

An essay on the nature and treatment of the malignant contagious ulcer, as it generally appears in the British Navy / by James Litle.

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ESSAY
ON THE
NATURE AND TREATMENT
OF THE
MALIGNANT CONTAGIOUS ULCER,
AS IT GENERALLY APPEARS
IN
The British Navy.

BY JAMES LITTLE, SURGEON, R. N.

Miseris succurrere disco.

LONDON:

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J. MURDOCH, 24, HART STREET,
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MDCCCIX.

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TO
JOHN CHILD PURVIS, ESQUIRE,
REAR ADMIRAL OF THE RED,
COMMANDING HIS MAJESTY'S SHIPS AND VESSELS AT
GIBRALTAR AND CADIZ,
THE FOLLOWING
E S S A Y
ON THE
NATURE AND TREATMENT
OF THE
MALIGNANT CONTAGIOUS ULCER,
AS IT OCCURS IN
THE BRITISH NAVY,
IS
DEDICATED,
AS
A SINCERE TESTIMONIAL OF RESPECT AND ESTEEM,
BY HIS
MOST OBEDIENT AND
FAITHFUL HUMBLE SERVANT,
THE AUTHOR.

*His Majesty's Ship Atlas, at ?
Gibraltar, Dec. 28, 1808. }*

ADVERTISEMENT.

THE PUBLISHERS of this Tract think it necessary to inform the Public, that its Author is at present abroad on his Majesty's service, and consequently has not had it in his power to superintend its progress through the press.

PREFATORY DISCOURSE.

IN tracing the phenomena of this destructive disease, the Malignant Contagious Ulcer, through its progressive stages, I am actuated merely by a wish to be of public utility. My observations, I can safely aver, are the result of deliberate remark and extensive experience.

The subject derives no common degree of importance from this disease having, in the course of the late, and also in the present war, been the cause of destroying or mutilating so very considerable a number of the most important servants of the country. The Malignant Ulcer, I believe, has of late years occasioned the loss of more men to the naval service, than all the other diseases incident to seamen: and not only has it been the cause of the loss of so many valuable men, but has, in many instances, rendered ships of the line unable to keep the sea. When once

it takes deep root among a ship's company, it is, of all the diseases I have yet observed, the most difficult to eradicate: for although it may be so far suppressed as entirely to disappear, yet contagion may not be eradicated: it may lie dormant for a considerable time, and upon any new exciting impulse, again burst forth with its accustomed virulence. An instance of this lately occurred. Part of the crew of His Majesty's ship, *Excellent* had belonged to the *Sampson*, on her voyage from Buenos Ayres to England; and the disease was extremely prevalent in that ship, so much so, that several amputations were found absolutely necessary, and actually took place; the disease, however, was in time subdued, and did not apparently exist among that part of the crew draughted into the *Excellent*; but that ship having been just fitted out, and probably very damp, which is generally the case of ships newly commissioned, the disease soon began to manifest itself, and increased very considerably; until a vigorous and effectual method was adopted in the port of Gibraltar, which eventually proved successful in conquering the disease: although it deprived the country of the service of a useful ship for a long time. For this account I am indebted to Mr. Spence, the surgeon of the *Excellent*.

To this latent state of morbid influence may

be ascribed the foundation of that mortality we read of in old voyages and medical records. They appear not to have been aware of the baleful consequences of inhaling air in any degree charged with noxious principles, or to have paid that attention to the subtile nature of contagion which the subject merited. Indeed contagion does not appear, even in the present improved state of medical science, to be sufficiently understood. We learn from high medical authorities, that the fever, which lately made such ravages in Gibraltar, was not contagious, although more than three fourths of those seized with it, lost their lives; the disease running through its different stages in the most rapid and destructive manner. Those inhabitants, however, who lost their friends and relatives by it, and who themselves escaped merely by removing a short distance, without the pale of its influence, to Europa Point, or a little way up the Rock, will not readily concur in the opinion that it was not contagious.

We read of single ships, and whole squadrons, being nearly depopulated by contagious or putrid diseases, almost constantly inseparable from a cruise of any considerable length; until the judicious and persevering Captain Cook taught us, that it was very possible to preserve the health of our seamen perfect, during long and

arduous voyages. Since his time we may observe, that a progressive improvement has taken place in the internal economy of British men of war. From him chiefly we learnt, that it was not altogether the privation of fresh provisions that produced putrid and pestilential diseases on board ships. He has proved that a ship's company may keep at sea, living upon the established rations of ship provisions, a long time, even in a warm climate, and yet their health be preserved. It was almost entirely from ventilation, i. e. the admitting of pure air, cleanliness and regularity in their mode of living, that his efforts were attended with so much success.

History furnishes us with many direful records of the fatal effects of a number of people respiring the same air in a confined place. The unhappy sufferers who lost their lives in the Black Hole at Calcutta, in the short space of one night, even when there was a small aperture for the admission of air, is a striking and well known proof how necessary a change of air is to life.

It may thence be considered as surprising, how the most industrious exertion of professional sagacity can preserve the health of seamen. When we recollect that three or four hundred men are for a whole night confined together in so small a compass as the lower deck of a man of war, with

only the hatchways to supply them with fresh air; we might naturally conclude disease would be almost inevitable. There are, however, some compensating circumstances. The rolling of the ship has a powerful effect in ventilating, or keeping up a constant circulation of fresh air; and this motion is fortunately always most present when it is requisite to keep the ports shut.

A particular instance of the salutary effect of attending to ventilation I can not forbear mentioning. Whilst in the year 1803, attending the practice of the obstetric art, at the Lying-in-Hospital in Dublin, one of the most extensive institutions of the kind in the British dominions, I was much struck, upon examining the records of the hospital, to find the deaths from puerperal fever diminished nearly one half to what they were at its first institution, and also a great diminution in the deaths of children, judging from an equal number in the two periods of time. But upon inquiry, I found that so salutary an effect arose only from a more perfect ventilation of the wards.

At its first institution, the doors and windows were kept generally shut, and little attention was paid otherwise to have the wards ventilated. The deaths, consequently, from puerperal fever, were proportionably very great, and continued

to be so till a new plan of ventilating the house was adopted by the very ingenious Dr. Clark of Dublin, then master of the hospital. The scientific assiduity bestowed on such an occasion, was the cause of saving the lives of many. To that circumstance alone was owing so surprising a diminution of mortality. What pleasure must the man of a benevolent heart experience from seeing his plan so eminently contributing to the preservation of his fellow creatures! This, to a well-formed mind, is infinitely superior to any pecuniary recompense. If the Roman individual, who was instrumental in saving the life of a fellow citizen, was rewarded with a civic crown, with what reverential respect must we in the present age regard the memory of a philanthropic Howard, or any other individual, whose efforts become so conspicuously instrumental in alleviating the miseries, or preserving the lives, of his fellow creatures! How indelibly must the name of a St. Vincent, a Cornwallis, and a Nelson, be engraven in the hearts of their countrymen, by recollecting, independently of their heroic achievements, their sedulous exertions to preserve the health of their seamen, in which their endeavours have proved so eminently successful! I have myself witnessed the care and attention of all those great commanders, and their alacrity in carrying into effect every idea that could be suggested for the attainment of an object so highly important.

When in former times, the sufferers under disease in the navy were left in their hammocks, promiscuously, in the lower parts of the ship, wallowing in the accumulated sordes of distemper, the visits of the medical attendants, which were but rare, could not be of any considerable utility, either in alleviating or removing their complaints. But how widely different is the scene that presents itself in the present day! An hospital berth is now as well fitted up, as airy, neat, and commodious, as an hospital ward; provided with a bathing apparatus, with a water-closet, with established nursemen, and with every comfort for the sick, that the situation on such an unstable and fluctuating element can admit; the sufferers are relieved from the rigour of military coercion, and the present establishment of professional talent affords them every relief that industry can procure or experience dictate. Such is the neatness of hospital berths in ships of the line, that they are commonly shown to visitants as the criterion by which the good or bad economy of the ship is estimated. Such also in general have been the zeal and industry of the medical officers of the navy, that their practice has of late years been improving in an uncommon degree.

Professional ability, and a spirit of liberal enquiry, are perhaps more general in the navy than could be expected, considering the many

and untoward occurrences inseparable from a sea life; for the dreary and tedious existence upon this turbulent element is by no means congenial to the expansion of genius, or acuteness of thought. Persevering industry, however, has overcome many difficulties; and that emulous exertion in discharge of their duty which so greatly prevails at present amongst the executive officers of the British navy, and which has raised it to its present greatness, is by no means wanting in the medical department. But the naval surgeon, from his isolated situation, cut off from consultation and advice of his brethren in cases of difficulty, turns his thoughts in upon himself; and the consciousness of the necessity of discharging his duty with propriety, proves a powerful incentive in promoting professional improvement. He observes symptoms and occurrences as they arise before him; he watches over the health of those valuable men committed to his care; immediately discovers the dawn of contagious disease, and adopts with decision the means calculated to arrest its further progress, in which by such early efforts he commonly succeeds. Were he to look on, and allow it to increase, it would day by day assume a more malignant and infectious type, in the event baffling all his efforts and practice to overcome it. But the moment any disease of that tendency makes its appearance in any of the men, they are immediately separated from the

rest, a temporary airy berth is fitted up for them, as much pure air as possible is admitted; early and vigorous means are adopted for the removal of fever, and they are generally attended with success.

