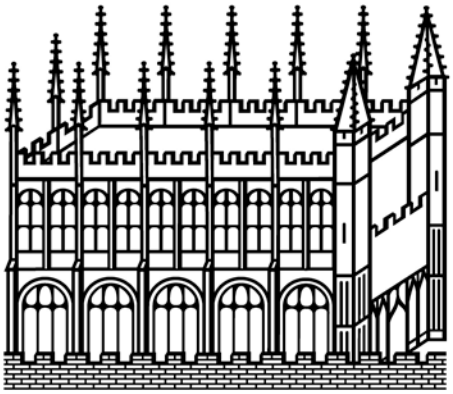
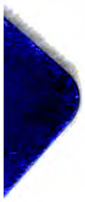
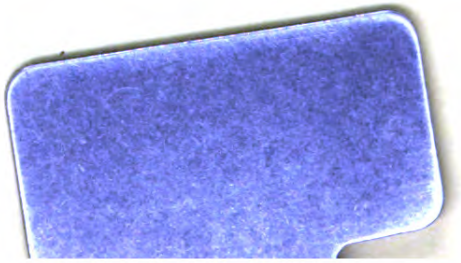


DR. BARTLETT

ON

CONSUMPTION.





CONSUMPTION.

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Great New Street and Fetter Lane.

Drawn on Stone by W. Bagg

Printed by Hullmandel & Walton.

1. Healthy air vesicles magnified. Total number computed at 600 millions
2. Crude tubercles.
3. Softened tubercles.
4. Tuberculous excavations.

CONSUMPTION:

ITS CAUSES, PREVENTION, AND CURE.

BY

THOMAS BARTLETT, M.D.

" Read not to contradict, nor to believe; but to weigh and consider."

LONDON:
HIPPOLYTE BAILLIERE, 219 REGENT STREET;
AND 290 BROADWAY, NEW YORK, U.S.

1855.


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PREFACE.

THE practice which prevails, of authors stating to their readers, at the first opening of acquaintance, their reasons for breaking ground, seems to me to be one which is advantageous to both. It is agreeable to a writer to tell the public, in a few brief phrases, why he appears before them; and to a reader it is useful to be furnished with some concise knowledge of the kind of book he is about to peruse. In default of any other defence of this course, sufficient, I think, may be found to justify an adherence to it in the circumstance, that it enables the reader at once to throw aside a book which is not to his taste, and to elect one which is more congenial to him. So, in this instance, if any one opens these pages with the expectation of finding an infallible recipe for the cure of Consumption, applicable to all persons, he will be disappointed; and should he labour under

the erroneous notion that such a nostrum can be discovered, he had better close the book forthwith; for the more he reads of it, the less he will like it. On the other hand, a person who comes to the contemplation of my views on Consumption with a mind disposed and capable of weighing and considering their value, may possibly find in these pages some return for the time spent in their perusal.

No physician, I apprehend, need offer an apology to the public for printing his thoughts on a disease which is the most fatal of any in the climate in which he is a resident, provided they embody his sincere convictions after patient earnest study. Further, when he has reason to know that relief would be afforded by the adoption of a course with the benefits of which he is acquainted, and especially when it is opposed to the prevailing practice, the option of silence is no longer left him; as in such case it is his duty to make his opinions known, that the sufferings of humanity may be alleviated, or, to use the expressive language of the great apostle of experimental philosophy, that they may bear fruit.

Circumstances have been favourable to me, in presenting opportunities for the acquisition of information respecting the treatment of the disease.

Thus, a residence for several years on the southern coast of Devonshire enables me to point out errors which able physicians have committed in speaking of the comparative excellence of its various localities for the residence of consumptive persons; and service with my regiment in various parts of Australia justifies me in calling public attention to the peculiar characteristics of its climate. The importance of this kind of knowledge will be apparent to every one, when told, that it is not unusual for persons seeking for health to make so bad a selection of climate as to migrate to one which is more hurtful to them than many parts of their own country. For example, we find consumptive persons going to the south of France to winter, thereby exposing themselves to polar blasts of destructive northerly winds; while they might nestle at Kingswear or Salcombe free from such pernicious influence.

The following pages, containing the results of a somewhat extended medical experience, represent my opinions on the rational method of lessening the ravages inflicted by pulmonary Consumption. I have thought so long and so seriously on the subject, that I have no hesitation in expressing my earnest conviction, that, were my views strictly and persistently

acted on, many a cheek would become roseate that is now blanched, many a tottering frame would be made firm, and hope and succour would be carried to many a desponding homestead.

I take this opportunity of expressing my acknowledgments to Dr. Carswell, from whose admirable work on Pathological Anatomy the subjects comprising the Plate have been taken.

1 *Raymond Buildings,*
Gray's Inn, London.

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CONSUMPTION.

Of all the diseases which afflict the human frame, there is not one possessing the importance of Consumption; standing, as it does, far beyond all others in respect to its destruction of life, especially in the temperate zone. The bills of mortality tell us that one in every four deaths in this country is occasioned by Consumption; and in North America, where the climate is more variable even than in England, the proportion is probably still greater. But the statement of this mortality, terrible as it is, does not convey a perfect idea of the enormous amount of affliction produced by this disease. Many a poor sufferer would recover from his bed of sickness, but that Consumption, being superadded to his original malady, destroys all hope of recovery; and his constitution, weakened by

previous disease, sinks under its fatal power. Thus, not only does Consumption destroy by itself more lives than any other disease; its malignant influence is often apparent in the latter stages of almost every kind of sickness. And when, in addition to all this, it is remembered that, passing with the blood from parent to child, it is transmitted from generation to generation, it must in truth be considered as a disorder of appalling importance.

This disease, so vast being its influence and so enduring its power, demands the most earnest attention. The mind of the philosopher, and the practised judgment of the physician, can in no case be more usefully occupied than in allaying the sufferings occasioned by this disease, and in staying its progress. The most god-like attribute of man, the power of healing the sick, can never be exercised with more benefit to his species than when he relieves the afflictions of the consumptive, and cures their disorder.

Consumption is a disease which is no respecter of persons; for it seizes alike both upon the high and the low,—there being no social position bestowing an exemption from

its attacks. There is privilege neither of caste nor sex; and there is no immunity for age, for all, including even the unborn fœtus, are liable to it. The pure rose and lily complexion, with soft delicate skin, light hair, and sanguine temperament, conjoined with high mental susceptibilities, grants no exemption, neither does the dark skin, with raven black hair, slow circulation, and less excitable disposition. It fastens itself on the learned and the illiterate, the indolent and the industrious, the stout and the spare, the tall as well as the short in stature, the hard drinker and the vegetarian;—all, of whatever colour, position, sex, or time of life, are subject to the inroads of this terrible disorder.

The progress of the disease is varying and most uncertain. Many are cut down at once, with scarcely any warning, and fall as corn before the sickle; while others gradually and almost imperceptibly waste away, and drop like withered leaves in autumn. Some sicken, pine, and die, even in their growing youth, —thus many a beloved being has been lost; others, again, attain mature age before the hand of the destroyer is upon them.

Who can hope to portray the inexpressible anguish which afflicts the breasts of fondly-attached relatives and friends, when one by one the members of a family are destroyed by the fell disease? Truly, nothing can be more distressing than to witness the approach of the malady with which the blood of a family is tainted; the doom of one to-day may be that of another to-morrow, and no one feels safe within the fated circle of the consumptive diathesis.

Consumption, phthisis, is produced by the blood depositing in the substance of the lungs a peculiar kind of matter which is called tubercle, and which is so constantly attended with a decline or wasting of the body, as to have restricted the general application of the term to this particular disease. When first formed, tubercles are hard, semi-transparent, seed-like bodies of a greyish colour, varying from the size of a pin's-head to that of a garden pea; after a time they turn to a yellowish-white hue, become softened, and are discharged through the air-passages of the lungs. In this manner ulcerous cavities are left in the lungs, of a size and shape cor-

responding to the numbers of the tubercles and their propinquity to each other. These cavities are in some cases but little larger than the size of one tubercle; while occasionally the substance of an entire lobe is destroyed, and it is transformed into one large excavation, produced by the union of several smaller cavities.

Tubercles are not confined to the lungs, but are deposited in all the organs, large joints, &c.; and it has been calculated, I think with precision, that, exclusive of the deaths in early infancy, one third of the mortality is caused by them. We have it on the authority of Dr. Guersent, physician to the Hôpital des Enfans Malades, that five-sixths of the children who die in that institution are tuberculous. I have deemed it right to show the importance of the tuberculous disease as affecting other parts of the body besides the lungs, inasmuch as the same general plan of treatment is applicable to the prevention and cure of the disease in whichever organ or structure it may manifest itself, as when it attacks the lungs. The general object is so to invigorate

the blood as to enable it to keep under the latent poison of the tuberculous disease; and the local object is to strengthen the weak part to such a degree as to give it power sufficient to render it tubercle-proof.

Throughout the entire progress of Consumption, from the first deposition of tubercles to the destruction of a considerable portion of the substance of the lungs, the ear, applied directly to the chest, or mediately by means of the stethoscope, affords valuable evidence of the condition of the patient. In certain stages of the disease, the information thus obtained is of so positive a character, as to leave no doubt of the exact state of the lungs; while in others, it is of great assistance in enabling us to attach their true value to the various chest-symptoms, and thus to determine with a near approach to accuracy the nature of the disease, and the progress it has made.

At the commencement of the disease, when the blood begins to deposit tubercles in the lungs, the evidence given to us by the stethoscope is not positive. Tubercles may be deposited in great numbers in the lungs

without causing any marked alteration in the respiration, or furnishing any appreciable dulness on percussion, when they are nearly equally dispersed over the whole of those organs. In the great majority of instances, however, this difficulty is not experienced, the depositions being only partial; and then the stethoscopic signs are valuable, showing as they do a decided difference between the healthy and the diseased structures. The healthy portions of the lungs give a clear resonance on percussion, and the respiration is vesicular, caused by the gradual dilatation of the delicate air-cells; while in those affected with disease the sound on percussion is dull, and the respiration is indistinct in proportion to the numbers of the tubercles.

As the disease advances, the evidence furnished by the stethoscope gradually increases in value, until it becomes positive. The vesicular respiration of health is no longer heard, but is replaced by what is termed the gurgling rhonchus, when a cavity has been formed by the softening of the tubercles and their evacuation into the air-passages of the lungs. The gurgling or cavernous rhonchus

is a hollow and more or less loud sound produced by the air rushing into and out of the cavity, and its character is modified by the size, &c. of the excavation, and whether it is single or communicates with others. This sound becomes the more distinct as the liquid is gradually discharged from the cavity, until its character is so determined as to resemble the noise produced by blowing into shells, and it is then termed cavernous respiration, a modification of which is the amphoric, as it is called, resembling the noise made by air when rushing into a bottle; and this takes place when there is a small opening into a large excavation. The voice of the patient also furnishes unmistakable evidence of the presence of a cavity. When the stethoscope is placed over a cavity, and the patient speaks, his voice appears to come up through the instrument, and is more distinct than the sound of the true voice from the mouth; this is pectoriloquy. The metallic tinkling, somewhat similar to the sound made by a pin striking a glass, is heard when the contents of a cavity are discharged into the pleura.

It is seldom, however, that a case of Consumption runs its course without being modified by a more or less inflammatory action in some of the tissues of the chest; and when this happens, the signs of the tuberculous disease elicited by the stethoscope lose somewhat their decided character, being rendered less distinct by the sounds peculiar to the inflammation. In certain cases, it requires a well-practised ear to determine out of the complication of stethoscopic signs the proportion due to each disease.

