

MEDICAL DISCIPLINE;
OR,
RULES and REGULATIONS
FOR THE MORE EFFECTUAL
PRESERVATION OF HEALTH
ON BOARD THE HONOURABLE
East India Company's Ships.
IN A
LETTER

ADDRESSED TO THE HON.

The Court of Directors,

AND PUBLISHED WITH THEIR APPROBATION.

By ALEXANDER STEWART,

Surgeon in Southwark, and formerly of the Earl Talbot and
General Goddard East Indiamen.

*Homines ad Deos, in nulla re propius accedunt, quam salutem
hominibus dando. CICERO.*

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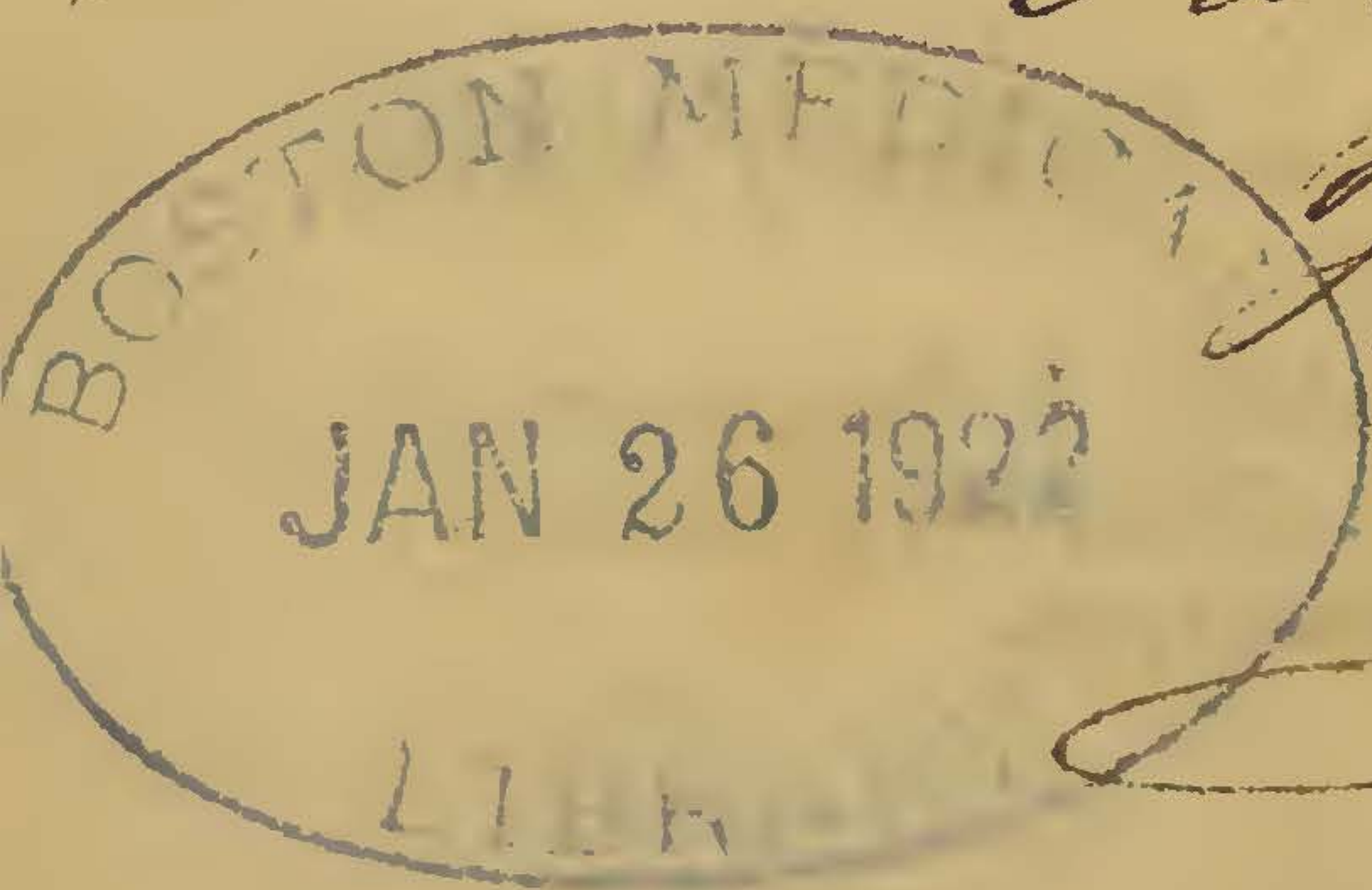
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To Joseph Cotton Esq
the member of the Committee
of Shipping alluded to
in the preface this
little Book is presented
as a small offering of
Gratitude by his
very respectful
Obedt Servt
The Author



BY PERMISSION.

TO THE HON.

THE COURT OF DIRECTORS

OF THE

United Company of Merchants of England

TRADING TO THE

EAST INDIES,

THESE HUMBLE, BUT WELL-MEANT ENDEAVOURS

IN THE CAUSE OF

HEALTH AND HUMANITY,

ARE MOST GRATEFULLY AND RESPECTFULLY

DEDICATED

BY THEIR OBLIGED, OBEDIENT,

AND DEVOTED HUMBLE SERVANT,

THE AUTHOR.

ERRATA.

PREFACE, page 1, line 5, for *who are* read *which is*.
Page 12, line 17, dele *comma* after REST and insert
and.

- 28, — 1, for *in* read *on*.
- 45, — 8, for *meal* read *meat*.
- 96, — 1, for *can can* read *can*.
- 50, *comma* after *soup*.

PREFACE.

NO apology, it is presumed, can be wanting for offering to public notice the present endeavour to render the situation of that class of men, who are so deservedly the just pride and boast of the British nation, more healthy and comfortable.

The work is chiefly adapted to the East India service, in which so large a body of seamen are annually employed; yet the author is willing to flatter himself that it contains useful truths, applicable to every species of service on the extended scale of navigation; and which will be found particularly useful, if attended to, in those ships destined for long voyages to hot climates.

The Court of Directors of the East India Company, with a readiness of attention they always pay to plans of benevolence and utility,

have been pleased to honour it with their patronage. They have liberally subscribed for a number of copies to be distributed to their different ships, and to be recommended to the attention of their commanders and officers—circumstances which lead me to look for the happiest effects in a cause of such extreme importance.

To Dr. John Hunter, physician to the Hon. Company, my warmest acknowledgments are due for his kind notice of it, from first to last, as it officially came under his cognizance. I feel also greatly indebted

to Dr. Saunders. The joint approbation of two such physicians, so deservedly high in the profession, cannot but make a grateful and flattering impression on my mind, and stamp an additional value on the work itself.

To an active and enlightened member of the Committee of Shipping, whose particular and obliging attention to it, could only have been bestowed on the score of its public utility, I beg leave to offer my warmest and most sincere thanks.

Retired from a service that commands so much of my respect, in which I passed some happy years, and acquired friends who will ever remain dear to me, to find my endeavours for its good thus honoured and approved of, will to me be a matter of pride and pleasing recollection throughout life.