Diseases of a contagious nature can not be too carefully guarded against. How often have they proved a scourge to mankind!--The pestilential disease of Homer, which nearly drove the Grecians from their camp before Troy; the destructive pestilence which threatened the depopulation of the beautiful city of Athens, about four hundred and thirty years before the Christian epoch; the plague which destroyed so many of the inhabitants of London in the year 1665; the yellow fever of America, and the malignant fever which lately made such ravages at Gibraltar; in short, the records of every period afford impressive examples how requisite such precautions always are. Yet, in late times, some of those diseases have been asserted not to be contagious: if so, I know not what contagion means. How destructive the plague of London proved when the streets were so very narrow and the houses much crowded with inhabitants! Fortunately however in the subsequent year, the great fire which took place totally eradicated the disease in removing its cause. To many, no doubt, this fire was a disastrous event; but most salutary in the end,

and attended with the greatest public advantages.

Classing the subject of the following pages with diseases of the above description, I have thus in a cursory manner given my ideas upon it to the public. The inconveniences inseparable from a sea life, and the hasty manner in which this essay is thrown together, will, I trust, plead in extenuation for the want of method and the inaccuracies with which it must abound.

Impressed with the idea that the naval officer may sometimes derive an useful hint from what is here written, I have studiously avoided, as much as possible, that garb of verbose phraseology which has been but too generally seized upon to decorate the medical disquisitions of the present day. For since a Darwin, a Beddoes, a Currie, and a Reid, have so eminently contributed by their works to disseminate the principles of medical philosophy among the more enlightened classes of the community, the profession has acquired additional respectability. It is by unfolding the principles of medical knowledge as much as possible to society, that the profession will receive its just appreciation. The community will then set a proper value on the advice received and assistance to be derived, from the man who has devoted his life to physical re-

search. To obtain a competent knowledge of the organization and functions of the human body, is no very easy task for the medical student to accomplish. It is by unwearied application alone that an acquisition so essential to his profession can be obtained. The inexplicable action of the nervous power on the faculties of the system, and the great changes produced by the different emotions of the mind, must be acquired wholly by study and actual observation. A state of mania has often been known to arrest the progress of phthisis pulmonalis, and we daily see examples of nervous sympathy producing the most important alterations on the functions of the vital system. The state of the atmosphere likewise demands attention. All of these things must be taken into consideration before we can attempt to direct or assist nature in her operations. The healing art is therefore in no danger of falling into disrepute by the dissemination of its *general* principles among society. The medical profession must ever remain exclusively in the hands of its legitimate professors. Empirics and quacks will, from such a liberal promulgation of medical knowledge, no longer be able to impose on the credulous and the unfortunate; they will then cease to prepare their poisonous compounds, and will not have it in their power to raise fortunes so immense and so rapid at the expense of British credulity.

In proceeding through the following sketch, it was my intention to confine myself as much as possible to practical remarks. But it soon appeared highly requisite to elucidate (however difficult the task) in some degree, by physiological reasoning, the method of treatment and opinions advanced; which, however singular in some instances they may appear, are entirely the result of deliberate remark. It may also be alleged that I have generalized too much, or been too comprehensive in my remarks; but the subject in hand, perhaps as much as any, admits of such a license. In all pathological narratives, accidental or unusual symptoms and occurrences must in some measure be omitted; otherwise they will become perplexing and tedious, and can never without practice lead to a thorough knowledge of the complaint. My object is only to draw the leading features, as it is a disease which soon manifests itself without the aid of descriptive minutiae. The degree of my success, the public, and more particularly my brethren in the navy, will appreciate.

SIMPLE PURULENT SORE.

BEFORE entering upon the discussion of the subject which occupies the following sketch, it is requisite that I should not pass over in silence another species of ulcer, commonly denominated the Simple Purulent Sore, which, though in itself merely local, may sometimes among seamen prove the precursor, being so susceptible of infection, and consequently degenerate into that species of complaint hereafter to be described. These Simple Purulent Sores have always been very prevalent both in the army and navy, and most frequently have been found very stubborn and embarrassing to the practitioner. Of the truth of this, every medical officer in either service must, from experience, have been well assured, and that even in spite of the very neat and celebrated method of dressing introduced into practice by the ingenious Mr. Baynton.

In ancient times, when such sores were found for a long period to resist the efforts of the surgeon, it was usual to attribute their stubborn in-

flexibility to witchcraft; but in modern times, the apology of witchcraft has become obsolete, and we are under the necessity of finding out another excuse for the inefficacy of our art; and one perhaps equally unfounded, I am sorry to remark, has but too frequently been substituted. The obstinacy of such indolent sores, has been attributed to the tricks and chicanery of the unfortunate patient, for the purpose of evading duty, or ultimately procuring his discharge from the service. That such tricks have been often played upon the surgeon, I will not attempt to deny; but I believe the unfortunate sufferer is often blamed for a cause in which he has no share. We frequently, in extensive practice, meet those old indolent sores, which for a great length of time resist all our efforts. We ought, therefore, to be well convinced of the fact before we tax an unfortunate sufferer with such a crime. I imagine that by a minute attention to circumstances, such sores will not unfrequently be found connected with constitutional diseases. I have often, in the course of my practice, met with sores which baffled all my endeavours to heal, until suspecting some hidden cause, a course of mercury was adopted, from the use of which, it soon assumed a healing aspect: and after the cure was effected, upon a retrospect of the case, I had every reason to conjecture that such sore was connected with a syphilitic taint. But yet I

have no doubt that the moderate use of mercury will often induce the healing process, even when no venereal taint exists, provided it is unconnected with scrofula.

Escharotics have often been blamed as the means thus clandestinely resorted to in perpetuating or keeping open that kind of sores; but if the system be in a healing mood, all such applications will not keep them open long undetected, unless the surgeon be very superficial in his observations. I apprehend that the means more effectual for such a purpose, and with which I fear many of them are acquainted, are ligatures applied on the superior part of the limb, for the purpose of restraining the circulation in the large blood vessels, which will ever be found to have a powerful effect in keeping open or increasing the ulcer.

The learned Morgagni, in his book *de Causis et Sedibus Morborum*, (who was in the habit of drawing his inductions from the morbid appearance of the subjects he inspected), mentions ulcers often to have been caused in the lower extremities from continued pressure alone on the vessels thereof, restraining, though not entirely stopping the circulation. Every mean, therefore, which retards the determination of

blood to the part, may be considered as an exciting cause of ulcer.

A scorbutic affection is often suspected as the cause of such obstinacy in those sores. I believe too much so; for if a scorbutic habit of body be present, it will soon evince itself by other unequivocal symptoms. A scrofulous habit of body may, I believe, be often adduced as the cause of the immedicability of such sores. In our endeavours to heal them, cleanliness is particularly requisite: any excretions collecting on the prominent edges ought to be carefully removed every dressing, and even the edges themselves, when they become hard and callous, must be reduced by the scalpel; and they ought generally to be dressed twice a day. But nothing that I have ever yet tried have I found so beneficially efficacious as the roller and rest. The roller, when properly applied, has a powerful effect in restraining increased secretion, a common attendant on languid circulation in a diseased part; and has also a great effect in assisting the weakened organs in the office of absorption. Calico, or old linen rollers are the best, as they assimilate so neatly with the limb; but considerable dexterity is required in their application. They ought to invest, with some degree of pressure, the whole of the foot and leg. A compress should be applied over the dressings on the sore, and by half

inverted turns going up the calf, they may be made to sit with neatness and equability, as the patient should be enjoined rest. It is upon this principle of exciting absorption by pressure, that Mr. Baynton's method has proved so successful; for simply approximating the edges has but a very trivial effect. Lotions made with tincture of myrrh, or other astringents of that nature, applied to the sore, will be found to have a considerable effect in accelerating the healing process. When such ulcers are cicatrized, after the constitution has been long accustomed to their discharge, some unpleasant symptoms are said to have ensued, unless a vicarious discharge was procured; an assertion which will often prove to be founded in reality. The metastasis of such a discharge may induce inflammatory suffusions of the eyes, lungs, or stomach, by that redundance of gluten which the habit had been so long accustomed to give off. I have known excruciating head-ache supervene from the healing of an old sore on the leg, and when the ulcer again broke out, to disappear; and *vice versa*, alternately with each other; and that when there was no reason to suspect a scrofulous or syphilitic taint. I am inclined to think that such occurrences may be obviated in a great measure by the free use of purgatives, and exercise in the open air so as to induce perspiration.

It will be found of much use to preserve a healthy cutaneous perspiration, or when those symptoms rise to any great degree, occasionally a little blood may be drawn from the system, when it appears calculated to bear such an evacuation. If these means be used, in the manner now suggested, I have no doubt that they will supersede the necessity of a vicarious discharge, till the secretions resume their natural course, and the system recover its wonted tone.

CHAPTER I.

INTRODUCTORY.

MALIGNANT CONTAGIOUS ULCER.

THE cause to which the following sketch owes its introduction to public attention, was the melancholy impression produced on the author's mind by witnessing the destructive effect of the disease under consideration, on board two ships of the squadron under the command of Rear Admiral Purvis, off Cadiz, during part of the Year 1807, and part of 1808. So destructive was its power that both of those ships were nearly rendered unserviceable, at a period when their efficient service was of much importance to the country.

As strenuous and early efforts, at its first appearance, may arrest the further progress of this complaint, it behoves every medical officer in the service of the country not only to commit to writing his ideas upon this subject, but to give them all the publicity in his power, when he thinks they will in any degree prove beneficial.

In obedience to this benevolent precept, I now endeavour to contribute my mite, although I have no new remedy to bring forward.

I am so unfashionable as not to come before the public full-handed, with a new and effectual Specific for the removal of the disease under consideration. My object is to detail what observation and experience alone have taught me ; to put the Young Practitioner upon his guard, and caution him against placing implicit confidence in the many nostrums so boldly asserted to be efficacious in curing this complaint. For even negative information, when well authenticated, has its merit ; it will save trouble to those of less experience ; and during a professional career of sixteen years, spent in his Majesty's service, various and extensive are the opportunities I have had both at naval hospitals, and on board different ships of the fleet, of remarking its insidious and destructive influence. I believe it to be, in the present day, by far the most formidable disease we have to contend with in the medical department of the navy. It is a disease mentioned by many authors, who all bear testimony to its destructive effects ; but none that I have yet met with, appear to have entered minutely into its nature and treatment.