Our efforts for the prevention of the disease would be attended only with meagre results, if nature did not give us timely warning of the approach of this great scourge of the human race. To the attentive observer there is usually no lack of warnings, the system showing year by year its gradual decadence from the latent presence of Consumption, until its culminating point is reached by the disease breaking out with fierce intensity, and when the careless watchers fancy its presence is first felt. Latent Consumption may be recognised by various symptoms, all of them traceable to a

deficiency of good blood. Thus we find that the all-important function of digestion is impaired; the skin, which is unnaturally white and flabby, does not perspire properly; the state of the bowels needs constant attention; the action of the kidneys is deranged; the feet are apt to be cold; the countenance is pale and care-worn; and the pulse is small and languid. It is not unusual to find that the patient suffers now and then from attacks of irritative fever; while he is peculiarly liable to catarrh, on being exposed to the slightest exciting cause. During bleak winds, or in the hot weather of summer from the glare of the sun, the eyelids are subject to irritation, which, if unchecked, becomes a chronic inflammation; and the ears also suffer from the same cause. It may often be noticed that the last joints of the fingers and the nails present a rounded projecting appearance, not unlike the shape of a filbert, and thence the term, the filbert-nail. The hair is liable to fall off; and the absorbent glands, the favourite seat of scrofula, are prone to inflammation and enlargement. These symptoms, all of expressive significance, gradually

accumulate, until such indications of Consumption manifest themselves as to leave no doubt of the nature of the malady.

When pulmonary Consumption attacks delicate young ladies, the admonitory symptoms are liable to be overlooked by reason of the health being far below par even when free from disease; for they have the weakness of children, and a languid circulation as well. Such cases need more than ordinary watchfulness on the part of the physician: in the first place, because such persons are more liable than others to the attacks of this disease, and have less power to contend against it; and secondly, because the friends and relatives, when warned of the probable nature of the malady, are apt to say, that the symptoms arise only from constitutional weakness, and that they are certain there has been no change for the worse. Many a delicate young lady is lost in this manner, the nature of her malady being discovered only when it is too late to administer any effectual check to it: even in the bloom of her young beauty does she waste away, a poor attenuated skeleton, until the sufferings

of her weakly frame are stilled by the quiet serenity of death.

The physician has frequent opportunities of noticing the effect which pregnancy has in modifying the progress of Consumption. The disease often remains quiescent during pregnancy, but breaks out fiercely after confinement.

As with gout, so with Consumption, it is often found that the disease spares one or two generations, only to appear again in the succeeding ones.

There is an inherent aptitude in the young of both sexes to be affected by pulmonary Consumption, but which does not extend to adults. For example, when young persons are restricted in their food, or their blood from any other cause is made in insufficient quantity, tubercular Consumption is very constantly the result: thus we find this disease destroying great numbers in all establishments adapted solely for the reception of the young, especially when they are debarred from a sufficiency of good food. On the other hand, the disease is of rare occurrence among healthy adults, however greatly they may suffer from

want of food or other depressing influence. A notable instance of this will be found in the absence of Consumption among that heroic band of soldiers who, with their illustrious and lamented chief, Lord Raglan, have suffered so much, and have fought so nobly, during the late winter campaign in the Crimea.

A cough, more or less violent, is one of the earliest and most persistent symptoms of the disease. It is at first only noticed on getting out of bed in the morning; but as the disease progresses, so does this symptom increase both in frequency and duration, exertion being often an exciting cause. Generally, it will be found, that in addition to the morning cough, there is also a more severe fit on getting into bed at night than at other periods; it is, however, apt to come on whenever the patient assumes a horizontal position. Although a cough is usually one of the very first symptoms of the disease, nevertheless it does sometimes happen that it only appears a short time before death, even when the lungs are extensively diseased. Indeed, the lungs have been known to be destroyed by tubercles without there having

been experienced any cough; and now and then, in the course of the disease, the patient is entirely free from this symptom for a considerable period. When the cough is slight, the expectoration is proportionately diminished. The cough may be either hard and dry, or accompanied with an expectoration, most copious in the morning, consisting of a flocculent, colourless, ropy, and slightly frothy fluid, and in which may occasionally be found some spots of various colours, including white, green, yellow, and black.

The cough arising from tubercular Consumption has been confounded with the cough of catarrh, the cough caused by an elongated uvula, the nervous cough proceeding from nervousness, and the stomach-cough occasioned by derangement of the stomach, liver, or bowels. Observation and reflection fortunately guide us to a knowledge of such distinctive characteristics of each affection, as to give us the power of determining the cause of this symptom. The consumptive differs from the catarrhal cough in its persistence, the one being long-continued and increasing, while the other is evanescent;

the cough produced by an elongated uvula is stopped directly a portion of the uvula is removed; the nervous cough is short and jerking in its character, without expectoration, the fit is very slight, and comes on during nervous excitement only; and the stomach-cough ceases when the stomachic difficulty is cured.

Tightness across the chest is felt at intervals, gradually increasing to pain, and the breathing is oppressed. We find also that the circulation is disturbed, the pulse becomes quicker than usual, there is thirst and slight febrile heat, following a feeling of general chilliness, or even shivering; this occurs more commonly towards evening. The sleep becomes uneasy, and is interrupted by fits of coughing, and the voice becomes hoarse. The appearance of the patient sympathises with these symptoms; his muscles lose their substance and their vigour, and his countenance is pale, or rapidly alternates from a flushed red to an ashy whiteness; his nerves lose their tone, his temper becomes bad by reason of his failing strength; he is fretful and dissatisfied with the medical treat-

ment, being of opinion that his illness is only trifling, and not unfrequently attributes his weakly state to the incompetence of his physician; and he is keenly alive to any adverse change in his condition. These are the external indications of the first stage, when the tubercles are hard; and the degree in which these symptoms are felt is dependent on the numbers of the tubercles.

As the disorganisation of the lungs increases, by the substance of the tubercles becoming softened and discharged into the air-passages, so do the symptoms become aggravated. The cough is more violent and more constant; the expectoration is thicker, consisting of the softened tubercles combined with the usual mucous secretion,—it is of a yellowish colour, and occasionally tinged with blood. The patient is less frequently free from the evening chills and the attending fever, and he begins to suffer from morning perspirations, which are so exhausting, that it may frequently be noticed that he is weaker in the morning than at night. There is a dark rim under the eyes, the cheek-bones are prominent, and the fingers become small

and taper. Even while he is sitting down, the patient's respiration is hurried, the pain in the chest is more constant, and it is generally felt on that side on which the lungs are the most diseased: the pulse becomes more frequent and weak, with less calibre. When a blood-vessel is destroyed by the disease, or when one is ruptured by the violence of the cough, blood flows into the air-passages, and is thrown up by coughing. The quantity of blood varies very considerably. Occasionally it amounts only to a sufficiency to tinge the expectoration in reddish streaks here and there, while in other cases as much as a pint or two may be lost at a time. These distressing symptoms do not continue without producing great mental and physical prostration, and a corresponding anxious expression of countenance. As evening approaches, there comes on each cheek a red flush, which is accurately defined, the surrounding skin being of an ashy paleness, the more remarkable from its close propinquity to a heightened colour: this is the hectic flush. The most careless observer now apprehends danger; and yet, such is the elas-

ticity of the human mind, that, under all these indications of approaching mortality, consumptive patients, while free from pain, are often cheerful, and entertain a confident anticipation of speedy recovery.

As the disease proceeds towards a fatal termination, we shall find that the patient suffers more and more from perspirations. The cough becomes still more troublesome and more straining, and thereby occasions the difficulty of procuring refreshing sleep; the expectoration has a fœtid odour, and in it may sometimes be noticed some portions of the lungs; and it is more copious until just before dissolution, when it gradually diminishes, while a new but most distressing symptom supervenes,—an obstinate diarrhœa. The lower extremities become dropsical; and the difficulty of breathing, emaciation, and general debility, gradually increase. Ulcerations upon the tongue, gums, and palate, which are commonly termed the thrush, now make their appearance, and add to the previously severe sufferings of the patient. The eyes become dim, and there is a difficulty of swallowing. As the physical power dimi-

nishes, so does the mental, until eventually delirium comes on; and it has repeatedly been noticed, that patients have been hopeful of cure but a short time before dissolution, and when recovery was obviously an impossibility. These symptoms, occurring in a varying degree in different patients, are so harassing, not only to the poor sufferers themselves, but also to their relatives and friends, that it may truly be said to be a disease which taxes patient endurance to the uttermost. Death may ensue either from loss of blood, suffocation by the bursting of a cavity into the air-passages, or, as more generally occurs, from utter exhaustion.

Actual experiments have repeatedly shown that tubercles may be produced in rabbits by placing them in cold and damp cellars, and by making them live on unsuitable food. On dissecting them, it has been discovered that the healing power of nature has completely removed the disease. By following a similar course tubercles are also produced in cows; and monkeys, by living in this climate, are rendered remarkably liable to tuberculous disease. These experiments on the lower

animals are valuable links in the evidence, by analogy, as to the causes of consumption, showing, as they do, that breathing damp air, and living on unsuitable food, produce tuberculous disease in rabbits, cows, and monkeys; and the well-authenticated examinations of rabbits are of still greater value, as proving that tubercles are curable.

There is no portion of the human frame so disposed to diseased action terminating in tubercles as the lungs; and, moreover, no organ of the body is liable to be affected with the disease to the same extent as they are. And it is because tuberculous depositions have so great an affinity for the lungs, that they require more attentive consideration than they would have done, had their favourite seat been organs of less vital importance. Great variety exists as to the manner in which tubercles are formed in the lungs. Sometimes it happens that only a small piece of lung is diseased; and the deposition may be found either in the shape of small tuberculous seed-like substances, all close together, or they may be pretty accurately divided over the whole of the diseased

portion of the lung. In some cases the substance of the whole of one lobe is entirely changed into one large tuberculous deposition, and this even sometimes happens to every portion of a lung.

It will almost constantly be found that tubercles first appear in the upper and back part of the superior portion of the lungs; and it is curious that they have a greater affinity for the left than the right lung—the advent of tuberculous depositions being much more common on the left than the right side. But when inflammatory action has taken place in the right lung of a person with the consumptive diathesis, then it is not unusual to find that tubercles are first deposited in that lung.

One reason for Consumption attacking the upper part of the lungs is, because there is much greater motion in the lower than in the upper part of the chest. The expansion of the chest being much greater at the lower than at the upper part, the lower portions of the lungs are called into active exertion much more than the upper; and, true to a law of nature, those portions of the organs which are the least used are the least able to resist

chronic disease, and so become the most liable to Consumption. Another reason is, that, whereas the lower parts of the chest, and therefore of the lungs, are always well protected by clothing from feeling the vicissitudes of the weather, the upper parts are almost always scant of protection; and in females they are sometimes almost nude.

It is interesting to remark how the diseases affecting the lungs are dependent on the general law which regulates the whole of the animal economy. Tuberculous Consumption, a disease of slow growth, is brought by the blood into the chest, and becomes localised in the least active part of the lungs; while inflammation, a state of excessive action, begins in the most used part of the lungs, and only when in an advanced stage does it affect the general system.

When the close of the winter ushers in the disease, the symptoms frequently disappear, and almost always improve, before the warmth of the sun; but when it makes its appearance in early winter, it is too confirmed to derive the same advantage from the heat of the summer. The improvement, however,

obtained by the genial warmth is too often evanescent, and the cold of the succeeding winter brings back the disease in an aggravated degree, while the system is less able to withstand it by reason of the greater constitutional weakness.

The duration of the disease varies from a few months to many years, dependent on the patient's peculiar habit of body, the nature of his occupation, the locality in which he resides, and the degree of exactitude with which he has followed the advice of his medical attendants. In rare cases, Consumption lasts not more than five or six weeks; but the average duration of the disease is about a year and a half. Cases are occasionally met with which do not run their course under thirty years, and even longer. As a general rule, it will be found that the duration depends much on the age of the patient; the younger the person the more rapid usually is the course of the disease.

