4
80th ditto	1
7th Bombay ditto . . .	5
Departments	12
Total.....	<u>26</u>

On the whole, it was a pleasing circumstance to see so little of the disease among the native corps, as, when it did occur, it proved so much more fatal to them. From my correspondence with different gentlemen in the pest-houses it appears, that, during the month, bubo was not so constant a symptom, and that carbuncles were now frequent.

At first this symptom was seen in no case. Excepting the 61st regiment, the

army was in a very healthy state. Fever was equally mild as in last month. Ophthalmia began again to appear. In the last return there were sixty cases, fifty of which were Europeans. Of seventy one men with ulcers, sixty were Europeans. The total sick of the army, at the end of the month, did not exceed three hundred; and in this are included every ulcer, accident, or less serious complaint, which prevent a soldier from appearing on parade.

MAY.

At the commencement of this month the principal part of the army was still encamped at Alexandria. On the last day of April orders arrived from England to General Baird, to return with his army to India, and to detach the 10th, 61st, and 88th, regiments, which were placed on the British establishment.

On the 3d the Indian army began the march to Ghiza, where it remained en-

camped by the pyramids for some days, until water and the passage over the desert were reported to be ready. At length the march commenced with the sick.

We crossed the river, encamped at Boulac, set off from Cairo, and, passing the ruins of Hepiopolis, made B El Hadje our first stage. Our marches over the desert of Suez, as in crossing the great desert, were all performed during the night, and we always encamped by sunrise in the morning. Luckily there had much rain fallen before we marched; and at one place in the middle of the desert, and again at Suez, we found large collections of rain-water, from which all were well supplied.

By the end of the month the whole corps, except the 7th Bombay regiment, had crossed the desert and arrived at Suez. Part of the army was encamped near the town of Suez, and part at Moses Wells, nine miles on the eastern side of the Red

Sea. The march over the desert of Suez was performed with much greater ease than that over the desert of Thebes. The weather was cool and favourable, the hot winds were less felt, and we found abundance of good water provided at the different stations. At the time of our arrival we found Suez very healthy. Though the plague had travelled as far as Cairo and all the neighbouring villages, it had not reached Suez till the arrival of the army.

The women and children of the army, as well as some invalids, were here; and they, with the Lascars of the fleet, were under the medical charge of Dr Colquhoun and Mr Waring, whose reports had all along shewn a very great degree of health. The only disease was the tropical dysentery, and this was confined to the women and children, who were inactive. The Lascars, who were actively employed, were all very healthy. During the month, several cases of the plague were reported, but they

were all very mild. On the 4th, a Sepoy of the 1st Bombay regiment, on duty with the pioneers in the desert, was attacked with the disease, and was the only man who died of it during the month. On inquiry afterwards, it was found that the Sepoy had got the infection from one of the interpreters, named Peter, and that Peter brought the disease from the Turks in Cairo. The case of the interpreter was so mild, that it was treated by Mr Dick as a venereal complaint. He took the mercury to produce salivation, the bubo came to suppuration, and Peter recovered. As soon as the Sepoy died in the desert, every article belonging to him was burnt with the body. A perfect separation was effected, and every precaution taken in consequence. No other case appeared in this detachment.

On the 12th, another case appeared in the 7th regiment, now encamped at a village opposite Boulac. No plague could be discovered to have been in the village.

The occurrence of this case, therefore, could be accounted for in no other way than that the seeds of the disease still lurked in this very unfortunate corps, and that they brought it from Aboukir with them. A pest-house was established under the charge of Dr Henderson at Boulac, and two other mild cases were admitted into it towards the end of the month.

On the 23d, the disease was discovered on a Madras tent-Lascar at Moses Wells. On the 26th it was discovered on a serjeant of the 86th regiment in crossing the desert. This was the last case which appeared previous to the embarkation of the army.

The weather, during the month, was uncommonly fine. The thermometer was greatly on the rise. During the month it was from 60° to 68°: at Alexandria from 60° to 78°: in the tents on the desert, and at Moses Wells, from 60° to 98°. The wind was generally from north to north-west. In the desert, and at Moses Wells, we had the dry suffocating wind that we

found in the desert of Thebes, at Kossier, at the same time in the former year; and the atmosphere was generally cloudy. The army was very healthy.

Ophthalmia now, however, became a more frequent disease, particularly among the Europeans, and it might be said to be the only disease which prevailed.

JUNE.

On the 2d, the embarkation commenced, and by the 15th the whole army was embarked, and had sailed for the different presidencies, except the 7th regiment, which, on account of the plague still prevailing in it after the rest of the army had embarked, was ordered to remain two months. Most of the corps in the army embarked in the most healthy state. There was hardly a sick man, except a few cases of the venereal disease which had resisted mercury.

To conclude, never, perhaps, was there an army embarked for any service more

healthy than the Indian army was when it re-embarked on its return from Egypt.

Previously to the arrival of the army from Egypt, in order to provide against the introduction of the plague into India, quarantines were established at the presidencies of Bombay, Bengal, and Madras, as well as at the island of Ceylon. The principal of these was at Butcher's island, near Bombay, where there were pest and quarantine establishments, of which, on my arrival in June, I took the charge. At this period, letters from Dr Short, at Bagdad, and from Mr Milne, at Bassorah, described the plague as raging in Persia, and particularly at Ispahan and Bagdad: in consequence of this information every vessel, both from the Red Sea and Persian Gulf, was ordered to Butcher's island.

As the ships arrived, the troops from the Red Sea were landed; but the artillery, 86th regiment, 1st Bombay regiment, and the commissariat department, were so un-

commonly healthy, that I detained them but a very few days on the island.

The 7th Bombay regiment landed at Butcher's island in August. As this was the corps in which the plague had principally prevailed, though they were not unhealthy, I judged it prudent to detain them a month. On my last inspection of them before they left the island, of a total of seven hundred, including Sepoys, their wives, and the public and private followers of the corps, I found only four sick, and these I believe were all catarrhs.

Dr Henderson, with the pest-establishment, and all those whom we had left at Suez, arrived at Butcher's island on the 1st September. The convalescents from the plague, as well as the guard, and the pest-house servants, were, on their arrival, all of them very healthy; but I thought it safe to keep them in quarantine on the island till October, when, like all the others who had been in quarantine, they

were provided with new clothing and sent over to Bombay.

The company's packets from Bassorah, and the vessels which arrived from the Persian Gulf, had none of them the least suspicious appearance, and I found that their crews were all very healthy.

I had likewise the satisfaction to receive accounts from the medical gentlemen employed in the expedition, after their arrival at Calcutta, Madras, and Ceylon: their accounts were so late as November. In none of the corps did any death occur from the time of embarkation at Suez. The deaths which appear in the annexed table, in the 80th regiment, were men lost in the wreck of one of the transports.

END OF PART I.

PART II.

FROM my own observation, from accurate reports made to me, as well as from an extensive correspondence with the medical gentlemen of the Indian army in Egypt, I have presented a faithful, and I believe an accurate, narrative of the medical occurrences of the late campaign.

Perhaps it may be thought that I have descended to a great degree of minuteness: however, I conceive, that, from the facts stated, important and useful deductions may be made. I think it a matter of regret that such journals are not more frequently kept; with a little industry on the part of the profession they might always be so. Had such records been always faithfully kept, many practical points would not, as

they now are, be involved in doubt and uncertainty. We should not now be so ignorant of some diseases, of the countries where we have so often made campaigns, or of which we have so long been in the possession.

Humble as the labours may seem, and confined as the abilities of an individual may be, were he only faithfully to relate observations made with care, to compare them with those of his contemporaries, and by these to correct the opinions of his predecessors, he would perform no mean service to his art.

I shall, in this part, advert to what appeared to be the principal causes of the diseases which prevailed. Previously to this it will be necessary to take notice of the state of the different corps, composing the army, as they landed at Kossier.

With the exception of the Sepoys from Bombay, every corps disembarked at Kossier in the most healthy state. Rarely, indeed, have troops on any expedition been

landed in the degree of health in which the Indian army landed in Egypt.

There is little doubt that their situation on ship-board was the cause of the sickness which prevailed among the troops from Bombay. The Sepoys were but a short time encamped at Kossier when they began to recover; yet the situation there was by no means what we would recommend, or make choice of, for the recovery of health.

The army under General Baird was composed, as already observed, very nearly of one half Europeans, and of one half natives of India. We shall begin with the Europeans.

A detachment of the Royal Artillery came with Sir Home Popham from the Cape of Good Hope, where they had been stationed for nearly four years. The Honourable Company's artillery, collected from the different presidencies in India, had all of them been a considerable time in that country. Of the artillery, the Bombay suffered the most; next to them

the Royal; next the Madras; then the Bengal; and, least of all, the horse-artillery. The prevailing diseases were dysentery and hepatitis. At one period, indeed, fever prevailed among the Bombay artillery.

The troop of the 8th Light-Dragoons was landed in a very healthy state, and continued healthy throughout. The dragoons came from the Cape of Good Hope, where the regiment had been for five years. The only man they lost in Egypt was from hepatitis.

The 10th foot had been a short time at Madras and had been two years stationed in Calcutta, whence they were embarked for Egypt. At Calcutta this regiment was at first very unhealthy, and lost a number of men; but they landed in a most healthy state at Kossier. The 10th regiment, but for having lost their way, and making some prodigious marches across the greater desert, would have suffered less, perhaps, than any other corps. In consequence of this march,

soon after they reached Ghenné, a number of cases of fever appeared, all of which terminated either in hepatitis or in dysentery. Half the sick of the army, on leaving Ghenné, was from the 10th regiment; and the diseases contracted by their march across the desert continued, at Rosetta, to croud their sick-reports for four months after.

The 61st regiment was, in several respects, the finest corps in the army. The men were all young and very healthy, and the regiment joined the army in a state of high order and discipline. They came from the Cape of Good Hope, where the body of the regiment had been for nearly three years. This regiment continued healthy till they were encamped at El Hammed, and they lost very few till they came to Alexandria. They were quartered in the Pharos, and the surgeon attributed much of the sickly state of the regiment to the situation of this quarter. The situation is indeed a very damp one, surrounded

every where by the sea, except on the side of the mound which connects it with Alexandria. However, this corps had not yet lost those men which every corps loses on its arrival in a warm climate, and which, in some shape, seems necessary to their naturalisation to it. The diseases by which the 61st regiment suffered were dysentery and hepatitis; and, after their arrival in Alexandria, they were wont to lose, on an average, four men a week, for some time.

The 80th regiment came from Trincomalée, in Ceylon, a very unhealthy station, and where, during a five-years stay, they lost a very great number of men. This regiment was very healthy on landing. It was composed of what are usually termed old Indians; draughts from the 36th, 52d, 71st, and 72d, regiments, which had been sent home after a stay of fifteen or twenty years in India. The 80th suffered most of their loss after crossing the desert. At Ghiza, at El Hammed, and at Alexandria, they were the most healthy corps. How-

ever, there were many old men in this regiment who never recovered the fatigue of the march, nor the illness at Rhoda island, and who felt most severely the cold weather at Alexandria. A fact regarding this corps deserves mention. Mr Brown, who was in charge of it, informed me, that many men, who, at Trincomalée, were never free from liver-complaint, and were almost always in the hospital with this disease, never complained at Alexandria. This fact, on inquiry, I found held good in most other corps, and I had observed many instances of it in the 88th regiment.

The 86th regiment landed in a healthy state. This regiment had been six years in a warm climate. They came from Bombay, where they had been in garrison for the two last years. They continued very healthy till they were encamped at Rhoda island; there, and at El Hammed, they suffered much: subsequently, no corps in the army suffered less or lost fewer. The frequent movements of this corps contri-

buted to their being in a more healthy state than some other corps were.

The 88th regiment had been about three years in a warm climate. They likewise came from Bombay. This regiment crossed the great desert with the loss of only one man. They were very healthy at Ghenné, and continued so till their arrival at Rhoda. The 88th was the first regiment from the Indian army that arrived at Ghiza, where they found the 89th regiment, and the ophthalmic hospital of the English army. In the course of the first week after their arrival at Ghiza, the 88th regiment sent one fourth of their strength into the hospital; all of them cases of fever or ophthalmia. At El Hammed, in proportion to the strength of this corps, ophthalmia prevailed more in it, and the regiment suffered more from it, than any other corps, except the 10th regiment. It will be remembered, too, that it was in the 88th regiment that the plague first broke out; and this regiment had more cases and more deaths

from it than any other European corps. Mr Tonrey and myself, who attended these first cases, were among the few medical men who were exposed to the contagion and came in contact with the patients, and yet escaped the disease. The 88th regiment became at last one of the most healthy corps in the army. From the 1st December, 1801, to the 1st May, 1802, they only lost two men; of these, one was from the plague, and the other from sudden death, cause unknown.

With the exception of the two Bombay corps, all the native Indians lost fewer men than the European corps. After they marched from Kossier, and till the plague appeared in the two Bombay battalions, where it committed the greatest ravages, they were the two most healthy corps in the army.

The Bengal volunteer-battalion, composed of volunteers for the expedition to Egypt, from different regiments of Sepoys in Bengal, was a fine body of men, and

they were mostly what are called old or made soldiers. They were in general very healthy, and during the campaign their loss was very inconsiderable. Though the plague at one time appeared in this corps, yet, by the system established throughout the army by this time, and by the active vigilance of the officers of the corps, the contagion was extinguished; and, though the plague prevailed in every other corps, it never subsequently visited this battalion.

The Artillery-Lascars were, on the whole, very healthy throughout the campaign. The few deaths which they had were from dysentery.

The 1st Bombay regiment, after recovering from the fever contracted on ship-board, continued healthy, and suffered few deaths but from the plague. It was remarked, that this corps effected the march across the desert of Thebes, as well as that over the isthmus of Suez, with less difficulty than any corps in the army. In general, we observed that the native troops endured

this better than the European. It ought not to be forgotten, that, under Captain Mahoney, detachments from the native corps were employed, some time before the march of the army, in clearing the roads, digging wells, and on other duties of fatigue more harassing than any that fell to the lot of any other part of the army. Nevertheless, these men continued in a high state of health.

At the period when the plague attacked the 7th Bombay regiment, they were far from unhealthy. The prodigious loss of this corps, which appears in the annexed table, was at first from the fever which raged at sea, and subsequently from the plague, which continued to persecute this corps from December, when it broke out among them, till the whole army was embarked at Suez.

The pioneer-corps was uncommonly healthy till they came to El Hammed. Here they had much severe duty. They were employed in building the hospitals,

and very often in cutting the reeds by the river-side, or in conveying them through marshes. A very considerable share of the intermittents that prevailed in the army was from this corps.

The departments (under which title are included about five hundred men employed by the commissaries of cattle, of provisions, and of stores, and by the quarter-master general) were, from beginning to end, more healthy and had fewer deaths than any one corps in the army. They lost none but from the plague; and, when this was discovered, such precautions were taken that the contagion was very speedily eradicated. The extraordinary health of this body of men, as well as their escape from the plague, though particularly exposed to the contagion, I could only attribute to the commissary of cattle, who had the greater part of them in his charge. Captain Burr was constantly among these men, and was

most singularly attentive to every thing that regarded their internal economy.

I am decidedly of opinion, that in the peculiar soil and climate of Egypt we are to look for the principal causes of the diseases which prevailed the most in that country.

On grounds that appear not slight, we suspected that several of these diseases were propagated by contagion. But I have no intention of entering on the discussion of the theories of contagion; an obscure subject, and on which I do not presume to think that I could throw any new light. If ever the veil which covers it be removed, the late discoveries in chemistry bid fair to do it. The accurate knowledge which we have acquired of the composition of bodies, and in particular of the constituent parts of the atmosphere, have opened new fields of inquiry to the philosopher and to the physician. The successful application of these discoveries to the practice of physic by the Doctors Beddoes

and Thornton, by Dr Rollo, Mr Cruickshank, Dr Wittman, and other eminent surgeons of the artillery, and more particularly by the philanthropic Mr Scott, of India, deserve the gratitude of the profession and of mankind at large. Hereafter, most probably, and when introduced into general practice, they will be looked upon as the greatest improvements that the healing art has received in modern days.

In respect to the soil and climate of Egypt, as giving rise to disease, they are of considerable variety. In a country of such extent, stretching from the tropic, on the one side, to the shores of the Mediterranean, on the other, this might be expected. If, in Lower Egypt, and on the bleak shores of the Mediterranean, we saw the diseases of Europe, and met with the inflammatory diathesis; in Upper Egypt, and as we approached the tropic, we met with the same diseases, and succeeded with

the same treatment, as in the peninsula of India.

Perhaps no country is better known, or has been oftener described, than Egypt. I therefore presume that every thing regarding the climate and soil is generally known.

Upper Egypt, that is, the cultivated part of it, is a narrow stripe, laid out sometimes on one and sometimes on both sides of the Nile, which, in its course from Abyssinia till it passes Cairo, is on both sides enchained with a ridge of mountains.

Lower Egypt is, in general, a fine, rich, flat, country, interspersed in different places by branches of the Nile, and overflowed by this river at a particular season; at which time the country is in the situation of Holland, or of the fenny counties of England.