The ingenious Mr. John Bell has, in my opinion, treated this subject better than any author

I have yet perused. In that now voluminous work, the Medical and Physical Journal, many applications are recorded as infallible remedies for the complaint ; but were we to take mere assertion for our guide, we might, by referring to that work, readily remove every malady to which the human frame is liable. Remedies are therein confidently recommended, supported merely on the authority of unsatisfactory theory. The infallible cure of Cancer by the internal use of carbonate of iron, and the immediate removal of sphacelus by the application of nitrate of potash, are, I much fear, instances of this kind.

Whoever has placed implicit confidence in such assertions, after an unprejudiced trial, will find himself grievously disappointed. He will then take the liberty of judging for himself in his future prognosis. Much has been said upon the medicinal cure of Cancer. That it may have been retarded in its career by regimen and the use of *aquæ ammoniæ puræ* I will admit ; but it would afford me much unexpected pleasure to witness a real case of Cancer perfectly removed by medicine alone. At the same time, I do not mean indiscriminately to offer objections to the work, for it undoubtedly contains much valuable and scientific matter ; and has proved the vehicle of conveying many important facts (which otherwise would have been lost) to the public.

It is not my province or intention to assume the censor; but as it is a work read with avidity, particularly by the younger part of the profession, I could not help admonishing to beware of the multifarious, wild, and fanciful speculations, promulgated by the merely medical theorist.

CHAPTER II.

PATHOLOGY OF THE MALIGNANT
ULCER.

THE Malignant Contagious Ulcer, of which I am now about to assume the pathological detail, is a disease, as far as I have remarked, not well understood. Practitioners in general seem to consider it, by their treatment, merely a local disease; poulticing, and dressing the parts affected, and often express their surprise at its malignant and unrelenting nature. They are naturally unsuccessful, for in fact it is not a local complaint only they have to encounter. It is a fever *sui generis*; a contagious fever; attended, like other complaints of that nature, with direct debility from the beginning, and considerable morbid action of the sanguiferous system. The Ulcers and Sores are only symptomatic of a morbid catenation in the vital system, and the fever assumes much the characteristic of regular typhus; having commonly a remission in the morning, and an exacerbation towards the evening.

The disease seizing upon the lower extremities only, may be accounted for upon the general laws of the animal economy. In reasoning from physiology upon the seat of this ulcer, we should conjecture it to originate in the lymphatics; commencing with the superficial lymphatics of the leg, and spreading in the cellular substance of the surrounding parts. But so prone is the system at this time, to run into the phagedenic process, that I have witnessed the very ulcer to take its rise immediately in the superficial veins of the leg; the disease either seizing upon the coats of the vein, or the ulcerating process commencing in its cavity. I have several times remarked large coagula of blood come away with the first dissolution of parts, more particularly when the ulcer took place on the site of any of the large veins. It has been asserted, and perhaps *literally* with truth, that putridity can not exist in the blood; but this only implies that ammoniacal decomposition can not take place till the vital function is extinct. We certainly, however, find the fluids of the body in diabetes, in typhus fever, and in all diseases of asthenia where inanition ensues, to possess qualities and principles widely different from what they possessed in a state of health.

The organs of the secreting system must be in depraved action; the blood, therefore, as the

grand fountain from which all the fluids of the body originate, must possess characteristics very different under disease, from what it does in a state of health. What a beautiful field does the theory of the animal combinations open to the chemico-physiologist ! Perhaps the time is not far remote, when the doctrine (at present enveloped in obscurity) will be unfolded, and brought with the happiest effect under the control of the practitioner.

The superficial veins of the leg deriving so little support from the surrounding parts, frequently become varicose at an early period of life, by which the recurrent blood must be partially retarded in its circulation ; the powers of the system being at times so much debilitated, that the *vis a tergo*, with the valvular action of the veins, are unable to propel the blood with sufficient velocity in those parts to preserve its vitality. Hence, from the degree of local debility which takes place in the superficial vascular system, the contents of the veins must be greatly retarded in its course : a chemical change of the blood, must consequently, to a certain degree, take place, and most commonly in the varicose portion of the vein. The blood being nearly in a state of general necrosis, and thus retarded in its progress, soon lays the foundation for local disorganization : the disease flies with peculiar

rapidity to the surface, the skin soon becomes affected, and a foul sloughing ulcer takes place, spreading with destructive rapidity, and pouring out at every dressing abundance of thin sanious excretion, highly acrimonious, and bearing no resemblance whatever to concocted pus. Sometimes even pure blood has issued, and that most frequently independent of any adventitious or fortuitous influence, or even the smallest degree of previous incontinuity of parts. The pendent situation of the lower limbs has also, no doubt, a powerful influence in aid of such an effect: hence a horizontal position is commonly found so serviceable in the early stage of this complaint. The powerful action of the absorbents, whilst the body lies quiescent in bed, becomes evident, upon examining the state of the adipose membrane when going to bed, and again in the morning upon getting up. Thus the powerful action of the absorbents, whilst the body is in a quiescent state, has a great effect upon ulcers; as we invariably find by experience that ulcers of almost every kind assume a much more benign appearance in the morning than in the evening. The action of the heart and arteries has also a powerful influence at the time, in exciting the locality of the disease. The arterial system, though increased in the frequency of its pulsations, is unable to propel the usual quantity of blood to the remote extremities. The

arteries most powerfully partake of the morbid irritation present in the system : the diameter of their cavities is thereby diminished from their tendency to contract, in obedience to the laws of irritation, like other organs of that structure. They therefore become unable to transmit the requisite quantity of blood to the remote parts, notwithstanding their increased pulsation. Hence when the arterial system is under morbid influence of this nature, we never feel that full, free pulse, so indicative of health. In diseases of this type, the moment the finger is applied upon the artery, a small throbbing or thready pulse (as it is termed) announces to us that the sanguiferous system is in morbid action.

The local debility which in this manner takes place, and which proves so powerful an exciting cause of those ulcers, bears considerable analogy to the debility which so commonly occurs in the lower extremities of old people. In very old men, we find ulcers, when existing for any considerable length of time, mostly to be incurable ; and in people at a very advanced period of life, we experience a proneness to gangrene, even from the slightest local injury on the remote parts of the lower extremities. Such cases are generally beyond the art of the medical attendant to remedy. But those subject to the disease under examination, are generally in the prime

or middle period of life, and as it ensues solely from a morbid state of the system, we may promise much from early and judicious arrangements. We should first endeavour to remove the cause, and then to restore the habit of body to its wonted energy.

CHAPTER III.

CONTAGION.

THAT the Malignant Ulcer is a contagious disease, few, I presume, will question. It appears most commonly to take its origin in the navy from specific contagion, derived from some exterior source, which must be aided by concomitant influence, producing a certain predisposition of the system for the reception of disease. I have not seen it rage with any great degree of virulence unless when the internal economy of the ship was such as to favour its propagation; or when a long series of irregularities, committed during the time of refitting in a British naval port, had produced the necessary degree of morbid predisposition; and when once the constitutions of a ship's company are thus injured, and prepared for its reception, it soon spreads with all its destructive consequences among those within the vortex of its contagion. Though more insidious, its progress, however, is slower than most other infectious diseases.

Solitary instances of simple Purulent Sores, or slight wounds, remaining exempt from the

complaint, though daily exposed to its influence, I can not consider as a proof of its not being contagious. In such cases we may conjecture that the habit of body is too powerful to be affected. We know also by experience, that many constitutions are unsusceptible of the small-pox ; and we meet with many people proof against the fomites of the plague, or typhus fever, however malignant, though constantly exposed to its influence. Fortunate it is for persons afflicted with those diseases, that such exemptions exist ; otherwise they would soon perish unaided and unrelieved. Neither can the officers, who are invariably exempt from this disease, be adduced as a corroborating proof of its non-contagious nature. Their previous habit of body, their mode of life, and local advantages, exclude them from the danger of being infected by this subtile disease.

As the principle of life depends upon a due portion of excitability imparted to the system from obvious sources ; every thing, therefore, which tends to exhaust or destroy that principle of vitality, must induce a morbid action in the general functions of the system, and that in proportion to the deleterious nature of the power so applied.

From the immediate absorption which takes place in the lungs, by filling the bronchia with ammoniacal carbonic acid, or other noxious gases,

the vital function may be instantly destroyed. That such an absorption takes place we may admit. In a practical view of the subject it is not requisite, nor is it my intention, to enter into elaborate disquisitions on the question, how noxious miasmata act on the vital functions. I shall not here attempt to investigate whether they act by negative or positive power, having laid it down as a rule to be observed through the present sketch, to avoid, as much as possible, theoretical speculation.

But although the air for the purposes of respiration may not be so highly vitiated as immediately to induce disease; yet every attentive observer must have remarked, the insidious, though slow effect, of respiring an atmosphere in any degree contaminated. The writers of former times, as Huxham, Lind, and many others who have handed down to us the lamentable record of what the health of the British seaman was in their day, have left us the gloomy history of its destructive effect, in very rapidly thinning their numbers, and even occasioning the return of squadrons into port, after the lapse of a very short period at sea.