Before I conclude this short Preface, in justice to truth; I may be permitted to remark, that to the very judicious and laudable attentions of my valuable friend the commander, seconded by those of my esteemed

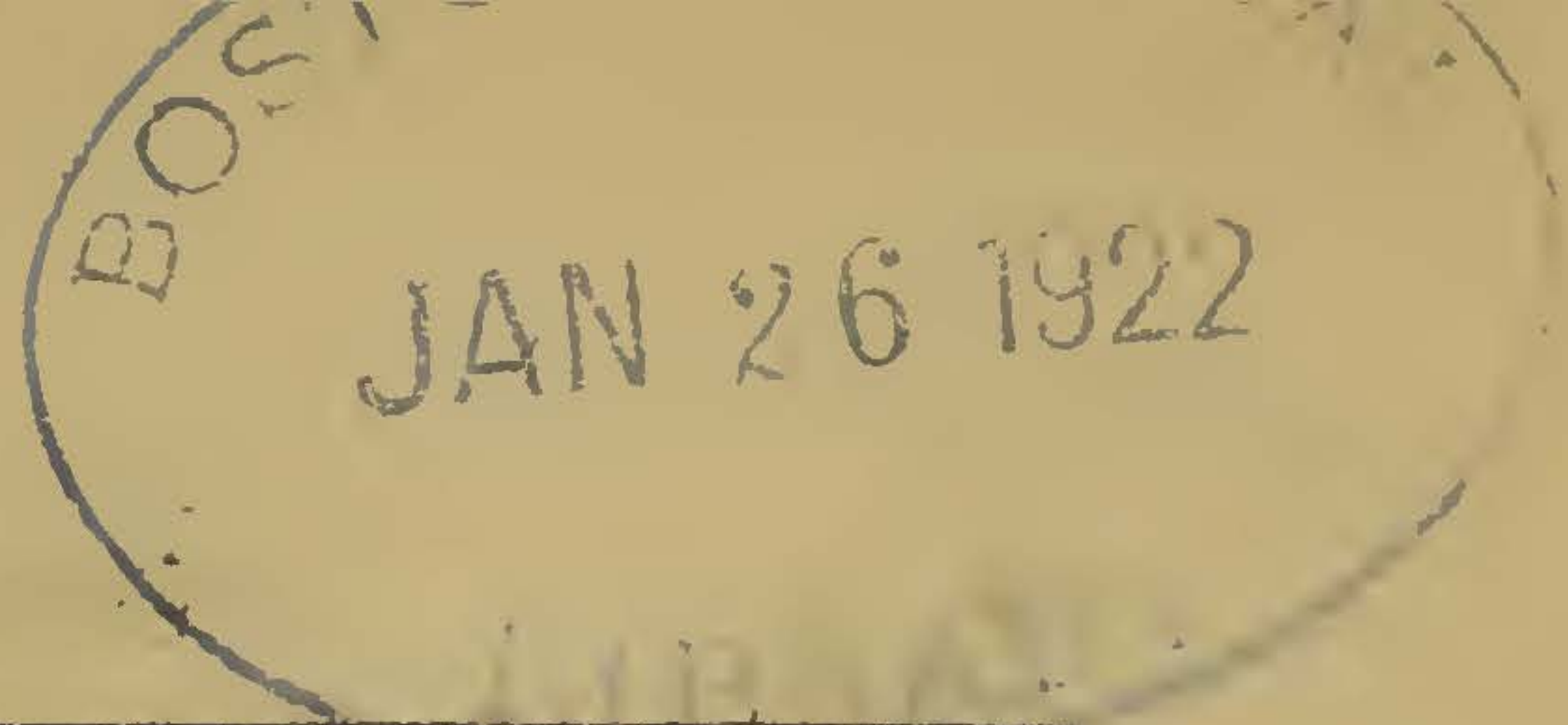
friend Mr. Blany, and the other officers, the crew of the GENERAL GODDARD, in 1794, and 95, were indebted for an uncommon share of good health, throughout an arduous and a tedious voyage, which enabled them, towards the close of it, under such an able commander and such officers, to perform signal and substantial services to their country, by the capture of an enemy's fleet, off the island of St. Helena, in company with his Majesty's ship Sceptre, Commodore Essington.

As no pains or attention shall be

wanting to make the work still more complete, should it extend to another edition, the author will thankfully receive any hints or communications which may be offered for the improvement of a plan, at the same time so benevolent and so important.

CANTERBURY SQUARE,
Southwark, July 3d, 1798.

A. LET.



LETTER

TO THE HONOURABLE

THE COURT OF DIRECTORS,

Ec. Ec.

Honourable Sirs,

THE proposer of any plan which professes for its object the good of that great commercial service of which you are the guardians and protectors, is naturally led to solicit the attention of your Honourable Court to the points he wishes to make known and establish.

It is in this light that I now presume to address you ; and from that liberality and zeal with which you patronise every attempt to benefit the East India service, I am encouraged to hope that you will honour with your attention the subject I now respectfully submit for your consideration.

A course of four voyages, a period nearly of ten years in the Honourable Company's medical service, has enabled me, in my situation of surgeon, to observe, collect, and arrange, a number of facts on different matters relative to the important interests of health on board your ships, in their voyages to and from India.

It is a well-known and melancholy truth, that these voyages when protracted beyond the usual length of time, from war, or other causes, have hitherto been very generally attended with great sickness and mortality: the scurvy, fluxes, and malignant fevers, having frequently made dreadful ravages amongst the crews.

Your ships, by far the best equipped and most valuable the commercial world could ever boast, form the grand medium of conveyance between Europe and Asia, from which not only individuals, but the state at large, derive opulence and commercial advantages unequalled by any other country in its most successful periods. On the

health of their seamen depend, in a great measure, the certainty and duration of a voyage, and consequently the safety of their valuable cargoes.

Your records will present to you many instances of ships having been detained for a whole season in India, from the ill health of their crews; while others have been endangered and nearly lost, from the same cause.

Your annual returns also give numerous proofs of great mortality at different periods amongst your foldiers, on their passage out to guard your territorial possessions; and of great numbers having been so reduced and weakened by disease on ship-board, as to be to-

tally unfit for actual service on their arrival in India. Hence your commercial and political interests are so intimately connected with the share of health and active strength enjoyed by your seamen and soldiers, that whatever concerns their preservation will, I doubt not, appear to your Honourable Court an object as important in every view of wise policy, as it is truly interesting to the cause of humanity.

The successful experience of the late celebrated and humane navigator Captain Cook, has happily evinced how much it is in the power of well-directed management to preserve the blessings of health, in the longest voyage, through every variety of climate,

His success, together with similar instances, warrant the asserting with confidence, that sickness and mortality, to the deplorable extent they have so frequently occurred in voyages to hot climates, are by no means to be considered as evils unavoidable ; nor as calamities entailed upon mankind from any change of climate or condition. On the contrary, it appears an undoubted and most important fact (which cannot be too strongly inculcated) that the human body is fully endowed by its all-wise and never-erring Creator, with great and various powers, wonderfully suited (with due care and attention on our parts) to accommodate itself to every vicissitude of climate and season, to resist disease al-

most equally well, and to enjoy nearly the same portion of health in all countries.

Strongly impressed with these interesting considerations, with the thorough conviction of the many salutary effects that must result from the timely and judicious use of various simple methods, for the more effectual prevention of sickness and mortality amongst your seamen and soldiers; and indulging the hope that it is only necessary to point these out, in order to their being generally adopted; I humbly beg leave, with that gratitude and respect which I feel as an old medical servant now retired from your employ, to state to your Honourable Court those means,

which, from my experience in the service, I have found to be best adapted for that salutary purpose.

The following directions and observations, the faithful result of much experience and attentive observation, during several voyages, will, I trust, be deemed conducive to that great end.

They have received the approbation of some medical gentlemen of high authority, whose names, were I permitted to mention them, would entitle them to your serious attention.

They were first intended merely as a set of rules for the Honourable Compa-

ny's ship General Goddard, in the season of 1794, on our sailing from England, with the prospect of a long passage; and were submitted in the beginning of the voyage, with every desirable effect, to the commander *, a gentleman whose attention to every particular that could contribute to the health of his ship's crew, and whose laudable humanity and benevolent solicitude at all times towards the sick, merit an encomium far indeed above the feeble tribute of my praise.

Extracted from my MS Medical Journal of 1794, in your committee of shipping's office, they are now presented to your Honourable Court, in

* W. T. Money, Esq.

hopes that they will meet with your approbation, and prove beneficial to the service.

Should they be honoured with your recommendation, they would claim a more particular attention from your commanders and officers, for whose information they are chiefly intended; and every thing useful they contain would be diffused and tried. They would become a plain manual of simple rules and regulations, easily reduced to a short, methodical, and practical system of discipline for the preservation of health. Thus a general spirit of observation and improvement on this important head would be excited throughout the service, which

could not fail of being productive of measures highly beneficial to the interests of the East India Company, to the welfare and comfort of their seamen and soldiers, and truly congenial to the warmest feelings of humanity.