From time to time a good deal of controversy has arisen among medical men in regard to the question, as to whether or no Consumption is contagious. The result of

my observation is opposed to its being so; for I do not think there is any exhalation from the skin or lungs of a consumptive patient which is capable of producing Consumption in a healthy person, or of hastening its development in one who has the disease lurking in his blood in a latent form. And it is easy enough to account for the prevalence of the disease among the close attendants of the consumptive, without being obliged to have recourse to contagion as a reason. Good, attentive, close nurses, instead of taking that exhilarating exercise which their own frames are much in need of, sacrifice their health to the well-doing of their charges; they confine themselves in-doors, their natural rest is broken, they sleep only by snatches, and their minds are disturbed by anxiety for the condition of their patients. These are the reasons why their food is not turned into blood, and why healthy nurses, when closely attentive, are changed into consumptive invalids. This being so, it is surely the duty of the friends of consumptive patients to adopt the precaution of having the requisite change of attendants, so as to allow all to have opportunities

of preserving their own health. Many a good nurse, regardless of herself and thoughtful only for her charge, has immolated herself on the altar of duty. It will doubtless suggest itself to the mind of every one who peruses these observations, that it is needful to exercise a more than ordinary care when the attendant on a consumptive invalid is a blood relation, or from any other cause has a predisposition to the disease.

It is probable that alterations in the physical condition of the various classes of society have had the effect of modifying the proportionate mortality in the different grades of our social scale. Increased civilisation, while it has benefited the labouring population by lodging and clothing them better, and by giving them more blood-making food, has proportionately relieved them from Consumption. On the other hand, the middle and upper classes have suffered in the same degree; for with them the manners and habits of our time are inimical to the free exercise of the body, and thus the full development of the physical frame is stunted. This applies especially to the case of ladies; with how dis-

astrous a result the female mortality of many high families furnishes a mournful and too abundant evidence.

In ancient times, physicians, incapable of availing themselves of a practical acquaintance with the structure of the human body and the changes produced in it by disease, endeavoured to make up for these deficiencies of their education by watching most carefully every new phase which disease assumed; and well indeed did they record the results of their observations. In those days, the superstition of the age prevented the dissection of the human body under any circumstances, and medical men were only enabled to form an idea of the marvellous mechanism of their own frames by a comparison with that of the lower animals. The practice of medicine is released from this unwise restriction, and we can, all of us, now see to the minutest particular the wondrous manner in which we are formed, and we can also perceive the alterations which certain diseases make in certain structures. By this, medicine has gained a great deal; and it has also largely profited by the advances made, especially in later years,

by chemistry. But neither a knowledge of healthy nor of diseased anatomy, nor an acquaintance with physiology, nor skill in chemical manipulation, can release us from the necessity of watching the indications of diseased action as displayed in the living frame. What can be a more severe opprobrium on our present system than the common-enough saying, that such an one is a good anatomist or a clever chemist, but knows nothing of disease?

A man may dissect for ever, and yet know nothing of the causes of what he sees, nor the relation which one thing bears to another. Chemical science is capable of teaching a good deal, but there are many things chemistry cannot teach us. For instance, no chemist could have known by analysing rhubarb that it was a purge; he knows it only by observation: and so, the chemist may analyse the human body and all its secretions, and not know that which the most superficial observation could teach him; for the human body is not only a laboratory,—it is a vast deal more. Who can tell by analysing the blood of a person whether his children will have

hereditary predisposition to scrofula, gout, or consumption? And yet we know that they are all transmitted through the medium of the blood of the parents. Led away by the apparently certain conclusions of the anatomist and the chemist, physicians have withdrawn themselves from the study of that book which never yet deceived,—the book of nature. After giving all due importance to the assistance rendered to medicine by anatomy and chemistry, it cannot be denied that the successful treatment of disease rests on observation, and that the only true test of the propriety of a prescription is to be found in the improved condition of the patient.

As an illustration of the danger arising from a reliance on mere divisional knowledge, so far as this disease is concerned, I will only refer to a passage in Lehmann's *Physiological Chemistry*, published by the Cavendish Society, in which it is said, with a view of showing how essentially an acquaintance with the chemistry of respiration tends to a proper treatment of Consumption: "We may perhaps aid a tuberculous patient quite as much by recommending him to respire a

moist warm air, as if we prescribed Lichen Carragheen or Ol. Jecoris Aselli." In other words, Lehmann, regarding pulmonary Consumption with the knowledge of a physiological chemist only, great as that knowledge is, triumphantly deduces an inference from it which is disproved by the positive fact that miners, who suffer fearfully from the disease, breathe precisely that description of atmosphere which he recommends for its cure. It is true that some moisture in the atmosphere is occasionally needed; but when so, it is the rare exception.

Consumption being a disease liable to put on an infinity of changes, dependent on the patient's varying condition and his individual peculiarity, stands perhaps more in need of incessant, minute observation than any other disease. The physician, trusting to his stethoscope—often fallacious, and to his chemical knowledge—frequently deceptive, and to his microscope—by no means unerring, jumps to conclusions in regard to the state of consumptive patients which careful observation of the progress of disease would show him to be decidedly erroneous. And I feel convinced

that the absence of minute observation is one of the reasons of the slow progress of the successful treatment of Consumption in later years.

The Causes of pulmonary Consumption are, hereditary predisposition, malformation of the bones of the chest, all such occupations as restrict the free use of the limbs and necessitate a constrained position of the body, the breathing a vitiated atmosphere especially if it be cold and damp, deficient clothing, damp residence, want of cleanliness, sedentary habits, excessive labour, mercurial salivation in scrofulous habit of body, improper diet whether too much or too little, severe external injuries on the chest, indulgence in ardent spirits, the suckling of children beyond the mother's strength, and any diseased action or other depressing influence which lowers the system. Any one of these conditions will produce Consumption; while the advent of the disease is the more imminent in proportion to the number of them which co-exist.

It is scarcely necessary to mention, that

any artificial contrivance which restricts the full expansion of the chest acts as an exciting cause of Consumption. Tight stays, while they spoil the female figure by distorting the beauty of nature, are very prejudicial to persons with small weak chests. They find it difficult under the most favourable circumstances to supply their lungs with sufficient air, and the difficulty is increased immensely when they are encased in unyielding stays. All occupations which necessitate a constant pressure against any portion of the chest are also very disadvantageous. To admit a proper supply of air into the chest, its walls should be as free outside as the air they have inside.

The respiratory apparatus brings the atmospheric air into the closest apposition with the most vital organs of the human body. During the process of respiration, the blood always gives off carbonic-acid gas and aqueous vapour, and occasionally alcohol and other ethereal substances, to the inspired air, and takes up oxygen from it. This being so, it is easy enough to perceive how the inspiration of an atmosphere containing any gases of carbon is injurious to the system,

because the richer the inspired air is of carbon, the greater is the difficulty of disengaging it from the blood; and so with the water, the moister the air drawn into the lungs, the more difficult is it for the blood to throw off the water, especially as it has to pass through the air-vesicles of the lungs, which are always moist with the secretion of the mucous membrane. In the treatment of all diseases of the chest, it is important to bear in mind that alcohol passes through the lungs, as it is obvious it cannot do so without exciting irritation in those organs through whose agency it is eliminated from the system.

It is worthy of note, that although children are peculiarly liable to tuberculous diseases affecting other organs of the body, they are not near so frequently subject to tubercles of the lungs as adults. The reason of this is obvious enough, because children use their lungs much more than grown-up people. The younger the person, the more frequent the respiration. An adult breathes only eighteen or twenty times in a minute; whereas an infant, during the first year, makes about

thirty-five respirations in the same time. Besides which, the staid adult uses the respiratory function as gently as need be; while the child is running, jumping, hollowing, laughing, or crying, nearly all the time he is awake; and the result is, that he enjoys freedom from the disease which so grievously affects the older person. This, again, confirms the truth of the principles of practice declared in this book as preventives of Consumption. If adults were to use their lungs as freely and as constantly as children do, they would be as exempt from the disease as they are; so true is it that an organ loses its power to resist diseased action when its function is seldom employed. And again, it confirms the great fact, that no one can oppose himself with impunity to one of the laws of nature.

The mortality which annually takes place from Consumption in some trades is perfectly astounding; and yet so reckless do men become in regard to that description of danger to which they have been long accustomed, that no efforts of Christian benevolence, however perseveringly continued,—no statement

of facts, however well known,—no reasoning, however convincing, have succeeded in inducing the workmen employed in such trades to adopt the obvious means of averting the impending evil. They succumb, like willing slaves as they are, to what they impiously term their destiny, and wickedly neglect the most simple remedies. Men who work and live within gun-shot distance of hale agricultural labourers, enjoying a green old age of threescore years and ten, talk and act as if the brand of Cain were upon them, and turn a deaf ear to the exhortation to adopt the means of self-preservation which are placed within their reach. Because their forefathers died before reaching forty, they say so must they; and wilful in their obstinate defiance of medical knowledge, so do they. Thus thousands of valuable lives are annually lost to the productive industry of the country.

Miners, who breathe an atmosphere surcharged with moisture, and frequently vitiated with gaseous compounds, and never cheered, during their hours of labour, by the vivifying influence of the sun's rays, suffer greatly from Consumption; and so do all

those workers in metal whose business consists in setting free minute particles of metallic substance; thus the mortality from this cause is very considerable among needle-pointers, metal-grinders, and polishers of metals, who live in an atmosphere full of metallic particles. Indeed, so liable are they to the disease, that it is known among them as the "grinder's rot." Flax and feather-dressers, stone-masons, and all the workers in those trades which require the body to be kept for many consecutive hours in a sedentary position, and especially when they work in ill-ventilated rooms, such as dress-makers and tailors, are also very subject to the disease.

The factory system, as it affects children, subverts every law of nature, and is therefore one of the causes of pulmonary Consumption. It taxes the tender energies of young children to the greatest possible extent; it obliges them to devote those hours to severe bodily toil which ought to be passed in strengthening repose or in recreative diversion; it forces them to pass their childhood in a filthy atmosphere, amid all the grease, gas, and noise

in which that relentless tyrant, steam, delights; and not satisfied with afflicting and destroying the body, it renders the mind of childhood, which should be, like the fairest surface, unspotted and untainted, a congregation of foul, loathsome blots.

"I well remember," says Mr. Fielden, "being sent to work in my father's mill when I was little more than ten years old. For several years after I began to work in the mill, the hours of labour at our works did not exceed ten in the day, winter and summer; and even with the labour of those hours, I shall never forget the fatigue I often felt before the day ended, and the anxiety of us all to be relieved from the unvarying and irksome toil we had gone through before we could obtain relief by such play and amusements as we resorted to when liberated from our work. I allude to this fact, because it is not uncommon for persons to infer, that because the children who work in factories are seen to play, like other children, when they have time to do so, the labour is therefore light, and does not fatigue them. The reverse of this conclusion I know to be the

truth. I know the effect which ten hours' labour had upon myself,—I, who had the attention of parents better able than those of my companions to allow me extraordinary occasional indulgence; and he knows very little of human nature, who does not know that to a child diversion is so essential, that it will undergo even exhaustion in its amusements. I well know too, from my own experience, that the labour now undergone in the factories is much greater than it used to be, owing to the greater attention and activity required by the greatly increased speed which is given to the machinery that the children have to attend to, when we compare it with what it was thirty or forty years ago."

"A steam-engine," says Mr. Rickards, the government inspector, "in the hands of an interested or avaricious master is a relentless power, to which old and young are equally bound to submit . . . . . that tyrant-power may at any time, and without any effort, cripple or destroy thousands of human beings, if not duly restrained . . . . their position in these mills is that of thraldom; fourteen, fifteen, or sixteen hours per day is ex-

hausting to the strength of all, yet none dare quit the occupation from the dread of losing work altogether. Industry is thus in bonds; unprotected children are equally bound to the same drudgery; and hence the universal cry for restriction on the moving power."

The writer of an able article on this subject in the *Quarterly Review* (No. 114) uses these memorable words: "Rather let us believe that no blessing can accompany those riches which are produced in suffering and crime, but that eventual mischief must descend on a system which afflicts so large a portion of our race, and demands every hour of that life, and almost every energy of that soul, whereof a portion should be given to the pursuit of those noble ends for which Providence endued man with understanding, and promised him immortality. Great and small, we have a common and an only hope; and it is by that common and only hope that we implore our legislators to have mercy on the children." I can but repeat, "Have mercy on the children."