The soil in most places is argillaceous or sandy, and in some calcareous; but every where there is a strong mixture of a salt: in most places there are incrustations

of it to some depth. The quality of the atmosphere, and the proportions of its different constituent parts, I regret that I never had an opportunity of ascertaining.

The cultivated part of Egypt, particularly the Delta, is a very rich country; in fertility and luxuriance of soil yielding to none under the face of heaven. The art of husbandry is there but imperfectly known; and at their harvests there is a very great destruction of vegetable matter, from which hydrogene gas, or hydro-carbonate, is extricated in great quantities. Under similar circumstances, in America as well as in India, I have seen a bad fever of the intermittent or remittent type appear. But in Egypt, after the subsiding of the Nile, which in many places had covered a great extent of country, there is a great exhalation from the mud, and from the putrid animal and vegetable matters left behind. The effluvia of these substances, acting on the human body, will readily account for much disease. If we

add to these the extreme filth of the inhabitants of Egypt, their poor diet, their narrow, close, and ill-ventilated, apartments, generally much crouded, with the extreme narrowness of their streets, and the bad police of their towns, we will not be astonished if a fever, at first intermittent or remittent, should have symptoms denominated malignant, superadded to the more ordinary symptoms of the disease. If an imported contagion should make its appearance at the same time, and under the above circumstances, we expect a most terrible disease.

The dry parching wind, which comes over the desert, and which at certain seasons blows in Egypt and in Arabia, is well known, and was often severely felt by the army on their march, both across the desert and the isthmus of Suez. The whirlwinds of sand roll with great impetuosity, are very troublesome, and insinuate fine sand and dust every where. It is hardly

possible to keep the minute particles out of the eyes.

The dews, which fall in Egypt, I always heard were very heavy, and were a cause of the diseases of the country. I had occasion too, more than once, to hear the natives attribute much to them as the cause of their diseases; with what justice I will not pretend to decide. From some experiments which I made in India, on the Red Sea, and lastly in Egypt, I am inclined to think that they are equally heavy in the two former as in the latter quarter. After weighing the matter carefully, I took a quantity of lint, twelve inches square, exposed it for a night to the dew, and, by weighing it in the morning again, ascertained the quantity which it had gained. I am aware that this is by no means a nice experiment, and that in the performance of it several particulars demand attention; but it is sufficient to our purpose, and I learned by it, that, in the island of Bombay, on the Red Sea, and

in Lower Egypt, the quantity of dew which falls is nearly equal.

It ought to be mentioned, that, during the year we were in Egypt, the season was not the usual one. There was a greater overflow of the Nile. It rose higher on the Nilometer than it had done for several former years, and it was remarked to be much later in subsiding at Rosetta.

The fall of rain at Alexandria was greater than on former years; and, at Rosetta, the rains were in setting in later than usual. The season of the plague set in much earlier than usual.*

In general, the Thebaid, or Upper Egypt, is healthier than the Lower. Never were troops more healthy than the army when encamped near Ghenné.

Ghiza, the ancient Memphis, at the time the army disembarked there from

* These circumstances I learned from a member of the French Institute, and from the Pharmacien en Chef to the French army, who often related to me the order which Bonaparte gave him to poison the wounded with opium.

Upper Egypt, we found to be a very unhealthy quarter. For a considerable time, and immediately before the arrival of the Indian army, it had been the station of large armies: alternately of Turks, Mamelukes, French, and English. From all these armies a number died at Ghiza, and there was much filth and noxious effluvia. We saw there enough of putrid animal matter to generate contagion. Whether this was or was not the cause of the fever which prevailed, I will not attempt to decide. One circumstance may be mentioned. We were here joined by a detachment of the 86th regiment under Colonel Lloyd, which, for some months before, had been doing duty with the Vizier's army, which never was healthy. That the circumstances which existed at the time of our occupying Ghiza were the cause of the fever is manifest from this, that, subsequently to the army going to the coast, the garrison left in it found Ghiza a most healthy quarter. The same

objections are to be made to Rhoda that are applicable to any marshy situation.

The 86th regiment found Damietta healthy, till the Turkish troops came down in great numbers from Cairo; but, at this period, the British troops were removed from it.

Rosetta is not a healthy quarter. It is one of the largest and worst-built towns in Egypt. There is hardly one street in it. There are only narrow dirty lanes, with high houses overhanging each other, and the passage frequently interrupted by houses in ruins. It is, on two sides, surrounded with swamps. The river is in the front, and behind, it is nearly encompassed with burying grounds.

The place of the encampment at El Hammed was an unhealthy spot. About half a mile in the rear of it there was a great extent of swampy ground; but there was no choice: it was necessary to encamp where there was water.

As a station for the army, Alexandria had every recommendation. It is built on a peninsula which formed the antient harbour, on a fine dry and open situation. Some squares, and several of its streets, are open and spacious; very unlike an African or Asiatic city. Its numerous mosques afforded us large and airy hospitals and barracks. In point of health, the inundation of the water from the lake Maadie was favourable. It insulated Alexandria; but the water was in motion, and at such a distance, that nothing was to be apprehended from exhalation. All the hospitals at first were within the walls of the modern city. The situation of the Pharos is well known to every one. I have said, that it was complained of as a quarter for troops, and with justice. The state of the 61st regiment shewed this. Subsequently to their being removed from it, they were encamped on the outside of the walls. From this period both the sickness and mortality in this corps disappeared. The

10th regiment found Fort Triangulaire a dry, spacious, and airy, barrack. In the fort they had the means of keeping the men constantly in their quarters; they were at some distance from Alexandria, and thus it was in their power to preserve a regular internal economy and prevent drunkenness. When the regiment came to take possession of this quarter they had a numerous sick-list: it decreased daily after they came here; and, finally, the 10th was as healthy as most other regiments. The barracks of the 80th regiment, and of the Bengal volunteer-battalion, were situated close to Fort Triangulaire; and they possessed all the same advantages, but that it was not so easy to confine the men to the barracks.

The barracks of the 88th regiment, at Fort Cretan, were dry and airy. Though in a different quarter they possessed nearly the same advantage as Fort Triangulaire, with the disadvantages of the quarters of the 80th regiment.

The horse-artillery and 8th dragoons were, along with the 26th dragoons, stationed at Damenhoure, which had every advantage of a country quarter. It was situated in a fine, open, cultivated, country. The station was thought so good, that at last we sent the sick of the army to this quarter; and old cases of dysentery and hepatitis, as well as some of fever, recovered here with astonishing rapidity. By the time of their arrival there was in many a great amendment. They were conveyed in waggons constructed for them, and made three days easy journey to Damenhoure.

In the difference of Upper Egypt in June, and El Hammel and Rosetta in December, is included perhaps more than change of season; there was change of climate and of heat from 108° to 49° of the thermometer. We have said that, in many instances, the causes of disease at El Hammel could be traced to the march across the desert and the encamp-

ment at Rhoda. Very much, however, was likewise to be attributed to the change of weather experienced in November and December.

In every part of the world, with change of season, some diseases pretty constantly make their appearance; but in no part is this so observable as in the countries under the tropics. In the West-Indian islands, as well as on the shores of India, I have repeatedly and uniformly observed the sick-list of European corps more than doubled by the third week after the setting in of the monsoon.* In these countries a very considerable increase of sick is likewise found to take place on the change from the rainy to the dry season. The change of season in Egypt had nearly an equal influence on the health of the army while there.

In a memoir, which, four years ago, I had occasion to present to the Military and

* In Dr Duncan's *Annals of Medicine*, for 1801, I have adduced a striking instance of this.

Medical Boards at Bombay, on the state of health of the 88th regiment, and of detachments of the 75th, 77th, 84th, and 86th, regiments, under my care, one passage is so very closely applicable to the subject I am now on, that I will extract it. After pointing out the smaller proportion of sickness in different corps, and in proportion as they had been in India from one, two, three, to twenty, years, and the very great proportion of disease and mortality which the European bore to the native Indian corps, the memoir goes on:

“Though, perhaps, a residence for a certain length of time, or a naturalisation to the climate, be necessary, yet one reason may, with probability, be brought forward to account for the very great difference, in point of health, between European and Indian corps, viz. the great intemperance of the European in eating and drinking. A native of India is astonished, at first, to see the meals of animal food devoured, and the quantity of spirits drank, by Euro-

peans. There can be little doubt, that the nearer we approach to the mode of living of the natives, the more nearly we shall attain their state of health.

“ On looking over the returns, and observing the proportional sickness of different periods, a periodical increase was very striking. The eight or ten days that followed the payment of the men, on the twenty fourth of every month, regularly produced much sickness. The soldiers pay in India, as in England, and perhaps every where else, allow him at times to indulge in excess. He is most amply supplied with meat and bread, and generally he has a portion of vegetables; but the allowance of spirits issued to him is too great. In the dry season it is a quarter of a pint daily, and in the rainy months it is double this quantity. As the price of arrack is low, the soldier very often procures as much as he can use; besides which, he has often access to farrey, or toddey, the fermented juice of the cocoa-nut tree.

Some degree of intoxication and intemperance, in a corps in India, is perhaps unavoidable. Intemperance has hitherto always appeared as a principal cause of the diseases which have prevailed.

“The difference, in point of health, between the hot and the cold, the dry and the rainy, months is striking. For the last eighteen months, in the hot season, the men had much duty. They were daily marched two miles to the fort of Bombay; where, while there, they were much exposed to the sun on the garrison-duty; and, in the heat of the next day, were marched back to their barracks on the island of Colabah. Yet it appears, by the accompanying tables, that the hot months were the most healthy by far. If heat be very noxious, something in this instance obviated its effects. Was this exercise?

“The first year after the arrival of the 88th regiment, in India, they suffered considerably. During the month after

that on which the monsoon set in, one hundred and forty, or more than one fourth of the corps, were ill of hepatitis or dysentery. In the second year of the regiment being in India, only seventy were admitted into the hospital in the course of the same month, and this number was not quite one tenth of the then strength of the corps. Here, then, we appear to have gained considerably by being one year inured to the climate."

In Egypt I found that all the above-quoted remarks held good; in particular that relating to heat. Though the degree of it be very considerably increased, I believe that, unless combined with intemperance, or some other cause, it very rarely is the exciting cause of disease. At Kossier, and in crossing the desert, the degree of heat was very great, and both the officers and men, from Madras, as well as Bengal, complained that it was more insupportable than they had ever felt it in the hottest seasons. Yet, at the

above period, the army enjoyed an uncommon degree of health, though they necessarily were much exposed to the sun: but their minds as well as their bodies were at this time exercised. Not only on crossing the desert, but for some time after we reached the Nile at Ghenné, we all thought that we were in the neighbourhood of a division of the French army, and the Indian army was for some time kept in the constant hopes of being engaged.

That simple moisture is noxious, the situation of the 61st regiment, in the Pharos, shewed; and that moist exhalations from marshes were active as causes of the diseases which prevailed, from the arrival of the army at Rhoda till their departure from El Hammed, the journal gives abundant proof.

We received still farther confirmation of the very great influence which intemperance has as a cause of disease. We had demonstration how very little spirits

are required, in a hot climate, to enable the soldier to bear fatigue, and how necessary a regular diet is.

At Ghenné, and on the voyage down the Nile, (on account of the difficulty of at first conveying it across the desert,) the men had no spirits delivered out to them; and I am convinced that, from this, not only did they not suffer, but that it even contributed to the uncommon degree of health which they at this time enjoyed. From two gums, or boats, the soldiers one day strayed into a village, where the Arabs gave them as much of the spirit which they distil from the juice of the date-tree, as induced a kind of furious intoxication. It was remarked, that, for three months after, a considerable number of these men were in the hospitals.

On the causes of the plague I do not mean to dwell. I may just mention, that, after seeing the first cases which occurred in the Indian army, and attentively studying the histories of some of the cases

which subsequently appeared, it struck me that there were many points of resemblance between this disease and the destructive fever of the West Indies, which, some years ago, I saw a good deal of in several of the islands there. I would by no means, however, have it implied that I consider the diseases as the same.

One of our medical gentlemen persevered in an opinion that the plague was not contagious. He made the first, and we sincerely hope the last, experiment of the kind to determine this question. Dr Whyte fell a victim to his own temerity.

Never were the effects of fear, in the treatment of diseases, more felt than at one period in the Indian army in Egypt. At the time the plague first broke out, (as shall be more particularly noticed hereafter,) the dread of the disease, particularly among the native troops, was a bar to every kind of treatment. They exclaimed that they were sent to the pest-houses merely

to die; and some of them refused every kind of medicine or sustenance.

I shall now advert to some of the principal measures of prevention of disease in general: some regulations regarding the plague are mentioned under the head of that disease.

Within the last thirty or forty years the improvements made in the means of preserving the health of seamen have been great. These had their rise from the great Captain Cooke; after him, very much was done by Dr Lind, of Haslar-hospital; since, by Dr Blane; and, more lately, by the present able physician to the fleet, Dr Trotter.

Under the eminent surgeon-general of the artillery, a very great deal has been done in the ordnance-department. Abroad, as well as at home, their hospitals and the medical department are in a state not unworthy of imitation.

Since the time of the Carthagera expedition, a good deal has been done in the

army likewise. To the present commander-in-chief the army owes very much; and the Army Medical Board have, of late, corrected many abuses, and introduced much improvement into the medical department: but much remains to be done for the soldier, especially when embarked for service.

Often, during the late war, have we seen troops suffer much in transports; and, on one or two occasions, a confinement of two or three months on ship-board has crippled regiments, if not armies, and left them unfit for service.

At no time, I believe, have troops on any expedition been so long confined on ship-board as during that of which we are treating; and in none I believe, not even in the shortest, has there been a smaller loss of men.

This is to be ascribed entirely to the very liberal policy of the great character at the head of affairs in India, and to the gallant general selected to command

on this expedition. It was the governor-general's order, that every convenience and comfort, that might conduce to the health of the soldier, should be most amply provided. In consequence of this, a sufficiency of tonnage, and that calculated for a warm climate, was procured. Large, lofty, and roomy, ships were fitted up, and the greatest care was taken to embark only such as were in perfect health. The transports were liberally provided with every requisite or comfort for a long voyage: the quality of the water was particularly attended to. Besides a large stock of fresh provisions, vegetables of every kind were shipped. There was a large stock of potatoes, of onions, bread-fruit, pickled vegetables, of tea, rice, and pepper, which were regularly served out to all. Besides these, for the sick there was provided a large stock of wines, of fermented liquors, and of every other comfort.

To the very liberal manner in which the transports were fitted up, and to the regulations established in every transport of the fleet, which were rigorously enforced, is undoubtedly owing the very healthy state in which most corps remained, for half a year, on ship-board; and that, on landing, they were fit to march on any service.

At Bombay there was, at first, a scarcity of shipping. One ship sailed thence much crowded; and, in a three-weeks passage to Ceylon, those on-board suffered much: there occurred much sickness and several deaths. On their arrival at the island of Ceylon, Mr North immediately ordered two more vessels for the troops with which this vessel (the *Minerva*) was crowded. The good effects of this measure struck all: thereafter, during a three-months passage to Kossier, there died not a man in the *Minerva*.

The clothing of the Indian army conducted much, in our opinion, to their healthiness. They landed with their white

cotton dresses, which were admirably adapted to the warm season in which we came to Egypt; favourable to cleanliness; and, by consequence, to the exclusion of pestilential contagion.

From the time of the army first landing at Kossier, in every situation where it could be done, bathing was enjoined throughout the army. In every corps it was regularly done under the inspection of a commissioned officer, and any neglect of cleanliness was most severely punished. In any country or climate, attention to cleanliness will be found a principal means of preserving the health of troops; but, in Egypt, where contagion was lurking in every corner, it became indispensably necessary.

In the cold season, and while we were in Lower Egypt, warm comfortable clothing and bedding were provided, not only for every soldier or Sepoy, but likewise for the women, children, and all the numerous followers of the army.

The simple diet of the Hindoo is well suited to a warm climate. It is seldom more than rice with aromatics, or clarified butter with a kind of pea, to which the luxury of a little salt-fish, of preserved tamarinds, or some fresh fruit, is occasionally added. As far as it could be done, the Europeans were made to conform to this diet; and we are convinced that it was with much advantage to them. The light wines of the Greek islands were issued to the Europeans in the warm season; but in the cold they got spirits.

In the cold season it was found necessary to make some change in the diet of the Sepoys. In the month of January they suffered so much from the severity of the weather, and a climate very unlike their own, that a portion of animal food, as well as of wine, was ordered to be issued to them.

The prejudices of country, religion, and of the different casts of Gentoos, were first overcome in the Bombay regiments. At

length, the most austere yielded; and, finally, even the severe Brahmin, as well as the rigid Mussulman, gave way to the necessity inspired by their situation in a foreign country.

The length of time, which most corps had been in a warm climate, deserves to be mentioned, as a cause of the health of the Indian Army in Egypt, till attacked by the endemic diseases of the country. No corps in the army had been less than two years in a warm climate. During the late war, the value of the Cape of Good Hope, to us, was often felt and acknowledged in India. After being at this healthy settlement and there seasoned to a warm climate, the 80th, 84th, and 86th, regiments and the Scotch brigade, landed in India, in an effective state, never before witnessed with European troops in that country. This fact is not undeserving public consideration.

