

**Observations on the effects of sea water in the scurvy and scrophula : in which a new theory of those diseases is attempted; with some reasons why bathing in fresh water must be much superior to that of the sea / By William Logan.**

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O B S E R V A T I O N S

ON THE EFFECTS OF

S E A W A T E R

I N T H E

SCURVY and SCROPHULA :

I N W H I C H

A new Theory of those Diseases is attempted;  
with some Reasons why Bathing in FRESH  
WATER must be much superior to that of  
the SEA.

By WILLIAM LOGAN, M.D.

Of PHILADELPHIA.

T H E S E C O N D E D I T I O N .

L O N D O N :

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MDCCLXXI.

[PRICE ONE SHILLING.]





TO THE  
PRESIDENT AND MEMBERS

OF THE

EDINBURGH PHYSICO MEDICAL SOCIETY,

THIS

E S S A Y,

AS A TESTIMONY OF RESPECT,

IS,

AFFECTIONATELY INSCRIBED,

BY

THEIR FRIEND AND COLLEAGUE,

W. LOGAN.



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## OBSERVATIONS, &c.

**T**HE scurvy, though a disease very common to the inhabitants of this island, has not till of late been properly ascertained. The variety of symptoms which occur in it, have occasioned it to be confounded with almost every chronic disease, where its nature was not properly understood. Of late it has been described with great accuracy and judgment by Dr. Hulme and Dr. Lind, insomuch, that I shall recommend my readers to their observations, and at present dedicate this essay to the service and attention of those who seem infatuated with the belief that sea-water is their only remedy.

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I shall endeavour to give a history of the disease as it usually appears, and enter so far into the pathology, as to prove that sea-water tends to increase it.

I am sensible, that more than half the people who visit Margate and Bright-helmstone, to drink the sea-water, have not the true scurvy, as I have often observed diseases of the skin are confounded with it. Nay, it very often happens, that in the spring a rash breaks out, which, though it indicates high health, and shews an equal distribution of the blood to the surface, yet the patient (if I may call him so) has been uneasy till he has been frequently purged by sea-water to rectify his blood.

The scurvy is oftenest found in people of a phlegmatic habit of body, and arises from a luxurious way of life; it generally appears by the colour of the face, which changes gradually from the natural clear-  
ness,



ness, and becomes yellowish and bloated, but these symptoms will occur from a peculiar temperament, and exist many years without any material alteration either for better or worse—but when it arises as a symptom of true scurvy, it is attended with prostration of strength and dejection of spirits, with a remarkable lassitude and aversion to motion; upon moving suddenly, the patient finds a difficulty of breathing, with more or less of a palpitation of the heart; but before these symptoms have continued long, the disease begins to appear in the gums, they turn red and spongy, are attended with itching, and bleed upon the least pressure, the patient's breath becoming at the same time remarkably foetid; the skin is now covered over with spots of a different magnitude, of a livid colour, not unlike the appearance of a bruise; they are spread over the whole body, but affect the thighs and legs more than the face. The legs generally swell and become



œdematous near the ancles, and upon being pressed, they leave the mark of the finger behind, much in the same manner as in the dropfy, but the impression here continues much longer. The pulse is usually small and irregular, and rarely exceeds the common standard; the appetite is weak, and the patient upon lying in a recumbent posture, with his mind calm and undisturbed, finds a remarkable cessation of his more violent symptoms.

Before other marks of the disease appear, and even through its course, the patient is attended with costiveness, but sometimes a dysentery will break out, which is followed with the most fatal consequences. The urine is commonly of a flame colour, small in quantity, having often a brown thick ash-coloured sediment, and sometimes a saline pellicle is found floating on its surface; in some cases the urine gives an irritation in its passage;



passage: upon bleeding the patient, the blood is commonly found without any texture, and has every mark of being broke down. The intellectual faculties are not much affected, and indeed all the senses seem unimpaired to the last, and yet the nervous system seems much more irritable than when in health, as the patient is one while greatly elevated, and at others as violently depressed, and suddenly has transitions from the most extravagant boldness to the most childish pusillanimity.