Having premised so much by way of preface, or introduction, I now beg leave to observe, before I enter on my particular subject; that, as the carrying on a plan of the nature which I have the honour to recommend with regularity and effect; is necessarily connected with discipline and subordination, I leave it to the wisdom of your Honourable Court to judge how far it would be proper and expedient (when once the various means are pointed

out) to make the commanders and officers responsible for its being executed with all the care, attention, and perseverance they can bestow.

To proceed. In the prevention of diseases, we are to attend chiefly to one or other of two great points; either to remove entirely the causes from whence it is known diseases have their origin, or, where this cannot be effected, to endeavour to counteract their influence.

I shall comprise what I have to say on this subject (without minutely entering into the mode of action) under the heads of CLEANLINESS, AIR, DIET, REST, EXERCISE, CLOTHING, *and* GENERAL REMARKS.

CLEANLINESS, in all its varieties, is well known to be indispensably necessary for the preservation of health. With regard to the necessary and important circumstance of the cleanliness of your ships in general, there remains nothing for me to point out. This object is already so carefully and regularly attended to in your service, and to such an extent in many of your ships as certainly merits great praise, and from which the most salutary effects must always arise.

The practice of frequent scraping and sweeping between decks, of washing the upper deck daily, the gun deck twice a week, and lower deck occasionally, is to be continued in warm wea-

ther. In cold weather, if due attention is paid to cleanliness, by means of scraping and sweeping well, perhaps it is necessary only to wash the gun deck once in eight or ten days, as dampness (which always occurs more or less on washing days) when conjoined with cold, is a formidable cause in the production of scurvy and other diseases. Moisture, when conjoined with heat and stagnant air, is also highly prejudicial, and frequently gives rise to putrid and malignant fevers; therefore, at all times the utmost attention should be paid to keep the ship between decks as dry as possible, by means of stoves properly fitted; by frequent swabbing; by keeping up a free circulation of air, and every other possible means.

Every day after the gun deck is washed and swabbed dry, four or five stoves, carefully fitted with coal or wood, should be attentively placed on each side of the deck, at convenient distances fore and aft, until every part of it be thoroughly dry. The stoves will have the double advantage of drying the deck speedily, and of correcting and purifying the air; which is generally best and most effectually done by means of fire and smoke.

The seamens' chests should not be ordered down, nor the men suffered to remain below on washing days, until every part of the deck be thoroughly dry.

Great care should be taken that the

ports and scuttles fit well, so as to admit as little water in bad weather as possible ; and in the high latitudes (as off the Cape of Good Hope, &c.) where bad weather is generally met with, they should be carefully caulked in : attention at the same time being particularly paid to keep windfalls in constant use, to use swabs as often as water comes in, and to dry the decks, and purify the air by means of stoves, as already mentioned.

As it is in such latitudes and weather that scurvy and many other diseases are most apt to break out, double care and attention are necessary to every possible mode of prevention.

It should be a standing rule to sweep every corner of the gun deck twice a-day, (after breakfast and dinner) also to keep the different births as clear from chests as possible, to prevent harbouring dirt and moisture ; and to make every mess responsible for the constant dryness, cleanliness, and good order of its birth.

All the births fore and aft should be regularly visited by the commander, or an officer, accompanied by the surgeon or his mate, morning and evening ; and a stoppage of grog, or some such fine, imposed on those who are most careless or slovenly in their births.

As men are often affected with dy-

sentaries for some time without complaining, and also with ring worms, it should be a constant rule to wash well the necessaries called the head, and galleries, morning and evening, as a preventative against the spreading of the contagion.

As serious and fatal accidents have been known to arise from want of cleanliness in the cooks' coppers, and other culinary utensils, they should be regularly examined by the surgeon, and care taken not to let any thing acid, or that is apt to ferment and turn acid, remain in them, as, owing to these, a rust may gather, well known to be one of the most active poisons we are acquainted with.

I beg leave here to remark a circumstance that fell under my observation on board the General Goddard in the voyage of 1792.—On the passage between the Cape and Bengal, two of the gunner's mefs complained at different times of pains in the stomach and bowels, the cause of which at the time was not particularly attended to, as the pain was easily removed by a dose or two of a laxative medicine, and laudanum. Soon after our arrival in Bengal, three or four of the same mefs were taken ill with a most violent attack of a particular kind of cholic, which proved extremely obstinate in all, and one with great difficulty escaped with his life. In endeavouring to trace the cause of this extraordinary attack, confined to

one mess only, I learned that they had been in the habit of keeping their allowance of water, for the sake of coolness, in a vessel lined with lead, which, from the inattention and carelessness of their boy, had not been thoroughly cleaned from the time of leaving England. On examination I found a quantity of mud and dirt (a kind of sediment from the water) adhering to the sides and bottom of the vessel, which I concluded had corroded the lead, or otherwise extracted some of its pernicious particles, so as to impregnate the water, and give rise to the complaint. The same vessel was kept in use for the remainder of the voyage, with the strict precaution however of daily cleansing it well, and no symptom of the complaint ever afterwards appeared.

It is not only necessary that every part of the ship should be kept constantly as dry and clean as possible ; but that the crew should be kept so also in their persons, bedding, and wearing apparel.

They should be regularly mustered, and made to appear clean, with a change of linen ; their faces and hands washed, their beards off, and their hair properly combed and tied, at least twice a week.

Regular and frequent washing days should be appointed, and I would beg leave to propose that a certain number of men (say two out of every twelve) should be appointed washermen for the others in rotation ; that proper washing

tubs should be provided, and a due quantity of soap always laid in (as stores) to be served out occasionally for the purpose of cleanliness.

All the hammocks should be washed, cleaned, and well dried at stated periods, (at least once a month) and the clothes and bedding frequently spread in rotation in fine weather on the booms, or hung up forward for airing ; and occasionally these should be purified by smoke of sulphur and tobacco as circumstances may require.

A strict and methodical attention in these respects would be evidently attended with much comfort and agreeable sensation to the men at the time ; inde-

pendent of the salutary effects it would undoubtedly have in the preservation of health.

An excellent and most judicious regulation for the purpose of cleanliness and good order in general, we are told was given out by Lord Howe to the captains serving under him during the American war; and which I understand has now become pretty general in the navy. Each ship's crew were divided into as many divisions as there were lieutenants, these again into squads with a midshipman appointed to the care of each, who was required to muster and review them frequently, and each officer was responsible for the cleanliness and good order of those assigned to his care.

This mode of discipline for enforcing cleanliness, and preserving health, cannot be too highly recommended. Its good effects have been experienced and confirmed in the navy, and it is greatly to be wished that the practice were generally adopted on board the Honourable Company's ships.

We have frequent and unequivocal proofs of the great utility of cold bathing in warm climates for the preservation of health. It braces and strengthens the system in general : hence its use, in a great measure, will prevent that languor and relaxation so common in hot countries. From the same effect it also enables the body to undergo more fatigue, and it powerfully assists the organs of digestion.

But, independently of these considerations, its effects, as contributing so much to cleanliness of person, strongly point out the propriety of having frequent recourse to it.

I have therefore earnestly to recommend, that the men be compelled to use the cold bath once or twice a week (by having buckets full of salt water thrown over them), more especially during the time that ships are within the tropics. This, at first, may be thought somewhat inconvenient, but in a short time it would become an agreeable and refreshing habit, that would be readily and cheerfully attended to by the men themselves, without orders or compulsion.

The bath should be used in the morning watch, when the stomach is empty; and the body not heated with work; and I would propose, that only half the men on deck bathe the first morning, and the other half, in their turn, the next morning, and so on, in rotation, with both watches. In this way it would come to every man's turn once in five days.

Having now mentioned all that occurs to me under the head of cleanliness, I proceed to the second head, namely, AIR.