The fact cannot be too often repeated or too generally known, that nothing con-

duces more to the health of a corps, than the preserving a good internal economy in it. A good commanding officer has, in general, a healthy regiment. Every thing can be done in the prevention of disease; but, unfortunately, very often, little in the treatment when it supervenes.

One point remains still, and I know no fitter place to introduce it than here.

It has been mentioned, that liver complaints rarely recovered in Egypt, and, likewise, that cases of hepatitis and flux, which, in India, had long remained obstinate, here yielded of themselves and without medicine. This fact leads me to the suggestion of a measure, which, I conceive, would save many useful lives. It is, whenever a case of fever, dysentery, or liver complaint, in India, is obstinate, or continues for a long time on the reports, to send such cases to sea or to Europe.

It is a truth, well known to every medical man in India, that, after continuing ill of these disorders a certain time, soldiers

or sailors never do well there. They linger, and are, at length, carried off, either by a suppuration in the liver or ulceration of the intestines. In India, when patients, whose situation in life permits them to take a voyage to Europe, are in this state, they never fail to take it, and, most commonly, are recovered by it; but there is no hope for the poor soldier or sailor there.

The same benefit might, however, be acquired for the soldier, and with little, or, perhaps, no, expense: it is not always necessary that the voyage be a long one, or, that the change of climate be to Britain. Were the cruisers of the company or the king's ships, from time to time, to take on-board some of these chronic cases, for one cruise, the men would be frequently recovered by it, and, in many cases, they would soon be capable of doing duty on ship-board, where, in time of war, Europeans are very much wanted, but cannot be found in India. Whenever a voyage in India is not attended with complete success, a voyage to Europe

still offers one chance for life. The prospect of this, by removing that despondency which, in chronic diseases is a never-failing attendant, and which we have too often found baffle every mode of treatment, would cheer the patient, and of itself do infinite good. Men of his Majesty's regiments might be brought home, and attached to the recruiting companies there, whence able healthy men might be sent in exchange for them, while the invalid from India would at the same time recover his health in a country-quarter at home, and be equally useful as another man on the recruiting service.

Humanity, as well as policy, loudly calls for something to be done. From what I have seen, I fear that invalids and ineffective men are sometimes detained by far too long in India.

END OF PART II.

PART III.

OF THE DISEASES OF THE INDIAN ARMY IN EGYPT.

WE have now arrived at the last part of these Sketches; where it is intended to offer some account of the diseases which we met with in Egypt.

The catalogue of military diseases is never extensive. If his peculiar way of life exposes the soldier more to some distempers, it entirely exempts him from many others. In an Indian army the diseases are even fewer than in any other; at the same time, that the practice of medicine is more simple. I am of opinion, that in India the practitioner goes on surer ground than in Europe, partly for the above reason, and partly from the causes

of disease being less varied in that country. Though the diseases which occurred in the Indian army, when in Egypt, were not numerous, yet some of them were highly important, and on our arrival in Egypt were new to every one of the medical gentlemen, excepting Mr Bellars, of the 86th regiment, who had treated a few cases of the plague, which occurred in a detachment of that regiment acting with the Vizier's army, and had himself suffered from the ophthalmia of Egypt.

I propose to include every thing that I have to offer on this part under two heads. Under the first, I shall notice two diseases which may be termed the endemics of Egypt, viz. the plague and the ophthalmia of that country.

Under the second, the other diseases which prevailed will be noticed. They are mostly tropical diseases; and with them the reader will not be long detained.

OF THE PLAGUE.

I begin with the plague; a disease of which accounts have been handed down to us from the earliest ages of history or of physic. The consideration of it is important, not only on account of its frequent and fatal occurrence, but, as being, perhaps, the most formidable disease that the art of physic has to encounter. On this subject, however, much will not be expected from me. Of no disease have we a more clear, accurate, and complete, history than of this, in Dr Russel's work on the plague. In Egypt, we often had recourse to this work, and we readily acknowledge our obligations to the venerable and learned author.

Though since the time that Dr Russel gave his ample history of the plague in Syria, we have had several accounts of this disease as it appeared in other countries; yet much has not been added to

our stock of information, and little of improvement has been made in the practice. The proper and well-timed use of mercury, and, perhaps still more, the application of the newly-discovered remedies analogous in their effects to the calces of that mineral, hold out a prospect of success the most encouraging.

In Europe, but more particularly in Britain, much of the dread, and much of the real danger, that attended the most fatal diseases in this country are now done away, by the late improvements in medicine and in chemistry.

The time was, when fever, when it broke out in different parts of England, proved little less fatal to whole villages and towns than the plague does in the countries where it resides. From the improved practice of the treatment of fever, but more from our knowledge of the means of destroying contagion and prevent its spreading, the mortality from this class of diseases is now comparatively small.

The small-pox, that plague which once carried off so great a proportion of the population of Europe, now bids fair to be expunged from the catalogue of diseases.

May we not indulge a hope, that, as the intercourse of civilized Europe, with the countries of which the plague is now the scourge, becomes more regular and intimate, we may be enabled to extend to them our discoveries and improvements, and so direct them to the means of divesting the plague of its terrors, and reducing the mortality from it to the scale of that of fever and the small-pox in Europe?

Egypt has been called the cradle of the sciences. From this we acknowledge, that the arts were derived to Greece, and subsequently to every part of the world. It would surely be the noblest gratification, if in return, at this period, Europe, by extending her benefits and improvements to Egypt and to Greece, could free them from the most cruel scourge of countries, once

the most civilized and polished in the world. It would in some measure compensate and console them for the low state of degradation into which they have fallen.

All that I have to say of the plague will tend to diminish the dread which has hitherto been entertained of it.

A formidable disease undoubtedly it is; but, when we hear how much of the population of Persia, Arabia, Turkey, Syria, Egypt, and Barbary, is now and then swept off, all must not be laid to the account of the plague, as if its ravages admitted of no remedy. The experience of the French and English, in Egypt, will now convince Europe, that much of the vast mortality, in the above countries, is to be ascribed to the gross ignorance in which they are immersed.

Were typhus, our goal or hospital fever, to be imported into a town of Egypt, we can hardly conceive how it could ever be eradicated by the natives. Whenever the

small-pox does appear in that country, it proves a dreadfully - destructive disease. The structure of their houses and plans of their streets are calculated for the production of disease, and the preservation and concentration of contagion.

It is a matter of no little consolation to us, that we know the means, not only of excluding the plague from our own country, but that, when our armies are stationed in the countries where the disease is endemic, we can arrest the progress of the contagion, and with certainty eradicate it.

The plague made its first appearance, in the army from India, in the middle of September, 1801. From its early appearance the natives were very much alarmed, and prophesied a dreadful season of plague. They have observed, that, when it breaks out before December, they have always a generally-prevailing and a very destructive disease.

The number of cases which appeared in the Indian army, from the 15th of September, 1801, to the 15th of June, 1802, is seen in an accompanying table.

After the plague broke out, the disease was for a long time confined to Rosetta; it was otherwise in the former season.

Soon after the British army effected their landing at Aboukir, in March, 1801, they were attacked with the plague, though the season was then on the decline. In the beginning of the year, the disease had prevailed very generally over the whole country, and the loss arising from thence, to the French, was considerable. It continued to spread in the British army till May, during which month few cases appeared; but none I believe in June.

Though the contagion is seldom or never, I believe, out of the country, the natives of Egypt denominate the season of plague from November or December of one year, to June of the year following; they ob-

serve, that the disease constantly stops at the period of the summer solstice.

I have said, that, during the season ending in June, 1801, the disease prevailed very generally in Egypt; Rosetta, however, was an exception; if any case did occur there it was concealed.

At Cairo, Alexandria, and Damietta; at Suez, in the villages, and in Upper Egypt; it proved very fatal: at Siout, at Girgé, and in general throughout the towns and villages in Upper Egypt, we saw continued marks of its desolation, and heard many dismal accounts of its ravages.

The reason of the plague first appearing in, and afterwards being confined only to, Rosetta, in the last season, was, that it was the only open port to which vessels from Turkey and Greece resorted; and that from some of these, no doubt, the disease was imported.

In the pest-houses of the army, thirteen medical gentlemen did duty, who in the

Indian army might be said to have had the post of honour. They were, Mr Thomas, Mr Price, Mr Rice, Dr Whyte, Mr Grysdale, Mr Adrian, Mr O'Farrel, Mr Whyte, Mr Dyson, Mr Angle, Mr Moss, * Dr Buchan, and Dr Henderson. Besides these, Mr Cloran was in charge of the cases under observation, and Mr Bell of cases under quarantine. Mr Blackwell, surgeon on the staff of the English army, acted as inspecting surgeon to the Board of Health. He visited every case in the first instance, and, as he judged it necessary, sent them to the quarantine, to the observation-ground, or to the pest-house: to Mr Blackwell's unceasing attention and discriminating knowledge of the pestilential symptoms, we owed no small share of our safety in Alexandria.

Besides the above gentlemen, we had two Greeks, the barber-doctors usually em-

* Dr Buchan was on the staff of the British army, but twice nobly volunteered his services, and twice did duty in the lazaretto of Alexandria, at this period common both to the English and Indian armies.

ployed in Egypt, who visited the inhabitants, and before interment narrowly examined every body. These two made a daily report to the Board of Health of the number of deaths and of their inspection of the bodies; they likewise did other duties under Mr Blackwell.

In order to take from our medical gentlemen, in the pest-houses, some of the most dangerous part of the duty, it was my wish to procure some of the Greek doctors of the country to reside in the pest-houses, to feel the pulses there, draw blood, open and dress buboes, &c. The most diligent search was made for those people, and very high pay was promised to them, but we could tempt none of them to live in our pest-houses: a plain proof of the opinion which they entertain of the contagious nature of the disease.

The thirteen gentlemen first mentioned, were those only that were directly in the way of contagion, for, it became their duty to come into contact with the in-

fects, and seven of them caught the infection, and four died.

To the atmosphere of the disease all the medical gentlemen of the army were exposed, as they saw and examined the cases in the first instance; but, except from actual contact, there never appeared to be any danger.

The sketch which I mean to give of the plague, I draw principally from the reports made to me by the surgeons of the army, and from a pretty voluminous correspondence with the gentlemen whose names have been already mentioned. From my own experience I hardly can venture to speak: it was very limited. Though I saw a great many cases, in the first stage of the disease, the number of cases which I treated throughout was very small; they were the cases which first appeared in the army, and my success in them leaves me little to boast of.

The reports and statements of the different gentlemen I have compared together,

and endeavoured to reconcile them by what I myself saw of many of the cases.

I have generally given the names of the gentlemen by whom the different facts are related: I have always done this where the reports of two gentlemen disagreed.

From the sources of which I am possessed, I think I can bring forward some new facts regarding the disease, particularly in the treatment. It is much to be regretted, that no traveller, acquainted with the modern practice with mercury and the analogous remedies, ever resided in the countries where this disease is endemic.

In one circumstance, there is a very generally-prevailing opinion in regard to the plague, viz. that extremes of both heat and cold stop the progress of the contagion.

If this be true, in regard to heat, it did not appear to be so in the army in Egypt in regard to cold.

The period at which the plague raged the most was in the coldest months.

It would appear, that, in different countries and in different seasons in the same countries, the plague assumes very different appearances. The plague is seen as varied in its appearance as the different fevers described by Sydenham to prevail in different years, and under different constitutions of the air, in England.

Our knowledge of this fact enables us to reconcile the different or opposite accounts given of the disease, and of its treatment by different writers.

In the Indian army, when the disease first broke out, the cases sent from the crowded hospitals of the 61st and 88th regiments, were from the commencement attended with the typhoid or low symptoms.

The cases sent from the Bengal volunteer battalion, and from the other corps, when the army was encamped near the marshy

marshy ground at El Hammeh, were all of the intermittent or remittent type.

The cases which occurred, in the cold rainy months of December and January, had much of the inflammatory diathesis. Mr A. Whyte remarked, that every case admitted into the hospital, at Rahamania, had the symptoms of pneumonia.

In the end of the season, at Cairo, Ghiza, Boulac, and on crossing the isthmus of Suez, the disease wore the form of a mild continued fever.

The resemblance which some cases shewn and of others described to me bore to the West-Indian fever struck me very forcibly.

I know not that I can better describe the disease, than by a short statement of the cases of some of the medical gentlemen who had the disease; most of whom wrote me accurately every thing that they felt. Dr Whyte entered the pest-house at El Hammeh on the evening of the 2d of January, 1802. In a letter of that date

he writes to me, "I just now inoculated myself, by friction, with bubonic matter on the left thigh;" on the 3d, he says, "I have this morning inoculated myself by incision on the right fore-arm." Mr Rice, then doing duty in the pest-house at El Hammed, gives the whole of the case. In a letter on the 3d of January, he writes to me, "Dr Whyte came here last night; soon after he came in, he rubbed some matter from the bubo of a woman on the inside of his thighs. The next morning, he inoculated himself in the wrist with a lancet, with matter taken from the running bubo of a Sepoy; he appears now very well."

In subsequent letters, Mr Rice says, "that Dr Whyte continued in good health on the 5th, and all day on the 6th, till the evening, when he was attacked with rigors and other febrile symptoms. He said himself that it was the attack of an intermittent; and it bore a great resemblance to it. After sweating profusely, he was

better in the morning of the 7th, but in the afternoon the shivering returned; and, after it had continued 30 minutes, a severe hot stage came on, then a profuse sweating followed, but with it much affection of the head, tremor of the limbs, particularly of the upper extremities, tongue black and dry, skin hot, pulse full, hard, and irregular, thirst great, prostration of strength, and anxiety. The head was the only place that he complained of, and it seemed to be the principal seat of his disease; he still persisted that the disease was not the plague; he would not allow his groin or arm-pits to be examined, and he refused all medical assistance." He asked for a purgative, which Mr Rice gave him, and he requested to be bled, this Mr Rice thought the state of the symptoms would not justify him in doing. On the 8th, these symptoms continued, and there was some delirium; he begged to be removed from the pest-house at El Hammed, to the old pest-house at Rosetta,

under the charge of Arabs. He was removed on the morning of the 9th, and died in the afternoon of that day very delirious.

2d, Mr Price did duty in the pest-house at Rosetta and at El Hammed from the beginning of November, 1801, and had a tertian which he never could completely remove. In the pest-house at El Hammed, he was in the evening of the 1st of January attacked with rigors and slight febrile symptoms; but he himself thought this was only an attack of his intermittent, he soon however felt an affection of his head, and tremor of his limbs, and knew his disease. On the morning of the 2d, three buboes appeared, two femoral and one axillary; he then became delirious, and had no recollection of any thing for several days. On the 5th, there was a remission of the fever. He was able, on the 7th, to write me, "that he had no fever, that one bubo was coming on, and that he was

extremely debilitated." On the 13th Mr Rice opened his bubo; but it was two months after this before he recovered.

I am sorry I cannot find a letter where the treatment of Mr Price is detailed; but I am pretty clear that it was by mercury, as this was his own practice at the time.

3d, Mr O'Farrel entered the pest-house at Aboukir on the 8th of March. He continued well and did his duty there till the 3d of April; in the evening of that day, when he had rigors, which he himself attributed to cold, and says, "that sudorifics nearly cured him." He was obstinately costive, for which he took several drastic purgatives: the rigors successively returned in the evenings of the 5th and 6th, and he continued taking antimonial powder. On the night of the 6th, he was attacked with giddiness, irritability of stomach, and low fever. Mr Dyson wrote to me, that, on the morning of the 6th, he was delirious, that he had applied a blister to his head;

but that he could not get him to swallow any medicine: he expired on the morning of the 7th. No bubo appeared till the day before his death.

4th, Mr Dyson went to assist Mr O'Farrel, at Aboukir, on the 1st of April. On the evening of the 5th, he was attacked with lassitude, and, on feeling his groin, he writes to me, "I discovered some inflammation of the glands." After this the succession of symptoms in Mr Dyson was nearly what has been described in Dr Whyte's case. The fever continued for several days, and became intermittent, one bubo came to suppuration. He obstinately refused every medicine but calomel, which he took as a purgative, but it never salivated him. Constant nausea and vomiting were symptoms with him from the second day of his illness, and he was a long time before he recovered.

5th, Mr Thomas, after being three weeks in the pest-house at Rosetta, attending the first plague-cases which came from the

88th regiment, while walking in the garden of the establishment, laid his hand on his groin by accident, and was alarmed to find a large swelling on one side. He soon after felt some giddiness and fell down; as soon as he recovered, he rubbed in mercurial ointment in great quantity, and every hour took as much calomel with opium as his stomach could bear. His gums were very quickly affected, his bubo came to suppuration, and, in three weeks, he was quite well.

6th, Mr Angle, after being about a month in the lazaretto at Alexandria, was attacked with fever and bubo. The bubo never could be brought forward, and he died of the disease on the 14th day. I have no notes of the treatment of this case nor that of Mr Moss; who, after having been about the same time on duty at the lazaretto of Alexandria, caught the infection. He likewise lived several days, and his bubo could never be brought forward.

It is useless to detail more cases, though I am in possession of many accurately related by several gentlemen. Nor do I mean to offer any comment on the above.

As particularly prominent and remarkable, I cannot, however, without some notice, pass over three cases where mercury, early and liberally exhibited, had very remarkable effects.