These are the most common symptoms in the first stage of the disorder; but if from the patient's situation or circumstances the disease is neglected, innumerable are the symptoms which attend it. I shall give the most remarkable:

The legs are contracted, and the knees are attended with a painful œdematous swelling, fungous ulcers break out in  
various



various parts, but mostly about the legs ; sometimes dry pustular eruptions, not unlike those of the miliary kind, are scattered over the whole body. Wandering pains are felt every-where, but there is commonly a fixed pain in the breast, attended with stricture, which is generally increased upon any attempt to cough.

There is an uncommon discharge of saliva, which is greatly increased with the smallest dose of mercury. In this malignant stage of the disorder, the blood being entirely dissolved, is poured out on every hand, bursting through the scars of old wounds which have been healed many years ; but very commonly more plentifully from the gums, nose, and hæmorrhoidal vessels—the teeth become loose and fall out ; the callus of old broken bones is dissolved, and they begin to loosen ; the difficulty of breathing is daily increased, and such is the degree of acrimony, that the least wound made by accident



accident in the skin becomes a painful ulcer. In this stage of the disease, a jaundice or dropsy often supervenes, but much oftener, from an effusion of serum in the brain, the patient upon the least motion of body, or perturbation of mind, is seized with a palsy, which closes the tragedy, yet retains his faculties to the last. It seldom happens that the disease arrives to this state on land, the patient having always at hand the use of fresh vegetables, and other means to obviate its increase. The common symptoms which attend people in London are those which I have enumerated in the first part of the history, being commonly accompanied with the most distressing of all diseases, the hypochondriasis; and hence I imagine it is that a journey to the seaside has been found so often of service, not in removing the symptoms of scurvy, but by engaging the mind with a variety of new objects, obviates the disposition which such patients find of cherishing the idea of their sufferings.

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As I offer this essay to my patients by way of caution, having professedly undertaken it to prove that sea-water in scorbutic disorders is not only ineffectual, but even often is attended with bad consequences, I shall now trace the occasional and proximate causes of the disease. I have hinted before, that people of a peculiar temperament are more subject to this disease than others:—what temperament I mean, is that of the melancholy, where the patient lives in ease and opulence, having too much of the enjoyments and too little of the difficulties of life to struggle with.

There is one general cause of scurvy which seems remarkably to prevail in these cases, and which is, too great a proportion of animal diet, which is not so perspirable as vegetables; but salted and high seasoned meats, from causes we shall enumerate hereafter, tend particularly to produce it, as Lord Anson's crew found in  
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the South-seas. Though the too frequent, or sole use of animal food tends to produce the scurvy, yet it has been observed, that diminished perspiration is a much more common cause ; hence it is, that the further we travel north the more we find the scurvy prevail, witness the Natural History of Norway, Lapland, and Greenland ; and it is a fact, that the further we travel north or south, the more we find the scurvy prevail or diminish, and hence arose the common observation, that the people of Scotland are more subject to this disease than those of the south of England.

The ingenious Dr. Hulme, in his Inaugural Dissertation, printed at Edinburgh, confirms this remark, by observing that the scurvy prevailed among the sailors (while at sea) more or less according to the height of the thermometer and the state of the air. He observed when the quicksilver was above seventy degrees, the disease

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seldom or rarely appeared, although the men lived upon salted provisions. This easily explains how a visit to Southampton will remove symptoms of the scurvy ; the season chosen as proper is the months of June and July, when the weather is warm, and the spot being the furthest south, hence they are more liable to a free and plentiful perspiration, which for the present removes the disorder, and the patient returns to town though cured, yet perhaps greatly reduced and weakened by large nauseous draughts of sea-water ; and consequently upon the approach of cold bleak easterly winds he will be more liable to have his disease return with renewed violence. I have with pain often observed whole families every summer pay an annual visit to the sea ; they have continued the practice for perhaps five or six successive seasons, the constitution every winter becoming more and more enervated, till at length a dropfy or jaundice has been the consequence : all which perhaps

might



might have been obviated by a little prudent management during the winter.