In those days, when putrid diseases were so prevalent in the navy, they were always referred merely to the privation of fresh meat and vegetables. The method of managing the health of seamen was therefore founded on very erroneous

principles, which the following lamentable event will readily prove. Dr. Huxham gives the melancholy account of no less than twelve hundred seamen being landed at Plymouth hospital, in a most deplorable state, from a squadron under the command of Rear Admiral Martin, in the year 1746, when they had been only twelve weeks at sea. Such an increase of disease could not have taken place in so short a period from the privation of fresh meat and vegetables ; for I have in modern times invariably known ships' companies to have been much longer at sea, even without new supplies of refreshments, and yet to have remained perfectly exempt from fever, ulcers, and scurvy. I am therefore clearly of opinion that the evil was occasioned by the bad internal economy of the ships. The decks, most probably, were often washed, and the ports shut before they were dry. We do not hear of the least attention being paid to ventilating the holds, or lower parts of the ship. The people, therefore, the moment they came below, were digesting an atmosphere charged with as much moisture as it could suspend, independent of the sordid exhalations emanating from their persons in this crowded and confined situation.

The effect of thus respiring an atmosphere so highly charged with humidity, and other principles so inimical to life, is obvious to every medi-

cal man who has studied his profession. Thus a predisposition to disease is gradually coming on, or exists in a latent state for a considerable time in the general frame ; perhaps much longer than either the patient or practitioner would be led to believe, till at last, by accumulated impulse, it bursts forth upon its unhappy victims, and assumes, according to collateral circumstances, the type of some pestilential, contagious, or putrid disease. Hence we may trace the origin of plague, typhus fever, and the malignant ulcer ; diseases, if I may be allowed the conjecture, not differing so widely in their nature as is generally supposed. For the Malignant Ulcer may, to all intents, be considered as a disease of the general frame, affecting the functions of animal vitality. That they are all diseases arising from specific contagion, may be reasonably inferred, and partaking to a certain degree of the same nature, viz. a morbid asthenia, though assuming, according to their concentrated degree of malignity, or other coincident causes, their respective pathognomonic symptoms. But I have never yet known any two of them to exist in a ship at the same time ; and have invariably remarked, that where the ulcer was raging, all other epidemical or contagious diseases were perfectly suspended.

There are, no doubt, many powerful and concurring causes to propagate the contagious prin-

ciples of all those diseases, the most powerful of which is, a certain state of the surrounding atmosphere, more particularly when it suspends a redundant portion of humidity: for I know nothing so injurious to life as the respiring of a humid atmosphere in a close place. I have, therefore, no doubt that a considerable portion of sickness in the navy, may be referred to, or is induced by, the too frequent washing of the decks; more particularly during the prevalence of damp or unsuitable weather.

This is a custom which formerly prevailed much in the navy, and is even still, on board many ships, persisted in with persevering obstinacy, although other methods of sufficient cleanliness are always within our reach. The washing of the decks so very frequently in this country, during the prevalence of the Levant or easterly wind, is attended with a two-fold mischief. The evaporation from a wet deck, must, for a considerable time, supply humidity to the atmosphere in such a confined space, which will ever be found highly inimical to health. And the chill produced by having the feet so long (during several hours) immersed in cold water, has an immediate effect on the system, and is found to be of itself productive of disease.

In the course of my professional experience,

I have often remarked a tendency to indisposition pervade a ship's company, ultimately assume the type of synochus, and threaten to become general ; which I could satisfactorily trace to the above causes. The decks may certainly be washed ; but it ought to be put in practice only when they can soon be made perfectly dry. As the health of British seamen, from their own inattention to their mode of living, is very easily deranged, the preservation of it must ever therefore rest with the officer.

Other exciting causes may also be adduced as propagating disease in the navy ; such are, excessive fatigue, depression of mind, and all other irregularities that tend to exhaust animal energy. And perhaps to some of their separate or collateral influence, may be ascribed the different phenomena which those diseases respectively assume, only in a ratio proportioned to the degree of their deleterious powers. The peculiar circumstances of the malignant ulcer's affecting the lower limbs only, we have already endeavoured to explain. Anthrax and Buboe, accompanying the plague even in its early stage, will bear a proportionate analogy to the local occurrences above described, and their taking place on different parts of the body so early in that disease, may be attributed to the highly septic nature of the complaint : for no disease with which we are acquainted brings

with it so concentrated a degree of putrid malignity as the plague.

But to recur to the subject under inquiry, the Malignant Ulcer, as already remarked, ensuing from a general morbid action of the system, much resembles, in its general tendency, the last-mentioned diseases, though it assumes phenomena which might lead us at first sight to think it merely a local disease ; and to consider the fever not idiopathic, but merely sympathetic of local affection. Such a conclusion must ever prove highly injurious if it govern the subsequent method of treatment. We shall therefore proceed to consider it as a contagious disease, affecting the general frame, without which our practice must be founded on a very erroneous basis : for as long as the cause of disease finds access to the body, all the local applications, all the compounds, and the whole catalogue of the materia medica, will be found, I much fear, ineffectual for the averting or retarding its progress. It is by reflecting on the causes and nature of it alone, that we can form our true and effectual methods of treatment.

Every time that such an ulcer is opened, and exposed for the length of time requisite for proper dressing, to this contagious or vitiated atmosphere, a considerable portion of the virulent principle must be absorbed by the surface of the

sore during the operation, as well as by the lungs ; upon which principle may be explained the sloughing, foul, and gangreneous appearance, which we sometimes observe in hospitals in cases of amputation, wounds, and the occurrence of the disease in question. We know the system, when in healthy action, has the power inherent in itself of quickly restoring continuity of parts, when destroyed by any fortuitous event : yet this power is very frequently incapable of conquering the influence of morbid principles. Adhesion of wounds, we learn by experience, will not take place whilst the patients are respiring a foul or contaminated atmosphere. We know, also, from practice, how readily our exertions are subverted in the treatment of wounds and simple purulent sores, the moment the habit of body becomes imbued or tainted with that vitiated principle derived from impure pneumonical absorption. The practitioner can not, therefore, be too solicitous in procuring the constant accession of fresh uncontaminated air, without which all his efforts will prove abortive. It is to this we owe our present great superiority in managing the health of British seamen. It is to a thorough ventilation, particularly in the lower parts of the ship, together with cleanliness of person, and regularity in their mode of living, that fleets and squadrons can, in the present day, remain at sea so long, and yet enjoy a healthy state. Squadrons have been lately in the habit of keep-

ing at sea for eight, ten, or twelve successive months. The *Atlas* has been eighteen months at sea off Cadiz, without ever anchoring or entering any port, and with but very scanty supplies of fresh meat or vegetables ; yet the good state of the health of her crew is unprecedented, having in that time lost only two or three people, and those by the natural consequence of age, and only five or six having been sent to the hospital, as the medical record lodged in the transport office will testify.

Many are the instances I have witnessed of that melancholy change which takes place for the worse in wounds and sores, when removed even from a ship to the foul air of an hospital-ward. The naval surgeon, who with the most unremitting assiduity treats it as a local disease, will find himself miserably disappointed. He will rack his brain in recollecting every nostrum and application he has ever heard or read of, to no purpose ; he will continue to labour, and continue to wonder, day by day, that his applications have not had the desired effect, whilst his patients are perishing, or losing their limbs under his hands. He may exhaust ingenuity in dressing those sloughing gangreneous sores ; but as long as his patients are absorbing the poisonous principle by the lungs and surface of the sores, his efforts will prove ineffectual ; at least as long as his attention is directed only to the locality of the disease.

CHAPTER IV.

VENTILATION.

AS the lungs and stomach are the two great organs by which the vitality of the system is preserved, a suitable and wholesome ingesta is therefore the first and most important consideration upon which we can securely found our hopes of success in the treatment of diseases. Notwithstanding the inconvenience under which we labour in the confined space of a ship, yet powerful means of ventilation are certainly within our reach. A pure air can always be obtained in the hospital berth of a ship of the line, when the sick are not crowded (which ought never to be the case). Every part of the main deck can, by suitable apparatus, such as wind-sails, &c., be kept constantly with a current of fresh air blowing through it. Such methods were recommended in the *Excellent*, when this disease was raging on board her, and as a better modification of it, the hammocks were hung up under the half deck, without any enclosing screen, where they enjoyed the benefit of fresh air constantly flowing round them from the open ports. Otherwise, a wind-sail can be adapt-

ed to enter the hospital berth at the head door, and another at the port, the gun being removed for the purpose, which, as a fleet is generally plying to windward, or at anchor, when the ship will be still more head to wind, a constant current of fresh air can be preserved between the hammocks of the sick. The first accession of cold air might prove a little painful or distressing to the feelings of the debilitated patients, by so sudden a restoration of stimuli to the system ; but in a few minutes it would be borne with comfort, particularly in the warmer climates. Should the patients be much exhausted, such means must be introduced by degrees. It is by strenuous and active exertions alone, that such salutary measures can be carried into effect. For methods may be proposed, and plans laid down, which however salutary, unless carried into effect by the vigorous and persevering hand of industry, will prove but of trivial utility. Even the methods of the ingenious Dr. Currie, found so successful in the removal of fever, I have known to fail, however well indicated, merely by slovenly and negligent application. Much benefit must ever therefore accrue to the unfortunate sufferers under this malady, by respiring an uncontaminated atmosphere, the procuring of which certainly comes within our reach ; but the simply opening the windows of an hospital-ward or sick berth, will not be found sufficient. At least in

ship, recourse must be had to mechanical powers to carry into effect a measure so requisite as a constant accession of fresh air, which ought to extend to the well, holds, and all the lower parts of the ship. It may be remarked that the air of some places, at particular seasons, has a powerful effect in producing ulcers, or preventing their healing. We learn from good authority that in certain seasons, at the Cape of Good Hope, it is found extremely difficult to overcome ulcers; and we have also always found by experience, that ulcers assume a much more unfavourable aspect during the prevalence of the Levant or easterly wind in the Mediterranean. The sirocco, or south-east wind, which blows from the coast of Africa, on the southern shores of the Mediterranean, so prevalent during the summer and autumn, we always found to possess a very unsalutary quality. Its accession was always felt by the sick and convalescent, as it never failed to waft to us its noxious influence, producing exhaustion of nervous energy, and consequently languor, a sensation of oppressive heat, and a parched skin. It likewise, not unfrequently, occasions diarrhœa and griping, from deranged action of the hepatic and alimentary organs; and always considerable change for the worse in the disease now under consideration. It appears to suspend some quality peculiarly unwholesome, with a redundant quantity of humidity; as its high temperature