I received several accounts of the good effects of mercury from the gentlemen in the pest-houses, but none so remarkable as the following:— In the beginning of the season, on the breaking out of the disease in the crowded hospital of the 88th regiment; every man in the hospital was examined at different periods of the day, and thus the disease was detected on its very first appearance. At this time, I gave to each of three of the men, placed in the observation-ward of the hospital, (of whom Littlejohn and Egan have already been mentioned,) two grains of ca-

lomel, and the sixth of a grain of opium every hour, and made them rub into the inside of the legs, thighs, arms, and neck, half an ounce of the strong mercurial ointment three times a day. I, at the same time, made them take each half an ounce of nitric acid diluted in their drink during the day, and put their feet and hands, three times during the day, into a strong nitric bath. In about twenty-four hours, their mouths became severely affected, a tenderness in their arm-pits and groins went off, and the severest febrile symptoms yielded. The men were, however, extremely debilitated, and remained a very long time convalescent. During their convalescence, I thought it prudent to keep them in quarantine, being fully convinced, that they had had an attack of the plague, the progress of which had been arrested, and the disease cut short by the above treatment.

Corporal Francis, as already mentioned, was suddenly attacked with giddiness after

coming off from duty as corporal of the guard in the pest-house. In the very commencement of the disease, on the first feeling of illness, he was brought to Mr Price, who instantly admitted him and immediately exhibited mercury, and as soon as the gums became affected, the febrile symptoms vanished. He remained some time in the hospital, on account of a bubo, which came to suppuration; but Francis suffered very little. He was never more than two days confined to bed, though the case occurred at a time when the disease was very violent.

The case of Peter the interpréter strongly evinces the success of the mercurial treatment. To this case, the mercurial pills and ointment were given; and he was, in every respect, treated as a case of syphilis and was speedily cured.

In the cases related, there appeared some facts as to the time the matter of the pestilential contagion takes before it comes into action. Other facts shew, that, in different

people, and under different circumstances, there is the greatest variety in this. The lazaretto at Alexandria was infected by the admission of an Italian merchant, and the guard there, consisting of 14 men, caught the disease, but were attacked on different days. The prevost's guard and his prisoners at Alexandria caught the infection from a deserter confined among them, and the disease among these people appeared at very different periods.

Mr Rice relates two cases on this part of the subject, which appears worthy of detail: he says, "we have had proofs, that the pestilential virus remains a considerable time in the habit, without exerting its influence or shewing its virulence. A striking case occurred lately: a Sepoy was sent to the pest-house from the hospital of the 7th regiment with plague; his wife could not be prevented from accompanying him, where she attended and nursed him. The Sepoy died, and the woman was ordered into quarantine; how-

ever, she escaped, and after some days search she was discovered near the regimental hospital of the 7th. As this woman had the greatest reluctance to going to quarantine, a centinel was put over her in the hut where she was, and all communication with her was stopped: she continued in good health till the tenth day after her escape from the pest-house; in the afternoon of this day, she was attacked with fever, in a few hours after, the inguinal glands became painful, and she was carried to the pest-house at El Hammed."

"Another case bore a great affinity to the above: a Sepoy came into the pest-house to attend his wife: the man was sent into quarantine, and he continued well there, till the seventeenth day, on which plague-symptoms appeared, and he was sent to the pest-house."

Of the symptoms of the plague, fever, though not always present, seemed the most constant.

At the end of the season, at Cairo, at Ghiza, and at Suez, cases appeared without any observable fever. When it did appear, as already noticed, the type at different seasons, and in different parts of Egypt, was very various. At the pest-house at Rosetta and El Hammeh, many of the cases, admitted from October to January, had the accompanying fever intermittent and of the quotidian type. This I believe to be a new fact in the history of the disease. For some time in January, February, and in some part of March, the fever had regular remissions. After this period, it generally appeared of the typhus form at Aboukir, except in the detachment of the 26th Light Dragoons, all of whom were young healthy men, and in them Mr O'Farrel observed, "that there was much re-action, and that the delirium was of the kind denominated phrenitis."

At the pest-house, at Rahaminia, Mr Whyte observed, that all his patients had pluritic complaints.

The second symptom in order was the tremor of the limbs. Mr Price says, "that bubo and pyrexia are not so essential parts of the diagnosis, as tremor of the upper extremities," and

3dly, The affection of the head, which was sometimes phrenitis, and sometimes typhomania. In a great majority of Mr Price's, Mr Rice's, and Mr Whyte's, cases there was much nervous affection; in one, the risus sardonicus. Mr Adrian says, the nervous affection, in many cases, was very remarkable; in several cases, it resembled the description, given by authors, of that nervous affection produced by the bites of mad or poisonous animals, an almost universal tremor.

4thly, The glandular affection was the next most generally attending symptom. Not above one-half of Mr Whyte's cases had buboes; and, in a great majority of Mr Rice's patients, this symptom did not appear. Dr Henderson says, "that, in every one of his cases, there was either inflam-

mation or swelling of the glands. The glands most commonly affected were the femoral, next the axillary, then the parotid, submaxillary, &c. In one case of Mr Adrian, an abscess, of the size of a pigeon's egg, formed on the inner canthus of the left eye. Mr Adrian opened it by incision, and the patient did well. Many were surprised at the rapidity with which the appearance of bubo followed the first complaint of illness: in a number of cases, within four hours. Mr Rice, on the 7th of January, admitted five cases, and in none of them were buboes later of appearing than six hours after the first feeling of illness. In a Sepoy of the 7th regiment, taken ill in December, the femoral axillary, parotid, submaxillary, and sublingual, glands were all affected. In another Sepoy of the same regiment, admitted by Mr Rice, a case of re-infection, so very much swelled were the glands about the neck, that the man died of suffocation the day on which he was admitted.

5thly. The next most generally-attending symptom was the affection of the abdomen. Mr Price says, the hepatic region was in every instance affected. Sometimes there was a swelling of the region of the liver, pain was experienced from pressure, sometimes in the epigastric, sometimes in the hypogastric, region; and almost always in the region of the liver, at which time, the pain has in some cases extended to the kidneys. Swelling of the belly was very frequent; in some cases the abdomen appeared a mass of knots. Uneasiness at the precordia, nausea, and vomiting, were frequent: the vomiting was always of bile, which was of different colours in different stages of the disease. Mr Price writes, "costiveness was a constant and obstinate symptom; and, when ten or twelve grains of calomel brought fœces down, they were always accompanied with bile; first brown, then yellow." The urine was in general yellow; the skin and adnata frequently of the same

colour. Mr O'Farrel says, "I lost one of the dragoons from the affection of his side; the fever went off some days before his death." Mr Adrian writes, "I do not find the constipation an universal symptom, although, in many cases, I have met with it very obstinate. I was once obliged to give eighteen grains of calomel and two scruples of cathartic extract before my patient was moved." In several cases, the disease commenced with diarrhœa or dysentery. Some of Mr Thomas's patients died of dysentery; and this might have been said to be the cause of their death, as they recovered from the bubo, fever, and other symptoms of plague.

6thly. In the first part of the season, petechiæ, viluces, maculæ, and carbuncles, were not seen: in the middle of the season they frequently appeared.

7thly. Some gentlemen could distinguish the disease by a particular look of horror and by a particular cast of the eye, which

was first watery, next blood-shot, and at last yellow.

8thly, According to the diversity of the season, the pulse varied. In general, it was small and frequent, and often when at the wrist it was not perceptible. It could be felt beating 130 or 140 at the carotids.

9thly, The tongue was universally white at the edges; and, when in March and April, some cases appeared with the fever of the typhoid form, it was black and furred in the centre.

10thly, Several of the cases, which came under Mr Grisdale's care in February and March, had cough and dyspnœa. Mr Adrian makes a similar report at the above period, and three of Mr Whyte's patients at Rahamania had cough and dyspnœa.

11thly, In a majority of Mr Price's cases, he remarked an unusual dryness of the skin, and that it was with the utmost difficulty that he could ever excite perspiration. Mr Whyte says, that, " At Rahamania the skin

was dry, and that he had never succeeded in exciting sweating."

These are the appearances the disease put on in the last season; and, on inquiry, I find that they were the appearances it assumed in the former season in the British army in Egypt.

My friend, Dr Short, who resided some time in Persia, and who has paid much attention to the history of the plague, informed me, that, in addition to the above, he found hemorrhage a frequent symptom in the plague, which raged at Bagdad in 1800 and 1801.

In one case he saw a copious hemorrhage from the eyes, which continued for nearly twelve hours. As soon as it stopped, an eruption appeared over the body very much resembling the measles. This patient, a boy of twelve years old, died on the 5th day of the disease.

The duration of the disease in different persons was very different. In several instances, the effect of the pestilential con-

tagion was the immediate extinction of life ; and we had several instances of the patient surviving but a few hours the first sensation of illness.

The muccadum of the dooley-bearers of the 88th regiment, about nine in the morning, exhibited the symptoms of fever. About twelve, a bubo appeared, and he died before four o'clock. In some instances, again, the patient lived till the thirteenth and seventeenth day of the disease ; however, these instances were rare.

Prognosis. We found that the greatest caution was requisite in giving an opinion as to the probable event of cases : in no disease was the practitioner oftener deceived. In several instances, patients who had recovered from the fever, whose buboes were doing well, and people who were convalescent, suddenly dropped down and expired. Whether this was from reinfection, or whether it was a feature of the disease, will be difficult to determine.

On the 24th of December, one of the Arab servants, convalescent from the disease, and who had been convalescent for eight days, taking bark, while smoking his pipe suddenly expired. In no disease do patients bear motion worse than in this. The least motion* induced syncope or death.

* This remark we found to be particularly applicable to the last stages of the disease. In the beginning of the season, one case occurred that gave rise to much conversation in the army. From having come into contact with a case of plague, a Lascar, in the department of the commissary of cattle, was sent into the observation-room of the pest-house of Rosetta; he was brought there much against his will, and contrived to make his escape from it, on the evening of the day on which he was admitted, though fired at by the dragoon-centries placed round the establishment. Ineffectual search was made for him every where in the neighbourhood of Rosetta, and we could hear nothing of him for about five weeks, when he was discovered at Boulac. On being brought down down to Rosetta, I examined him with Mr Guild, the surgeon of his corps. We found him then well; but certainly he had had the disease, for we saw an axillary bubo not quite healed. He told us, that he remained concealed for a great part of the time among the rushes by the side of

Sometimes, they who had for some time been convalescent, suddenly complained that they felt giddy, and expired. Sometimes they called for food, and expired with it in their mouths. In one of Mr Adrian's cases, where the fever had for some time been gone, and the patient was so far convalescent that he daily walked about a quarter of a mile, the man suddenly complained of giddiness, and expired in ten minutes.

Mr Thomas had two cases where, after affecting their gums, there was a complete apyrexia: but he lost his patient from an immense discharge from the glands and from a secondary fever. In general, it was found, that the patient recovered in proportion to the facility with which his gums and skin could be affected.

The *prognosis* likewise depended much on the degree of the affection of the sen-

the river. On mentioning this case to Dr Currie, of Liverpool, I think he said, he had heard of some similar cases.

sorium; when the patient was from the beginning comatose, the case terminated fatally. Several of the cases in the beginning of the season, particularly the natives of India, could never be roused. The typhomania was a more fatal delirium than the inflammatory species.

In the *treatment* of this disease, a variety of modes were put in practice; but so little success attended them, that some were inclined to despair of success from any. Though, with it, even many were lost, yet oxygenation and particularly the use of mercury had the most success.

Though every thing was done by General Baird that the situation and circumstances allowed, yet the gentlemen in the pest-houses laboured under so many disadvantages, that, for the most part, there was but little to be expected from any mode of treatment. In particular, not a little difficulty, as well as danger, was met with in affecting the gums. Safety required that the pest-houses should be at some distance;

perhaps, in general, the distance at which they were placed was too great. The patient suffered much by the conveyance, and frequently the treatment of the disease was entered on at too late a period to promise success. In December, January, February, and March, patients suffered so much from the extreme severity of the weather, that in some instances it was not easy to determine whether a patient died from cold or from the plague.

So much dejection prevailed among the natives of India, that, from the moment of the attack, they gave themselves up, and said they were sent to the pest-house to die. They never could be prevailed upon to swallow a morsel of food nor any medicine, and some actually starved themselves.

With establishments of a proper structure, and under proper regulations, we may safely venture to affirm, that our loss from the plague in Egypt would not have been half of what it was.

In the treatment of this disease, the first indication was, to clear the primæ viæ. Some gentlemen exhibited emetics; but in general there was no time for this. The general practice at last was, to begin by giving a purge of calomel, and the general remark was, that, if it operated briskly, the head was relieved and the skin became soft.

The second indication most generally agreed upon, was the inducing ptyalism and perspiration. As offering the fairest prospect of effecting both at once, Mr Price proposed using the warm nitric-acid bath, but unfortunately our stock of nitric-acid was insufficient to do this, otherwise than on a small scale. Mr Price got a little of the acid at El Hammeh; but, from circumstances there, he could not always have the warm bath; however, he writes, "On three of my patients, whose gums I could not readily affect with mercury, I determined to try the nitric-acid bath: it has shewn wonderful effects, ptyalism

has been produced in all the three; but the cold has regularly induced rigors and severe attacks of fever, and I shall loose my patients."

Nitric acid was given internally; and, where the patients would drink it, it shewed good effects. Mr O'Farrel, at Aboukir, succeeded in making three dragoons take it as much diluted as their common drink; and they did well all of them.

Mr Price thought well of citric acid. In some of the Arabs he effected cures by this, and by a bath of strong vinegar.

Both Mr Rice and Mr Price were in the habit of washing their patients with vinegar and spunging them with it, as strong as it could be procured, or with lime-juice. They dipped rags in the acids, and kept them constantly applied to the buboes. The head and stomach were relieved by wet cloths being kept to the scrotum.

The third indication was, to obviate the debility which appeared always to be very great. With this view, bark, wine, and

opium, were very largely given; and, at a certain stage, the cold bath.

At first, calomel was used only as a purgative, but, at last, the use of this remedy was carried farther. The reports were, "that, upon the mouth becoming sore, the skin became softer, the pulse more regular, the eye more clear, the tongue more moist, and that the thirst with the affection of the head and of the abdomen entirely disappeared. The evacuations too were copious, and approached more nearly to their natural colour."

Mr Price writes, "So much am I persuaded, that in the modes of oxygenation, I am in possession of an infallible remedy, that now I purposely expose myself."

Where he succeeded in affecting the gums, Mr Thomas lost none of his patients, and Mr Price in a late letter says, "Calomel affected the gums of all my patients who survived." It was a general remark, that the gums were remarkably obstinate and insensible to the effects of mercury in

this disease. Mr Grisdale writes, "in two of the cases, I for five days pushed calomel and mercurial ointment to a very great length, but never could succeed in affecting the gums." Both these patients, in a subsequent letter, he reports to have died. Here a particular fact deserves to be noticed: one of the medical gentlemen, who went on duty into the pest-house, and escaped the disease, on account of an old venereal complaint, used mercury and nitric acid very freely during the two months of his tour of duty, and he was one of the six who escaped the infection. On the whole, in mercury and the nitric acid, we appear to have excellent remedies for the plague: but they must be very early and very liberally exhibited. If the first stage is allowed to pass over before they are given, the season of doing it with advantage is in danger of being lost. When the stomach becomes irritable, I suspect that they never can be given with propriety. Perhaps, of all the cases

which occurred in the army, this treatment never got a fair chance of success, excepting in those which occurred on the first breaking out of the disease in the hospital of the 88th regiment, in Mr Thomas's case, and in that of Corporal Francis.

I regret, that, in this disease, we did not give a full and more fair trial to cold bathing. The extraordinary circumstance of the escape of the Lascar from the Rosetta pest-house, and the great benefit which I have seen from it in the yellow-fever, to which the plague bears no slight resemblance, would induce me to give it a full trial in plague.

I have, I believe, recounted the principal part of the treatment, and that which was most generally agreed upon. Other modes received a trial; but, from an experience of their inefficacy they were all deserted.

Dr Whyte used the lancet very freely, but every one of his patients died; Dr Buchan was in the habit occasionally of having

recourse to it; and, in the first season, he said, that he had met with several cases where bleeding was of the greatest service. In the beginning of the season, Mr Price bled one patient. The blood appeared very dark, and dissolved: this patient died, and Mr Price never repeated the operation on any other.

Some gentlemen, attached to the Brunonian system, put the stimulating plan to the test. By Messieurs Adrian and Whyte, patients were for some time kept under the influence of wine and opium; but, this practice was never successful and they deserted it. It was at length the practice of Mr Adrian to unite stimulants and mercurials.

Seldom before, I believe, have the bodies of those who died of this disease been dissected. The first was a Sepoy, by Mr Price alone; the second by Messieurs Price and Rice; and, in the last subject, viz. Signior Posetti, the Italian merchant, so severely affected were both of these

gentlemen, that it put a stop to this mode of investigation. The general appearances seen on the subjects, were, a perfectly-diseased state of the glandular system. In the liver, no matter was found; but, it was much enlarged and greatly diseased. Signior Posetti had only one bubo; the femoral gland was sixteen times the natural size and weight; and the blood, from the femoral artery, flowed black, pitchy, and dissolved in its texture. I come now to the last, and most pleasing part of the subject, the means of

The prevention. If, in the treatment of the disease, we were not successful, we assuredly were completely so in the prevention. At length, this became so generally known, that we no longer heard the distressing accounts of despondence and despair among the natives. They now no longer entertained such a dread of the pest-houses. We at length even found volunteers from the natives for duty in the pest-houses.