A due and regular supply of fresh air is as necessary to the support of health and life as food itself, therefore, at all

times, every attention should be paid to its free and constant circulation, and every care taken to keep it in as pure and healthy a state as possible between decks.

Wind-fails should be in constant use on the lower or orlop deck, and in bad weather, when the ports and scuttles are kept necessarily shut, they should never be neglected on the gun-deck.

In fine weather, when the wind is aft, the gun room ports should be opened, scuttles should be in the gun room bulk-head, and the fore hatchway kept open, while those abaft are kept closely shut, in order that the wind may sweep due forward all along the lower deck.

The air *on* the lower and gun deck should be frequently purified by the smoke of gunpowder, moistened with vinegar; by stoves properly fitted with coal or wood, and placed carefully at convenient distances from one another fore and aft; by the daily use of wind-sails; and occasionally, by having the gun room ports up in the manner before mentioned.

But the most effectual and powerful agent for destroying noxious or putrid air is fire, and the best and safest way of communicating it is by the use of stoves.

Wherever there is a large fire, there is a great and perpetual change of air taking place, from the constant motion

or draught that is kept up, owing to the dilatation of the furrounding portion of air by the heat; hence the fire and smoke of the galley, when on the gun deck, will not only tend to prevent dampness and moisture between decks, but be of infinite advantage in purifying and promoting a free circulation of the air at all times, but more especially in bad weather, when the ports are kept shut. And hence also there rises a serious and weighty objection to the plan which has been lately adopted on board some of the Honourable Company's ships, and which, I believe, is becoming general in the service, of having the galley on the upper deck, a plan which, otherwise, is allowed to be admirably well calculated for utility and convenience.

The precaution of sweetening and purifying the air on the lower deck is absolutely necessary, even when no men sleep below (which should never be allowed as long as there is convenient room above on the gun deck), as foul noxious air is sure to generate there, from the moisture and exhalations from the hold, from stagnation of the air itself, &c. &c.

Every ship should be supplied with one or two of the late invented air machines, to be kept regularly in use; as they appear well calculated for sweetening and purifying the air in every corner.

I need not observe, that the cables on the lower deck should be frequently aired, and when these are up, that the

deck should be occasionally washed, and always carefully scraped and cleaned.

In bad weather more particular attention should be paid to dryness and cleanliness, and to the state of the air on the gun and lower decks ; for it is in such weather, I must again observe, that sickness is most apt to break out, and consequently when double care and attention are indispensably necessary.

The foul air that is generated in the well, which is known to be of a very noxious and fatal nature, should be frequently purified by means of fire carefully lowered down in proper stoves ; and when the bilge water is much corrupted, it should not be pumped out

before breakfast ; as in the morning, with an empty stomach, men in every situation are most liable to be affected with any noxious effluvia, and other causes of disease.

I must here beg leave to take notice of a custom very general in India ships, which to me appears highly unfavourable to health ; which I must, therefore, disapprove of, and in every instance condemn, and wish to abolish.

On leaving England, and in sailing from ports that ships occasionally touch at on the passage, it is customary to keep a part of the live stock (sheep, poultry, and hogs) below on the gun deck, even in midships, or in the very midst of where the men sleep.

In such cases, it is evidently almost impossible to keep the deck either sweet or clean; and in so confined and crowded a place (more especially in hot latitudes), the men's breath, mixed with that of those animals, with the effluvia arising from their bodies, and with that of the different matters they discharge, must highly contaminate and vitiate the surrounding air, and render it very unfit for the purposes of healthful respiration.

On the subject of touching at ports on the passage, I think it here necessary to observe, that in such cases ships should anchor at as great a distance from the shore as is consistent with carrying on the various duties, in order to

avoid the land dews and exhalations, which often have been found extremely noxious and fatal.

Anchoring to leeward of marshes, swamps, or thick woods, at whatever distance, should, if possible, be avoided; and particular care should be taken to keep the ports and scuttles constantly shut on the side next the shore in the night time, to prevent the land wind from blowing in upon the men while asleep.

Those who go on shore on duty should avoid getting wet, and be as little as possible exposed to the rays of the sun. They should on no account be suffered to sleep on shore at night, or lie down

and sleep in the day time, which they are apt to do after much fatigue.

They should be on board about or before sun-set, to avoid the falling of the dews; and they ought never to leave the ship in the morning without a warm, comfortable breakfast; for, as I before observed, men in every situation are most readily affected with the causes of disease in the morning with an empty stomach.

As those who go on shore on the duties of wooding and watering, are known to be peculiarly liable to very malignant and contagious fevers, the utmost care and attention should, on every occasion, be paid to them.

They ought always to be supplied with a few doses of bark, or some aromatic bitter; and when the duty is completed, they should be committed for some short time to the care of the surgeon, to guard, if possible, against those fatal fevers which they are so often attacked with; and which, in many cases, may be done by the early use of a vomit, purge, and a few doses of bark.

I come now to the head of DIET, under which I shall comprehend *solid food, water, and spirits.*

With regard to SOLID FOOD, although the managing owners of the East India ships, with a degree of attention and liberality highly to their credit, spare no

pains or expense to supply the ships with salt provisions of the best quality, and in quantity more than is allowed in any other service; yet it must appear evident to every medical observer, who has had any opportunity of paying attention to the subject, that many very material alterations and improvements might be made in the present mode of victualling, which would prove highly beneficial to health, and which, in point of expense, would prove a saving.

The proportion of salt beef and pork allowed for a warm climate is certainly too great, and that of many other articles too little; a sufficient quantity of extra provision for the sick and convalescents, and of proper antiscorbutics for

the ship's company, are seldom or ever laid in on fitting out, circumstances which, from the well-known attention and liberality of the managing owners, must be entirely owing to the want of a proper representation.

If the quantity of salted provisions were diminished, and the saving that would accrue therefrom be laid out in the purchase of sick stores and antiscorbutics, the commutation would not only prove acceptable to the men, but extremely beneficial to the preservation of health *.

* On this important point I purpose soon respectfully to submit my sentiments to the consideration of the managing owners.

On this head, however, as little can be done by the commanders and officers, I shall here only observe farther, that at sea, when the present allowance of salt meat can be diminished, and that of other articles, as pease, potatoes, flour, fruit for puddings, &c. be increased, it ought in every instance to be done.

Every mess should always be plentifully supplied with vinegar and mustard, as these articles greatly tend to counteract the bad effects of salted or putrid meat.

As there is reason to think, that more than a certain quantity of salt introduced into the human system is attended

with pernicious effects, it would be a good rule daily to soak the allowance of salt meat and fish in water (frequently changed), with the view of extracting a part of its salt; and, for the same reason, it should be boiled in as large a quantity of water as can well be done. I do not mean, however, it should be kept in soak so long as to render it insipid, or deprive it of any part of its nutritive qualities.

In touching at any ports on the passage, great caution should be observed with respect to the quantity of fresh meat and vegetables at first allowed; as I can confidently assert, from repeated observation and experience, that the usual allowance in a warm climate, and

immediately after a long course of sea diet, is by far too much ; and, if I greatly mistake not, frequently gives rise to obstinate fluxes, fevers, and a variety of bilious disorders.

It is a general opinion, that after being a long time at sea, the more vegetables and fresh meat seamen are allowed immediately on their arrival in port, the more they will be benefitted, and, to use their own expression, the sooner get the salt out of their blood. Having this idea themselves, and knowing no moderation in the use of their liberal allowance, they generally indulge to an excess, which, instead of effecting the wished-for salutary change in the

constitution, is frequently the cause of much sickness.

I am decidedly of opinion, therefore, that on a ship's arrival in port, the use of vegetables and fresh meat should at first be cautiously moderate, should chiefly be used in form of well-prepared soup, and be only by degrees increased to the usual full allowance.

Indeed I have often thought (and sometimes recommended), that it would be of great service to have a proportional share of the usual diet continued for some time after the arrival in port, in order to effect, in a gentle and gradual manner, that great change in

the system which must take place from a full diet, of so nourishing and opposite a nature to that used at sea.