Authors have observed, that moisture joined with cold is one great cause of the scurvy; this evidently arises from its effect in diminishing perspiration, and this may give us one reason why a scorbutic habit is so prevalent in England, as I believe no country is more subject to sudden changes of temperature than Great Britain; but I must confess cold without moisture has the same tendency. Moisture joined with heat is more apt to produce putrid fevers and dysenteries.

Having thus shewn the occasional causes of the scurvy, I shall endeavour to give an analysis of the blood in its scorbutic state, and from thence draw a proof that sea-water must tend to promote every symptom of this disease.



Dr. Boerhaave, in his chemical lectures, has long since proved that the blood in its natural state gave no proof of its abounding with either an acid or alkali, as he could not procure an effervescence with either the strongest vinegar or a fixed alkali; he tried another experiment by digesting the serum of the blood till it became putrid, and he then discovered a volatile alkaline salt; and hence the doctor drew some plausible conclusions with regard to putrid diseases, but his conclusions will not bear the test of examination, though perhaps if allowed it would be very favourable to my theory.

A volatile alkali is always found in the fluids in a neutral form, but that it is ever changed and decomposed in the mass of blood during life appears very doubtful; if it is evolved so as to exist in a separate state, it must be in consequence of a putrefaction which goes further than is consistent with life. Dr. Gaubius, an eminent professor at  
Leyden,



Leyden, in his excellent pathology, on this subject, considers it not as an alkali evolved, but rather seems to think it may be introduced in its separate state ; but his arguments, however strong, are easily obviated ; as there is, for some purpose of the œconomy, in every animal more or less of an acid in the stomach, and it is certainly so, nothing being more evident than that acids formally as such are often introduced into our bodies, and acefcents still more frequently. The greater portion of our aliment is vegetable, all of which, except perhaps the oily parts is plainly acefcant, and that the acid is truly and in our stomachs separated I have reason to think from the experiments of the judicious Dr. Rush, professor of chemistry at Philadelphia, who has shewn that more or less of an acid is always formally present in the stomach, though not generally observed : it is a question with me, whether the symptoms we mark as the effects of acidity in the stomach are to be referred  
to



to acidity alone, or to some other circumstance that attends the generation of this, as mephitic air, &c. I much doubt whether this acid ever enters the system further without being covered; there is no doubt it goes sometimes into the intestines when the powers which should cover it are defective, and hence it produces diarrhæas, cholera, &c. by its irritation. But some physicians have asserted, that it enters the lacteals, and hence assign its effects; but I must confess I know not the least ground to suppose acidity in the blood. Dr. Gaubius, in proof of the existence of acid, brings the souring of milk as an argument. I have no doubt but there is an acid materially in the milk, but I assert not formally till it is evolved by stagnation and putrefaction.

Having thus laid the foundation for a neutral salt in our blood, which arises from the combination of an alkali in our animal food, joined to a natural acid, I shall  
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endeavour to convince the reader that it is this saline state of our fluids which tends to increase and promote the scurvy.

I have in the history of the disease observed that the blood is broke down and dissolved, and this is the peculiar effect of the ammoniacal salt, to dissolve the lymph which gives consistence to the blood; we have proof of this in the great quantity of serum and its acrid and saline state, which is observable more particularly in the urine. It has commonly been supposed by some of the most eminent medical writers, that the scorbutic state is the putrid state of our blood, but I must here carefully distinguish it: I confess that there is reason to believe that this saline state of our fluids is the first step towards putrefaction; but the deepest and most deplorable scurvy furnishes no putrid ferment, and what is more remarkable, it is no where contagious: but there is another argument of considerable



derable weight, that the serum of scorbutic blood has been found to resist putrefaction when applied to other substances ; there is another circumstance in scurvy which shews it to be very different from putrid, which overthrows the whole system ; the scurvy has a very slow progress, and will subsist for years in some persons ; and from what I have advanced we may obviate some confusion that has occurred in the terms alkalescent and putrid. We can only say, that the alkalescent state so much spoke of, is no other than the ammoniacal I have been describing.