There was hardly a corps, or an hospital in the army, where, at one period or other, the disease did not make its appearance, but it was always in our power to arrest its progress. In well regulated corps, where a rigid discipline was enforced, and proper attention to the interior economy was paid, it rarely happened, indeed, that much difficulty was experienced in eradicating the contagion.

As our success in the prevention was so great, all that remains for me is to mention the substance of General Baird's order to the army on this subject.

1st, To every hospital, an observation-room, or in lieu of it a tent was attached, and to it, every case whatever with febrile symptoms was sent, as soon as discovered, and was there most strictly watched by the surgeon.

2dly, On any symptoms of the plague appearing, the case was instantly sent to the pest-house from the observation-room of the regimental hospital: the patient was

accompanied by the medical gentlemen of his corps who attended him, and who gave the medical gentlemen at the pest-house an account of the previous treatment of the case.

If any doubt remained, the patient in the first instance was placed in the observation-room of the pest-house; and, if the disease did not turn out to be plague, he was sent to the quarantine.

3dly, In every corps, and in every department, a minute inspection by the surgeon was made twice a week; and every person with the smallest appearance of ill-health was sent to the hospital.

4thly, Every corps or hospital, where a case of plague had appeared, was put into a state of quarantine; and, in such corps or hospital, an inspection by the surgeons was made at least two or three times a day; and every case with suspicious symptoms was ordered to the observation-room.

5thly, In suspected corps, it was ordered, that, under the inspection of a commissioned officer, every person should be bathed more frequently, and at stated periods; and, likewise, that all their clothing and bedding should be frequently washed and baked. To all the hospitals, ovens and smoking-rooms were attached.

6thly, Quarters of corps, hospitals, and ground of encampments, were frequently changed.

7thly, Much is to be attributed to the nitrous fumigation. In several instances it was attended with the best effects. The lamps, with this, were kept constantly burning in the observation-rooms, and in the rooms from which the cases of the plague had come. Vessels, with the materials for the fumigation, were likewise placed under the beds, and in the corners of the rooms. When our stock of nitrie was at length exhausted, we substituted marine salt for it; but this fumigation could not be kept up

in rooms where the patients were all confined to their beds.

OF THE OPHTHALMIA OF EGYPT.

The other endemic, and next to the plague in importance, is the ophthalmia of Egypt; which, though a less fatal, is a more distressing, malady.

In Egypt, at particular seasons, it is a most generally-prevailing disease. It is not confined to the human race; the animals of the country, particularly the dogs and camels, are subject to its attacks. Travellers (and, if I remember, Volney is one) describe the same disease as prevailing in Syria; and, I am informed, by my friend

Dr Short, that, in Persia, ophthalmia is a most frequent and severe disease.

In Egypt this disease proved most distressing and obstinate. The French, it was said, sent from Egypt to France 1000 blind men.

The number sent home from the English army was very considerable likewise. Of the Indian army, 50 were sent home invalids from blindness; most of whom were from the 10th and 88th regiments.

Ophthalmia prevailed most in the 61st regiment; after them, in the 86th regiment: while the 8th dragoons, the artillery, and the 80th regiment, had very little of the disease.

It was remarked, at all times, that the disease was seen much less frequently, and with less violence, in the native Indian, than in the European, corps. Of the former, the 1st Bombay regiment had much more ophthalmia than any other corps of natives. It was said, that, in the English army, the disease prevailed most in the

dragoon-regiments. The 26th dragoons was mentioned as a particular instance of this: that corps alone, I heard, sent home about 40 invalids from ophthalmia.

Several gentlemen thought that this disease, in Egypt, was contagious.* So singular an opinion I would hesitate to offer on slender grounds. However, the remarkable prevalence of the disease in particular regiments, and even in particular companies of regiments, while the same general causes prevailed every where, will not be easily accounted for, without admitting something of the kind. In some corps of the army from England, as well as that from India, this was observed. In the 54th regiment, my friend, Mr Ross, then the surgeon of it, informed me that the disease was for some time not only confined to particular companies, but to particular tents.

* Since my arrival in England I see that the contagious nature of the Egyptian ophthalmia has been noticed by two gentlemen of the English army, Mr Edmonstone and Mr Powers.

It deserves mention, too, that, till the arrival of the Indian army at Ghiza, ophthalmia did not appear in the army. We found at Ghiza the 89th regiment and an ophthalmia-hospital of the English army.

I believe that several diseases are contagious, which are not suspected to arise from such a cause: the theory of contagion is but very imperfectly understood.

It was said, that the sailors, on-board the fleet at Aboukir-bay, had the disease at the same time that it prevailed in the army on-shore. Several cases appeared among the troops after we sailed from Suez.

Ophthalmia prevailed most from May to December. At Kossier the disease was hardly seen, nor at Ghenné. It was not till the army was encamped at Rhoda, in August, that cases crowded in on us. In that, and the two following months, most of the cases made their appearance.

It will be seen, in part the first of these sketches, that, in the months of January,

February, March, and April, very few cases appear in the reports.

About the middle of May the disease began to appear in Alexandria.

Some of our medical gentlemen thought this disease very different from the ophthalmia which they had seen in Europe or in India. In several circumstances there certainly was a difference, and we were obliged to have recourse to a different mode of treatment, finding we did not succeed with that pursued in England or in India. The disease, I think, might generally be resolved into, 1st, either of Cullen's two species, the ophthalmia tarsi and the ophthalmia membranarum; 2ndly, to a combination of these two; or, 3dly, to a species of ophthalmia, frequent in India, symptomatic of disease in the biliary secretion.

The appearance which the disease put on, particularly the two first species of it, was nearly what we have seen in other parts of the world; except that the symptoms advanced with alarming rapidity to the highest

inflammatory stages. In most cases the attack was sudden, and very generally at night. Speedily, the patient complained of a burning heat of the eye-ball, or of a sensation of needles being passed through the eye. There was a considerable swelling of the ball of the eye, of the eye-lids, and sometimes of the neighbouring parts. Almost always, there was a copious flow of tears, which felt hot and scalding, and, as they flowed, excoriated the face down. Very frequently, there was a racking headache and general fever. Œdema of the eye-lids was frequently met with in the early stage of the disease, and inversion of the cilia in the last stages.

The disease very often continued two or three months: after it had continued some time, the general health became much impaired. It often terminated in diarrhœa or dysentery, and sometimes the patient became hectic.

In the third species of the disease, which I have mentioned, there was not so much active

inflammation as in the other two species; and it was generally known by a yellow tinge of the adnata, or by dyspeptic symptoms being present; though, sometimes, we have seen those appearances absent: and no topical application had any effect in removing the ophthalmia, till the gums were affected by calomel or some mercurial preparation.

In the two first species of the disease, the inflammation, in a great many instances, induced fever of many days duration, and the disease too frequently terminated in opacity of the cornea or in suppuration of the eye-ball.

In the treatment, it appears, from the reports, that different gentlemen followed very different modes. We said, in general, that the European practice did not succeed. Scarification and astringent collyria, in the first stage, gave intolerable pain, and generally aggravated the symptoms.

The practice of the natives, was, to apply, in the first stage, emollient decoctions of

their plants, and poultices of the kali. In the last stage, they rely much on the frequently bathing of the eye in the cold water of the Nile : they are likewise very fond of bleeding ; and I understood that sometimes they use the actual cautery, burning behind the ear where we usually apply blisters.

The practice, which appeared to be by far the most successful, was the following :

For the first twenty-four or thirty-six hours after admission, the eyes of every patient were carefully syringed with tepid water, which had been filtered carefully. The syringing was performed from three to six times in the day ; the light was carefully excluded, the patient kept cool, and every other part of the antiphlogistic regimen strictly enforced. After the above period, a weak solution of sugar of lead, or of camphir, or vitrolated zinc, was applied. Where the pain was much complained of, a solution of opium was added

to the collyrium; opium was applied in a cataplasm, or two or three drops of laudanum were let fall into the eye.

If there was much swelling, a saturnine poultice, or the coagulum alluminosum, was applied to the eyes. I observed, that blistering a large surface, and as near as possible to the seat of the pain, if kept discharging for some time, always afforded great relief.

To remove the fever and to alleviate the distressing pain, we often gave opium internally in a considerable quantity, and with great advantage.

Setons in the neck and the free use of bark appeared to be of the greatest service, when the disease was of long standing.

In opacity of the cornea, and when there were specks, several gentlemen thought highly of the aqua phagedænica of the old pharmacopeias, after having divided the vessels which went to the speck. It gave very pungent pain; but

I have seen great relief from it, and also from a solution of lunar caustic.

As a collyrium in Egypt, I often gave with considerable benefit what I found in the hands of the black doctors in India, viz. a tea spoonful of lime-juice to four table spoonfuls of water, or a tea spoonful of arrack to two table spoonfuls of water. In the first stage, I would have applied leeches, but never could procure them.

In Persia, Dr Short, informs me, that he was very successful in the general use of an ointment, composed of white vitriol, tuttey, and cinnabar, after the application of leeches and scarification.

From the days of Prosper Alpinus, the salts contained in the soil of Egypt have been supposed to be among the principal causes of the ophthalmia of the country. Though the various modifications of light and heat no doubt act as existing causes; yet to the particular soil of Egypt, and to the constitution of the air there, we

must look for the regular and the principal causes of this disease.

In Egypt several causes occurred, which in any country, separately applied, would be adequate to the production of violent ophthalmia. The dry, white, dazzling, soil, and the fine sand and dust constantly thrown about in whirlwinds and entering every crevice. If an ophthalmia is epidemical or is endemic in Egypt, the above causes will render it a very violent disease.

But I conceive, that, of themselves and alone, these circumstances do not produce the violent ophthalmia seen in Egypt. In no place did these circumstances exist in greater force than at Kossier, on the march across the Great Desert, and at Ghenné. Yet, till our arrival at Ghiza, the disease did not appear. These circumstances likewise exist in great force in most places of India, where the ophthalmia occasionally occurs from them, yet it is different from the two first species of the Egyptian ophthalmia.

For the production of the third species of this disease, the same causes will account, which produce dysentery, hepatitis, and other diseases of the liver. In Egypt, I remarked, that most of the cases of this species occurred at the time that dysentery prevailed the most.

It should be mentioned, that, in Egypt, the natives are universally impressed with the idea, that sleeping in the night-air brings on the disease.

In the ophthalmia of Egypt, as in the plague, it would appear, that very much may be done in the prevention.

It could not escape observation, how rarely officers were the subjects of this disease. In accounting for this, I lay most stress on the attention which officers pay to cleanliness. In the 88th regiment, where, I believe, forty men did not escape an attack, only two officers out of thirty had ophthalmia.

In the whole of the Indian army, only one officer lost an eye by it, and this

was Ensign Paton, of the 86th regiment.

The exemption of the officers from the ophthalmia gives more weight to the opinion, that in Egypt this disease is communicated by contagion.

Mr Paton, previously to embracing the military profession, had studied medicine; and, when medical assistance was much wanted, and a great many of his corps were laid up with the ophthalmia, he very humanely offered to attend them. When employed in this duty, he was himself attacked with the disease and suffered most severely by it for many months.

Mr Bellars, about this time, joined the 86th regiment at Ghiza; he took charge of the sick, and was attacked in the same manner as Mr Paton had been, and he likewise suffered most severely by it for several months.

Dr Whyte, who fell a martyr to his zeal in the investigation of the history of the plague, from a residence of some years

in the Levant and some time in Egypt, had good opportunities of being acquainted with the diseases of that country, informed me, that, by making those under his charge, frequently during the day, wash the eyes with cold water in the season of the ophthalmia, he never failed in preventing the disease. He instanced particularly the sailors of the transports, of about one thousand of whom he had the medical charge. The captains of the different transports carried Dr Whyte's preventive instructions into execution; and, though the disease raged both in the army and the navy, few of the sailors of the transports had it. By an attention to this mode of prevention, and in the season when the ophthalmia prevails most, making the soldiers wear something over the eyes, I think we should have the prospect of passing a second campaign, or season in Egypt, with less loss from ophthalmia.

I have dwelt a considerable time on the two endemics, the plague and ophthalmia, the only diseases which we found peculiar to Egypt; and there do not many more diseases remain to detain us.

We come next to a class including several diseases, and which are usually described separately: but, I am at a loss how to disunite them, as they occur all of them in India, and as they have for the most part appeared in the Indian army in Egypt. The diseases are fever, hepatitis, and dysentery; and, as I have for the most part seen them, there exists among them a most intimate and natural connection. For a long time, the same causes appeared indifferently to produce them: there was a frequent transmutation of these diseases one into another, and in the three diseases we succeeded by a similar treatment. In offering a few remarks, however, I will

preserve a distinction, and speak of these diseases separately. Before entering on them I may remark, that the effects of the solo-lunar influence, so remarkable in fever hepatitis and dysentery in India, were in Egypt likewise very observable. In the treatment of these diseases the practitioner found his account in attending to the periods of the moon; at the full and the change, paroxysms would frequently supervene, if not anticipated; and, at these periods, convalecents would frequently suffer a relapse.

OF FEVER.

THE fever which we had in Egypt, at different stations and in different seasons of the year, assumed various types. That which, on the outset, prevailed among the Bombay Sepoys, was remittent. At Ghenné, the fever in the 10th regiment was continued; but it very often terminated in hepatitis. At Ghiza, we have said that we suspected contagion as the cause, at first; but, in the end, the disease was clearly kept up by marshy effluvia on Rhoda Island. It assumed a remittent, and sometimes an intermittent, form, when brought down to Rosetta; and many of the cases terminated in dysentery. At El Hammed, a majority of the fevers which occurred were intermittents; but several remittents occurred, and a few cases which had some resemblance to typhus. After October, fever

was a disease of rare occurrence. In the last general return for November, fifty cases appear, of which thirty-four were natives of India. The last return in December is much the same, the native corps having a majority of the cases.

In the last return of January there appear, of continued fever, twenty-two cases; twelve of whom were Europeans. Of intermittents there were thirty-two cases, and sixteen of them were Europeans. In the general report of the 26th of February the total of fever in the army is only twenty-three, and of them, only six are natives. On the 26th of April, we had only fourteen cases, of which three were natives. In May, fever did not appear in the reports.

Though fever, as it appeared in the Indian army in Egypt, at different periods, occurred with some variation; and though particular symptoms called for occasional variation in the treatment; yet, in its general character, the disease

was the same, the proximate cause appeared to be the same, and the same general indication was required to be kept in view in the cure. I am inclined to believe, that, under different names, the same fever prevails over the peninsula of India, and over the eastern islands ; and, perhaps, I might venture to extend the remark to the countries between the tropics. This fever has been often well described, under the name of the remittent fever of Bengal. Dr Lind, of Windsor, several years ago, gave an excellent and concise account of it in his Thesis. In Bengal, it is known under the name of the pucca fever. In Madras and on the Coromandel coast, it is the jungle fever. At Bombay and on the Malabar coast, it is known under the same name. In the army in the Guzzerat country, to the northward of Bombay, it is this fever which has proved so destructive of late to our army in the field there, opposed to the Mahrattas. In the island of Salsette, near Bombay,

it pays an annual visit, on the ceasing of the monsoon, and proves very destructive. In 1801, on one estate, in Salsette, upwards of forty people were attacked with this fever in one night. I have learned from my ingenious friend Mr Christie, surgeon-general of Ceylon, that it was from the same fever, that the 19th, 51st, and 80th regiments, have been so very much reduced; and that it was this fever which proved so destructive in the late war with the king of Candy. Mr. Christie writes me, that in its destructive malignancy and ravages, particularly on the Europeans in Ceylon, it has equalled the yellow fever of the West Indies.

From many accounts of it, which I received while in India, I am convinced, that the dreadful fever which prevails in Batavia is the same disease. In Batavia, the mortality from this fever is prodigious; it is not exceeded by that from the plague in Egypt, or from the yellow fever in America. Different circumstances, it

would appear, concur to the production of the disease, in a very aggravated form, in the Dutch settlement of Batavia; of which, we may mention the extreme ^{un}healthiness of the situation, and the bad practice of the Dutch surgeons.

Dr Griffith, surgeon to the naval hospitals in India, informed me, that, when our fleet lay off Batavia, in 1801, it prevailed very much; but that, when they got the management of patients early, they were generally successful in the treatment of the disease. Bencoolen is one of the most unhealthy of our eastern settlements, solely from the prevalence of this fever. In China, it appears likewise to be a frequent and fatal disease.