Health is the greatest blessing that can

be bestowed on a living creature; for not only does it produce comfort and happiness, by enabling all the organs of the body to perform their functions in an efficient manner, it also possesses a remarkable power even on the operations of the mind. When the rough material of the body is suffering from disease, however trifling, the subtle influence of the mind is certain to be affected by it. The capability of the mind to grapple with any difficult abstruse point is essentially lessened by the slightest departure from healthy action in any portion of the frame, and most especially so when those vital organs, the lungs, are affected. So direct, so immediate is the effect of bodily disease on the operations of the mind, that an entire subversion of its powers is produced by any disease which affects in a painful manner the sensibility of the material frame. Who can bring his mind to the comprehension of any obscure subject while the merest point of a nerve is painful—during a racking toothache? And how trivial is the toothache, compared with the constant long-enduring pains attendant on Consumption? So that,

whether as regards mere animal gratification, or the infinitely higher delights of intellectual enjoyment, health is, in either case, a pre-eminent auxiliary. Without health man is but a miserable, suffering, complaining object,—with health he is the acknowledged lord of the universe; without health, his whole energy is devoted to an endeavour to obtain it,—with health he may fit himself for that high destiny which the bountiful goodness of his Creator has promised him.

The enjoyment of perfect health tends not only to develop the full physical powers and to draw out the rich resources of the mind, it also tends directly to increase the aggregate wealth of a community by enlarging the capability of production in each individual. This applies in all cases. The labourer, of whatever grade, and whatever his description of work, cannot produce as much when he is ailing from any bodily sickness or infirmity, particularly when it interferes with the functions of the chest, as when he enjoys firm robust health. Whenever a working-man,—and few there are who do not come under this denomination,—is sickly,

the product of his industry will scarcely fail to exhibit indisputable evidence of it. The cause of this is abundantly apparent. For, in addition to the inaptitude to draw out in full his mental and bodily powers, caused by the sickness, his mind is not wholly given to his work, because he is constantly endeavouring to discover some method of cure. Thus it is that his industry is not so profitable as it otherwise would be, and thus it is that the wealth of a community is lessened by the sickness of its members.

Health being the greatest blessing which can be bestowed on us, it follows that the science which has the power of conferring it is the most important of all sciences. However beneficial, however generally applicable any science may be, it must yield to medicine, because every other is immediately dependent on it, and because every person is affected by it. Disease is an impassable barrier, which stops all study, and, indeed, every human operation; hence it follows, that the science which has the power of removing it is superior to every other in utility. There is no knowledge more generally applicable

than a knowledge of medicine; always excepting, however, the knowledge of religion, for that assuredly surpasses all knowledge which is attainable by mere human efforts. How can an advance be made in any study without the aid of that knowledge which shows how health may be preserved? And where would be the acquirements of the scientific world, unless medicine interposed her protecting shield? The science of medicine is applicable to all; for all are defended by it, and all may enjoy health if they follow its rules, founded as they are on the laws of nature, which, in the words of Hobbes, are immutable and eternal.

If in the profession of medicine there is ever required something more than an acquaintance with its principles to render any one thoroughly fitted to discharge its duties, it certainly applies in an especial manner to the treatment of Consumption. For unless a physician is capable of forming a cool and deliberate judgment under the most trying circumstances, he will be but an indifferent healer of the consumptive invalid. And not only must he be able to arrive at a conclusion

as to the best mode of treatment,—he must also possess sufficient strength of mind to disregard the well-intended but ill-judged entreaties of friends to change it for that plan which may be more consonant to their wishes. The firmness of purpose of a medical practitioner should be only equalled by his discretion, or he will be foiled on the very threshold of his inquiry, as persons in the earlier stages of Consumption are frequently indisposed to state the full extent of their symptoms, from an indistinct dread of the disease, arising from the too prevalent notion of the incurability of Consumption. Indeed, they often deny having any chest-symptoms, unless the interrogator puts his questions in a quiet and somewhat indifferent manner, and as if not deeming the answers of much consequence. He should weigh every point connected with his patient's case long and carefully before he forms his opinion; but when that is done, and his mind is made up as to the treatment, no appeal to his feelings, nothing short of argumentative reasoning, should have any weight in altering his decision. To act up to this course in the

strictest manner needs no exhibition of harshness in the slightest degree. The most rigid treatment, so far from requiring any harsh sternness, will only be acted up to in very many cases so long as the kindness of the attendant's manner is a guarantee of his not ordering any thing more severe than necessity requires. While blandness of disposition is pleasing to the feelings of relatives, their deliberate judgment may be convinced by a strict firmness of purpose.

It will be easy to show that a person whose knowledge extends no farther than an acquaintance with the mere routine of the profession, however accurate that may be, can neither be so fit to form an opinion, when there is any real difficulty, nor so determined to carry his point when he has satisfied himself with having fixed on the plan of treatment which offers the best prospect of cure, as one whose knowledge is more considerable. When a person has been educated in such a manner that his ideas have never extended beyond the mere profession or occupation in which he has been employed, it is no other than might be anticipated for him to be

incapable of taking an enlarged view of any subject. This objection applies with quite as much force to those matters immediately connected with his every-day employment as it does to those which have but a remote relation to it. Indeed, if there be any difference, it is the more felt in regard to those questions which are the more intimately connected with his constant occupation, because the force of early habit has a strong tendency to fetter the exercise of reason, when applied to the consideration of any question which the prejudice of teachers has regarded as firmly settled. So that a faulty education, which fosters a limited range of thought, is especially pernicious to the medical practitioner, because it incapacitates him from viewing an important subject otherwise than in a confined point of view.

This subject is full of interest to all consumptive persons; for in no disease to which the human frame is subjected is there so much discrimination needed on the part of the practitioner as in tuberculous disease of the lungs. With every advantage of education and mental capability on the part of the phy-

sician, and every disposition to follow his advice on the part of the patient, the matter in hand—the cure—is beset with difficulties. For example: too much exercise may be taken, so as to fatigue and weary the body, and render the stomach incapable of digesting the food it takes; or, again, the body may be not exercised sufficiently, in which case the food will be undigested, to the manifest weakening of the system, owing to mere languor of the stomach. Illustrations might readily enough be multiplied a hundredfold; but it is probable the one given will suffice to satisfy every one that judgment and discretion are of the highest importance in the treatment of Consumption.

It will be evident at the first blush, that in any profession which requires the exercise of all the powers of the mind at every step, the capability of comprehending fully and clearly the real points of every case is as necessary as even an accurate knowledge of the principles on which such profession is based. For unless there is a ready apprehension of the true bearings of a difficult question, the time for applying knowledge is utterly

lost. This quickness of perception can only arise when there is an extended acquaintance with men and things. In no other profession is a clear apprehension more generally useful than in that of medicine, and particularly so in that department of the study which refers to diseases of the chest, because it is one which is founded entirely on observation and comparison. And unless the mind is enabled to unravel perplexities and intricacies of no ordinary character, to simplify that which is confused, and at all times prepared for any emergency, there will be but a sorry prospect of benefit. Now this amplification, so to speak, of the powers of the mind can only take place after a searching education in general knowledge. As the intellect becomes more profound, the deeper the well of truth is pierced, so it is the better able to apprehend the true points of an individual case, when there is a vast mass of general knowledge.

A person whose information extends no further than the avocation he practises can never effect the same amount of benefit to his species as he whose mind is well stored

with general erudition, unless, indeed, in regard to the mere mechanical employments. In those occupations in which extreme manual dexterity is alone needed, a very considerable extent of skill may be acquired without an acquaintance with the principles of any other avocation; but even with them this exemption from the necessity of possessing some generally applicable knowledge applies only to the actual seam-stitchers or journeymen; for the intellect—the master-mind—which directs their toiling labours, must be acquainted with something more than simply the routine of only one branch of industry. And if some general knowledge is absolutely necessary for the successful direction of handicraft trades, how much more necessary must it be for the practice of a profession which requires great depth and variety of learning, with an extreme nicety of perception!

In the treatment of a disease like pulmonary Consumption, one of the chief peculiarities of which is its ever-varying character, it is above all things requisite that the practitioner should not refrain from seeking for

information beyond the arbitrary axioms of a dogmatical physic; but, on the contrary, he should ever be on the alert to give to his patient's case the full benefit of his own individual professional observation and judgment.

Although a ready apprehension of the real points of a difficult case can only be expected after the mind has been tutored by a cautious study of collateral knowledge, it must never be forgotten, that eminence in no employment can be anticipated, however considerable the extent of general information, unless the mind is stored especially with the principles or groundwork on which the avocation rests: for, however rich the mental resources of general knowledge may be, we can never arrive at a fair conclusion unless we are also well informed on the peculiar kind of knowledge which characterises the subject under consideration. Whence it follows, that however well acquainted any individual may be with questions of universal interest, he can never effect much good in the treatment of Consumption without a thorough familiarity with that description of knowledge which especially relates to it. Whatever the

influence of general information in the expansion of the powers of the mind, it can never be brought fully into profitable operation, without a perfect knowledge of every point, however minute, of that division of a great question on which an opinion is to be formed.

There is a passage bearing on this part of the subject in Lord Mahon's portrait of the character of Walpole. Alluding to Walpole's limited knowledge, Lord Mahon remarks: "His splendid success in life, notwithstanding his want of learning, may tend to show, what is too commonly forgotten in modern plans of education, that it is of far more importance to have the mind well disciplined than richly stored—strong rather than full." This inference is, to a great extent, undoubtedly just; it is better—more actively profitable—for the mind to be enabled to give its due weight to every item of information it may happen to possess, although its stores of learning may be limited, than for it to be crammed with a vast stock of knowledge, without the power of applying any portion of it, owing to the chaotic confusion in which

it is jumbled together. However richly stored the intellect may be, but little active benefit can arise without the capability of separating or sifting the atoms of which such general knowledge is composed. But his lordship, I apprehend, has pushed his inference too far. The acquisition of knowledge, so far from taking away from the strength of the mind, invigorates it, and renders it more actively powerful than perhaps any other cause; and this is effected in so remarkable a manner, that it cannot fail to strike an attentive observer who watches the expansion of its power. There are some minds, it is true, so extraordinarily constituted as to be naturally endowed with a justness of perception on questions with the general bearings of which they are but little acquainted. But no one surely can doubt, that if much learning were engrafted on these naturally strong minds, they would become, as a necessary and inevitable consequence, much more powerful. It appears to me scarcely to admit of a doubt, that if Walpole had had more learning, he would also have had greater strength of mind; that if his intellect had been more richly stored,

his mind would have been better disciplined. I have deemed it right to make these observations, fearful lest the weight of Lord Mahon's reputation should foster a spirit of relying solely on the strength of the mind. In regard to the medical treatment of Consumption, I have no hesitation in asserting, that a sole reliance on the strength of the mind would be most extensively pernicious; for without not only a general but also a divisional knowledge, a natural strength of mind would be but moderately beneficial. How can we reason unless we have something to reason upon? How can an edifice be raised without a foundation? There must be knowledge before there can be thought.

The mind, in its states of fulness and vacuity, may be compared to a bright sparkling stream and to a stagnant pool. When the mind is enriched with knowledge, it embellishes every subject that comes under its consideration; just as the fertilising influence of the running stream adorns the surrounding country. And when the mind contains no store of learning, it bears no inapt similitude to the foul rank water of the pool; for the

crust of ignorance shuts out all perception of the beauties of discriminating truth; just as the scum of the pool and the coarsely-matted vegetation of its edge exclude the rays of the bright sun from the water beneath. A system of education which overlooks the necessity of giving the mind full information cannot be any other than faulty; for its natural strength will prove the extremity of weakness when opposed to an ordinarily strong intellect which has been improved by cultivation. The product of a richly-stored intellect exceeds that of the uneducated mind fully as much as the produce of the highly-cultivated soil surpasses that of untilled ground, where noxious weeds flourish to the exclusion of more profitable herbage.