I flatter myself, that after having advanced sufficient proof that all the symptoms of scurvy are owing to a decomposition of the blood, the proximate cause of which is too great a quantity of neutral salts ; I need use no further arguments to prove the bad consequences



Sequences attending a too free use of sea-salt.

The true scurvy (which I have described) does not exist on land so frequently as has been apprehended, at least to any great degree ; and indeed, we have reason to think that it was much more frequent formerly than at present, which the celebrated Sir John Pringle attributes to our now making a greater use of vegetables. Almost every disease which arises from irregular secretion has been confounded with the scurvy, and it is this confusion in the distinction of diseases that has given birth to a great deal of bad practice. Physicians have hitherto pretty much neglected the study of cutaneous diseases : they have in most cases had the idea of an acrimony in the blood thrown on the skin. This I agree sometimes happens, especially in the scurvy and in putrid diseases—but when we consider that the generality of diseases

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of the skin occur in the winter, when the temperature of the weather is fluctuating from warm to cold, it must occasion a difference in the secretory organs; if the perspiration is remarkably free, we have reason to think an acrid matter passes with it, which being suddenly stopped by cold, occasions it to stagnate; and this acrid matter being effused under the skin gives a disease attended with an intolerable itching, till a new increase of perspiration carries it off.

I shall now enquire into the effects of sea-water, when used externally in the form of a bath, in the scurvy and diseases of the skin, and afterwards draw some favourable conclusions with regard to its use in scrophulous disorders. The first question that arises is, whether the advantages from bathing in the sea are superior to those which follow the use of water of the same temperature unimpregnated with sea-salt? I must confess, that I have  
never



never yet found any reason to suppose its effects equally advantageous to spring water, where a cold bath was indicated. I am sensible that this is a theory which will surprize many people who have supposed something specific to exist in a sea-bath. I am certain from experiments that a large quantity of water may be absorbed by bathing; but the question is, whether sea-water enters in its saline state; if it does, the same objections will rest against it in scurvy which I have advanced with regard to drinking it; if it cannot, it follows of course that its effects must be the same as those of simple water. The immediate effect of cold bathing is a gradual warmth and an increase of perspiration; so far it is useful not only in diseases of the skin, but also in scurvy; but if an increased warmth is the advantage expected, this will be found more remarkably in a colder water; and therefore I advance this as another reason why cold spring-water should be preferred as a bath to sea-water.



However, after all, I must acknowledge that I believe sea-water used as a bath has frequently had a superior effect to a fresh-water bath; the reason I take to be this, when a patient enters a bathing machine in the sea, he goes with a firm persuasion that it is his only remedy; the warmth of the water, the agreeable variety of company, all tend to remove that natural dread which most people find when they are at home and obliged from a warm bed to go to a solitary bath, where, perhaps, they stand trembling on the brink till they have got a fresh cold before they can be induced to plunge in, and this in a short time from being irksome becomes terrible, and is neglected. Therefore, I am well convinced, that if people would candidly examine the matter without prejudice or partiality, they would agree with me, that in all the diseases where a cold bath is indicated, spring-water, by being much colder, must be greatly superior to that of the sea.

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I am very sensible that in advancing this theory I shall disoblige many of the inhabitants of Scarborough, Margate, Southampton, and other places, but in an essay of this kind it is necessary I should be candid. They may perhaps conclude, that for some interested motives I write against salt-water; I must therefore declare that my object is truth, not interest. I must now conclude this essay with recommending sea-water, and more especially those saline waters impregnated with sulphur, in the most distressing and cruel of all diseases, the

### SCROPHULA: OR, KING'S EVIL.

This disease, though it differs from the scurvy, yet has often been confounded with it, and therefore I shall give a short history of it, with the symptoms.