Having said thus much on the identity of the fever which appeared in Egypt, with that which is seen in India, and in the eastern islands, I shall proceed to the treatment. The first step was to cleanse the primæ viæ, and some gave emetics:

this, however, was not always necessary ; and purging with calomel, and the neutral salts, appeared in most cases to answer the same intention. In the first stage, likewise, as particular symptoms called for them, venæsection was performed, blisters were applied, we determined to the skin, or gave opiates. However, if the fever was of any duration, the practice always was, to endeavour to affect the mouth as speedily as possible with mercury. This was the practice in continued fever, and in Egypt, as in India, we were very generally successful, if application was early made. In the destructive fever of Ceylon, Mr Christie says, that he has practised but with a moderate share of success : but that the affecting the system by mercury is by far the most successful of different modes of treatment which he had tried. He gave nitric-acid, but in a very small quantity. In the fleet, when stationed near Batavia, Dr

Griffiths gave mercury more liberally than any practitioner I know. He likewise used the nitric-acid very freely, both externally and internally, and relied much on its combined use with mercury. By two very able practitioners, Dr Keir and Mr Stewart, the Salsette fever has been successfully treated by nitric-acid alone; purgatives having been previously exhibited. Some practitioners treated intermittents by bark, some by opium, or by giving this and the volatile alkali. It has sometimes occurred to myself, and I have frequently had reports from our surgeons, that agues continued obstinate till the gums could be affected by mercury.

From a very intelligent officer I had a detail, regarding the Batavia fever, so remarkable, that I shall here insert it. This gentleman is the captain of a ship in India, who, in different voyages which he had made to Batavia, had constantly lost great numbers of his ship's crews.

In his last voyage, when in a certain latitude, and as he approached Batavia, he gave daily to each of his men a few grains of the mass of the blue pill. By the time of his arrival at Batavia, he had thus very gently affected every one of their mouths; and, in that voyage, he lost not a man. Would mercury thus exhibited, as a preventive, be useful in the plague, or in the yellow fever?

Before dismissing the subject of fever I may observe that no well-marked case of typhus occurred to us in Egypt. In India we never saw a case of this species of fever. To the existence of this fever, which in Europe has committed such havoc in our fleets and armies, the climate of India is inimical. We know instances where, in transports, typhus had broke out, and, on the passage to the Cape of Good Hope or India, had proved little less destructive than the plague could have done; but the disease never reached

India. If a case was landed there, it never propagated the contagion: a second case never appeared on shore. On inquiry, I found that no case had ever been known on the western side of the peninsula, nor have I ever heard of its existence in the eastern.

HEPATITIS,

OR THE LIVER COMPLAINT.

IN India I have often had occasion to remark, that the acute hepatitis, of Cullen, was a disease of rare occurrence. The disease which comes before us most frequently, in India, is his chronic species; and in that, most frequently, there is neither pyrexia nor the “decubities in latus sinistrum difficilis,” which, from having included in the definition of both of his species, I suppose the illustrious and accurate professor was induced to believe was a constant symptom in this disease. In very few of his definitions is there room for alteration; and I hope, for venturing here to suggest one, that I shall not incur the charge of presumption. But hepatitis was a disease, for accounts of which the accurate nosologist must have trusted to other sources than

his own observation. It should be known, that very often we meet with this disease, when few of the symptoms of his definition are found. In India I have learned from some of the oldest practitioners, and from some gentlemen of abilities, the most respectable in the profession, that very commonly hepatitis is met with when all the symptoms of Cullen's definition are wanting. In that country, when any of the abdominal viscera are complained of, we may in general suspect some error in the hepatic system.

In India, the liver seems to be the seat of disease in nearly the same proportion that the lungs are in England.

In Upper Egypt, and at Ghiza, we had many cases of hepatitis: it was the same disease that we had seen in India. At Rosetta and Alexandria a few cases did occur, accurately answering to Cullen's definition of the acute species. Sergeant Levi, of the 88th regiment, was one instance. On the 13th of October, he

was admitted into the hospital with this disease in a most violent degree. He had been ill only twenty-four hours: he had high inflammatory fever; his side was extremely tender to the touch; he had great irritability of stomach, and pain over the belly. He was twice bled: the antiphlogistic regimen was for thirty-six hours applied in its utmost rigour: thereafter mercury was liberally thrown in, and he recovered. We remarked that many, who, in India, were the frequent subjects of repeated attacks of hepatitis, at length never complained, or they had the disease in the mildest shape, in Egypt. After the month of October, hepatitis was a disease of still more rare occurrence. In no corps did the number of cases bear any proportion to what they were wont to be in India.

During October a considerable number of cases occurred, but almost all of them were Europeans: the proportion of the

natives who had this disease was always very small.

About the beginning of November several fresh cases occurred, and all of them were acute.

By the end of December this disease was fast disappearing in the army. In the last return of the month there were only twenty-one cases, and twenty of them were Europeans.

In January it still continued to decline. In the return of the 31st of this month there appear only nine cases, and all of them are Europeans.

In the first return of February there are only five cases, and all of them are Europeans.

There was an increase in March. In the first return of the month there were twelve cases, and all were Europeans.

In the last return of April the total number was so low as six, of which number four were Europeans.

At the time of embarkation, at Suez, there was not one case reported in the army.

Hepatitis appeared more in the Company's artillery, and in the 10th regiment, than in any other corps of the army. For its predominance in the latter corps, one reason has been assigned, and which to me appears to have had the most powerful influence.

But, on the whole, this disease, once so formidable to us in India, gradually ceased to appear in the returns of the sick.

The treatment of hepatitis it is unnecessary to dwell on: for no disease are we provided with a more effectual or sure remedy. If the season for applying the remedy be not lost, we are nearly, I think, as confident of a cure by mercury, and the analogous remedies, as we are in a case of syphilis by the same remedies.

To whom the world is indebted for the successful treatment of hepatitis by mer-

cury, I cannot correctly say. The oldest written account of this practice, that I have seen, is in a very sensible pamphlet by Dr Paisley, formerly of Madras. There is another very distinct account of it in a pamphlet by Dr Girdlestone, of Yarmouth, formerly surgeon of a regiment in India.

For the general introduction of mercury, through the western side of the peninsula of India during the last twenty years, for the application of nitric acid to the same purpose, and for the discovery of some other preparations analogous to these, we are indebted chiefly to the ingenious Mr Scott, of Bombay. About ten years ago, from some experiments which he made on the calces of mercury, he discovered the analogy between them and nitric acid, and he was the first to apply this acid to the cure of hepatitis. Subsequently, he was led to the use of nitric acid and other analogous remedies in hepatitis and other

diseases, which are curable only by mercury, a practice, of which, on a large scale for the last six years, I have observed the best effects, and which is now likely to get into general use in India.

I have said, that the species of hepatitis which we met with, at last, in Egypt, was not that usually seen in India, and a corresponding change was required in the treatment. Previously to giving mercury it was found necessary to premise the anti-phlogistic regimen.

In the use of mercury great address is often required; and, in substituting nitric acid and the analogous remedies, I am convinced, that much advantage may often be gained. Sometimes one of these remedies will succeed when the other has failed; and not unfrequently have I seen their combined use succeed where separately given they had failed. In obtaining a new agent we have acquired a great deal more power in the management of a disease, the most for-

midable to Europeans in the eastern world.

Sometimes in Egypt, and in many instances in India, I have observed, that I could not affect the gums with mercury, or with acid, till venæsection was performed. After this operation, I have often succeeded, and induced a flow of saliva, in cases which had long resisted a liberal use of mercury and nitric acid.

If the modern practice of giving but little mercury, and to make it only touch the gums, as it is called, without exciting a flow of saliva, be proper in the venereal disease, undoubtedly it is not in hepatitis. This disease never yields till the saliva flows freely---the explanation of this I do not attempt; but the fact is as I state it, and it is well known to every man who has practised extensively in India. Whenever the gums are hard, and insensible to the effects of mercury; when, instead of a salivation, they are red, painful, spongy, or blue, the prog-

nosis is very unfavourable : in ninety of such cases out of the hundred we lose our patients.

In the first stage of this disease, I have derived benefit from cupping and blistering the side ; but I never allow these remedies to interfere, or to delay the principal indications---the affecting the gums.

Dissection shews us the liver, of appearances considerably varied when this disease has existed some time. I have preserved notes of my dissections ; they are not few. I made a rule of inspecting the body of every one that died under my care for several years past. At present, I shall only mention, in general, that sometimes the liver was of the natural consistence ; sometimes harder, and that it was much varied in colour ; but, generally, it was considerably increased in size. After the disease had lasted long, it was sometimes much wasted, and, in a few instances, of a very small size. In a majority of the fatal terminations,

there were found vomicae, or abscesses. When matter is formed, it is well known, that it makes its escape in various ways: here surgical aid may sometimes be of use.

DYSENTERY.

THIS was by far the most-generally prevailing, as well as the most fatal disease in the army.

After mature deliberation, and the most satisfactory proofs, proofs nearly amounting to demonstration, I convinced myself, in India, that the dysentery of that country is a disease whose first causes lie in the biliary system. On reflection, and after looking over the accounts of my practice in the West Indies, I have little doubt but that the dysentery of that country proceeds from the same cause. In the end, I was led to think that dysentery, as it occurs in Europe, was the same disease: however, the opportunities of observation, which I had in Egypt, convinced me that I was wrong.

The dysentery which occurred in the army till we came to the shores of the

Mediterranean, and for some time after, was clearly the dysentery of India; but, afterwards, we witnessed a different disease. I must confess, that, having come to so certain a conclusion, I was not ready to give up an opinion which appeared to me to rest on very sure grounds; and it was not till after much doubt, hesitation, and careful observation, that I became convinced, in Alexandria, that, with the change of country and climate, we had a different disease. This is one proof how improper, and how unsafe, it is for the practitioner of one climate to sit down and describe the diseases of another. They only who have studied the same diseases, in various and opposite climates, can fully comprehend the extreme absurdity as well as fallacy of this. From reasoning of any kind, we are incompetent to decide on the identity of disease. Reasoning from analogy here always deceives. In many of the symptoms diseases may agree; but, from

thence to infer their identity is taking a very narrow view. The comparison will be found to hold good only in some points, and that we have satisfied ourselves with an imperfect outline. Between diseases, as they occur in Europe and in Asia, there are just as many shades of difference as between the plants of those opposite regions, or in the colour of the inhabitants.

The dysentery of India, or what I shall term the tropical dysentery, is not the disease which is described by Cullen under that name. The dysentery of Cullen, as it is faithfully described by Sydenham, Pringle, Monro, and Sir George Baker, is a frequent disease on the continent of Europe; and it has ever been a most destructive disease in our armies there. The dysentery of Europe I believe to be generally a disease of the intestinal canal. I have already said that the tropical dysentery proceeds from a different cause; but the diseases likewise

differ much in their symptoms. The “*pyrexia contagiosa*” certainly forms no part of the tropical dysentery; and the torminia and tenesmus occur so rarely, that, in a definition of this disease, I presume they cannot be admitted. Spasmodic affection of the intestinal canal, I believe, rarely occurs in the tropical dysentery.

I have ever experienced difficulty in distinguishing dysentery from diarrhæa, and am inclined to think, that, in Cullen’s definition of diarrhæa, is described tropical dysentery. The diarrhæa biliosa, as well as his seventh species, the diarrhæa hepatirrhæa, perhaps, ought to be included in a definition of tropical dysentery.

It has been already mentioned, that it was the tropical dysentery which principally prevailed in the army. Though I was not convinced that we had a different disease, till after we came to Alexandria, yet I am inclined to think that it

was the European disease which chiefly prevailed in the army for some time before ; and, if we draw the line from November, we shall not be far removed from the truth.

It will not be necessary to say much in the treatment of tropical dysentery. Mercury is now the remedy relied on every where. In Egypt, we felt the want of nitric acid in hepatitis ; and we equally felt the want of this powerful remedy in dysentery. The instances which have occurred to me, during the last five years, are extremely numerous, where, after our failure with mercury, exhibited in all the variety of its preparations, we succeeded with this remedy sometimes as a substitute, and sometimes as an auxiliary.*

* Though this practice is now followed by many gentlemen in India, yet I believe that it has been carried to a greater extent by Messrs Dean and Bellars, of the 86th regiment, than by any other practitioners. These gentlemen have recorded several hundreds of cases of dysentery treated solely by nitric mixture and bath.

It was in the 61st regiment that cases of the dysentery of Europe were first observed. Perhaps it more readily appeared in this corps, because the greatest part of the men had not yet got rid of the European habit, and were as yet unassimilated to a warm climate. After repeated failures, and losing some men, Mr Ruxton saw the necessity of giving trial to other remedies than mercury.

The disease generally set in with a smart fever, and, unless the calomel exhibited went through the bowels, the patient felt no relief: and Mr Ruxton remarked, that the neutral salts gave this relief much more perfectly than calomel. The treatment which Mr Ruxton rested on, and with which he was at length successful, was, in most cases, putting the patient on the anti-phlogistic regimen; frequently giving laxatives; and keeping up a determination to the skin. The same practice was followed in the few fresh cases which occurred in the 88th

regiment at Alexandria, and in a considerable number of cases in the hospital of the 10th regiment, and some other corps. However, it must be mentioned, that to the last period some cases did occur, in all these corps, where calomel was found necessary. When the disease was of some weeks standing, and where a chronic disease occurred, calomel given in small doses proved the best and indeed only useful remedy.

For a long time, we saw but little dysentery in the army. The number of cases which occurred, before we arrived in Lower Egypt, was inconsiderable.

In September, a great many cases occurred in the neighbourhood of Rosetta, and in the camp at El Hammel; but many of these were the sequelæ of the fever contracted at Rhoda. In October, the number of cases was greatly on the increase. The rainy weather with which the month of November began, and which continued during the follow-

ing months, brought a prodigious increase of dysenteric cases. In the general return of the first week in November, there appear one hundred and sixty cases, and one hundred and twenty-three of these are Europeans. Most of the natives were from the Bengal volunteer battalion.

In the first general return in December appear two hundred and nineteen; of which one hundred and forty are Europeans.

After leaving the encampment at El Hammed, and getting into dry, comfortable barracks, at Alexandria, the disease occurred more rarely in the army.

In the last return of January, only one hundred and sixty cases are seen.

In the last return of February, the total number of dysenteric cases in the army was fifty-four, and only twenty-two of these were natives of India.

In the last return of March, there ap-

pear nineteen cases, fifteen of which were Europeans.

There are only twenty cases in the last return of April, and these cases are equally divided between the Europeans and Indians.

At the time of embarkation the number was even less than the above.

The disease was more frequently met with among the European artillery, and in the 61st regiment, than in any other corps. Among the native corps, the Bengal battalion had more of the disease than any other. I made inquiry, but could find no reason that could with probability account for this.*

* In Egypt we gave trial to a mode of treatment which was strongly recommended to me by Dr Whyte. It was the application of flannel bandages over the whole abdomen. In chronic cases, and in convalescents, it appeared to be of the greatest service; and, in recent cases, when the appropriate remedies were used at the same time, it appeared to shorten the cure. I have seen it tried alone but in a few cases of this disease. From the result of these, however, in cases of either

I have continued longer on the subject of dysentery than was at first my intention.

the European or tropical dysentery, I would not venture to rely on it alone for a cure.

Before leaving the subject of dysentery I may mention, that, in India, I have met with some cases of a very violent dysentery which ran its course in three, four, or five days. In this disease the usual practice did not succeed. The best treatment appeared to be, after a dose of castor oil, to give opium liberally by the mouth, and by clyster; and to make the patient drink very freely of gum arabic at the same time. In some of these cases I have likewise given diluted nitric-acid. A constriction of the vessels discharging mucus was in this way effected; the incessant discharge was stopped, and time given for a secretion of mucus to cover the abraded gut. I have thus sometimes succeeded in checking a most violent disease. Thereafter, the mouth could be gradually and gently affected by mercury, or by nitric-acid.

On opening the bodies of those who died of the tropical dysentery, in Egypt as in India, we almost instantly found the liver diseased. In old cases, we likewise most commonly found ulceration of the great intestines, and very frequently within the reach of enemata. In the composition of these, a variety of articles were used: most frequently, I think, solutions of sugar of lead, or vitriolated zinc, gave greatest relief; and we sometimes found that gum arabic, milk, and broths, gave relief, when many other things had failed.

I will confess, that I think it is a subject on which I could with more propriety speak than on any other. My opportunities of seeing the disease have been no common ones. Rarely, I believe, has it fallen to the lot of an individual to see so very many cases of one disease in such a diversity of climate and situation. In the 88th regiment, during the course of upwards of ten years, I saw the same man the subject of this disease on the continent of Europe, in America, in both extremities of Africa, and in India. Of late, it has afforded me not a little amusement to review my notes as well as my journals of practice in this disease, in all these quarters.

I have now both given some account of the endemic diseases which we met with in Egypt, and offered a few remarks on those diseases which were most prevalent in the army. They are the diseases which constantly prove the most fatal to

an army in India. The few which now remain, or (if I may be allowed the expression) the minor diseases, will not long detain us.

PNEUMONIA AND RHEUMATISM

I shall speak of conjointly. In the symptoms or treatment we could not observe any difference from the same diseases as they occur in Europe. If these diseases were less violent than we have seen them in Europe, they had more of the inflammatory diathesis than in India.

It was not till after the army had been sometime in Lower Egypt, that either of these diseases appeared.

In the first general weekly return in November, there appear a total of six cases of pneumonia, and nine of rheumatism.

In the first week of December, there were twelve cases of pneumonia, and seven of rheumatism.

In the first weekly return of January, both diseases appear to have increased; there were twenty-four cases of pneumonia, and twenty of rheumatism.

In the first return of February, there are thirty-four cases of pneumonia, of which number, twenty were Europeans. Of rheumatism, there were fifteen, and only eight of them were Europeans.