With this view, a sea pye (of which seamen are remarkably fond), when properly made with a mixture of fresh and salted meat, vegetables, and seasoning, would be an excellent mode of victualing, for some days, on the first arrival in port.

The same observation may be made with respect to the particular article of fruit; none should be allowed to come on board but what is perfectly ripe, and of the best kind; and it ought to be served out in proper proportions by the ship's steward.

I am perfectly convinced, that want of due attention to these particulars is often the cause of dangerous sickness on the arrival of ships in Bengal river, and other harbours of India, and therefore, that it is well worthy of the most serious consideration.

Much benefit would be derived from the plan of allowing the ships' crews a proportion of fresh-baked fermented bread, once or twice a week, in lieu of biscuit. The sick and convalescents in particular would be materially benefited by a daily allowance.

This plan was adopted by the benevolent commander of the General Goddard with the happiest effects.

The wheat breakfasts in cold weather is an excellent article in the mode of victualling, but the ships are seldom supplied with a sufficient quantity. It would answer equally well in warm weather, at least it would prove an agreeable and beneficial change occasionally instead of meat. Rice, on the homeward-bound passage, would prove an excellent substitute:

A still better plan, however, which was also adopted on board the General Goddard, is, laying in a quantity of tea and sugar, to be served out from time to time to the different messes; and at all times to the sick and convalescents. This we found to be extremely salutary, and

it is greatly to be wished it were to become a general practice in the service.

I come now to the article of WATER ; and I need scarcely observe, that no pains should be spared in laying in as large a quantity of the best and purest as can be got, and as often as can be done.

The water, at many of the ports that ships touch at in the passage, is frequently the cause of much sickness on board, on which account, the most particular attention is always necessary in laying it in : spring water, where it can be had, is always to be preferred ; next to that clear, running water, which should

be taken from as near its source as possible.

Stagnant and brackish water, it is well known, ought at all times carefully to be avoided.

In situations where none but unwholesome water can be got, the process of boiling will tend much to correct its bad qualities.

No pains should be spared to render the water on board as sweet and pure as possible. When thick or muddy, it should be filtered and cleared with a little allum. The day's consumption should be pumped off, carefully filtered,

and exposed to the air, at least twenty-four hours previous to its use.

Osborne's water machine, with which the Company's ships are generally supplied, is an admirable contrivance in this respect, and should be kept in constant use. Care should be taken when the scuttle butt is empty, to have it well washed before any water is again pumped into it.

With regard to the use and consumption of water, there is one circumstance which I have particularly and most earnestly to recommend, namely, that the crews never be restricted to any particular allowance; a custom very general in the service.

The diet of seamen peculiarly requires a constant and considerable dilution—nature strongly craves it : and it would be next to cruelty even to run the hazard of not supplying her demands, in this respect, to the utmost extent. Besides, the free and plentiful use of good water, which may be always had with a little care and attention, is among the best correctors of a sea diet, and, consequently, an excellent preventative of scurvy and other diseases.

Instead of an allowance therefore being served out daily, the scuttle butt should never be allowed to be empty ; (unless for the purpose of cleaning it) and every man should be permitted to take as much water as he has occasion

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for, the officer on deck taking care, at the same time, that none be wantonly spilled or wasted.

With regard to the best mode of distilling fresh water from sea water, on ship board, I cannot here do better than refer to Mr. Jonathan Farquhar's letter on this subject, addressed to your Honourable Court in 1790, printed by your order, and distributed as instructions to the commanders of the Company's ships.

Water so procured may at all times be very advantageously used for making pease soup, for the live stock on board, and for washing the seamen's shirts.

I am now, Honourable Sirs, come to the article of LIQUOR ; the effects of which, owing to its imprudent and excessive use, is among the greatest enemies the health of seamen has to contend with ; particularly when habitually used, in what is called its raw state.

The practice on board most India ships of regularly serving out drams in the early part of the day, I have always considered as productive of the most pernicious consequences.

Much might be said in support of this opinion ; but I shall at present only observe, that the habit of daily swallowing a quantity of liquor in its raw state, should be most scrupulously abstained

from ; and that drams ought never to be given, unless after great fatigue, long exposure to cold, or on getting thoroughly wet. On such occasions a glass of good pure spirits is not only innoxious, but even absolutely necessary for the preservation of health, as it diffuses a sudden warmth and stimulus, which excites a temporary vigour in the system, and enables it to resist, or in a great measure to obviate the bad effects that might otherwise ensue.

At the end of a long, cold, wet watch, rubbing the body dry, a change of comfortable dry clothing, and a glass of pure, unadulterated spirits, would, in numberless instances, prevent many an able seaman from appearing next day in the

sick list, and eventually, perhaps, be the means of saving his life.

Although the bad effects of spirits, when habitually used, must undoubtedly be diminished in proportion to its dilution with water, yet they cannot, I think, be totally obviated by the mixture with water alone; and the custom of giving seamen their allowance of liquor daily, in form of their favourite and famed beverage, *Grog*, is far, in my opinion, from being salutary or commendable.

According to the ordinary proportion of water, it is, undoubtedly, only the least of two great evils.

The only mode, it appears to me, in which liquor can be daily allowed to seamen with safety and advantage, is in form of punch, made with either the fresh or preserved acid of vegetables, as lemon, lime, or orange juice. When the liquor is in this manner blended with the acid and sugar, and a large proportion of water, many of its bad qualities are corrected, and the acid and sugar are given in a pleasant, palatable form with infinite advantage. In this state it counteracts the bad effects of a sea diet, and powerfully prevents scurvy.

An ordinary allowance of punch daily given at dinner, is, perhaps, among the most effectual antiscorbutics that can be used at sea. We have instances

on record where this practice, in a long voyage, saved whole crews, even from the slightest symptoms of scurvy ; while other ships in the same fleet, and exposed only to the same causes, were daily burying men cut off by this dreadful malady.

But of the virtues of this acid, (on which those of punch chiefly depend) both in the cure and prevention of scurvy, I can decidedly speak from my own immediate observation and experience.

On board the General Goddard, during the voyage of 1792, several cases of scurvy occurred among the soldiers, in recovering from a contagious fever that raged universally for a time amongst

them, which were all speedily and effectually cured by the liberal use of preserved lime juice. And I have every reason to think that the disease was prevented in a great many others by the daily use of a small quantity of the acid mixed with water, and the addition of a little wine and sugar.

Indeed I consider this acid, in its fresh or preserved state, to be as effectual in curing and preventing scurvy, as the bark and mercury are in curing the ague and syphilis ; and a large quantity of it as necessary to be laid in by ships at every place it can be procured.

I have therefore strongly to recommend, that a fresh quantity be always

purchased at every port a ship touches at on the voyage ; and also that a part of the ship's stock of liquor be made into shrub, that is to say, that a certain quantity of acid and sugar be mixed with a certain proportion of spirits, to be kept, and daily served out to the men during their continuance at sea.

It were most truly and earnestly to be wished, that the Honourable Company's ships should always be supplied, on their fitting out, with a quantity of their liquor made previously into shrub, which would only require a proportion of water to make punch. That the use of punch, in a moderate degree, should become general—that drams should never be given unless in such instances of ex-

posure as I have already mentioned—and that grog should be used as seldom as possible. In my mind the beneficial effects that would arise from such practices would be great indeed.

The practice common among seamen of gambling for, or exchanging their allowance of liquor, and of making liquor the reward of every little job done for the officers, or for each other, should be universally discouraged and prevented: with many other bad effects, it leads to the vile habit of drunkenness, so injurious to health and morals;—a habit, in my opinion, meriting a punishment equal to any generally inflicted on board.

The seamen, on no account, should be allowed to lay in a private stock of liquor on fitting out, for sea use ; and the custom of exchanging a part of their salt provisions for liquor, at St. Helena and other ports on the passage, should be strictly prohibited.

I come now to the fourth general head, viz. REST and EXERCISE.