Every person having a tendency to Consumption, or with weak lungs, would act wisely in considering seriously on his condition. He should ask himself this question: How is it that persons do not die of Consumption who live in dry and warm climates? Now the answer to this is obvious enough: Because they breathe a warm and dry atmosphere, not affected by the sudden changes of

wet and cold, such as we are liable to in England. As soon as he has satisfied himself that such is the reason of this notable exemption from so terrible a disease, let him set about rendering himself as near proof as possible against those sudden changes which are so destructive to the health of all weakly-chested persons. He should begin by well protecting the chest,—and when I say the chest, I mean the whole extent of it, more especially the upper part, which contains the portion of the lungs that most readily becomes diseased, and is almost constantly left more exposed to the vicissitudes of the weather than any other part of the trunk. How often do we see these precious organs left entirely naked, or if not quite so, covered only by some flimsy material of no worth as a protection! Frequently, indeed, have I noticed with sorrow the bare chests of ladies, who, martyrs to an all-destroying fashion, have bared their breasts to the pitiless changes of temperature so frequent in our climate. Who has not seen delicate creatures, with chests uncovered and arms exposed, passing from the ball-room to

the carriage, thus leaving a very warm and dry atmosphere, and, moreover, a state of great physical exertion, to pass into a cold and wet air? The result of this imprudence —alas, how common!—is the hectic flush, the hollow cough, the constant expectoration, the gradual wasting away,—the distressing emaciation, in a word, of Consumption. Thus many and many a valuable life, in the pride of youth and beauty, has been cut down and destroyed; thus many a beloved being has been lost; thus many a fireside has been made desolate; and thus many an attached friend has had to mourn the death—the lingering, struggling death—of some fond one, whose life might have been spared, had proper medical and precautionary means been adopted to temper the blast to the shorn lamb.

Doubtless it is too much to expect that young persons themselves should exercise a constant attention to what appears to them as of little consequence; but surely it is especially the duty of their relatives and friends to be unceasing in their endeavours to shield the weak ones from so dreadful a disease as

Consumption. Many an afflicted parent would have saved a lost child, had the dictates of matured judgment been acted upon.

The blood-producing power is the essential element of success in the prevention of Consumption. It is this power, and this alone, which enables us to render the constitution proof against the insidious attacks of Scrofula, and of its terrible congener Consumption. It is the life's-blood which strengthens the weak, supports the tottering, paints the wan pallid cheek of disease with the roseate hue of health, and transforms the scrofulous consumptive adolescent into the robust vigorous adult. Scrofula and Consumption are both shoots from one root; and it is only by imparting the greatest possible vigour to the parent stock, that we can hope to displace its weak drooping twigs by strong healthy branches.

The blood-producing power varies remarkably in different persons. The power of digestion is so strong with some people, that they make blood out of almost any description of food; while to create a sufficiency of blood for the requirements of the system,

other persons need to partake largely of that food which is readily assimilated. It is within the capability of almost every one to test the accuracy of this statement; for few there are who do not number among their acquaintance illustrations of both these cases. For example, who does not know at least one hearty stout person who is a small eater? and, again, who does not know some thin people who eat largely? When ladies are endowed with a high degree of the blood-producing power, it is frequently very annoying to them, for eat as sparingly as may be, still they get fat; while others, again, have an uncomfortably thin appearance, however much they may eat. An attentive consideration of this lesson, which the great instructor, nature, has placed before us, will show the presumption of those medical men who confidently affirm that a certain amount of food in the day is proper for all, and that all should be dieted on the same scale; while in no one point is the individual peculiarity more strongly developed than in the description and quantity of food suitable for each person.

The blood circulating throughout the entire animal economy enables every part of it, not merely to maintain its power, but gives it besides the capability of growth and renewal. It is a lamentable consequence of mortality, that the more earnestly and profoundly the powers of the mind are devoted to the mastering any difficult question, the less robust does the bodily shell become; as if the strength of the material were transferred to the immaterial. In such cases blood is made with difficulty, and the waste of the system is not replenished.

Much injury results from weakly persons following rules which have been designed for universal application. It is impossible that such a course of proceeding can be attended with success; for nothing can be more opposed to the dictates of nature, by reason of the peculiarities of the individual constitution being unheeded. And it really does appear a noticeable circumstance, that persons who know by experience that no two pieces of even vegetable fibre are precisely in every respect similar, should nevertheless expect that in the most marvellously intricate human

economy the same kind of diet and regimen is applicable to every person. It is surprising that any one, however slightly acquainted with the structure of the human frame, should have exercised to so little purpose his powers of observation as to hold this opinion. How much more surprising, then, is it that medical men, whose profession has made them acquainted with the wondrous mechanism of man—to say nothing of his high nervous and mental temperament—should nevertheless be so self-sufficient as to consider that they have discovered a mode of living applicable to all persons at every time of life and in almost every stage of disease! The mere statement of the case carries absurdity with it; for every one knows, on reflection, how differently the same individual bears the same kind of medicine, food, or drink, at different times,—attributable, among other causes, to variations of temperature. To give only one illustration of this. All of us have experienced the depressing influence of the east wind in the English climate. Every one has felt his digestion impaired, his nerves weakened, and his respiration affected, by the bleak, bone-

searching, lung-piercing easterly or north-easterly wind. At such a time blood is made with difficulty, and the system suffers proportionately; and thus, in the words of Shakspeare,

"Consumptions sow
In hollow bones of man."

On the contrary, during a fine dry sunshiny genial day our nerves are braced, our heads are free from pains, our chests feel strong and elastic, our stomachs are capable of digesting almost every thing, and the blood-producing power is at its highest point, while our spirits partake of the general well-being of the physical, and every thing appears pleasant and agreeable. It is obviously opposed to reason to consider that the same manner of living is the best fitted for even the same individual under such totally different circumstances. But how much more unreasonable is it to suppose that the highest point of strength can be attained by all persons under one unbending code of regimen!

It is my firm conviction that constitutional peculiarities are not sufficiently taken notice of; that they are apt to be passed over, as, if

not mere fancies, at all events the results of habit only. This, however, is not my opinion, as my experience tells me that I must study each patient's idiosyncrasy, or peculiar constitution, to enable me to cure his malady. As an illustration, I will mention only this, that many delicate young ladies require to take as aperients the strongest of medicines; while robust, hard-working, hard-living men are oftentimes acted on by the mildest doses. This being so, I think it follows necessarily that something more than universal rules are needed to enable us to attain the highest blood-producing point. I apprehend there is scarcely any one who has not among his acquaintance one or more persons remarkable for some distinguishing peculiarity in regard to the digestion of food. Some men cannot digest, cannot even bear the smell of, cheese; while others cannot remain in a room in which there is any fish. Of the latter I know a remarkable instance. A friend of mine, a solicitor, had so strong an aversion to all descriptions of fish, that he was obliged to leave every place which contained any; and he has told me, so far from

this arising out of any kind of affectation, that he had tried all in his power to overcome this very disagreeable idiosyncrasy, but without avail. With him the peculiarity was developed at an early age; and he has told me that, when quite a child, and when walking out with his mother, it was a subject of remark and concern to her, that every now and then he showed the greatest aversion to go with her, hanging and dragging back, and with so much vehemence as almost to throw himself into a fit, kicking and screaming, &c., which expostulation and chastisement failed to remove. For a long period the cause was not discovered; until at last it was found that one of these outbreaks always occurred at passing a fishmonger's shop, and then, the right clue having been detected, it was ascertained that he had an unconquerable aversion to all kinds of fish.

For myself, I think there can be no doubt that persons differ from one another in their constitutions far more than they do in their physical forms: we must, I think, on reflection, all admit that each person has his individuality as well in constitution as in person.

It is known to every one that a blind man recognises persons by peculiarities of voice and walk which are inappreciable to those who enjoy vision; and we all know that a dog can trace the footsteps of his master through every obstacle.

I am anxious not to pass lightly over this subject, because a great deal depends on it. Many accomplished medical men strenuously advise all their patients to rise with the sun, sing their morning songs coeval with the lark, disport themselves on the breezy uplands, and then return home to breakfast. Now, although I know that this is very delightful and health-imparting to many persons; this also I know equally well, that it is highly prejudicial to others, who require to break their fasts immediately on rising; for their nerves are too weak, and their stomachs too languid, to enable them to bear the regimen so advantageous to others. Again, some require more drink, while others need more sleep, than the average; and it does appear to me the highest presumption for any man to say, No one requires more than so much sleep and so

much drink in the twenty-four hours. And here I will remark, that such a person is often guilty of gross injustice, in attributing slothfulness or inattention to those who fail to follow his precepts. After all our book-learning and our science, whether chemical or otherwise, we are liable to commit the greatest errors, unless we study carefully, and with an inquiring spirit, the requirements of nature, as displayed in the characteristics of each individual. What gives health to some, brings sickness and death to others.

Some individuals, convinced of the permanent ill effects of a large daily consumption of animal food, have deprecated the use of any diet which was not of the most simple description. Investigation, however, shows us that such persons have erred in recommending an entire prohibition of animal food. The formation of man, wonderful in every respect, is in nowise more so than from holding a mediate position, as far as the alimentary canal is concerned, between the carnivorous and the graminivorous animals. Man has many of the peculiarities of each class, and therefore it follows that his diet should consist of a mixture

of both descriptions of food, the proportions to be regulated according to the circumstances of each individual case.

Those animals whose instinct teaches them to exist on the destruction of others are forced to undergo violent and long-continued muscular exertion to surprise or seize their prey; and long intervals must occasionally take place during which their stomachs have opportunities for repose, owing to the impossibility of at all times finding sufficient food. How differently is civilised man placed in regard to this great essential to existence—the obtaining food! He keeps a supply of sustenance always by him, which he uses up as fast as the powers of his stomach will allow him to do. There is no rest for his organs of digestion; they are kept in constant active work. So that, although man is placed in a mediate position between those animals that prey on others and those which subsist on a less stimulating diet, his organs of digestion are more constantly exercised in the demolition of the more exciting kind of food than even those animals which exist solely on it, because he has not sufficient self-

control to allow his digestive powers any repose, and because he is always able to procure as much food as he desires.

Even the animals which feed on the most simple kinds of food have to exert themselves to obtain that food; and are obliged occasionally to fast, from their not being able to procure a supply. The laws of nature have regulated the supply of food to the lower animals in such a manner, that their digestive organs must have occasional rests. But man, regardless of the analogies which every where surround him, is an exacting taskmaster to his stomach; for he allows it no respite. The more it works, the more it is obliged to work; until its exhausted powers are no longer able to bear the accumulated load of mischief under which it eventually succumbs. Greatly would it conduce to the well-being of mankind, if human reason were to learn a lesson from the instinct and the habits of animals; for the enjoyment of health and the prolongation of life would follow adherence to the laws of nature.

It will be well for all of us to bear in mind the opinion of the illustrious John

Hunter with reference to the stomach. In combating the notion prevalent in his day, as well as in our own, that science was capable of unravelling and explaining every thing, he used these memorable words in his lectures: "Some physiologists will have it that the stomach is a mill; others that it is a fermenting-vat; others, again, that it is a stew-pan. But in my view of the matter, it is neither a mill, a fermenting-vat, nor a stew-pan; but a stomach, gentlemen,—a stomach."

Not contented with making their stomachs work all day long without intermission, many persons do not permit them to have any repose even in the night, when all the other organs are enjoying rest. There are many people who consume a larger quantity of food immediately before they retire for the night than at any other meal during the twenty-four hours; so that their stomachs are worked harder during the natural period of rest than at any other time. Strange to say, they are not even contented that their stomachs should have more work to perform during the night than in the day; for they consume at supper the most indigestible sub-

stances; so that their stomachs have not only more work to do at the proper time for repose, but it is of a more hurtful character than that which is required of them at any other period.