In March, the first return presents only five cases of pneumonia: of these, three were Europeans; but, of rheumatism, there were twenty-seven cases, and nineteen of them were natives of India.

In April, there were sixteen cases of pneumonia, and only five were Europeans. Of twenty-five cases of rheumatism, eleven are Europeans.

The warm clothing and bedding provided by the General for the natives of India, in the cold months, no doubt protected them from the attacks of pneumonia and rheumatism. The latter disease was found to be more prevalent in the Bengal battalion of Sepoys than in any other corps

SMALL-POX.

THE cases of this disease that occurred were very few. I have said that the small-pox broke out at sea, in the division of the army commanded by colonel Murray. Mr Philips told me, that it was very fatal to the natives : he sent every case as soon as discovered into the Julia hospital ship, which was unfortunately lost, in the Red Sea, with all on board

The Europeans, who were attacked in Egypt with this disease, all did well ; but it proved a very fatal disease to the few Indians whom it attacked.

As in India, we remarked, that in Egypt the contagion did not spread so widely as in Europe. Though, at different periods, it broke out in the hospital of the 10th regiment, at Rosetta, in the department of the commissary of cattle, when

encamped near the lake Mareotis, and in the garrison of Ghiza, yet in none of these instances did the disease spread. The cases that did occur were all of them very confluent. When, on the eve of our march to Suez, I received vaccine matter, sent from Constantinople by order of Lord Elgin : it arrived too late, however, for us to introduce the new inoculation either in the army, or the country ; it was likewise too old and unfit to be carried into India, as we intended.* At one time I expected to see a curious question in physiology resolved, by observing the united agency of the variolous, and pestilential contagions. In one instance, these two poisons were in action in one corps, and at one time. A case of the

* It was soon afterwards introduced to India, by the exertions of the Medical Board at Bombay ; and the world has had a full account of its introduction and success from my friend Dr Keir, who had the charge of the institution for disseminating the vaccine disease, from Bombay through India.

small-pox, and another of the plague, broke out, in the camp of the commissary of cattle, at the same time. By the active vigilance, and the system established there, the progress of both contagions was soon stopped, and a second case of either disease did not afterwards occur.

DIARRHÆA.

I HAVE said, that, from the quality of the water, this was a prevailing disease in crossing the desert of Thebes. It occasionally appeared, at other times, in some corps, particularly after a change of provisions, or after changing quarters, as from El Hammed to Alexandria.

SCURVY.

THIS disease was but little seen in the army. About twenty cases occurred in the 61st regiment while quartered in the Pharos, and one case occurred in the 80th regiment at Alexandria. At the time the disease occurred, the army was regularly supplied with fresh vegetables, and there was no scarcity of provisions in the market.

SYPHILIS.

THIS disease prevailed much in the garrison of Ghiza, and in the 86th regiment. At the time of embarkation there were many obstinate cases. With the small stock of nitric acid which we had, we had as strong proofs of its efficacy as in India. In the instances of some officers who were successfully treated with it, we found that the stomach seldom bore more than half the quantity which, in Bombay, we had usually exhibited in the hospital of the 88th regiment; but the acid given to these cases differed much from the acid used in India: the latter was a much pleasanter remedy.

To a few cases we successfully gave the oxymuriate of potash, and to several cases the oxymuriate of soda.

We found that syphilis was a frequent

disease in every part of Egypt that we had seen, both among the Bedouins and the Fellahs; and we have seen in Upper Egypt many objects terribly mutilated from this disease. Crude mercury I have often seen in their bazars, or markets, and they appeared to be acquainted with the use of it.

THE GUINEA-WORM.

THIS did not frequently appear in the Indian army while they were in Egypt: on the voyage thither, however, it prevailed very much, and a great deal of it came under my own particular notice. On my return to India I found, that, in the manner of its first appearance, as well as in its progress afterwards, much of what I had observed was considered, by medical men, as new and remarkable. I shall, therefore, give some detail of it here: though this may be going a little out of my way, it may be useful. When cases of this disease crowded on me, and with the very severe symptoms with which they appeared, I was both perplexed and embarrassed; and I regretted much the not having had a previous knowledge of the disease.

This disease, as will be shewn by the table, was but little seen in Egypt. It appeared only in two European corps, the 86th and 88th regiments; and in two native Indian corps, the 1st and 7th Bombay regiments. It is a disease, of which I believe that we know but little. Industry and attention might be usefully employed in the investigation of the natural history of the *dracunculus*.

In September, 1799, the 86th regiment relieved the 84th in the fort of Bombay. The 86th remained in the king's barracks there until October, 1800, at which time they were relieved by the 88th regiment from the island of Coulabah.

The 86th, on coming into the fort of Bombay, had never had a case of the Guinea-worm; and they continued free from it till the setting in of the monsoon of 1800. The king's barracks in the fort are close to the bazar in Bombay. Here Mr Dean, the surgeon of the 86th regiment,

remarked, that the Guinea-worm prevailed very much among the natives. In the course of the monsoon, nearly three hundred cases of this disease appeared in the 86th regiment. I saw, at one time, one hundred cases of it in Mr Dean's hospital.

The 88th regiment, from the time of their arrival in India, in June, 1799, till October, 1800, was quartered in the island of Coulabah, distant one mile from Bombay. During the fifteen months of their stay at Coulabah, only one case of Guinea-worm appeared in the regiment; and this happened, as they were about exchanging quarters with the 86th regiment, in an old man, debilitated with repeated attacks of hepatitis and dysentery. No case appeared in the 88th regiment in October, nor for nearly a month after their coming into the king's barracks in Bombay; but, in that part of November which immediately preceded

their embarkation for service, three cases occurred.

The artillery, 86th and 88th regiments, as already mentioned, were embarked, at Bombay, for the Egyptian expedition. In the course of the voyage to Ceylon, a case of Guinea-worm first appeared in the detachment of the 86th regiment, on board the *Minerva*; and, thereafter, six cases in the 88th regiment, on board the same ship.

On our arrival at Point de Galle, in Ceylon, we found that the disease was unknown in his Majesty's 19th foot, among the Sepoys who came from Bengal or Madras; in the Malay corps; and, as far as I could learn, among the inhabitants. During our stay in Ceylon, a few cases made their appearance in the 86th and 88th regiments on shore. On sailing from this island for the Red Sea, only three hundred and sixty men, of the 88th regiment, with the artillery, were embark-

ed in the *Minerva*. Two companies of the 88th were embarked in a small vessel, the *Fancy*. Another vessel, the *Hope*, was provided for the detachment of the 86th regiment, and two officers of the 88th were embarked with them.

Soon after sailing from Ceylon, the Guinea-worm made its appearance among the 88th, both in the *Minerva* and *Fancy*: in the *Minerva*, particularly, it increased with alarming rapidity. By the time we reached the Straits of Babelmandel, we were in a most alarming state. Of three hundred and sixty men, whose services we had reason to expect daily might be required, one hundred and sixty-one were at this time crippled and laid up with this loathsome disease. Though contrary to every account which I had had of the disease, many circumstances at this time led me to suspect that it was infectious, and I, at length, thought it prudent to treat it as such.

The officers remarked, that it prevailed most in particular parts of the ship, and much more in some companies than in others. This, at length, so much struck the commanding officer, that the sick were separated from the sound: the men with the Guinea-worm were all placed on the orlop-deck, and the rest of the men occupied the gun-deck. At this time, too, extraordinary precautions, regarding cleanliness and ventilation, were adopted. Much lumber and luggage were stowed away, and the space between decks, which hitherto had been lumbered with it, was made open and clear, fore and aft. The decks were daily well washed with boiling water, and the nitrous fumigation was kept constantly going on throughout the ship. Besides the usual bathing three times a week, of all on board, the soldiers were made to wash their hands and feet regularly twice every day at the ship's head.

In a little time after adopting these measures, we could perceive the disease to diminish. The number of fresh cases reported, decreased daily ; and at the time of our casting anchor in Kossier Roads, though there were on the sick list many bad ulcers from the Guinea-worm, no fresh case had appeared for some days before.

During the voyage, 199 cases had appeared from 360 men of the 88th regiment ; and several cases occurred among the ship's crew ; but not a single case occurred among the artillery. This struck every one on board, very early, as remarkable ; yet these men had the same provisions, drank the same water, and in every other circumstance were situated as the men of the 88th regiment, except that they were kept separate. From the outset, the artillerymen were accommodated apart, on the gun-deck, in a spot divided off for themselves. Not one of the officers,

either of the artillery, 88th, or belonging to the ship, had the Guinea-worm. From the strong circumstances which in its course appeared, every officer on board was impressed with the opinion of its being contagious, and was inclined to use every precaution of prevention; from which, most probably, all escaped this filthy and severe disease.

Those embarked in the *Fancy*, were not so fortunate; few of the men there escaped the disease. Of eight officers of the 88th, three caught it. Mr. Bruce, then the assistant surgeon, was one of these: he had a worm in each leg. The *Fancy* was obliged to return to Bombay; most of the men were disabled by this disease; and the season was too far advanced for her getting up the Red Sea.

Among the 86th regiment in the *Hope*, only three cases occurred; and one of the two officers of the 88th, on board, was one of them.

I find, by my case-books, that in the part of the 88th regiment which continued in the *Minerva*, the disease appeared as follows :

From the 9th to the 24th December,	6 cases on the passage to Ceylon,
From the 25th Dec. to 14th Feb. . .	4 ditto at Ceylon, on shore.
From the 15th to the 28th Feb. . .	39 ditto at sea, after leaving Ceylon.
In March	103 ditto at sea.
In April	39 ditto at sea.
In May	8 ditto at sea, till landing at Kossier.
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Total of cases . . .	199
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I have purposely excluded the cases which occurred in the 88th, on board the *Fancy*, or among the 86th regiment.

The disease was pretty uniform in the manner of its appearance. The patient was first sensible of an itching; and, on looking at the part, generally observed a small blister: sometimes I have seen three or four small blisters, and the part having the appearance of being stung with nettles. When the blister was snipped, a piece of mucus of the breadth of

a sixpence was seen underneath, which being removed, the head of the worm was seen. It was in general firmly attached, and required force to detach it from the parts underneath. When detached with the forceps, we twisted it round a ligature or piece of lint, and thus, often on the first day, succeeded in extracting a foot, or even two, of the worm. It resembled much what is called bobbin, and was about the same size. It was transparent and moist, a white liquid being seen in it. We continued, daily, extracting as much of it as would come out with gentle pulling. It was always dangerous to pull strongly, for fear of breaking the worm: it then occasioned the most acute pain, and there followed much swelling, with inflammation of the neighbouring parts, sometimes of two or three weeks continuance, when the worm would shew itself at another part, as at first, with itching and a blister.

It seldom appeared to be deeply seated; generally, under the cutis, or among the tela cellulosa, when we could often trace it in its course, and sometimes see it: sometimes it was under the fascia, and but seldom among the muscles.

If not ushered in with fever, it was almost always attended with it in its course: when there was considerable inflammation, it ran very high. In several cases, mortification took place, and very large sloughs were cast off. In a few cases, there was a very considerable and alarming hæmorrhage.

By presenting itself at different places, it would often leave two or three large, foul, and fistulous ulcers in different parts of a limb. When the inflammation has run very high, as I have often seen of the whole leg or thigh; and when a profuse suppuration followed; the worm frequently has come out dead, often in

pieces, with the sanies, by which, probably, it had been eroded and killed.

Frequently, after extracting one worm from a patient, a second, a third, or even a fourth, would appear: after getting one out of a leg, a second would appear in the other, a third in one hand, and a fourth in the other hand.

The Guinea-worm, I believe, has been seen in every part of the body. Though the extremities appear to be its favourite seats, yet the face, breast, back, penis, &c. are not exempted from its visits. I heard of a gentleman in Bombay who had one in his scrotum and penis, and of a lady who had one in the pudenda.

The following I extract from my case-book and notes, taken on board the *Minerva*, by which it will be seen that the extremities are as much more frequently its principal and first seat, as in the itch.

	Feet	Legs	Thighs	Scrotum	Groin	Hands	Arms	Body	Total Cases
Feb.	34	3	1	—	—	1	—	—	39
Mar.	70	21	5	2	2	3	—	—	103
April	20	9	5	—	—	3	—	2	39
Total	124	33	11	2	2	7	—	2	181

As to the causes of the appearance of the Guinea - worm, and the mode in which it is generated, I must confess that I have no account that I could venture to offer here.

In different parts of the world, the water drank is accused of occasioning intestinal worms, as the *tænia* in Switzerland, and the *tænia* and the *teretes* in the West Indies ; where, likewise, I have heard the mucilaginous vegetables eaten assigned as a cause of the frequent appearance of worms. In Russia, there is a worm, the *lumbricus militensis*, common near swampy grounds. In Russia and in Siberia, in the same situations, the *tænia infernalis* prevails. But, after

what has been here stated, we cannot bring the water, drank on board the *Minerva*, or at Bombay, to account for the Guinea-worm which prevailed: in fact, the water came from different and distant quarters, Bombay, Ceylon, and Madras. Besides, the officers of the 88th, and the artillery, drank the same water, and escaped.

No case of Guinea-worm had been known among either the Lascars or European sailors in the *Minerva*, when the 86th and 88th embarked in her.

I have good reason to think that the spreading of the Guinea-worm may be stopped, whenever it does appear. The means which we adopted appeared to succeed. Extreme attention to cleanliness is indispensably necessary.

In India, the native doctors are much more successful in getting out the worms, than Europeans. After long feeling with their fingers, for the body of the worm,

they make an incision as nearly as they can judge over its middle, and, pulling the worm by a duplicature of it, draw out both ends of the worm at one time. I have often endeavoured to imitate this practice. My sense of touch was not so delicate, and did not guide me so correctly, as it did the Hindoo doctors; but I always found that when, on cutting down to it, I got on the middle of the worm, and, by the forceps, pulled this out, I could with ease extract a large portion, and, not unfrequently, the whole worm.

Leeches, astringent and sedative lotions, cataplasms, fomentations, &c. were applied, as required by the circumstances of the case. A good deal of attention was paid to the disease, in all its stages; and several experiments were made on the worm, which, however, it is needless to detail here.

After using a variety of articles, in the

treatment of the Guinea-worm, and making them enter the system by the absorbents, I think that unctuous substances succeeded the best, particularly mercurial ointment. Passing an electrical shock through the part had no effect.

ULCERS.

IN India, we remarked that ulcers, particularly of the legs, were very rarely seen; and that many men in the 88th regiment, who in Europe were always in hospitals with them, were in India quite free from them. In Egypt, they began to re-appear. In the course of six weeks after the army came to Alexandria, there appeared seventy on the general return of the army; and they continued afterwards on the increase.

TETANUS.

THOUGH no case of this disease occurred to us while in Egypt, I met with a severe one on the voyage thither. As I was successful in this case, and by a mode of treatment which, with the theory which gave rise to it, is, I believe, now considered as obsolete, it may not be uninteresting to mention what led me to give it a trial.

In the year 1794, the first tetanic case I met with, occurred at Bergen-op-Zoom. A sergeant of the 88th regiment, after remaining drunk out all night, was in the morning found lying in a ditch. This was in August, and the weather was unusually warm. When brought to the hospital, his jaws were so firmly locked, that the blade of a pen-knife could not be introduced between the teeth. Mercury

was had recourse to, but in a few hours the muscles of the neck became convulsed. By the advice of a Dutch physician, a man of great eminence, I immersed my patient four times, in the course of the day, into a bath of broth. He continued in it half an hour each time, and, after he came out, his whole body was rubbed with mercurial ointment. I do not recollect that any thing else was given to him, unless a stimulant enema. Next morning the good effects of the Dutch practice were evident: a violent salivation came on, and, in about three weeks, the man was doing his duty.

In the next case which occurred, though a cure was not completely effected, the same treatment was, for some days, attended with good effects. In the island of Grenada, a negro, attached to our pioneers, received a contusion and a slight wound of the head, which was

soon followed by locked jaw. The warm bath, and the liberal use of mercury, were ordered. He, for some time, appeared to be better, and I flattered myself with the hopes of another cure; but the disease gaining ground, the cold bath and the tonic treatment were had recourse to. The patient died.

The next was a sailor, who, a few days before our embarkation, in the *Minerva*, at Bombay, had been slightly wounded in the foot by a copper nail. On my first seeing him, his symptoms were slight, but were gaining ground fast. On the 10th of December, the day after our embarkation, he had the most violent symptoms of the disease: the jaws were firmly locked; the muscles of the neck, before and behind, were strongly convulsed; and he had twitchings of the muscles of his face. He pointed to the region of the stomach, where, he afterwards told me, that he had intolerable

pain and sickness. This man was immediately put under the same treatment as was employed in the case of Sergeant Kirkland, with this difference, that, instead of broth, a bath was made from fat, or what is, on ship-board, called the slush. The same success attended; but the symptoms yielded more slowly, and it was several months before the sailor recovered.

From hearing me relate these successful cases, by the warm bath and mercury, some cases in the Bombay general hospital were treated in the same manner. My friend, Dr Keir, informed me that he tried it in three cases of tetanus, in the garrison hospital. It succeeded in one, but failed in the other two.