By some authors it has been considered as a new disorder, introduced with the venereal disease; but I think the strumæ  
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mentioned in ancient medical writings were such swellings of the glands as we call scrophulous: it generally appears like a tumor of a small size in different parts of the body without changing the colour of the skin, and at the same time is for the most part free from pain and inflammation; the tumor is moveable under the skin, it slowly advances to an inflammatory state, and after some redness has come on, it is gradual in coming to a suppuration; and after it shows a fluctuation of matter, it is long in opening and changing into an ulcer. It differs very materially from what is called a phlegmon, though it is true that it sometimes has the appearance of a pointed tumor, but it does not (like other inflammatory tumors) come always to a point and open there, but the inflamed skin breaks at small and different apertures; when it is thus become an open sore, it affords but little purulent matter, and always with it something of a curd



a curd or cheese-like substance, with a quantity of transparent and gelatinous serum soon after appearing in it. The ulcer thus formed heals slowly, affording but a little pus, and much of a viscid transparent serum; the edges of such ulcers are seldom regularly circumscribed; being at the same time free from callus, and may be known by their flatness and smoothness: they thus arise on the bones near the joints, and affect them with a caries of a particular kind, for while the caries from most other causes is difficult to heal, it seems as if that in scrophulous cases healed up as easily as its ulcerations in the soft parts: these tumors and their consequences affect particular temperaments or constitutions; persons of fair complexions, with light hair more frequently than those of dark black hair, though sometimes these latter do not escape; but in all the skin has a remarkable polish, is very smooth, the cuticle having a very peculiar fineness;



It attends a certain period of life, from three years old to puberty, though I have seen it in a child three months old, it more frequently appears from three to seven than afterwards—After the age of puberty, it may be doubted whether a swelling of the glands is of the scrophulous kind, though there is a species that appears about the age of puberty, but then it is always a prelude to consumption of the lungs, and does not require to be treated as scrophula. Whenever scrophula attacks it rarely continues many years, the most usual period is three or four, and then the ulcers heal; if they do not appear at the age of puberty, they seldom continue after it. I have thus described the disease as it most commonly appears. These tumors most manifestly occur in the lymphatic or conglobate glands. Every part of the body is liable to be affected, but more frequently the neck. It is a difficult matter to determine whether



whether the disease thus affecting the glands at a particular period of life is not owing to some change in the secretory system; it is a serious, if not an important question, and well deserves the attention of physiologists. The general opinion is, that scrophulous swellings are owing to a morbid matter affecting the glandular system; but if this was the case, why should it occur at a certain period of life, and among people various in their way of living and circumstances.

From scrophula being commonly attended with a thickness of the upper lip, some physicians have supposed that the breath was infectious; but the phenomena of the disease by no means confirm this, as children sleep together during the whole course of the disorder without infection.

There is one circumstance attending the disease, which confirms an opinion I have long entertained, that scrophula primarily

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is owing to a disease of the glands themselves, and not to the matter which they should transmit; for whatever changes may be made in diet, even after the ineffectual use of antimonials and mercurials, the disease has remained without alteration during the summer, being more or less inveterate according to the temperature of the weather; but as the cold weather approached it gradually went off, and entirely disappeared at midwinter. This observation I have made in various cases, and always found it hold good where the disease was recent; in some instances this fact has failed, but then I have remarked that the winter had been moist and warm, or the patient too much nursed. Scrophulous tumors generally appear about the neck and on the elbows; but from my own observations, I have reason to believe that in such patients the mesenteric glands are more or less affected; this I conclude from the swelling and hardness of the abdomen, and the rapid emaciation which ensues,



enfues. I have frequently had an opportunity of seeing young children in this situation, a remarkable instance occurred to me lately : a tradesman in Whitechapel brought his son to me, he was about five years of age, of a thin, pale, delicate habit of body—his pulse very rapid, being one hundred and twenty in a cool room when sitting still ; his abdomen was remarkably swelled without any fluctuation ; his legs were œdematous ; he had towards evening a hectic paroxysm which increased towards midnight, and went off in the morning with a copious colliquative sweat ; his appetite was natural, but he shewed a remarkable fondness for cold liquor, which he drank in great plenty ; he was generally costive, except upon taking some laxative medicine ; and his stools were natural, except having a mixture of white matter ; he had no cough, nor pain in his breast ; was cheerful and lively ; his urine shewed no marks of purulency. He had for some time been under the care of an eminent