With the view of making the most of their time, many persons habituate themselves to a custom of eating their meals as expeditiously as possible. They save a few minutes every day; but they sow the seeds of innumerable inconveniences and derangements of the animal economy. When we take into consideration the artificial state in which civilised man lives,—the impurity of the air he breathes, the unwholesomeness of his diet, to say nothing of its quantity,—we shall have good reason to deprecate any departure from an observance of that law of nature which requires that the food should be well masticated before it is allowed to pass into the stomach. Teeth are given to man to enable him to masticate his food; that person, therefore, who swallows his food without mastication might just as well be without them.

The importance of suitable food in raising up the blood-producing power to the highest

point will, I apprehend, be obvious enough to every one, when he considers that what we take daily by pounds' weight must be at least as essential to our health as what we take seldom and only by grains or spoonfuls. Voltaire was right when he defined a physician to be an unfortunate gentleman who is every day requested to perform a miracle,—namely, to reconcile health with intemperance.

A diet containing a large quantity of milk is often of essential service during the progress of this disease. Milk is easily digested, furnishes more support than vegetables, while it is not so heating to the system as animal food.

In determining the description of food to be given to a patient, regard should at all times be paid to the palate of the person; for it has been well said, that the gratification which attends a favourite meal is in itself a specific stimulus to the organs of digestion, especially in weak and debilitated habits. Never forget there is a to-morrow, when considering your diet for to-day.

The English, inhabiting a cold, damp, and

constantly varying climate, differ from other civilised nations more in their repugnance to adapt their style of dress to the requirements of the weather than in any other particular that I am acquainted with. Many an English person is proud of wearing the same kind of under-clothing during the chilling blasts of winter as in the hot months of summer. And yet how opposed is this to reason! It cannot for a moment be seriously contended that this can be durable; for in the nature of things, a time must come when this folly meets its rebuke in the practical refutation of a severe illness. Man, with his thin skin, in the absence of proper clothing is unable to bear the vicissitudes of weather, which pass innocuous over the lower animals; for nature not having bestowed on them the capabilities so plenteously enjoyed by us, protects them by a covering of wool or hair suitable to the climate in which they live. Let us, then, make use of the reason which God has given us, and clothe ourselves in a manner commensurate with the variations of temperature which the body has to sustain; for thus shall we save many a life

which would otherwise perish, and render many a household free from ailments.

All animals, excepting only the one at the head of created beings, are furnished by nature with whatever protection from the vicissitudes of weather their peculiar states require. To man alone has the privilege been granted to discover his own protecting medium,—to make his own clothing; nature having given all other animals a sufficient provision. This is one of the distinguishing characteristics of the human race; and it is notable, that the very lowest grade of the family of man either takes or makes something as a covering. The New Hollander, perhaps the least removed of all from the mere animals, adopts both plans; he takes the skin of the kangaroo to clothe his body, and he girdles himself with the opossum-hair twine which he manufactures. Is it not, then, the duty of civilised man to take care that his clothing is so made and of such materials as to afford a good and sufficient protection?

The necessity which exists for persons whose lungs are weak exercising great caution to prevent their taking cold, is well ex-

emplified in the history of a case which is undeniably authentic. The patient was a female of twenty-one years of age; and from sitting in a draught of cold air, she was affected with inflammation of the lungs and of their lining membrane on that side only which was exposed to draught. The case terminated fatally; and it was found that the whole of the lung which had suffered from the inflammation was filled with tubercles, while in the other lung there were scarcely any. Thus it is evident that persons who have a predisposition to Consumption cannot exercise too much caution in preserving their chests from every description of disease; for whenever any diseased action is set up in the lungs of such persons, there is always a tendency in the system to deposit tubercles. As soon as the healthy action of the lungs is suspended, then becomes active the lurking latent poison of Consumption. Armed with this knowledge, persons who have an hereditary predisposition to Consumption may pass a long lifetime of usefulness and enjoyment, free from any symptoms of the disease, provided they are never neglectful of them-

selves, but conform to the rules of living recommended by their medical attendants.

Consumption is an all-exacting taskmaster who brooks no eye-service, but whose favours are reserved for those who diligently and in a faithful spirit follow out the behests of medical knowledge, and who wisely resign their individual desires for the attainment of that priceless gem—health. When the patient neglects the disease, the disease never neglects the patient.

Diseases of the chest prevail in cold climates, while in hot countries affections of the stomach and bowels are the most abundant. To secure health, it is therefore obvious that the chest should be well protected in cold climates, and the stomach in warm ones. And yet, so omnipotent for evil is the fashion of our day, that it makes people in the English climate warmly wrap up the stomach, which is rarely affected by serious disease; while the chest, which is the seat of such severe sufferings, is scarcely covered with any clothing. In the sixty-fourth number of the *Spectator* we read as follows: "The most improper things which we commit

in the conduct of our lives, we are led into by the force of fashion. Instances might be given in which a prevailing custom makes us act against the rules of nature, law, and common sense."

In all flannel-jackets and Guernsey frocks that I have seen, there has been one great fault—they come higher up behind than in front. This is obviously an error; for by the present system of dress the back of the chest is always well protected, while the front is not so. The proper way to wear Guernsey frocks is to place over the front of the chest that part which the maker intended for the back. When thus worn, Guernsey frocks protect well the upper part of the chest, and are very comfortable.

It rends my heart to see how the dresses of some poor children are made, when they leave the whole of the upper part of the chest and shoulders perfectly bare. Those mothers who persist in dressing their children in this senseless manner take a fearful responsibility on themselves; for, in the event of there being the least consumptive taint in the blood of their offspring, they are almost certain to

germinate the seeds of the disease, provided they are not killed at once by active inflammation of the lungs. Children need more care in this particular than even adults, as their growing frames naturally are more tender, and they are more liable to take cold by reason of the impossibility of keeping them from constantly running from one draught into another.

A protection to the chest of flannel and wash-leather will be found of inestimable value in guarding the lungs from the vicissitudes of the weather; and the use of flannel over other parts of the body should always be adopted whenever there are sensations of chilliness. The feet being that portion of the body the farthest removed from the centre of the circulation—the heart—should always be kept dry and free from cold: silk socks, inside cotton or worsted ones, will be found excellent safeguards. In this climate the use of respirators is indispensable for all those persons whose lungs are at all weak.

When I hear a person complaining of cold, whose body is thickly wrapped up, while his mouth is bare, I cannot help saying to

myself, What a pity it is that the man does not think a little!—for if he did, he could not fail to perceive the reason of his chilliness. He inhales large volumes of air at a low temperature, possibly several degrees below the freezing-point, deeply into the middle of his body, and thus more than counterbalances the warmth derived from his thick clothing; and so frequently does respiration take place every minute, that he is constantly forcing a succession of draughts of piercingly cold air into and out of his lungs. Knowing this, who can feel surprise at a person so undefended being cold? A respirator, or handkerchief around the mouth, is more efficacious in warming the body than considerable clothing, by reason of its warming the air which enters into the frame. Any one with a cough has it in his power to test the accuracy of this statement by noticing how instantaneously his cough is relieved on passing from a cold atmosphere into a warm room, and how comfortable the temperature feels long before the heat of the room has had time to warm his skin.

The function of the skin is one of the

most important in the animal economy. This is no other than might be anticipated, when we consider its extensive surface, stretched over every portion of the body. The function of a structure of so large a superficies cannot but exercise a considerable influence, either for good or for evil, on all parts of that excessively complicated formation of which it is a portion. So palpable is the power of the function of the skin on the whole of the system, that it has been acknowledged in all ages.

Perhaps the most convincing proof of the sanative power of cleanliness is to be found in the degree of health enjoyed by the higher classes of society in our own country. If we take into consideration the artificial state in which they live, the quality and quantity of their food, and the times at which they eat it, the periods when they take their rest, and the continued round of dissipation,—it will be a matter of surprise, not that they are frequently unwell, but that they are ever healthy. It is allowed, I believe, by every one, that there are no people who are so cleanly as the higher classes in England. With them per-

sonal cleanliness is carried to an extreme; and it is from their attention to the state of their skins, that they are enabled to enjoy some degree of health, although perfectly regardless as to the condition of the other organs of the body. Were they to extend their habits of personal cleanliness to all the other functions as well as to that of perspiration, they would, without a question, be subjected to less disease than any other persons. The middle and lower classes of English society would do well to follow the practices of the higher ranks in their extreme attention to personal cleanliness; for thus would they erect a most formidable barrier against the approach of disease of whatever description, not excepting pulmonary Consumption.

It is strange that those who have domesticated animals under their charge, and who know by experience the absolute necessity of keeping their skins in a clean state to give them a chance of thriving, do not apply that information to themselves. The groom, who keeps his horses as cleanly as they can be kept, because he knows unless he does so, they will fall off in condition, retains the dirt

on those portions of his own skin which are not exposed, to rid his horses of which he works so long and so laboriously. Many a man, who would express the greatest horror at wearing a dirty shirt, feels no compunction at having a dirty skin.

That a thorough cleansing of the skin is necessary every day, is evident from the scum which floats on the water after a person has taken a bath. The knowledge of the botanist and the art of the perfumer are laid under contribution, at a great expense, to do that which is performed much more efficiently by cleanliness. Those persons who waste their money in the purchase of expensive scents may be assured that cleanliness is the best perfume that has ever been invented.

Of all the means at the command of man for preserving the function of every organ of the body in a healthy state, and thereby increasing the blood-producing power, there is none so effectual as exercise; for it may be regulated with the most extreme nicety, so as never to exceed nor to fall short of the wants of the system. So essential is exercise to our bodily well-being, that perfect health cannot

exist without some degree of muscular exertion.

Bodily exercise or labour may be divided into two kinds: that which is undertaken for health's sake only, and that from which subsistence as well as health is derived; for the hard toiling of the daily labourer conduces as much to his health as it does to his livelihood. So sanative is exercise, that it is matter of daily observation that the upper classes pay dearly in their own persons for their exemption from the necessity of muscular exertion in procuring their livelihood. The riches of the indolent wealthy man are counterbalanced by the diseases they engender. Who ever heard of an agricultural labourer being short-sighted or gouty? If the hard-working peasant lives indifferently, he is compensated for the scantiness of his fare by the robust health he enjoys; while the rich man, surrounded by apocryphal pleasures, sighs for that health which he is constantly undermining. If the wealthy one possessed all the riches of the universe, he would still be far behind the poor daily labourer in the enjoyment of happiness, were he deficient of that

glorious boon to man,—health; for there never can be any approach to comfort or happiness where there is no health. As the operation of thinking unfolds the hidden treasures of the understanding, so labour brings out the strength of the body.

If it be useless to anticipate freedom from disease without some sort of muscular exertion, how much more so must it be to expect that elasticity of the spirit without which life is but an unvarying dull monotony? The indolent person, who avoids exercise, may not immediately suffer from disease; but he bears the seeds of it within him, which only require an exciting cause to make him feel his folly in its fullest extent. The body of an indolent man, who takes no exercise, is as feeble and as enervated as that of him who takes his daily exercise is robust and vigorous.

One of the essential characteristics of pulmonary Consumption is debility, which is always present in every variety of the disease and in every stage of it; and as a consequence of this, there is great difficulty in rallying consumptive invalids when depressed by any

other disease,—such, for instance, as influenza. Being essentially a disease which arises from absence of good blood in the system, persons suffering from it lack the power of shaking off any adverse influence, which lowers their vital power still more. Under the most favourable circumstances, in the treatment of Consumption it is always a difficult matter to bring on a reaction in the system; and this is one of the peculiarities of the disease which must always be most carefully remembered, for many a life has been lost from the physician trusting his hopes on a reaction which never took place, and ordering depressing remedies, totally inapplicable to consumptive persons by reason of their constitutions being unable to rally. After these observations, it will readily enough be seen why it is injudicious to take blood from consumptive persons. When a consumptive invalid is attacked with slight inflammation, resulting from some imprudent exposure to cold or damp, we must cure it, not by bloodletting either general or local, but by counter-irritants, &c.; or, in curing the disease we have under treatment, we shall bring the

patient to so low a condition that he can never rally.