That a proper degree of exercise is necessary is sufficiently obvious: and that rest and sleep, in proportion to the fatigues of the day, are indispensably necessary for the purposes of health, is also equally evident. Seamen suffer severely in this respect ; and it is greatly owing to the short, irregular, and disturbed

sleep they commonly have, that they so soon and so easily fall a prey to sickness, and premature old age.

A due and proper degree of regular undisturbed sleep would add much to their comfort, and to their public utility, by greatly assisting in the preservation of their health.

It would be highly advantageous if the crews in the Company's ships could with propriety be divided into three watches. Latterly this was the constant and invariable custom of the enlightened and humane Captain Cook ; a custom which always had the happiest effect on the health of the ship's company. According to the present establishment

in the Honourable Company's service, perhaps this division would be found inconvenient, at least for any continuance of time ; but with all due deference, I conceive that alterations greatly for the better might be made even at watch and watch, so as to allow six hours of uninterrupted sleep instead of four. Suppose the starboard watch were to turn in at eight at night, and not relieve the other until two, instead of twelve ; and the larboard again not to relieve them until eight, instead of four in the morning. This, with a short sleep through the day, would, perhaps, be sufficient ; at any rate, it appears to be greatly superior to the common plan, of four hours below, and four hours on deck alternately at night ; for I conceive that

the inconvenience or fatigue, even in the worst weather, of staying two hours longer on deck, is not to be put in competition with the advantages and refreshment that would arise from two hours more, (in all fix, instead of four) of undisturbed repose. However, the commanders and officers in this respect are by far the best judges what can, or ought to be done, and I only beg leave to hint the circumstance for their consideration.

While fatigue, and long continued exercise or labour, are as much as possible to be avoided, and a due proportion of rest and sleep allowed: on the other hand it is equally necessary not to indulge or encourage the idle and lazy, nor to allow the men, in general accus-

tomed to a great deal, to suffer from want of exercise, as they are apt to do in the trade winds, and other seasons of exemption from the ship's duty.

At such times, and indeed at all times when on deck, and not employed, dancing, fencing, cudgelling, and all manner of harmless games that exercise the body and divert the mind, should be encouraged; in short, every thing should be allowed and encouraged, as far as is consistent with innocence and discipline, that any ways tends to diffuse cheerfulness and good humour.

In this light, at suitable times, I highly approve of music, and especially of the fife and drum. On occasions

when these play and beat, a piece of duty is not only executed with more spirit and activity, but by their animating and exhilarating effects on the mind, they tend to dispel melancholy, lowness of spirits, and other depressing affections, well known greatly to favour the approach of scurvy and other diseases. It would be a commendable plan to encourage singing, and entertaining story-telling at night among the men on deck, at times when they are not at work, or walking about, in order to engage their attention and prevent their sleeping on deck, which they are apt to do, and which is often extremely prejudicial to their health, particularly when the deck is damp, or when they lie down in a draught of air. Sleeping on deck should therefore

be prevented as much as possible at all times; and when below, men should be cautioned not to lie down on chests opposite a port, at which a current of wind enters, as nothing can be more prejudicial than to have the whole or any part of the body exposed in this state while asleep.

It is proper I should here take notice of a custom, or certain mode of punishment, on board many ships, erroneously supposed slight in its nature. When a man is found asleep in his watch, and not ready at a call, it is usual to awake him by throwing a bucket full or two of water over him, a circumstance which may be attended with very bad consequences, if the

man does not immediately shift and rub himself dry, which he seldom or never thinks of attending to. It would be better by far to flog him well with a rope's end.

Having now mentioned all that occurs to me under the head of Rest and Exercise, I come to the fifth general head, viz. CLOTHING.

The great advantages of proper clothing in the preservation of health are quite evident and daily ascertained by the state of our own feelings ; but owing to thoughtlessness and inattention, seamen are generally very deficient in this necessary and comfortable article.

A due degree of clothing, adapted to the state of the weather and climate, acts by preserving a just balance and distribution in the great mass of the circulating fluids of the system, by supporting an uniform and equal circulation on the surface of the body; and by preventing a partial or general suppression of that perspirable matter, the escape of which is so necessary to the purposes of health.

In every climate an attention to this particular is therefore indispensably necessary, but more especially so in an East India voyage, when men are exposed to every variety of climate from below the freezing point up to 90° and 100 degrees of Farenheit's scale.

Warm comfortable clothing in the cold boisterous weather met with off the Cape, and in other high latitudes, will greatly contribute to the prevention of scurvy and many other diseases. When ships approach such latitudes therefore, the men should be made to wear a due quantity of the warmest they have got; and such as are deficient should be supplied from the stow chest, which, on fitting out, I may here remark, should be always amply supplied with every article necessary for the voyage.

Equal attention is due to proper light clothing in warm weather; and care should be taken that no part of the body, usually covered, be exposed to the rays of the sun, or to the current of

warm air, so common in hot countries, as a suppression of perspiration would thereby be the consequence—a circumstance to be considered always as more or less dangerous.

The men should never be allowed to go about dressed in a careless or slovenly manner. A neat and cleanly appearance, as far as circumstances will allow, should be insisted on. In the hot latitudes they should never be permitted to appear without their hats, and, as the slightest scratches on the feet and legs, from the nature of a sea diet, are apt to run into ill-conditioned sores and ulcers, they should always be made to wear shoes and stockings.

When they are over-heated with work in the hold, &c. they should particularly avoid coming up in the air with their naked bodies exposed, in order to cool themselves; nor, in like circumstances, should they ever drink large or sudden draughts of cold water to quench their thirst. I have frequently known tremors, vomiting, and febrile attacks immediately follow such imprudent conduct.

When on deck, they should be as little as possible exposed to the rays of the sun; never suffered to sit or lie down at such times, as they are very ready to do; and such duties as can be conveniently put off until the evening or morning should never be executed in the heat of the day.

Awnings forward and on the poop in the hot latitudes, to prevent exposure to the rays of the sun, would be of considerable benefit.

At all times every care should be taken that the men have a dry and comfortable change of clothes, in case of getting wet ; and at the end of every wet watch it should be an invariable rule with the officers of that watch to see the whole strip, get well rubbed dry, and either turn into their hammocks, or put on dry clean clothing ; at the same time giving particular orders to have the wet clothes hung up to dry the first possible opportunity—a constant attention to this point, a simple and easy practice, with a glass of pure spi-

rits, in cases of long exposure as before mentioned, I am convinced would be the means of preventing much sickness, and saving many a valuable life.

In cold wet weather much benefit would be derived from the use of flannel shirts, due attention being paid to cleanliness, and sometimes they would be equally beneficial, even in warm climates, by preventing a partial or general check of perspiration, so frequent and dangerous in hot countries.

Every care should be taken that the seamen be supplied with proper hammocks, bedding, and a due quantity of bed clothes, and that they never be allowed to sleep on chests or on deck at

night, which some from carelessness in losing their hammocks and bedding, and others from mere laziness, frequently do.

An inventory, or regular account should be taken of every man's stock of clothes in the ship by the commanding officer, and kept in a book, for the purpose of being occasionally referred to. Such as are deficient should be supplied with what is necessary; and the men should be mustered, and their clothes inspected at stated periods, in order to keep up a proper stock, and to punish those who are most careless in losing any part, or, (which is too often the case) who exchange any for liquor.

GENERAL REMARKS:—Under this head I first of all beg leave to take notice of the numerous and various accidents that happen on ship board, from causes which often, perhaps, might be avoided. I have seen much mischief, even sometimes death, happen from the accidents I allude to, namely, blocks breaking and falling from aloft; men falling down the hatchways; hurts and bruises in consequence of intoxication; fighting, &c. &c.

It should therefore be the particular care of every officer to guard as much as possible against accidents even of the slightest nature. It should be a rule to see that the hatches are always laid over at night, or provided with some guard

or fence, to prevent the men from falling down them in the dark.

Quarreling and fighting should at all times be prevented; and as men in a state of intoxication, on ship board, are peculiarly liable to accidents of a dangerous nature, none in this state should be suffered to go about, but ordered immediately to bed until perfectly sober, and then some punishment should invariably be inflicted, as an example for the general good.