will hardly account for its noxious effects. The barometer's sudden rising indicated its approach; it commonly blew fresh; the sky always exhibited a fiery haziness near the horizon, and but seldom deposited any dew during the night; it seldom or never rained during its prevalence; the decks when wetted, or wet clothes, would not dry, or at least required a long time for it. The hot winds from the sandy deserts in the interior, must bear with them in their rapid course, the marshy, and other noxious effluvia, exhaled by the sun in this warm climate. And moreover, when we consider the climate, and other peculiar circumstances attendant on the situation of Gibraltar, it becomes almost a matter of surprise that malignant epidemics, and pestilential diseases, are not more prevalent there than even what have been experienced. An extensive town, embosomed in the crescent-form valley of an almost perpendicular mountain, with a vast accumulation of animal and other feculent matter constantly rotting under its walls, the effluvia of which the eddy winds effectually concentrate; the lanes narrow and dirty, and the houses crowded with inhabitants of all nations, most of them inattentive to personal cleanliness; are sufficient causes for the origin of disease, independent of the constant danger of importing contagion with its merchandise.

The squalid unhealthy aspect we perceive almost generally in the children nurtured in the town, immediately conveys an impressive testimony of the unsalubrity of the air. But the new mole, from its local situation, may be considered as the focus where noxious effluvia more particularly concentrate, the effects of which His Majesty's ships, that remained any length of time refitting there, have invariably experienced: a line of battle ship has seldom left the mole without a fever of some kind or other on board; most commonly appearing under that variety of fever termed typhus icterodes. It becomes impossible for the most sedulous ingenuity to counteract the influence of noxious air arising from local disadvantage. But even here much may be done as a preventive by a wise and rigid police. The rulers of this place should be extremely vigilant, and always recollect the consequences that may accrue from neglect of a good internal economy; for if ever that important fortress should be unfortunately wrested from the hands of the British nation, it will, in all human probability, be owing to the presence of contagion. Numerous are the examples upon record of pestilence effecting that which the sword was unable to accomplish.

When such a number of sick men are confined to their hammocks, the air around them soon becomes highly vitiated, perceptible to the sensa-

tions of the visitants upon entering the place. I have myself experienced some degree of nausea, and considerable diminution of muscular energy, even by remaining an hour or two exposed to its influence. In such cases, when calm weather, or other circumstances, would interrupt the requisite ventilation, the air becoming vitiated, Dr. Carmichael Smyth's method of fumigating with nitre and sulphuric acid, may be used with advantage; or a few pipkins may be constantly kept boiling with vinegar, or other means used by which oxygen gas may be evolved. It is only by the quantity of this air given out, that such means can become useful; for I know no specific influence that the decomposition of nitre can have in destroying contagion, except merely by giving out oxygen, thereby rendering the contiguous air more pure, and better adapted to the purposes of respiration.

In those cases absolutely requiring confinement to the bed during the day, the blankets, and also all other woollen clothing, ought to be removed from the hammocks of the sick. The hair mattresses and the linen sheets supplied in the navy for the purpose, will be found sufficient in the warmer climates, and also during the summer at home. This disease is not so prevalent during cold weather. These circumstances, however trivial they may appear, will not be found beneath the attentive surgeon's care.

CHAPTER V.

R E G I M E N.

THE next consideration is the ingesta of the stomach, which, though not of such consequence as that of the lungs, yet is by no means unimportant. It is not at all necessary to restrict the patients to a very spare diet: perhaps in none of the disorders of this class is nourishment more requisite than in this. A moderate quantity of light, easily-digestible food, with a due proportion of ascendent vegetables may be allowed, not taken at once, but at different times during the day: for, when the constitution has sustained so much injury by the insidious and protracted influence of disease, the digestive organs must be in depraved or indolent action, an occurrence likely to be foremost among the premonitory symptoms. A tendency to inanition will therefore be found to exist from the commencement of the disease. It becomes highly important to pay particular attention to the state of those organs. In this distemper they will commonly be found in a weak state, and the quality of the gas-

trick juice much changed. A considerable accumulation of flatus is therefore likely to ensue after meals, which, from distending the stomach, is of itself a cause of indigestion : even in a state of health, it is injurious to load the stomach with solid food ; but here it becomes a grievous fault. In the higher classes of society, where indolence and luxury commonly go hand in hand, we shall find that extensive indulgence in the use of rich animal food, as frequently proves the parent of disease, as even excess at the bottle. But dyspepsia, hypochondriasis, and obesity, are ills from which the mariner, by the active nature of his duty, is totally exempt. Roast meat is certainly better than boiled, as it does not so readily run into the fermentative process ; and a moderate portion of vegetables with it will be found sufficient : but great quantities of vegetables I do not think by any means proper. When the stomach becomes distended in this manner with flatus, a portion of diluted sulphuric acid, or aromatic bitters, will be found useful, by checking that tendency to generate flatus which we invariably experience when the alimentary organs are in a weak state.

Fresh bread may be very easily prepared on board every day for the use of the sick, and will ever be found a most useful and salutary part of their diet. Its great utility only requires to be

pointed out to the commanding officer, who can so readily order its being carried into effect. I have, for many years, seen as good and wholesome bread made on board as any by the bakers on shore.

A moderate portion of ripe fruit, when it can be procured, may be allowed ; and may in a certain degree prove useful and gratifying to the stomach ; but I am inclined to believe that the great necessity of such articles in this complaint has been much over-rated.

Sago, and such other articles as sit easy on the stomach, and impart gluten to the system, will obviously be found useful.

Wholesome wine ought also to be allowed ; but I would recommend it to be given in small quantities ; say a wine glass full only at a time, every two or three hours during the day and night, in the same manner as we give medicine ; but more particularly after meals, by which a bottle may be administered in the course of the twenty-four hours, without in the least injuring the system. The effect of agents of that nature ought to be minutely attended to : whenever they tend to augment morbid heat, or induce inordinate action of the sanguiferous system, their use ought to be

immediately restrained. We must be attentive to preserve a due balance in the animal economy ; for medicinal agents, when carried to excess, may prove much more injurious to the constitution than the very diseases they are intended to remove. Wine is become a fashionable remedy in such fevers ; and it may, under certain restrictions, after the primæ viæ are well evacuated, be made to answer a good purpose. But I think the use of wine, in general practice, is often carried too far. I have seen wine ordered in typhus fever, and that by physicians of long experience, until I believe some of their patients went to the other world in a state of inebriety. But in this complaint, good, well-fermented porter will be found a much more salutary article than wine.

For common beverage, lemonade, gruel, barley water, or cream of tartar drink, given freely during the night, when awake, as well as in the day, either cold or a little tepid, as the taste of the patients incline, shall be found the best.

Cream of tartar is a useful medicine ; more so, I am confident, than is generally allowed. In hydropic affections, given in substance, it has been administered so as to produce the most happy effects ; and moreover, in most febrile com-

plaints, dissolved in the drink of the sick, it will be found a useful, cooling, and aperient remedy.

Personal cleanliness, when there are at times copious excretions of the skin, merits our peculiar attention ; but certain means, hereafter to be pointed out, will obviate that occurrence. Cleanliness of person with the sick, however requisite, in a ship, is generally overlooked, unless enforced by the authoritative orders of the head of the department.

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CHAPTER VI.

MEDICAL TREATMENT.

UPON the Medical Treatment of this complaint by remedies introduced internally, I do not mean to dwell long. The medical treatment of fevers, in all their different genera and stages, being so well established, and so well understood, particularly by my brethren in the navy, that extensive and minute detail would only be a work of supererogation. However, when a putrid tendency exists in the general habit, I must mention the use of purgatives which become here so essentially necessary. But this is a part of the treatment concerning which, I believe, few practitioners of the present day require any information; more particularly, since the subject has been so ably treated by the pen of the accurate Dr. Hamilton. I can not pass over in silence another author who has written previously to Dr. H. on the use of purgatives in fevers, and other diseases endemic in the warmer climates. An elegant little tract, by Mr. John Peter Wade, surgeon, on the Bengal establishment in India, was published

in the year 1793 ; in which he has, in the most masterly manner, inculcated the early necessity of purgatives in fever, and other complaints, where a morbid catenation of the system is present. The book was written in India, and consequently his reasoning suited to that climate. But that part of the work where he dwells so impressively on the use of purgatives, is applicable to every clima

It will therefore be found highly necessary to preserve an open state of the bowels throughout this complaint, but not to use rough or drastic purging. Whatever quantity of vegetables is made use of, it will not be found effectual in keeping the bowels sufficiently open : recourse must be had to cathartics, and it may perhaps be proper to use them every second or third day. The elec: e senna comp: with pulv: jalap: or crem: tart: added to it, the cathartic salts, castor oil, or such mild purgatives, will afford sufficient choice : they should be given merely to preserve the bowels in a free solutive state. For when the system is labouring under such morbid influence, the hepatic and alimentary organs must be under indolent or depraved action, and the necessity of such lenient evacuants becomes therefore obvious.