apothecary, who had given him calomel and rhubarb powders, supposing his disease to arise from worms, but without any advantage, as the child gradually grew worse. Upon his application to me, I was convinced that the disease would in a short time prove fatal, as I had reason to think from the celerity of his pulse, that if an ulceration had not already taken place in the mesentery, it must in a short time (as his chylous stools gave me sufficient reason to believe a great degree of congestion existed in the mesenteric glands) accordingly he languished a few weeks longer, and then expired without pain, the approach to death being remarkably calm and gradual. At my earnest request I was permitted to open the body; and agreeable to my expectation, I found the glands in the mesentery swelled in a most surprizing manner, so that the child was in fact starved to death for want of a proper assimilation of chyle. Had this child been managed properly at first by  
taking



taking saline preparations, in all human probability he might have been saved. Upon enquiry I found that the father of this child had been severely afflicted with scrophula in his infancy.

I am well convinced that these cases occur more frequently than is imagined ; they are generally supposed to arise from worms, as it occurs in the summer, when children meet with plenty of green fruit, which has been long supposed to generate worms, though I know not on what foundation. But to return to scrophula in general :

From this disease being hereditary ; from its occurring at a particular period, and attending a peculiar temperament, we may safely conclude it to be constitutional ; hence I conceive that it arises not from a *matter* transmitted from parents to children, but from a peculiar form of body.

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I am sensible, that in this opinion I differ from many learned and ingenious physicians, whose improvements will always render their memory dear to the students of medicine. I deliver this only as my opinion, submitting it to the examination of more judicious and impartial men. It may perhaps seem a strange assertion to some, that I should presume scrophula to depend on a peculiar formation of the system; but if we examine the several diseases which can be traced from father to son, we must conclude, that in the various stages of life the system undergoes different changes necessary for the animal œconomy—if this was not the case, how does it happen that the gout, which is a hereditary disease, lies dormant till the fortieth year of life? or whence arises that wonderful change which occurs in both sexes at the time of puberty? We every day see children whose features bear so striking a resemblance to the parents, that they may be known to be such among strangers



strangers—if then it is true that a parent can transmit to posterity a miniature of himself externally, why should a similarity in the internal structure be objected to?

Upon the whole then, I presume that scrophula arises primarily from a peculiar state of the glands themselves, and not from the matter they retain. And I presume it will be an argument of some weight with my readers, if I observe that scrophula exists only during a certain period of life, and that it disappears afterwards, owing to some change in the glands themselves: how, or why this takes place I am uncertain; I only advance it as a fact, and leave it to the speculation of men of ingenuity to investigate it further.

It has been asserted that viscid tenacious diet, and austere unripe summer fruits (things contradictory in themselves) have been the cause of scrophula. Infants have been supposed to receive the infection from  
their



their nurses, but we have no facts that can be depended on to prove this; besides, at the time of giving suck nurses have seldom any symptoms of the disease.

Again, it has been imputed to humid air, to children being confined too close, to a frigid phlegmatic temperament, to drinking snow-water, and various other causes, some of them without any foundation and others very uncertain.

I have in the preceding pages observed, that the mesenteric glands are generally more or less affected in scrophula: this must occasion a great difference in the assimilating powers; and hence it is that such people are generally weak and relaxed, the circulation being irregular it must occasion a material difference in the lymphatic system, and hence the phlegmatic constitution is a consequence of the disease, and not a cause; and this also will explain why the summer season is so very unfavour-



unfavourable to scrophulous habits, and account for that phænomenon of the disease returning at certain periods.

It may be readily supposed that I shall find it difficult to alter a natural constitution, change and overturn an operation of nature, and consequently that every method of cure must be ineffectual. I must acknowledge that all diseases depending on a peculiar temperament, when they are once established are very difficult to eradicate ; as we find in the gout, mania, &c. It is true, that there are some empirics in the world whose assurance is beyond every thing ; they have furnished the history of physick with a number of pretended facts that may seem to overthrow all dogmatic theory ; but if mankind were less credulous, if they would examine such histories themselves, they would find, I am confident, in nine cases out of ten that such diseases were grossly misrepresented.