As men frequently fall overboard, I need hardly observe that two or three buoys, or floating substances, should be always in readiness to let go; and a boat ready to be lowered down at a mo-

ment's warning, by which many lives may often be saved.

There is a frequent, and very formidable cause, though a seemingly trivial one, in the production of some bilious disorders, and others, which I have not yet mentioned, and to which seafaring people are peculiarly liable---I mean a costive habit of body: here provident and bountiful nature affords an admirable and effectual antidote in the surrounding watery element, perhaps by far the best that can be used; and therefore, when nature herself is not regular in performing her usual and necessary functions at least once a day, a large glass or two of salt water taken

in the morning, fasting, may be of infinite use.

In what I am now going to suggest, Honourable Sirs, I may be considered by some to deviate from my professional line; but, conceiving it no deviation, I shall not be deterred by the fear of appearing singular, from maintaining what both observation and experience have fully impressed on my mind, namely, *That a strict attention to the morals of seamen, and to the due and regular performance of public worship on ship-board, will highly contribute to the preservation of health.*

If I mistake not, it will always be found that the most healthy, cleanly,

useful, and valuable seamen are men of the best private or moral character; and that, very generally, the reverse of the observation will hold equally true.

The able and experienced seaman is, indeed, in every sense of the word, a truly valuable character---he is only thoughtless and inattentive as far as regards his own health and welfare.

As a man, he will yield to no one in his detestation of whatever is mean, ungenerous, or dishonourable---he has an open, a noble, and an honest heart.

As a seaman, to be cheerful, active, and prompt in the execution of his duty; to bear fatigue and the vicissi-

tudes of weather and climate without murmuring; to be steady and collected at his post in the hour of difficulty and danger; to be obedient, respectful, and attached to the officer worthy to command him; to be faithful and true to his king and country; courageous in action, and humane in victory, are splendid virtues which he eminently displays as occasions require*.

Such, Honourable Sirs, it is well known, are the leading characteristics of a British seaman; and who can reflect

* As the above observations on the nature and disposition of seamen may strike some of the readers of this little work to be a quotation, it becomes the author to inform them that an extract was taken from the MS. and inserted in the Analytical Review for June 1797—page 670.

without a sigh on the manifold hardships, from sickness and other causes, he daily encounters? on the extreme misery and distress so often his lot? And who that has it in his power but will strenuously act *his part* to mitigate the sufferings, alleviate the distresses, and contribute to the health and welfare of this inestimable class; the very life and soul of our commerce; the great bulwarks and guardians of our nation?

It is far from being so, however, in nature or in character with all on ship-board; and some will be found, in both, the very reverse of what I have just now endeavoured to delineate; perfect lubbers, the meanest and most

profligate of mankind ; the very scum of the earth and outcasts of society, who, in reality, are an utter disgrace to the jacket they wear. It is among such as these, immersed in indolence, sloth, and vice, that sickness generally first makes its appearance. Such abandoned wretches are guilty of every irregularity and excess, equally unfriendly to health and to morals : they corrupt the minds of the young and thoughtless by their pernicious examples ; and by their vicious habits they generate and disseminate diseases of the most fatal and malignant nature, which affect the health and endanger the lives of a whole ship's crew. Surely, then, the strict hand of discipline and authority, when properly exercised, can never be more usefully em-

ployed than in endeavouring to correct the principles and reform the manners of such a description of men, which will not only tend to their own health, and every moral and bodily good, but to the comfort and happiness of all on board.

Slothfulness, indolence, drunkenness, theft, gambling for liquor; fighting, and all other such flagrant vices, should therefore not only meet with exemplary punishment, but the precepts of temperance, sobriety, and good order, should always be strongly inculcated, and the examples of these virtues held forth for their imitation.

The regular and solemn performance

of public worship, in presence of the whole ship's company on the quarter deck, once in the week, in suitable weather, I need hardly remark should never be neglected either at sea or in harbour.

A proper idea of religion, a habit of duly and regularly imploring the protection and aid of the Author of all good, independently of every other consideration, will highly contribute to the preservation of health.

It tends greatly to introduce cleanliness, sobriety, and good order. It teaches obedience, subordination, and a faithful and regular discharge of the different duties in the stations allotted to

each individual. It produces, above all, a happiness and serenity of mind that banishes melancholy, discontent, and all the train of depressing affections : and in the hour of sickness and distress, when all human aid avails nothing, it will prove a firm and never-failing support of inward comfort and happiness.

There now remains, Honourable Sirs, only a few observations to be made respecting the sick and convalescents ; and the steps to be taken, if unfortunately a ship's crew, by any unavoidable circumstance, or otherwise, should become sickly.

In cases where fevers, or other diseases of a malignant or contagious na-

ture prevail, the sick should immediately be separated from their messmates, and a sick berth made for them in the quietest, most airy, and convenient part of the ship.

At all times, and in all situations, proper careful attendants should be appointed to watch and nurse the sick, to be at hand constantly to supply their wants, and make their demands known, and to pay the most minute attention in keeping them as clean, airy, and comfortable, as possible. On these attentions, frequently, much more depends than on the whole powers and virtue of medicine, and at all times, every hour of the night and day, they ought to be most strictly and carefully attended to.

In cases of a very malignant and contagious nature, all communication with the sick birth should be cut off, unless through the surgeon and attendants; and where a fever of this nature unfortunately rages, avoiding costiveness, and occasionally taking a dose of the powder or tincture of bark, will often secure many of those who are well from its attacks.

Fires should be frequently lighted in the sick birth to purify the air. The surrounding part of the deck, the beams and sides of the ship should be frequently sprinkled with hot vinegar, impregnated with camphor, allspice, or some grateful aromatic; and the utmost possible attention, in every respect, paid to cleanliness, dryness, and ventilation.

The buckets that the sick use should be properly fitted with a top, kept constantly clean, and, after use, washed and left half full of salt water.

The sick should frequently shift, and their foul linen should be immediately steeped in salt water, and carried on deck, there to remain until washed, which should be done as soon as possible.

Their bedding, when they are able to sit up, should occasionally be purified with smoke of tobacco or sulphur, and always hung up in the rigging for airing, at as great a distance, however, from where the men work as possible.

The sick themselves should appear on

deck in fine weather as long, and as often as they can, for the sake of air and gentle exercise, taking particular care, however, to avoid exposure to cold or partial draughts of air; to avoid getting wet, or being exposed to the rays of the sun.

The convalescents in particular will be greatly benefitted by attention to these points.

In sickly times, on ship-board, many of the crew are often ill for several days without complaining; the moment, therefore, an officer observes any of his watch to be more inactive, or look worse than usual, or any ways in a sickly or droop-

ing state, he should order him immediately to be examined by the surgeon.

With regard to nourishment, the inclination of the sick themselves should generally be consulted; they should be indulged in moderation, and nothing useful withheld that the ship can possibly afford.

A light restorative diet, the moderate use of wine, along with cleanliness, comfortable clothing, gentle exercise, and a cheerful mind, as men are recovering from fevers, fluxes, &c. are the best sureties against a relapse, and the appearance of scurvy (so frequent in such cases), and the only means that can be de-

pended on for the restoration of usual health and strength.

When a man has recovered from fever, or any contagious disease, before he is permitted to mix with his messmates, his hammock should be well cleaned, and washed, and carefully purified; his bedding should also be purified and well aired, and all his wearing apparel either purified or thoroughly washed: his hair should be well washed with soap and water, and the warm or cold bath used (as may be judged best), for the sake of thorough and general cleanliness.

Every ship should be provided with a proper bathing-tub, to be always kept

at hand, as many cases may occur where it will be much wanted.

When men are recovered, and returned to duty, great attention and tenderness are due to them on the part of their officers; indeed, at all times, much depends on the proper conduct of the officers towards the crew in the preservation of their health.