Weak-chested persons may strengthen their lungs to such a degree as to render them Consumption-proof, if with well-directed local exercises they combine a system of general constitutional invigoration. It is a well-recognised fact, that the power of every portion of the system is capable of being increased by a continued and active use of it: thus we find that the chests of rowing men are broad, capacious, and muscular; that ballet-dancers have strong legs; and blacksmiths muscular arms. And it is also a law of nature, that when any part of the frame is allowed to fall into disuse, its strength gradually diminishes, until eventually it loses all power of performing its proper function. A striking instance of this is seen in the persons of those fanatic Hindoos who, having vowed never to move their limbs, in the course of time lose all power of motion in them, and their muscles become transformed into mere shreds, with no capability of performing their functions. And so with the lungs: when they are brought into constant and energetic action, they in-

crease so marvellously in strength as to be Consumption-proof; but when the respiratory function is but languidly used, the lungs gradually lose their power, and become an easy prey to tuberculous disease.

Some years since, a case came under my observation which made a strong impression on my mind. A young gentleman called on me, to procure my medical certificate for his admission into the United Law Clerks' Society. On examining his chest, I found it to be narrow, and terminating in almost a sharp point in front; he was, in fact, what is commonly termed pigeon-breasted. As I was of opinion that he was ineligible for admission by reason of the malformation of his chest, his proposal was declined. In about six months, after a thorough course of active muscular exertion of his chest, he appeared again before me, and the improvement was very marked;—the chest was broader, and, as a necessary consequence, it was less pointed in front. During all his leisure time, he had either been rowing, or had been bending his elbows violently back towards his spine; and the result of these exercises was, that the

muscles of his chest had pulled out the bones of his chest—he being a growing young man —made it broader, and thus given room for his lungs to perform the respiratory function in a proper manner. However healthy the lungs may be, they cannot do their duty unless the chest is of sufficient capacity to admit as much air into them as the necessities of the system may require. Persons who have weak chests should do two things: they should enlarge the capacity of their chests by the means just now referred to; and at the same time they should increase the power of the respiratory function by talking loudly, and by taking as long and as quick walks as their constitutions will bear.

For myself, I have sufficient of the old Anglo-Saxon feeling to prefer an open fireplace to all other substitutes for it. I know a good deal may be said against it,—such as, waste of fuel, &c., and the carbon being in the atmosphere instead of being consumed in the fire; but of all things that are disagreeable, I know of none more so than the sulphurous abominations that arise from the closed-up stoves which are now so much

in vogue. The air surrounding these contrivances is of a close, stifling, and headachy character; and although there can be no doubt that in burning our coals in old-fashioned fire-places we waste a great deal of fuel, as a large portion of the heat goes up the chimney instead of coming into the room; still, with a sufficient consumption of coals, we may warm an apartment, and leave the air in it fit for respiration. It is better for a good deal of carbon to go up the chimney, if in so doing it takes all the sulphur with it, than to procure the greatest amount of heat out of a given quantity of coals with the disagreeable alternative of inhaling sulphur as a set-off. This being my opinion, I strongly advise all invalids to have open fire-places; for I am convinced, if they do so, what they lose in coals they will gain in lungs.

The celebrated Dr. Darwin was so impressed with a conviction of the necessity of good air, that, being very popular in the town of Derby, once, on a market-day, he mounted a tub, and thus addressed the listening crowd: "Ye men of Derby, fellow-citizens, attend

to me! I know you to be ingenious and industrious mechanics; by your exertions you procure for yourselves and families the necessaries of life: but if you lose your health, that power of being of use to them must cease. This truth all of you know; but I fear some of you do not understand how health is to be maintained in vigour. This, then, depends upon your breathing an uncontaminated air; for the purity of the air becomes destroyed where many are collected together—the effluvium from the body corrupts it. Keep open, then, the windows of your workshops; and, as soon as you rise, open all the windows of your bedrooms. Inattention to this advice, be assured, will bring diseases on yourselves. Let me again repeat my serious advice: open your windows to let in the fresh air at least once in the day. Remember what I say; I speak now without a fee, and can have no other interest but your good in this my advice."

As it is essential, in this climate, to breathe an atmosphere free of watery vapour, trees should not be suffered to grow close to a residence, by reason of their rendering the

air moist. They also block out the light and warmth of the sun.

The danger arising from hereditary predisposition needs attentive consideration, the more so, as it is capable of a gradual diminution by due consideration being given to the physical frames and conditions of the sexes, with a view to their fitness for marriage. When both parents are consumptive, the children are almost certain to have the disease; and their inborn liability to it is dependent on the degree in which the blood of each parent is tainted with Consumption. The blood of many a family has died out, from a neglect of the simple precaution of seeing that the physical conditions of persons about to marry are adapted to one another. How can a poor diseased creature, worn out by intemperance and every kind of irregularity, hope to live over again in the persons of a healthy progeny?

Children frequently inherit Consumption from a taint in the blood of one of their parents, when neither of them has shown any decided manifestation of tubercles; the disease in the parent never having progressed beyond

the latent stage, by reason of circumstances having been so favourable in regard to place of abode, occupation, and general habits, as to prevent the further progress of it. When, however, such children, from any cause, are disadvantageously circumstanced, they frequently have the disease to its fullest extent.

The effect of insufficient or improper food in the germination of tuberculous Consumption is very decidedly seen in the cases of those infants which, born healthy and of healthy parents, nevertheless soon fall into a tuberculous state from being suckled by women in indifferent health, and whose milk is therefore insufficient in quantity and deficient in quality for the nourishment of them. And this is the more remarkable when it occurs with children whose brothers and sisters, having been well nourished, thrive and are hearty.

There is one point, in connection with the hereditary transmission of Consumption, which needs more attention than it has hitherto received. When a person of either sex, in whom there is the least suspicion of a taint of latent Consumption, is about to be mar-

ried, the strength of the constitution should be raised to its highest point. The disease being transmitted from parent to child through the medium of the blood, the state of that vital fluid in the parents is obviously a subject of the first consideration when endeavours are made to preserve the offspring from the attacks of this terrible disorder. Both before and after marriage, the blood-producing power of both parents should be fully developed, so that the children may be the issue of persons whose blood is in a vigorous state of health.

The milk with which a child is nourished should be healthy in quality and abundant in quantity; and whenever the mother is delicate and the child weakly, the right course to adopt is to procure a robust young woman as a wet-nurse. As it is certain that no food can be so proper for a child as the milk which nature provides for it, I am confident that, with delicate infants, suckling should be continued much longer than is the ordinary custom. For the first six or eight months such children should derive their whole sustenance from the breast; from that

age a little light nutriment might be given; but until they are at least a year and a half old, their main support should be the milk of healthy women. It may be as well to mention, that when a wet-nurse is employed, care should be taken to select a person whose child is of the same age as the one she is about to suckle; and during the whole of the time she is nursing, her blood should be kept as pure and healthy as possible.

In the Life of John Hunter, by Ottley, we find an anecdote that is instructive. Among Hunter's friends was Mr. Nicol, bookseller to the king, and a highly accomplished scholar. Mrs. Nicol had lost five children, and was in the family-way with the sixth, when Hunter, in passing one day, dropped in, and asked her husband whether he intended to kill this, as he had killed all the rest of his children. Mr. Nicol, who was a north countryman, had, on false principles, endeavoured to inure his children to cold and rough usage, thinking, if they could not survive this, they would never live to be reared to manhood. Not understanding such a question, he demanded of Hunter what he meant. "Why," said

Hunter, "do you know what is the temperature of a hen with her callow brood? because if you don't, I'll tell you." He then proceeded to explain the necessity of warmth to young animals; and convinced Mr. Nicol of the propriety of changing his plan, which he did, and with complete success.

Certainly it is most unwise to attempt to strengthen delicate children by exposing them to hardships. Weakly children should be well wrapped up and carefully attended to, especially during infancy; and when brought up in this manner, they may become healthy adults, by reason of their constitutions undergoing a change at the period of adolescence.

In childhood any forced exertion of the mental or bodily powers will inevitably be followed by a departure from healthy action. The tender-growing sapling is beaten down to the very earth by the same wind which is too weak to affect the proud strength of the full-grown tree. And thus, until the powers of an animal become developed by the silent operations of time, they are liable to be uprooted by an adverse influence which would sweep innoxious over it if arrived at maturity.

The powers of life are weak in the young of all animals, and not until they are full-grown do they become firmly fixed. The lamp of life burns dim and flickering in youth, while it is bright and steady in the adult: with the one it needs the utmost care to keep it alight; but with the other the invigorating operations of time give it a steadiness and a firmness which enable it to send out a clear lustre, shedding its radiating influence on every side.

The food of a child cannot be too simple; for its powers of digestion are weak, and they will rapidly give way if at all overstrained. And by parity of reasoning, all the other powers of the child should be carefully shielded by the defensive authority of its parents from their too early exertion. Indeed, every circumstance which is in the least injurious to the man is incalculably more so to the growing child. There is one point connected with the rearing of children which ought never to be lost sight of,—they require exercise; but while exercise is necessary, fagging exertion is most pernicious. Children, if unrestrained, will almost invariably take as much exercise

as their systems can bear: there cannot be a more injurious habit than that of forcing children to use an excess of exertion, whether mental or bodily. Their little frames are crushed by the very means which are designed to give them strength. If the breathing of uncontaminated pure air is necessary for the health of the adult, how much more necessary is it for the development of the expanding powers of the child. Nature visits with an awful retribution any departure from her laws in the rearing of children. What can afford a greater contrast to the hale, hearty, ruddy countenances and muscular frames of country labourers' children than the pampered, sickly—and sickly partly because pampered—and careworn visages of townspeople's children! The young of the agricultural labourer are healthy because they enjoy pure air, and roam unrestrained around the open heath. The young of the townsman are sickly because they are forced to breathe the most vitiated air, and are cribbed, confined, or worked beyond their strength. The offspring of the wealthy town tradesman, if not quite so sickly, if not of quite so

wretched an appearance as those miserable objects the over-worked young of the poor resident in towns, are nevertheless not to be compared with the rosy, laughing, healthful children of the open country. So long as the laws of nature are unheeded in the rearing of towns-children, so long will they be borne to the grave in their adult age by diseases which first took root in their constitutions during the weakness of their infancy; so long will they grow up deformed miserable memorials of the insufficiency of art to contend against nature.

Nothing has ever appeared to me so utterly subversive of the laws of nature as the attempt to force the minds of young children to constrained exertion. Parents and teachers pride themselves on the parrot-like proficiency of children in abstruse subjects, when it would be much more reasonable for them to lament the knowledge—such as it is—which can only be acquired by the ruin of their health. During childhood every organ is weak, every function is speedily deranged; whence it follows, that the confinement and the application which would not

be at all injurious to the lad are extremely pernicious to the child. Is it not a matter of notoriety—which the observation of every man obliges him to acknowledge—that clever children never live to adult age; that they pine away and die, even in their growing years? And is it not a matter of equal notoriety, that those which live the longest, so far from enjoying life, merely drag on a wretched existence, that has been undermined by the fatal but well-intentioned endeavours of parents to force the acquisition of knowledge regardless of the quiverings of the body? The intellects of young children are as weak as their bodies; for a subject which is too abstruse for the comprehension of the child is readily understood by the mere boy; so rapidly does the intellect acquire power when the operations of nature are not interfered with. If those mistaken parents who desire to make their children clever and learned beyond their years, who do their utmost to rear mental phenomena instead of flesh-and-blood men and women, were to force the intellect and the intellect only, then would the evil—although enormous—not be so over-

whelming as when the body is weakened by being debarred from the enjoyment of those happy guileless pleasures which are peculiarly the delight and strength of childhood. Did the forcers of the minds of children inculcate their lessons of abstruse learning during a ramble over hill and dale, did they instruct the mind while the body was strengthening itself, then indeed there is a possibility that the evil, although not removed, might be diminished. But no, such persons bring up their children in defiance of every prudent suggestion; they force their minds to continuous exertion, while they weaken their frames by shutting them up in ill-ventilated apartments, thereby preventing that freedom and that exercise which nature requires. The effects of huddling large numbers of children into a confined room, of obliging them to inhale a vitiated atmosphere, of making them learn, like parrots, to repeat a certain form of words too abstruse for their comprehension, are most injurious; for a weakening of the powers of the intellect, and a premature decay of the body, are sure to follow.