To one article in the class of purgative medi-

cines I can not help here offering an objection, viz. calomel, which, from the high reputation it has justly obtained in the treatment of the bilious, or yellow fever of the West Indies, has been but too frequently had recourse to in many other complaints to which seamen are liable, however widely differing in their causes and nature. Calomel has been administered, I have no doubt, in the bilious remittent fever of the torrid climates, both as a purgative and alterative, with great success ; but from the nature and influence of those climates, it is a disease assuming phenomena very different from any that we meet with in our own climate. Its attack is sudden, and its career rapid ; a great termination of blood to the liver is generally among the first symptoms ; so much so, that I have seen the lancet used freely at its commencement with great advantage ; and when such a turgid congestion takes place in the minute vessels of the liver, calomel administered with a bold hand, much more extensively than European practice would justify, both as a purgative and alterative, is likely to be attended with the greatest benefit. In reasoning therefore from analogy, which is ever liable to mislead the practitioner, it has been often used with the same view in the fever which produces the Malignant Ulcer, and also the typhus of a British climate ; but I am certain that it has always been attended with pernicious consequence. It is no doubt a

very powerful and efficient medicine as a purgative, in very many complaints to which British seamen are liable, more particularly in the warmer climates, as already remarked. But in the low typhus of our own climate, and in the disease under consideration, I think there are strong objections against the use of it. It certainly has a powerful effect in disencumbering the alimentary canal of its sordid crudities, and exciting the hepatic and alimentary organs into action ; but during the time of its performing that office, a considerable portion of the medicine enters the lacteals, must be taken up and enter the circulating system ; and from the constitutional susceptibility at this time existing, must produce a considerable effect : it must add to the action of the vascular system already in high excitement, and consequently increase debility. In this state of disease, I have more than once seen six grains of calomel, administered as a purgative, powerfully affect the salivary glands, and even excite a copious ptyalism, inducing a very serious and even dangerous degree of exhaustion. When calomel is administered as a purgative, and does not perform its office in five or six hours, some other brisk purgative ought to be given to carry it off, which will tend to obviate that state of constipation to which the intestines are invariably so prone after the operation of calomel. In the intervals of purging, recourse may be had to tonic and anti-

septic medicine, such as cinchona quas: flor: chamomel; but more particularly the rad: columb:. From the happy effects of the use of columbo in puerperal fever, it may with much propriety be put in practice here, or the sulphuric or nitrous acids may be given with prospects of advantage, provided they agree with the stomach; for in this, as well as most other complaints, any medicine that is very repugnant to the stomach will never prove of much utility. I most heartily concur with Dr. Cuming in his method of administering the cinchona, as described in his *Amanuensis*. I have been long in the habit of using it either in decoction or infusion, and adding a portion of conf: aromat: or some other ingredient of that nature, merely as a peptic, with evident advantage. It must be an absurd practice to administer any materials so crude and indigestible as the cinchona in powder to a feeble patient, whose stomach is most probably already in a considerable state of nausea. I believe the practice, as Dr. C. has very justly remarked, to be attended with much mischief, notwithstanding its long reign.

I must here mention an article of great utility, from the use of which I formerly experienced much success, as a substitute for the cinchona: the willow bark, (cortex salicis fragilis) a decoction of which, with the addition of a little

orange peel, or some other aromatic ingredient, I have found to be a very useful medicine, as a substitute for the peruvian bark, and am inclined to think, when gathered at a proper season, and carefully dried, that it possesses virtues equal to most of the cinchona with which we are now supplied. I am very much inclined to think that, were the researches of medical men, qualified for the task, directed to the virtues of our own indigenous plants, we should be furnished with a catalogue of as useful remedies as the numerous exotic roots, bark, and seeds which at present fill the shops of the apothecaries. But of all the multifarious catalogue of tonic medicines, there are none perhaps from which so much benefit may be expected as an appropriate preparation of iron. From the innate affinity between iron and the blood, of which it is a constituent principle, it soon, when given in a state of solution, enters the circulating mass, and in a great many constitutions labouring under asthenia, or inanition of this kind, after the alimentary canal has been freed from its vitiated crudities, will be attended with very happy effect; and may with much propriety, in many instances, supersede the use of cinchona, and the numerous list of medicines of that kind. Ten or twelve drops of tinc: ferri: muriat: may be given three or four times a day in a little infus: quass:, or the practitioner may have recourse to any other prepara-

tion of the metal that he may judge more congenial to the stomach of his patient. I mention the above as the only preparation of iron with which we are supplied in the medicines for the navy; but I think a solution of the metal in the vegetable acids much preferable. The vin: ferri: may with careful attention be prepared on board, and it is the most simple, consequently the best preparation of this powerful agent. Iron being a metal so peculiarly congenial to the human system, and possessing so powerful an influence over both the fluids and solids of the body, I am much inclined to think that when the fever does not assume a high pitch of action, or when an inflammatory diathesis does not prevail, it will most generally be found a remedy meriting the practitioner's most serious regard. I am confident that, in certain stages of this complaint, the use of chalybeates will be attended with the most happy effect.

In the early stages of this complaint, when the exacerbations of fever run high, the nausea and thirst very troublesome, the effervescing saline draught, or aq: ammon: acitat: with camphor, either in pills or the camphor julep of the shops, will be found cooling useful medicines. Camphor is a medicine of which at one period I entertained but an indifferent opinion, its medicinal powers in general not being well ascertained;

but lately I have witnessed so much benefit to accrue from the use of it as has led to a complete change in my opinion concerning its effects. I have seen camphor when administered in rather extensive doses, to be attended with very beneficial effects, particularly in tranquilizing the inordinate action of the vascular system, a constant symptom in that kind of complaints. But in such cases it must be administered in considerably more extensive doses than are directed in common practice. It has been recommended to dissolve it in lime water, which will certainly hold it in solution ; but in this combination it is certainly not so proper as in a more simple form.

Yest, could it be procured in its recent state at sea, from its well known antiseptic powers, would be found a valuable remedy in this complaint. From the numerous and respectable testimonies in its favour, we may pronounce it a most useful antifebrile medicine. The community owes much gratitude to the benevolent Dr. Cartwright, for introducing so cheap and efficacious a remedy for typhous fever. All those remedies which convey a certain portion of that great corrector of putridity, carbonic acid gas, to the stomach, will prove very congenial to it, and stimulate it to a healthy action.

Opium, from the severe pain most commonly

attending this ulcer, is much resorted to ; and I am inclined to think, rather too frequently. After the exacerbation of the fever is on the decline, and the pain very severe, it may occasionally be employed as a temporary anodyne, and it will have a better effect after the use of cold affusion : the patient should likewise be kept as cool as possible during its operation, as pointed out by Dr. Currie, in the first volume of his Medical Reports. But in this complaint, I think it a medicine which ought not to be administered very frequently. It certainly may be conducted so as to relieve pain for the time being, but no permanent benefit can accrue from such alleviation of pain ; it will never tend to accelerate the cure. It is only on very urgent occasions that it ought to be administered, and then given and repeated merely till it produce the full effect of an anodyne.

The appearance of the tongue, nausea, and other symptoms present, will often indicate the necessity of emetics ; but they ought to be cautiously employed. I think they are in many cases the worst kind of evacuants, as they invariably induce so much debility by the violence they commit on the stomach. It is only when a great redundancy of offensive crudities appear to be present in the stomach, that they ought to be used, and it will seldom be requisite to repeat them. In the sequel it is much better to use

purgatives; and the sulphate of magnesia will be found the most safe, easy, and efficacious of any.

Venæ sectio might here be well passed over in silence; but as a rapid, and sometimes rather a full throbbing pulse is present in the early stage of this disease, the practitioner not reflecting on the nature of the disease he has under care, might inadvertently use the lancet. Whoever has experimentally bled his patients, in this malady, by due attention to the sequel of the case, will perceive the error of such practice. The mischief attending the abstraction of blood from the system, in diseases where debility, and a putrid tendency apparently exist, is now so well understood by English practitioners, that any further comment upon it is unnecessary.

CHAPTER VII.

BATHING.

THE affusion of cold sea water dashed suddenly upon the head and body, and repeated as requisite, will, in most stages of this complaint, be attended with much benefit ; but the sores must carefully be preserved from its contact, and dry clean dressings applied before the patient is returned into bed. The cold affusion of sea water I have long experienced to be a powerful agent in mitigating the exacerbations of febrile diseases. I have found it to possess the peculiar power of restraining inordinate action of the sanguiferous system, whilst it restores the principle of excitability to the muscular fibre, and by cleansing, preserves a healthy state of the skin. I have likewise in the warmer climates used the cold sea bathing as a prophylactic against fever with evident advantage. Where an impending feverish tendency appeared to pervade a ship's company, I have recommended their daily bathing in sea water, when the weather would permit, a measure which was found to be attended with very beneficial effects. To the scientific and benevo-

lent exertions of the late Dr. Currie the world is much indebted for the introduction of so simple, easy, and efficacious a method of averting the progress of epidemic and contagious fevers ; a method which I am happy to learn is daily becoming more general, and which has, I have no doubt, already saved the lives of thousands ; this practice is however by no means entirely modern. The application of cold water in fever was recommended and practised by the ancients ; and Dr. Cullen also mentions it in his treatment of typhus, page 186, vol. 1, of his First Lines. Yet, notwithstanding these authorities, it was not ventured on to any extent in fever, till the unwearied exertions of the above benevolent and ingenious man demonstrated its safe and salutary effect. Whoever has laboured under a languid state of the system, arising from febrile action, and has felt the benign influence of a shower, or momentary cold bath, will agree in testimony of its salutary and refreshing effect. But still as a remedy in disease, it ought to be directed by the hand of experience. In the warmer climates the water immediately drawn from the sea may be used ; in those climates the colder the better, but in these more northerly climates, where the air and water are generally very cold, the temperature of the water will require to be brought nearer to that of the body. The shock of the affusion when the water is so very cold, would be

too great, and might instantly destroy life ; and the more particularly, should a previous chill be present in the system. It is only when a redundancy of caloric is present ; it is only when the morbid heat rises above the standard of health, that the cold affusion is admissible. But febrile heat being commonly present in this disease, the cold affusion will then be found a safe and efficacious remedy, provided the skin be not in a state of perspiration. When a feeble pulse and chilliness is present, the cold affusion would be found injurious ; the blood-warm bath will, under these circumstances, be found a desirable application. The best degree of temperature will be to make it soothing to the sensations of the patients.