WHEN I had nearly brought these sketches to a conclusion, I met with two books which I regret that I did not see earlier, viz. Dr Chisholm's work on the Pestilential Fever of the West Indies, and Dr Wittman's Travels. In perusing these works, I have had great satisfaction to find a coincidence with me in some opinions which I had formed, and which I have introduced into this treatise.

It is matter of regret to me, that I did not meet Dr Wittman in Egypt. Most of my observations, I find, coincide with his; and I am glad to have mine confirmed by authority so respectable.

The frictions with oil we did use to a small extent, in an infected corps of the Indian army; but the report made to me, by the surgeon, was unfavourable, and I never recommended its use in any other

corps. Since reading what Dr Wittman says on the subject of friction with oil, I think it not improbable, that, in addition to the great care which captain Burr took of the commissariat department, another circumstance may have conduced to their exemption from the plague. The camels of the army, to the number of some hundreds, were, as well as the horses and buffaloes, under the charge of the commissary of cattle, captain Burr; and his people were entrusted with the care of them. In the cold and wet season, which commenced in November, the camels became very sickly, and many of them had an eruption over the body. In the course of three months, I believe, more than three-fourths of these useful animals died. Captain Burr employed some Arabs, who were reputed to be skilful in the treatment of the camel. The plan which they followed I remember well. It was, after shaving or cutting the hair very close, to rub them all over with oil,

daily. The men of the commissariat department were, during the day, constantly employed in these frictions, or in tending the cattle : and the great mortality among the camels happened in November, December, and January, the months in which the plague raged the most in the army. The circumstance I think not unworthy of notice ; I leave others to ascribe to it what degree of importance they think it deserving of.

I have mentioned, that I thought I could see a characteristic similitude in many of the symptoms between the plague and the destructive fever which has for some years devastated the continent of America and the West India islands ; and to the end of the account which I gave of the plague, I add a table of the principal points where it appeared to me that the two diseases agreed.* I am now glad to find, that in this opinion I do not stand

* Vide Appendix.

alone ; I have been particularly gratified to find that this is the opinion of so very respectable authority as Dr Chisholm.

I have had the greatest satisfaction in the perusal of the very complete history of the West India fever which Dr Chisholm gives. In most points, the result of my observations on this, coincides with the doctor's. My experience, in a particular situation, supplied me with some very strong facts, touching the question of the contagious nature of this fever.

From my case-books and notes, while in the West Indies, I have thrown, under a few heads, a brief extract of the result of my observations, which I shall here insert. From the similitude which I think I can trace, this is not foreign to the principal subject of these Sketches ; and, as the result of close observation, unattached to any theory, they may, perhaps, be not without interest or use.

1st. In Barbadoes, both in the end of 1795, and in the beginning of 1796, the only

disease which prevailed was typhus. The 88th regiment was healthy at St Lucia, and continued pretty healthy at Grenada for three months after their arrival there, or as long as they remained to the windward side of the island. This was likewise the case with the 10th, 25th, and other regiments. It was only after our return to St George's and to Richmond Hill, after we had communication with the 68th regiment, and the general hospitals, where the yellow fever had for many months prevailed, that it appeared in the 88th, and in the other corps.

2d. Before the appearance of this fever in the 88th, as well as in other corps, dysentery and intermittents prevailed most.

3d. On the 12th of July, 1796, a detachment of the 88th regiment was embarked at Grenada, in the Betsy transport, for England. We embarked one hundred and forty, and I was most particularly careful not to take any man on board with the slightest appearance of illness. Every

precaution which regarded cleanliness, ventilation, or fumigation, was adopted. The remains of the 8th, 10th, 25th, and other regiments, were at the same time embarked, at Grenada, for England.

4th. From the time we sailed from Grenada, on the 19th of July to the 5th of August, seven days after we sailed from Tortola, (where we had touched for water) no case of this fever appeared in the *Betsy*. The other corps, which left Grenada along with us, had not been so fortunate. The 8th, 10th, and 25th regiments, all of them suffered severely on the passage from Grenada to Tortola; the 8th particularly. This corps, besides the loss of many non-commissioned officers, in this short passage, lost every officer on board, except the surgeon in second, and major and captain Armstrong; and these two gentlemen were ill of the yellow fever on coming into Tortola. I was requested to go on board to visit them, but the request was opposed by all the officers on

board the Betsy, as well those of the ship as by the officers of the 88th regiment on board. So very much were all impressed with an opinion of the fatally infectious nature of this fever, that they remonstrated with me, and told me, that the ship and the regiment were now perfectly free from this fever; but that, by my going to see the 8th, I should certainly bring the fever into the Betsy. However, a second message having come for me to visit captain and major Armstrong, I instantly accompanied the messenger on board. From seeing the state of their transport, I immediately ordered major and captain Armstrong on shore, and accompanied them to the hotel. Here we found that the prejudices in the Betsy transport prevailed in the island of Tortola. The doors of the hotel were shut against the yellow fever, and it required a very *forcible* remonstrance to persuade them to admit these two officers, who,

however, both of them, died the next day in the hotel.

5th. The state of the other corps, after sailing from Tortola, I am unacquainted with. When lying at Tortola, on the 29th and 30th of July, the Betsy communicated with the transports which had the 8th and 10th regiments on board. On the 6th of August, the first case of the yellow fever appeared on board the Betsy; from which period to the 12th of September, 1796, every person almost was once, and a great many on board twice, attacked with this fever. Of one hundred and forty people on board the Betsy, the captain of the ship, eighteen soldiers, and one woman, died in this period. It should, however, be mentioned, that, of the soldiers, several were old and worn-out invalids. During the passage from Tortola to England, our convoy, the Hebe frigate, suffered even more than the Betsy. When sent for on

board, by Captain Scott, I found that he had not only lost many seamen and marines, but several officers, and two medical gentlemen.

6th. On the fleet, from Grenada, anchoring at Tortola, the yellow fever was unknown there; thereafter, I have heard, that it prevailed generally, and committed great havoc.

7th. Those labouring under dysentery, ague, &c. were those first seized with this fever.

8th. [*Symptoms.*]---The attack was first with extreme debility, affection of the head, and frequently the appearance of drunkenness. Next, the abdomen was complained of, and the biliary system appeared to be a principal seat of the disease. The yellowness, though not a constant, was a generally attending symptom. The eyes first appeared of a watery suffusion; they next were observed to be blood-shot; and, in a short time after, yellow; from the eye, the yellowness quick-

ly spread over all the body, and the patient in a little time had the appearance of one highly jaundiced. Sometimes the yellow colour of the body continued for some time after the patient got well, and purgatives brought off yellow stools, while the urine was at the same time yellowish. The irritability of the stomach, and what is called the black vomiting, were pretty constant attending symptoms. The state of the pulse varied in the course of the disease; there was at first, almost always, a firm and strong pulse, with so much re-action, as would lead a stranger to the disease to blood-letting and the anti-phlogistic regimen. The bowels were, in general, very unequal; there was either a looseness or costiveness, though most frequently the latter.

9th. The duration of the disease was, in different cases, and in different situations, very different. In Grenada, when it first broke out, it generally ran its course from twenty-four, thirty-six, to

forty-eight hours, in the hospitals. Soon after we sailed from Grenada, cases terminated in three days: thereafter, and as we approached the higher latitudes, and before we reached Ireland, cases were drawn out to ten, twelve, and fifteen days.

10th. The prognosis. The danger was generally in proportion to the degree of affection of the head, irritability of the stomach, and yellowness of the skin, and as these appeared early or not.

11th. In the treatment various modes were tried. Emetics appeared to be unnecessary; and, in general, seemed to do mischief, as did all antimonials. I have witnessed the practice of a large hospital, where blood-letting was premised in every case; but this was by no means a successful practice. In three cases in the *Betsy*, and where the state of the pulse and other symptoms seemed particularly to call for it, I performed venæsection; but I lost my three patients. Clearing

the bowels appeared to be a principal indication: when this was repeatedly done by drastic purgatives, and when a free perspiration was kept up, there was always less complaint of the head, and, in some cases, a remission was thus obtained, and the bark could then be given with manifest advantage. In the few cases where it was used to produce salivation, calomel did more good than any other remedy whatever. I lost no case, where I succeeded in inducing a flow of saliva.

In some cases, and these all proved fatal, the gums became insensible to the effects of mercury; and though one drachm of calomel in one case, and two scruples in another, were given in a very short period, yet the patient died without a flow of saliva having been excited.

Nothing gave more relief than the cold bath; it generally suppressed the irritability of stomach for some time; it al-

ways induced sleep, and brought out a gentle sweat, which most commonly relieved the patient. The Brunonian practice I saw tried with no advantage.

These are the principal of the leading circumstances, regarding the yellow fever, which came immediately under my notice.

Dr Chisholm, when he formed the opinion of the similarity of the plague and the yellow fever, was not singular.

Since my arrival in England, I have received several letters addressed to me in Egypt, and which followed me from that country to India, and from thence to Europe; mostly answers to letters which I wrote from Egypt. By two of my West-India correspondents, in particular, this opinion is repeatedly expressed. I have several letters on the subject from two most respectable physicians, Dr Paterson, of Grenada, and Dr Robertson, of Barbadoes. From the opinion which he had formed, Dr Paterson

repeatedly urges me to the use of mercury, and of the cold bath, in the plague.

Dr Robertson, in one letter says, "I decidedly agree with you, that there is a strong similitude between the symptoms of the yellow fever and the plague: although the latter disease never came under my observation, yet I was so struck with the appearance of yellow fever, and the histories of the other disease, which I had read, that, at one time, I was almost disposed to consider them both as different modifications of the same diseased state of body, and actually wrote a paper on the subject in February, 1797."

In the practice in Egypt, Mr Price's observation militates against the use of cold bathing in the plague. It should be recollected, however, that, when Mr Price made his observation, it was in the severest part of the season, when the plague raged the most, and when Mr Price laboured under many disadvantages

in his practice. I anxiously wish to see cold bathing, or sponging, extensively tried in the plague. I have great expectations from it in that disease, from having so often seen how much it has done in the yellow fever and in typhus fever, where I consider it to be the most valuable part of the treatment.

In concluding, I am impelled to do an act of justice, and acquit myself of a debt of gratitude. The use of this invaluable remedy, and what else I know of tropical practice, I learned many years ago from my venerable and much-respected friend Dr Wright. By the use of the cold bathing, my life was saved in Jersey, in 1794, when I was ill of typhus fever, by Dr Jackson, then surgeon of the Buffs, who, at the same time, attended my hospital for me, and with the greatest benefit, and introduced this practice into the 88th regiment, where typhus then raged.

The use of cold water and cold bathing has since been diffused by the ingenious and elegant pen of Dr Currie. This I conceive to be one of the greatest improvements which the practice of physic has received in modern times.

THE END

TABLE I.

I HAVE said, that the similarity between a number of the symptoms of the plague, and those of the destructive fever which I saw in the West-Indian islands, in 1795 and 1796, struck me in Egypt. On my return to India, having recourse to my papers and case-books, written while I was in the West Indies, I found a very great resemblance between the two diseases, as I had seen them, in countries so remote. At Bombay, in conversation with General Nicolls, who commanded at Grenada while I was in that island, I mentioned the resemblance of the two diseases, in very many of their features, as being remarkable. At the general's suggestion, I soon after drew out, in a tabular form, the principal points of resemblance between the plague and the yellow fever. This table appeared curious to the general, and to my ingenious and esteemed friend, Mr. Scott, as well as to other friends at Bombay; and, at their desire, I appended it to my Memoir. I here subjoin it in the abstract: it may suggest hints that might be useful to future observers in the West-Indian fever as well as in the plague.

Points of Resemblance between the

THE PLAGUE.

- 1st. The attack is sudden, and with the greatest prostration of strength.
- 2d. The head is the part principally complained of at first; thereafter the abdomen and limbs.
- 3d. In a majority of the fatal cases, there is an unconquerable irritability of stomach, and a vomiting of frothy bile.
- 4th. The biliary system appeared in most cases to be the seat of the principal complaints: there was often pain, sometimes swelling of the liver, and the bowels were generally unequal.
- 5th. In many cases there were remissions; and, in some cases, particularly of the Sepoys, there were perfect intermissions.
- 6th. The disease frequently alternated with the tropical diseases, arising from morbid action of the liver, viz. colera, icterus, hepatitis, and dysentery.
- 7th. In a majority of cases, we saw glandular swellings, petechiæ, maculæ, or vibices.
- 8th. Some cases died without bulo or irritability of the stomach.
- 9th. In those cases which proved fatal, it was found impossible to produce salivation.

PLAGUE *and the* YELLOW FEVER.

THE YELLOW FEVER.

- 1st. Men were suddenly attacked on duty, and with the greatest debility, from the first.
- 2d. The attack was almost constantly with a pain of the head, the eye being first of a watery suffusion, then blood-shot, and, at last, yellow.
- 3d. The black vomiting is an almost constant attendant of the fatal cases, and which rarely any thing was found to relieve.
- 4th. From the yellowness of the body so generally seen, as well as from the very unequal state of the bowels, we were led to think, that, in this fever, the system of the liver was principally affected.
- 5th. In a great many cases there were remissions, and some cases terminated in intermittents.
- 6th. In several instances it alternated with dysentery, and in some cases with affections of the liver.
- 7th. In some cases there were swellings of the parotid gland, petechiæ, maculæ, and vibices.
- 8th. We lost several cases, who never had the yellowness, nor the black vomit.
- 9th. Whenever we could excite a flow of saliva, the patient was considered to be safe, and did well.

TABLE II.

STATE of the DEATHS and DISEASES in the INDIAN ARMY in EGYPT, from the Time of Embarkation to the Return to INDIA.

EUROPEANS.

CORPS.	Effective Strength of different Corps.	Place of Embarkation, and Dates included.		Invalided or sent to India or England on recovery.	Dead.	Plague.	Fever.	Liver complaint.	Dysentery.	Diseases of the Lungs.	Stroke of the Sp.	Casualties and Diseases unknown.
		Place.	Date included.									
His Majesty's 8th Light Dragoons	80	Cape of Good Hope	1st March, 1801, to 4th June, 1802	—	2	—	—	2	—	—	—	—
Royal Artillery	44	Ditto	Ditto to 1st April, 1802	—	2	—	—	1	1	—	—	—
The Honourable Company's Horse-Artillery	27	Calcutta	18th Nov. 1801, to 4th June, 1802	1	—	—	—	—	—	—	—	—
Bengal ditto	37	Ditto	Ditto Ditto	—	3	—	1	1	1	—	—	—
Madras ditto	96	Madras	28th Dec. 1800, to 4th June, 1802	2	5	—	1	3	2	—	—	—
Bombay ditto	144	Bombay . . . . .	.. March, 1801, to Ditto	2	9	5	—	1	1	1	—	—
His Majesty's 10th Regiment of Foot	984	Calcutta	28th Nov. 1800, to 1st May, 1802	49	98	4	12	18	63	—	1	—
61st ditto	980	Cape of Good Hope	1st March, 1801, to Ditto	15	88	11	—	6	40	2	—	25
80th ditto	496	Trincomale	14th Feb. 1801, to 4th June, 1802	—	34	2	2	8	20	—	—	2
86th ditto	405	Bombay	3d April, 1802, to Ditto	23	34	4	2	12	14	1	—	—
88th ditto	466	Ditto	Ditto to 1st May, 1802	25	40	12	—	12	6	—	1	8
	3759			117	309	38	18	64	148	4	2	41

NATIVES OF INDIA.

The Honourable Company's Horse Artillery	160	Calcutta	18th Nov. 1800, to 4th June, 1802	—	1	—	—	—	1	—	—	—
Bengal ditto	157	Ditto	28th Dec. 1801, to ditto	—	4	—	—	2	2	—	—	—
Madras ditto	197	Madras	Ditto to ditto	6	22	—	6	1	1	—	—	14
Bombay ditto	200	Bombay	4th March, 1801, to ditto	—	40	8	2	5	14	—	—	8
Engineers	38	Madras	28th Dec. 1800, to ditto	2	1	—	—	—	1	—	—	—
Bengal Volunteer Battalion	658	Calcutta . . . . .	.. Nov. 1800, to ditto	6	25	6	5	—	9	1	—	3
1st Bombay Regiment	828	Bombay	4th March, 1801, to ditto	15	70	28	29	1	8	1	—	7
7th ditto	708	Ditto	Ditto	10	160	69	42	1	6	1	—	41
Pioneer Corps	96	Madras	28th Dec. 1800, to ditto	2	3	1	1	—	—	1	—	—
Departments	419	Ditto	Ditto to ditto	—	25	10	2	2	—	—	—	7
Public and private Followers.	666	Different Places	At different Periods	—	40	15	5	—	5	2	—	13
Total of Natives	4127			41	391	127	92	12	47	6	—	93
Grand Total	7886			158	700	165	110	76	195	10	2	154

NOTE. — The column "Diseases unknown" includes all the Casualties in the Army, and the Small Pox and other cases lost in the Julia hospital-ship. It includes likewise some deaths which happened in the Corps previously to the Surgeons taking charge of them.

THE JOURNAL OF THE

AMERICAN MEDICAL ASSOCIATION

PUBLISHED WEEKLY

CHICAGO, ILL., U.S.A.

VOLUME 11

NUMBER 1

JANUARY 1918

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