Seamen, of all classes of mankind, are the most thoughtless, and least attentive to whatever relates to their own welfare; in this respect they are mere children, and the judicious and humane officer, therefore, if I may be allowed the expression, will tend and watch over them with the careful and anxious eye

of a parent; he will consider all the crew as one family, of which he is the guardian, and whose welfare and happiness will flow in proportion to the tenderness, care, and attention he bestows in fulfilling those duties, which humanity, as well as the situation in which he is placed, impose on him.

An imperious, harsh, or ill-natured mode of dispensing orders, or of carrying on duty, I apprehend to be as repugnant to the true spirit of discipline and subordination, as to the pure and mild principles of humanity; instead of accelerating the execution of duty, it invariably retards it, and it never fails of introducing discontent, vexation, and despondency, among the crew; states of

mind which I have oftener than once observed to be highly conducive to the production of scurvy, and other diseases.

An uniform, assiduous, and humane attention to the welfare and comfort of all ; to study the character of each, and endeavour to make every man happy and pleased with himself ; to check the forward and presuming ; to protect the young and diffident ; to dispense his orders in a mild and conciliating, yet in a steady, decided, and manly manner ; and invariably (in the words of a learned and humane physician *) to endeavour to reconcile strict discipline with indulgence and humanity, are certainly among

* Dr. Blane.

the necessary traits in the character of an able and experienced officer*.

Such an uniform tenor of conduct can never fail to produce the utmost harmony, cheerfulness, and contentment, throughout a whole ship's crew, and consequently to have the happiest effect in the preservation of health; while the officer who so conducts himself is universally respected and beloved,

* The character I have here endeavoured to pourtray, and which, in a medical view, I would wish to hold up as a model to the younger officers, who wish to excel in their profession, was early impressed on my mind in my first voyage in the Earl Talbot. From that period, in a service that abounds with so much talent, I have seen many similar instances among my valuable shipmates, that have left me with the same impression which I first received.

and his orders and commands at all times readily and cheerfully attended to with the utmost activity and exertion.

Pardon me, Honourable Sirs, for this digression, and for presuming to state my opinion of the duties of a station, which, in every respect, the generality of the gentlemen in your service are allowed so ably and diligently to fill.

To return to my proper subject, I have to remark, when a man unfortunately dies of a putrid fever, dysentery, or any other contagious disease, that all his clothes and bedding should be immediately thrown overboard (as the readiest mode of destroying them), as also his chest, and no relic be left

that can possibly harbour any active or latent seeds of the contagion.

When attention has been paid to the different means of prevention, contagious diseases (as fevers, &c.) will seldom or never appear; at least if they do, they never acquire any great degree of virulence or malignancy.

When contagion rages, however, whether from inattention or unavoidable causes, every endeavour must be made to subdue it, by the most strict and rigid attention to every possible variety of cleanliness, by daily purifying every part of the ship with fires, fumigations, smoke of tobacco, and of gunpowder moistened

with vinegar; washing with warm water and soap, and sprinkling every part with hot vinegar; by the constant use of windsails, and every other possible mode of prevention, as mentioned under the different heads.

I have particularly to remark, in times of great sickness, when a man unfortunately dies, and, at the same time, when others are dangerously ill, that the usual ceremony of tolling the ship's bell immediately previous to the burial should always be omitted. The effects of the imagination, whether they are productive of depression or excitement of mind, are assuredly great in inducing or in warding off, in aggravating or in

curing a number of diseases; and seamen, by being more superstitious than any other class of men, are more easily affected in this way.

I have known men, in the last stages of fever, hurried into eternity from a dejection of mind arising from the impression of this last solemn and affecting mark of attention to a departed friend or messmate; for this reason it should, in many instances, be entirely omitted. Any deaths that may unfortunately happen, should be kept as profound a secret as possible from such as are dangerously ill; and while the surgeon is administering his cordials for the relief of the body, he should at the same time, with tender care and humane

sympathy, administer what hope and mental comfort he can to his low and dejected patient, while yet there is a possibility or chance, of averting that great and awful stroke—the final period of worldly existence.

But in cases where *death* is certain, where a strong self-consciousness of approaching dissolution exists, and all the powers of worldly aid avail nothing, then it peculiarly becomes the lot of the humane medical attendant to act to the best of his capacity in a clerical character, and to administer the comforts and promises of religion to his dying charge, preparatory to his taking leave of this mortal stage, and his entering into that certain and everlasting state,

that awful “undiscovered country, from
“whose bourne no traveller returns.”



I HAVE now, Honourable Sirs, laid before you, in as concise and regular a manner as I could, such remarks and observations relative to that most important subject, the preservation of the health and lives of your seamen and soldiers, as my reading, observations, and experience, have put me in possession of during the time I had the honour of serving in your employ; and in so doing, I have endeavoured to fulfil a most important part of the duties of my profession.

What I have said with respect to seamen, will generally apply equally well to the health and management of troops on ship-board: and it is in those ships that are crowded with soldiers, that the different means of preventing sickness should be most diligently and carefully practised.

I have unavoidably extended my observations to a greater length than I at first intended; and, on a superficial view, a number of circumstances I have mentioned may, perhaps, appear of little consequence. It should be recollected, however, that it is seldom from a single cause alone that disease is generated, but that the combined influence of a number of seemingly trivial circumstances,

acting in concert on the human body, is often the prolific parent of the most acute, malignant, and fatal diseases; and that it is only by the strictest and most rigid attention to every circumstance, even the most minute, that success, as far as depends on our foresight and exertions, can be ensured.

It will readily occur to you, that the preservation of health is at all times much more important and desirable than the cure of diseases. It is to this grand object that I have *chiefly* attended in the observations which I have now the honour of laying before you; and it is with the fullest confidence of experience that I conclude as I began, with saying, that a careful attention to the various matters

I have specified will, in great measure, preserve the health of seamen in the longest voyages, and in every variety of climate. To the feelings of humanity the plan must be peculiarly gratifying, and to a commercial nation, its success must produce infinite advantage.

It may be alledged, that sickness and mortality in voyages to India are now less frequent than in more early times : it will be found, however, that this results not from a more particular attention to the preservation of health, but is chiefly to be attributed to the great improvements in navigation, which now effect a passage in a quarter or third of the time usual in former periods. In proof of this, we have daily and melan-

choly instances of the sickness and mortality that still occur in long voyages *.

Certainly, of all voyages those to India, from their length and duration, afford the best opportunity for medical improvements, and for ascertaining, by experiment and observation, the means best adapted for the preservation of health in voyages to hot climates. Whenever, therefore, this subject shall meet with general attention, and the execution of the different means for preserving health shall be considered not only as the duty of surgeons, but that of every commander and officer, the improvements

* The great sickness and mortality that occurred in the last China fleet fully prove the above observation.

in this department will, with due encouragement, render the East India Company's service as famed a school for this part of medical knowledge, as it has long been for nautical talents.

On a slight view, the execution of all that I have mentioned may appear to some rather difficult and complicated: it appears to me, however, only to want a degree of abridged arrangement to reduce it to simple rules and regulations, or to a short methodical system of discipline for the preservation of health, that may be easily executed.

But were I to admit the difficulty of execution (which I by no means do), what trouble, care, or attention, should be

withheld in endeavouring to secure the certainty of keeping a whole ship's company in a healthy, vigorous, and active state—of preserving many a valuable seaman to his country and friends—and by so doing, of materially serving the great cause of humanity, in conjunction with that of the great maritime nation to which we belong?

Such, Honourable Sirs, are the hints I have to suggest: should my humble endeavours to be of use prove acceptable to your Honourable Court; should they meet with any degree of general attention on board your ships, or induce others, better qualified, from experience and ability, to extend farther the consideration of an object “so devoutly to

be wished," as the more effectual preservation of the health and lives of your seamen and soldiers, I shall feel truly happy, and be amply gratified in the honour of having thus introduced to your notice a subject so extremely important and interesting.

I have the honour to subscribe myself, with all deference and respect,

Honourable Sirs,

Your most obedient,

faithful, and obliged

humble servant,

ALEX. STEWART.

FINIS.