Heat, considered abstractedly, is certainly the great and necessary stimulus to animal existence ; but carry it beyond its natural standard, and it becomes a sedative, i. e. productive of the first stage towards destroying vitality. Heat and cold can only be styled sedative or stimulant, relatively to the temperature of the body ; cold being only the abstraction of caloric. We know that the introduction to a warm temperature, after having been exposed for some time to a cold one, causes an abstraction of stimuli, consequently performs the office of a sedative. Apply a greater degree of heat, and it stimulates the vessels to morbid action. A moderate degree of cold suddenly ap-

plied, restores strength and vigour to the body ; apply a greater degree of cold, and it becomes sedative ; when carried to a greater degree of intensity, it will first induce sleep, and then death will ensue. In such applications for the removal of morbid irritability, we ought to consider well the temperature of the patient's body ; for either the redundance or negation of caloric, when carried to any great excess, will prove equally destructive of the vital power. A moderate degree of cold, or in other words, a moderate abstraction of morbid heat from the system, under the direction of scientific experience, will, in very many instances, prove highly beneficial ; but in no instance must either the negation, or positive application of this active agent, be carried to much extent from the temperature of the body.

The warm bath will therefore, from its debilitating powers, and from its adding to the morbid heat in this complaint, be found but seldom necessary, unless under circumstances as above, or for the purposes of cleanliness, or when an inflammatory affection of some of the thoracic or abdominal viscera is present, in which case, the tepid bath would be found highly advantageous.

The utmost care is requisite not to disturb the distressed minds, or hurt the tender feelings, of our patients. Every symptom they exhibit, every

pang they endure, ought to be observed with the most benevolent attention. In their forlorn situation, the voice of sympathy will vibrate in the ear with peculiar harmony and delight. It is a sound to which the seaman's ear is little accustomed; it will therefore reach his heart by the readiest way, and, from the man who merits confidence, will bring peculiar comfort to the unhappy sufferer. It is by such suavity of address alone, that we can inspire them with respectful confidence, and induce them to look upon their surgeon as their preserver: in this we may succeed without descending from the dignity of our profession, and this conduct may perhaps contribute more to their recovery than resources drawn from the medicine chest.

Sunt verba et voces quibus hunc lenire dolorem,

Possis et magnam morbi deponere partem.

CHAPTER VIII.

LOCAL APPLICATIONS.

AN important part of the treatment still remains to be discussed, viz. the Dressing and Local Application: for whilst the prophylactic and general means are carrying into effect, the locality of the disease must also be strictly attended to. In the incipient stage, when the phagedenic process appears commencing, as may readily be discovered by the discoloration of the skin, and pain in the part, refrigerating, or rather stimulating lotions may be used, whilst the other means are carrying into execution. The best lotion I know for the purpose is aq: ammon: acetat: and spirit vini: rect: in equal parts; or even common spirit, with a portion of camphor dissolved in it. A cloth well wetted with such lotions ought to be constantly kept applied to the part: such applications, keeping the patient in a horizontal position, while breathing a pure uncontaminated air, may often prove effectual in averting the impending dissolution of parts.

There is one medicament which I must also particularly recommend, being that from which I have experienced the greatest benefit in this stage of the complaint; and that is, a frequent application of warm fomentations to the part. I have, in very many instances of chronic ulcer, as well as this under consideration, had much success from the use of warm fomentations composed of chamomile flowers, or some other vegetable substance of that nature; but much attention is requisite to its degree of warmth, for which no rule can be laid down, as the temperature must be regulated by the heat of the parts. It ought to be soothingly warm; for when applied very hot it becomes too stimulating, and therefore injurious. Whoever will persevere in the use of such fomentations, will find them highly beneficial in every stage of this, as well as of chronic ulcer. But should the disease prove of a very malignant nature, and the ulcerating process take place in spite of our efforts, applications so very irritating will then become inadmissible. A considerable degree of inflammatory appearance and pain will probably then attend the sore; which circumstances might induce us to have recourse to warm emollient poultices; but as such inflammatory affection comes within the denomination of erythema (not phlegmon) a short trial will afford convincing proof of the inutility of such poultices, even in that inflammatory stage

of the complaint; the only one in which such applications are in any way admissible.

The fermenting poultice is an application that has been much extolled in this species of ulcer; but for want of the materials requisite to compose it, I never had an opportunity of experiencing its effect. From the quantity of carbonic acid gas it evolves, it may certainly prove beneficial to the sore; but other means presently to be mentioned, will be a more ready way of applying the carbonic gas. However, if any farinaceous poultice can be procured, I would certainly give it the preference. The carrot poultice has also been much recommended for correcting the acrimony of the discharge, I believe with much propriety. I have frequently experienced the good effect of recent mild vegetable substance when applied to ulcers. How often has a skilful matron in the country succeeded in healing old sores among her less experienced neighbours, merely by fresh herbaceous applications! even sores that had long withstood all the ointment of the shops. The *scrofularia nodosa* is known to be a favorite ingredient in the compositions of such irregular practitioners. Let us not despise useful information from whatever source it flows.

The process which occasions this acrimonious state of the discharge, is difficult to be explained,

as it appears almost incredible that the vessels can convey lymph abounding with so high a degree of acrimony as we here find it possesses. I am not sufficiently acquainted with the minutiae of the chemical affinity between animate and inanimate matter; upon which, I imagine such a process depends, as I have seen the discharge from a blister, and even the lachrymæ, under certain affections of the system, assume a very highly-corrosive quality. Such a state of the discharge may proceed from a chemical union with the atmospheric air; a strong affinity may exist between the oxygenous part of the atmosphere and the excretion from the sore, and hence a compound be immediately formed on the surface of the sore, of a very acrimonious and corrosive nature. But it must rest with those more deeply versed in the science of chemistry to ascertain the truth of such an hypothesis. However, the success experienced by proceeding in our method of treatment, upon the idea that such a process takes place, will corroborate the opinion. The excruciating pain occasioned by the application of oxygen gas, and the complete alleviation of all pain the moment that azotic gas is applied to a denuded portion of nerve, are circumstances which afford an impressive lesson how pernicious the access of atmospheric air is to ulcerated surface.

Even in this irritable state of the sore, the soft

and pliant roller will be found extremely useful in lessening the discharge, by affording support to the weakened vessels of the part, and excluding the external air; two circumstances, from what has been already advanced, certainly very desirable. The first close application of a bandage will no doubt occasion considerable distress; but the pain will gradually diminish on the second and third application; and it proceeds from a mistaken lenity to forbear such an useful measure on account of a little primary pain. Do we not in recent wounds, trust much to the support the divided parts derive from the application of bandages, which always at first occasion considerable pain? And here they will be found to possess equal, if not superior utility.

When extensive foul sores were formed, I have seen pulv: cinchona applied in considerable quantities; but I do not think it a good application; either that or the pulv: rhæi, can have but little medicinal effect on the sore, and soon forms with the discharge an irritating cake very difficult to be removed. I think upon the whole that such applications will do more harm than good. Mild, antiseptic lotions, applied with lint, are better, as they remove so easily. Solutions of the sulphate of zinck, or nitrate of silver, will be found the best. Solutions of the other metallic salts may be tried, or even the sulphuric or nitrous acids

duly diluted alone, applied to the sore with lint. However, all those applications may be considered only as secondary agents. They may tend to restrain or correct the acrimony of the discharge; but the healing process must originate in the animal economy. The carbonic acid gas to the surface of the sore, from its well known antiseptic quality, I think will be found very useful in correcting the putridity. It may readily and conveniently be applied by a piece of lint immersed in a solution of carbonate of potash, and applied to the sore; then immediately another piece applied over it, charged with diluted lemon-juice, and continued *stratum super stratum ad libitum*, by which an effervescence is excited, and carbonic acid gas is instantly evolved on the surface of the sore.

The gastric juice from the stomach of an ox, so highly recommended by authors, I have not had an opportunity of seeing tried; but as it is certainly a peculiar and powerful antiseptic, I think it an application highly deserving our most serious consideration. It is to be regretted that an opportunity so seldom offers of trying its effects in a recent state at sea,

The knife, or scissars and forceps, will remove the redundant sloughs the moment they become inanimate.

The use of medicated or simple ointments, when there is such a profusion of thin sanious discharge, may be well omitted till the sore assumes a healthy aspect, when by restoring the system to its wonted energy by means of dietetic agents, and supporting the vessels of the limb by proper bandages, the cure will be completed as with any other simple sore. When there is a profuse acrid discharge, the sore we may say feeding upon itself, it will be highly proper to remove the dressings often, twice or three times a day at least; all the moisture to be absorbed from the sore with dry lint or a little fine tow, and dressed again as quick as possible. It is of much importance that the sore should be exposed to the air as short a time as possible. I do not think that much washing of the sores is by any means favourable, when the contiguous parts are in such a flaccid state, as it commonly induces some degree of hemorrhage injurious to the healing process. In the dressing it will never be requisite to use a sponge; a little tow or lint, on the end of a probe, will answer much better: it will effectually take up all moisture from the sore, and being never used a second time, will effectually obviate every chance of retaining or spreading the infectious principle. The sordid dressings, and all other offensive articles of that nature, must be destroyed the moment they are removed from the body.

I have thus endeavoured to prove that it is not by specifics, or any particular application, that we can remove this malady; a general systematic and scientific arrangement, founded upon its nature and cause, must be adopted and carried into practice, before we can hope for success.

AMPUTATION CONSIDERED.