Though a cure of this disease (when it is once established) may be difficult, yet  
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there is no doubt but we may by a proper precaution obviate the consequences to be expected from a scrophulous constitution, and therefore I must here earnestly recommend to those parents who have been subject to it, to make use of every precaution before the time when the disease occurs in children.

Although I have been strenuous in supporting a new theory of this disease, nevertheless I must acknowledge, that in the indications of cure it is necessary to include those remedies which may obviate the effects of acrimony. For it would be absurd in me to assert that there are no marks of acrimony in this disease ; there most undoubtedly are ; but these I consider as symptoms of inveterate scrophula, arising from a stagnation of that matter which should be transmitted by the glands ; and therefore the indications of cure are,

First,



First, Upon the supposition of some acrid matter to wash it out of the system.

Secondly, To obviate debility and laxity.

With regard to the former of these, the idea of acrimony being the cause of this disease, has laid the foundation for variety of practice; various have been the remedies prescribed, many contradictory to each other, and others so weak and inert in themselves, that they could never afford relief in the smallest degree; but as a catalogue of remedies declared ineffectual must in the recital be disagreeable to my readers, I shall pass them over with this observation, that if the nostrums recommended by empirics had been infallible in this disorder, they never would have sunk into neglect and contempt.

The method I have found the most effectual for the first indication, is the



use of water, which is a fluid fitted to carry out of the system any acrid matter by the several excretories. Much is to be imputed to pure elementary water ; but perhaps water impregnated with a saline matter fitted to stimulate and increase the secretions, is the most probable remedy. This should be used during the spring, in such quantities as the stomach will bear without purging.

It has been often recommended to the patients in this disorder to drink sea-water as a purge, in order to cleanse the blood (as it is commonly called) : this, however, is a practice always useless, and sometimes dangerous ; for I consider it as an impossibility for a medicine passing off by stool to affect the blood or excretories ; it is true, that the sea-salt by its stimulus may emulge the intestines and carry off a great deal of mucus, and in that manner may have some effect on the glands of the mesentery : but here it is necessary to observe,



serve, that all purges must have a bad effect, which stimulate the intestines when the glands by being turgid with matter, are in a state of inflammation; when this state takes place it may be easily discovered by the quickness of the pulse, pain, and tension of the belly, and also by the condition of the external glands on the neck, and therefore I would recommend only as much sea-water to be drank as the patient can bear without vomiting or purging: and this will be best effected by drinking small quantities at a time.

As this disease seems to have periodical revolutions, it will be best to assist the operations of nature by drinking sea-water very early in the spring before the summer solstice sets in; by following this rule I have known scrophulous complaints in time intirely removed. But as it often happens that patients being situated at a distance from the sea, through various circumstances are incapable of making a journey



journey at the necessary period when it is common to visit the sea-coast; to such I must observe, that salt-water can be transported at an easy expence to any inland town in good condition; there is no such advantage to be had from the sea air as many people have imagined. I have frequently found that those patients who staid quietly at home and drank sea-water, received much more advantage than those who made a journey on purpose; the reason I take to be this, those who take up sea-water on the shore generally get fresh water amongst it; and therefore I give this caution to persons who wish to receive benefit from salt-water, to let a boat be sent off to some distance from the shore, and the water taken up just before high tide; thus the salt-water will be got without being diluted with any fresh; with this management, I am certain that it will be a very powerful remedy.

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As this disease affects people of all ranks and conditions of life, it must sometimes happen, through poverty, that the sick are unable to bear the small expence of having the sea-water sent to them at the time it is most wanted ; to such I have recommended a solution of three parts of Glauber's salt to one of common salt in spring-water, which will be a useful substitute when sea-water cannot be had.

Having said thus much on sea-water, I shall now consider our second indication, viz. to obviate debility and laxity of the system.