WHEN this Ulcer has spread to a great extent, and appears still rapidly proceeding in its destructive career, it has been proposed, and but too frequently practised, to amputate the limb, as the only means left us of arresting its progress. But I know no one point in surgery which involves more intricacy of judgment, or greater professional acumen of sagacity to decide on, than the removal of a limb for ulcer. For I have seen the tibia denuded of its integuments down to the periostium, for a considerable extent; I have seen the transverse ligament laid open to view; I have also seen the tendons of the extensor longus, and the other muscles on the back of the foot completely denuded; and yet when the patient was removed from the vortex of contagion to a more salutary air, have seen him recover. When the ulcer was confined to the soft parts, I have seen, under local advantages, a rapid cure ensue; much more rapid than we could expect from sores of such importance. When the bone is affected, and deprived of its periostium, exfoliation must take place, and a protraction of

the cure will therefore be the consequence ; but still a cure may be accomplished, provided the patient breathes a pure air. Numerous are the limbs I have seen amputated for ulcers at hospitals, and some also on board ships, which I think a change of air might have saved.

I here can not help contrasting two occurrences in surgical practice, both of which may eventually lead to a removal of the lower limbs, and in both of which I must remark, that the propriety of performing the operation has often been perverted, viz. compound fractures, and the ulcer which has been the subject of the preceding pages. In the former case, I have observed a lenient forbearance to amputate the leg often adopted rather injudiciously. From a few wonderful and extraordinary healings (I can not say cures) that have taken place in cases of extensive compound fractures of the legs, surgeons have lately but too frequently been induced to attempt the preservation of limbs, which, from the magnitude of injury sustained, were beyond the power of both art and nature to effect, and thus the happy moment has been neglected when the removal of the limb could alone secure future health and comfort. When the fracture is attended with very extensive destruction of the soft parts, and still more particularly, when any of the large joints have suffered, or the capular ligament been rup-

tured, the cure is necessarily tedious, and very uncertain. Should any of the arterial trunks be divided or wounded, though they be secured by ligatures, yet that circumstance will of itself oppose a strong degree of inaptitude to the reunion of parts. Attempts at saving the limb under those circumstances, would generally be a great injustice to the individual, whose life and future comforts are thus committed to our care; for the health must suffer irreparable injury by the long confinement during the time of treatment; and should a cure be effected, the patient at best only drags a useless and cumbrous member after him, an inconvenience to himself, and reproach to his surgeon. A limb, though thus healed, can never be called useful or sound; it is ever after liable to edematose swellings, excruciating pains, ulcers, and other infirmities, from the slightest accidents, and the individual is thereby rendered not only a burthen to society, but to himself. I have even seen severely sprained ankles, without any luxation of joint, which have ever after entailed tormenting pains and lameness on the unfortunate sufferer, who would have been much favoured in having had the leg removed when the casualty took place. But I do not mean that compound fractures should be in general amputated; for many will happen which can soon be reduced, and brought to the nature of simple fractures, and a perfect and permanent cure accomplished. But

when much destruction of parts has taken place, a long-protracted cure and subsequent lameness are to be apprehended. In charity to the unfortunate sufferer, the leg under these circumstances ought to be immediately removed. But the custom of amputating legs for the Ulcer, that we have in the preceding pages been describing, as it is a case of a very different nature, we must decidedly disapprove. As the limb in this case, when cured, will be permanently sound and useful; neither the constitution nor the limb will exhibit any subsequent bad effect from such a disease. It behoves the practitioner therefore to weigh well the consequence, before he adopt so formidable and severe a remedy. It is impossible that such extent of incontinuity of substance as this ulcer generally exhibits, can take place without the constitution at the time powerfully partaking of the morbid change. The knife will not therefore always secure the patient against a recurrence of the disease; and should amputation be performed below the knee, we shall frequently experience a very considerable, and embarrassing oozing of blood; not from the large arteries, but from the entire surface of the stump, which astringent powders and local pressure are scarcely sufficient to restrain; and it is obvious of what serious importance the loss even of a few ounces of blood is to a patient in this state of debility.

From the immediate collapsion, and the change in the circulating system which takes place upon the removal of a limb, the cure of the stump may apparently go on well till nearly completed, when the necrosis may again seize on the stump ; and unless a salutary change of situation be immediately procured, the unfortunate victim will soon die exhausted. I do not mean to advance an unqualified negative to amputating limbs in this disease : cases will occur in which the existing circumstances oblige us to amputate. But it is only under the most direful and pressing necessity, that we ought to have recourse to such harsh means. A change of situation will often effect more than the knife. The pleasing conviction of having been instrumental in saving an useful limb to a fellow creature, is much more gratifying to a benevolent practitioner, than the reputation for dexterity acquired by cutting it off.

CONCLUSION.

MUCH more may be advanced upon this very interesting Subject, and still other means, both general and local enumerated, which are likely to be found useful. Electricity, when such ulcers assume an indolent or chronic type, is likely to be attended with much benefit, as it will, when judiciously conducted, cause in the vessels of the part, a new action very congenial to the healing process. I can not exactly speak from experience upon its utility in this respect; but from its well known exciting powers on the lymphatic system, it certainly is a measure well worth a trial. For other purposes as well as this, a small portable electrical machine would be an useful addition to the surgical apparatus on board a ship of the line.

Although such ulcers should be of long continuance, every method ought to be used to heal them as quickly as possible; for I believe we need not be uneasy about the consequence of absorption, or the sudden stoppage of the discharge of an ulcer. Those serious and irrecover-

able affections of the lungs, said to ensue from such a cause, have been greatly exaggerated. Do we not find mercurial ointment, and other gross substances entering the vascular system, and consequently passing through the lungs, which nature in the wisdom of her operations soon frees herself of? Should any inconvenience arise from that cause, the means enumerated in an early part of this Essay will obviate that occurrence.

The subject of this Ulcer has for many years excited much attention in the medical department of the British navy; and notwithstanding its long and disastrous prevalence, very little has yet been made public upon its causes and treatment. We may therefore consider it a path, as yet very little explored; for in all the course of my experience, I have not met with any complaint upon which there are so many jarring opinions, and so many different and opposite methods pursued for the purpose of cure. The doctrine, therefore, that I have advanced, being the result of long experience, will, I trust, stand the test of practical scrutiny.

As the foregoing sketch may at some future period undergo a revision, I sincerely trust my medical brethren in the navy under whose hands the disease may fall, will have the kindness to favour me with their opinions and remarks upon

the ideas I have thus endeavoured to inculcate, with any other method of treatment they may have found more successful ; from the result of which an effectual method of combating this formidable and destructive disease, may be established upon the firm and unerring basis, not of speculative opinions, but of incontestible facts, resulting from the experience of numbers.

Having now, though rather in a brief and superficial manner, discussed the prominent points upon the nature and treatment of this distemper, which the limits of such an essay would admit, I shall for the present take leave of the subject with a few general observations.

The naval surgeon, in treating this disease, must be guided in very many instances by the resources which he finds in his own mind, which ought always to be equal to meet any extraordinary and unforeseen event : he must reason on the source whence it sprung, and the means best calculated to counteract its progress, without which he will drench his patients at a venture. He must take this for his guide, that a pure uncontaminated atmosphere is the immediate and great pabulum of life, without which all his efforts will prove ineffectual. He must have a watchful eye to the decks being kept as dry as possible, and the holds sufficiently ventilated ;

for a damp air in a confined space will ever frustrate his efforts. But, in spite of his exertions, should the disease increase in a high degree, it will be indispensably necessary to remove the patients from the ship; otherwise such ship will soon become unserviceable. It may, perhaps, be in his power to stop it at its first onset, by which a valuable ship may be preserved to the service; but when increased to any extent, he will find that beyond his reach. The sufferers under this disease must then be removed; but not to an hospital ward, if possible, for reasons already adduced. Could it be practicable to remove them to some remote place on shore, where the temptations to commit irregularities were not in their way, it would be much better. Tents could be erected for their accomodation, with proper poles and spare sails from the ship, which would be found sufficient to protect them from the weather; and, I can aver, will answer the purpose well. The surgeons from the ship could attend them, and what little refreshments they required could be procured at a trivial expense to the country; perhaps in the event would prove an advantage, as it might obviate the necessity of the country's granting pensions to such a number of her mutilated servants. The placing them in such a situation on shore, is the only method by which we are certain of doing much good. I can bear testimony to its utility by an event which

I must beg leave to relate. When surgeon of a small ship in the West Indies, in the year 1796, the ship's company, from being in a perfect state of health, were suddenly visited by the yellow fever, the origin of which we were afterwards clearly able to trace. It spread with such rapidity that in two days near forty men were confined to their hammocks, some of them in an advanced stage of the complaint before the true nature of it was ascertained.

Two deaths soon convinced me of the malignant nature of the disease I had to deal with, which threatened, unless vigorous means were used to arrest its progress, to depopulate the ship. Tents were immediately erected on a small island, one of the Granadines; and the sick were immediately landed. The tents were erected very large and high. The hammocks, by means of horizontal poles, were hung about a foot and half from the bare earth, in which situation it was astonishing how fast they recovered. The people, the moment they complained, were sent on shore to the tents, as also many more from other ships present, and out of the whole we did not lose more than one in fifteen; a degree of success which I am thoroughly persuaded we could not have arrived at had they been crowded together in an hospital ward. The cold affusion and the same method of treatment were adopted as at this

time used ; but I attribute much more to the local advantages. Being so near the ground, the earth immediately absorbed all the noxious effluvia emanating from their persons ; and the open tents kept the air pure. Not the least noxious or bad smell was ever perceptible, even close to their beds. A similar situation I am confident would tend much to arrest the progress of the disease of which I have attempted to draw the preceding cursory sketch.

FINIS.