I have in the foregoing pages given my reasons why patients in the scrophula are commonly so much debilitated, and therefore I must now remark that tonic remedies are not to be used till after the sea-water has been pursued for a considerable time ; the general practice has been to use them both indiscriminately ; but I have  
never



never seen any advantages accrue from such treatment. The rule I have hitherto followed in putting the patient on a course of sea-water during the months of January, February, and March, and then gradually introducing the tonic remedies, as the summer advanced, has always been attended with remarkable success. The remedies for this purpose are:

First, The *Peruvian bark*: in the London Medical Essays we have some account of the good effects of the bark in scrophulous cases; this induced me to try it, and I must acknowledge that I had reason to think it useful; I will not pretend to say how it acts on the system in general, but I have never found it answer, unless taken in powder and in large doses. — Dr. Fothergill says, he used a decoction of it with success. But when we consider this as a constitutional disease, that is, which goes and comes with the seasons without the use of remedies, it renders



renders a slight decoction of the bark a doubtful remedy at the best.

I have often thought that this circumstance of the disease going off spontaneously has been the sole cause of that reputation which quack medicines have acquired,

Second, *Alum whey*: this is a remedy which, after the use of sea-water, I have found to answer better than the bark, or any other remedy, taken in the quantity of a tea-cup full three times a day, and continued for some time during the summer months; but I must here observe, that when the glands of the neck are painful or inflamed, this and all other tonic remedies will tend to increase the inflammation; tonics are only indicated in the early stages of the disease, when the tumors are small and moveable.



In case the patient should become costive by the use of this remedy, it may be obviated by taking a large spoonful of castor oil every morning.

Thirdly, *Cold bathing* : the sea-water has by many physicians been considered as a remedy of great consequence in scrophulous cases. I have no doubt but it has been often serviceable—but what I have said on this head when treating of the scurvy may be applied here : I presume its good effects are intirely to be attributed to the coldness of the water, and not to any impregnation of it. A gentleman of the faculty (whose judgment I greatly value) having seen the foregoing part of this essay before it went to the press, informed me that the general opinion of physicians with regard to the effect of sea-water, when applied to the skin, was that the sea-salt acted as a stimulus ; but though this observation might be allowed to have some weight in a warm bath made with sea-water,



water, yet I flatter myself it will be found to have no foundation when the water is used cold. It is a general rule in physiology that a strong sedative always destroys the force of a weak stimulus. *Cold* water suddenly applied to the body acts as a very strong sedative, and consequently it must destroy the slight stimulus which sea-water would otherwise give.

Others have observed that sea-water applied to meat tends to corrugate and harden the animal fibre; hence they say, that it must be a great bracer when used as a cold bath—this may be very true with regard to the operation of sea-water on meat; but surely there is a material difference between the living and dead fibre—and hence I conclude that in this or any other disease, a plain bath of the coldest fresh-water must be much more effectual than the sea.

It perhaps would be attended with considerable advantages if the patient after he



comes out of the cold bath was to be wiped dry and then rubbed for some time all over with a flesh brush till he was thoroughly warm.

There yet remains two other remedies which have been much used though with very different success; the cicuta and tussilago: the former has been much recommended in cancerous cases, and indeed in indurated tumors; for my own part I must say, that I have never seen it attended with any advantage when used simply. The general method of combining several medicines to answer one intention renders all their single operations uncertain, as we cannot in such cases discover which of them is efficacious. The tussilago is a remedy of great efficacy in this disease; the expressed juice, or a strong decoction of the dried herb, as recommended by Dr. Fuller, in his *Medicina Gymnastica*, has remarkable effects on scrophulous ulcers. I have known it used with great success in very inveterate cases.

I have



I have thus endeavoured to investigate the effects of sea-water in two diseases, if not the most dangerous, yet the most distressing to mankind. I have endeavoured to give a plain detail of those symptoms which occur in each disease; and though perhaps I may have digressed from the main subject in the practical part, yet I flatter myself it will not be found the less agreeable on that account to those who are so unfortunate as to labour under either of these complaints. It remains now that I close the subject, and submit it to the judgment of the publick.

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