If parents were less eager, less desirous

to add to their importance by the display of the wonderful talents of their children, they might make them very much more learned, and very much more healthy, by allowing time to mature their strength. The instruction which is afforded to young persons when their minds are ripe for the acquisition of knowledge is infinitely more efficacious in imparting real learning, than the constrained attendance inflicted on children of tender years. The man who forces on—so to speak—his children in a hot-bed alters the course of nature; in trying to impart a large amount of knowledge during childhood, he weakens the frame, which obliges him to endeavour to strengthen the body in adolescence, thereby preventing the possibility of imparting instruction, for the reception of which that period of life is so well adapted.

While a child is teething he needs more than ordinary care: our attention to him should be doubled, his digestive powers should be kept strong, and any febrile excitement should at once be stopped. The gum-lancet is of the greatest service in helping the child over this trying process: it relieves pain,

allays fever, facilitates the progress of the teeth, preserves weakly children from convulsions, and is a mother's best friend when judiciously employed.

When the child is weaned, it should be done very gradually; by which a great deal of suffering will be prevented both to mother and child. When the breast is no longer given, the food should consist of the most easily digestible substances, such as milk, farinaceous diet, and occasionally some light broth. After a time small portions of animal food may be given; but the effect on the system should be carefully noted; and it is manifestly wrong to give a child animal food to eat, which needs mastication, before he has teeth to masticate with.

In rearing a child who has a tendency to Consumption, the first consideration is to strengthen his blood, so as to make it tubercle-proof; while the second is, to educate his intellect. Many a dear child has been lost to his attached parents from their neglecting this maxim, which is so obviously correct. Boys and girls should go out and play in the pure air and warm sunshine; and not be

cooped up like gaol-birds in the rank reeking atmosphere of a close schoolroom. Unfortunately for children, the pride of their parents is excited by their advancement in book-learning; while no notice is taken of their wan cheeks and wasted forms, until disease has asserted its supremacy, and when medical aid can be of little avail.

The nursery should be the best-ventilated room in the house, and the ceiling should not be low; while care should be taken that the child is not subjected to draughts of cold air.

The skin of young infants should be kept clean. It is right to commence by washing the child in warm water, and gradually to diminish the temperature until cold water is used, provided it is summer-time and the child is able to bear it. Gentle friction should be employed after the washing.

There can be no doubt about it that, for a long period, the proper nourishment for a child is its mother's milk; that is the food which nature designed for the infant's stomach, which makes blood out of it sooner than from any other diet. A good deal of ingenuity has been exercised in attempting to

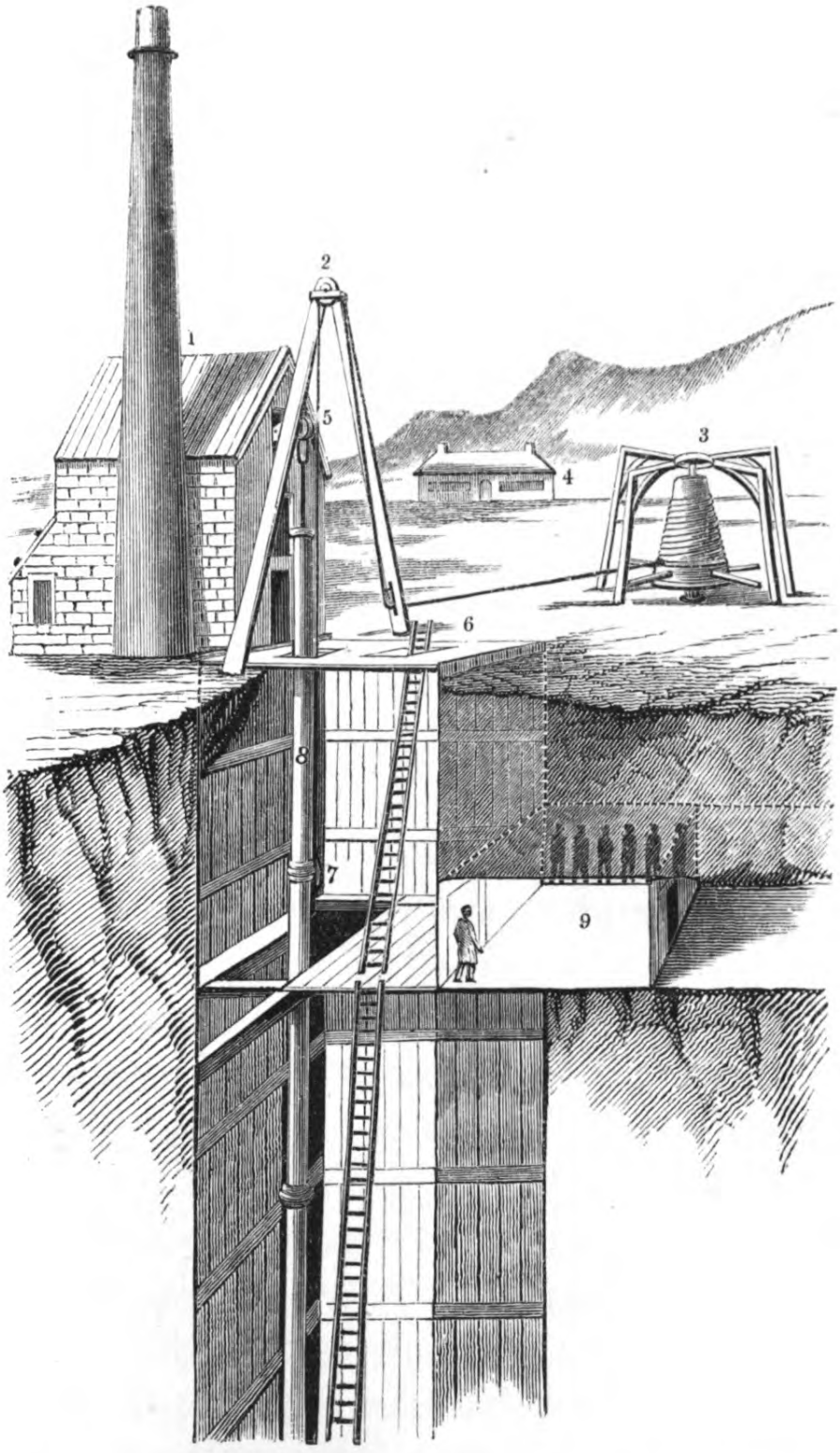
form an artificial food which shall equal the mother's milk; but the result has invariably been a failure. It often occurs to me to hear lamentable stories of the injury sustained by both mother and child from the difficulty of getting the infant to take to the breast. When all sorts of foolish things are given to a new-born babe, we cannot be surprised that its stomach, nauseated by the messes forced into its inside, should revolt even at its proper food.

The time of puberty is hazardous to persons of a consumptive taint, and therefore the state of the system during adolescence needs constant attention.

Milk, especially asses' milk, and the jelly of Iceland moss, are often of great service to consumptive persons with weak stomachs, by enabling them to make blood, which they are unable to do when they live on animal food by reason of their imperfect digestion.

The kindness of Mr. Oke, of Bodmin, has placed me in possession of much valuable information respecting the physical condition of Cornish miners. Captain Polglaze, who has been a miner all his life, and who has

risen from the position of an underground miner to be the captain of a mine, tells me that all mines are more or less fatal; those miners who work in the deeper mines suffering much more than others. In some of the very deep mines the atmosphere is so warm that it heats the water to such a degree as to prevent the miners working more than five minutes without being relieved. In such mines the men work with no other clothing than a pair of drawers. Under these circumstances, it is obvious, that many a life might be preserved by a better ventilation of the mines. Again, the usage is for the miners to wear their working clothes until they are aboveground; and usually the changing-house—the place in which they shift their clothing—is situated some 100 or 150 yards from the shaft, which obliges the poor fellows to expose themselves to all the inclemencies of the external atmosphere while dripping with moisture, and after having breathed a most foul air. The plate opposite shows the present position of the changing-houses, and the situation proposed for them. Were the miners to change their



1. Engine-house. 2. Shears. 3. Capstan. 4. Changing-house.
5. Bob of engine. 6. Shaft-floor. 7. Loop in cable for lifting.
8. Engine-pumps. 9. Proposed changing-room.

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clothes underground, on a dry level, it is quite certain that they would be so far less liable to disease of the lungs than under the present destructive system.

It is obvious enough, that the danger to the miner is increased when the ventilation of the mine is imperfect. A very excellent method of ventilation has been invented by Mr. Taylor, and which acts in this manner: the rising of a cylinder causes the air in the mine to rush up through a pipe and valve, and prevents its return by the closing of the valve on the descent of the cylinder. Mr. Herbert Mackworth found that the adoption of this plan reduced the temperature, at the United Mines, from 105° to 75°.

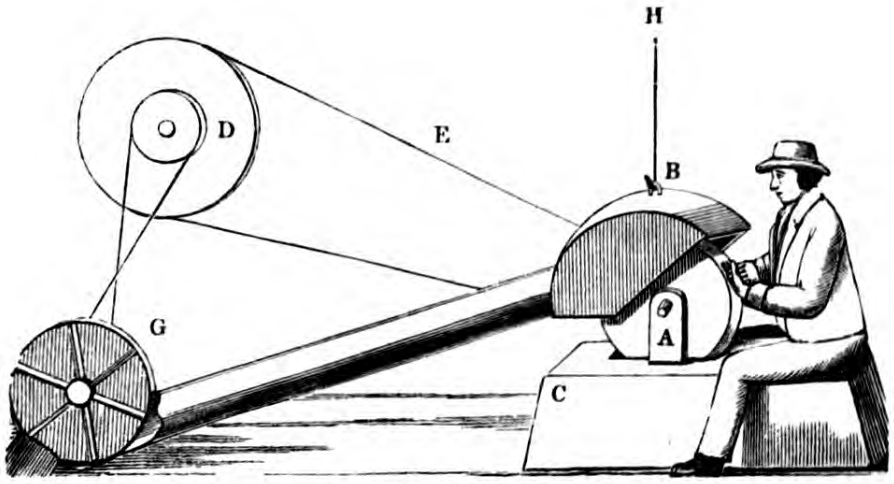
So exhausting is the occupation of a miner, that men have lost as much as five or six pounds weight at a single "spell" of labour, when working in deep mines, and in which the temperature often comes up to 90°. Who can be surprised at the haggard appearance of old miners, when told, after this work of so fearfully debilitating a character, that so deep are some mines, they have to ascend during one long weary hour a suc-

cession of ladders, to reach the top of the shaft!

The intelligent author of *Cornwall, its Mines and Miners*, gives an interesting account of the man-machines for lifting the miners out of the mines, and thereby saving them the toil of ladder-climbing from their place of work. He estimates the money-gain of this admirable contrivance: who can estimate the gain in health?

By the kindness of Mr. Oke and Mr. Merry, I am enabled to give, on the opposite side, an illustration of the fan used in needle-manufactories. The fan works in a manner similar to bellows, excepting that it draws the air inwards. This is done by the fan revolving so rapidly, that it causes such a rushing of air into the bonnet as carries with it all the steel and hone-dust, by which the lungs of the workmen are enabled to breathe a far purer atmosphere than by any other contrivance.

It has been noticed, that persons living in the close propinquity of tanyards have enjoyed freedom from pulmonary Consumption, although their families have been subject to



A. The stone: these vary in size.
B. The cap: this is made of tin, and comes over the stone in the shape of a bonnet, and the steel and stone dust goes down the pipe.
C. The tram in which the stone is fixed, and on which the man sits.
D. The fly-wheel, on which the strap works from the stone or wharf.
E. The leather strap.
G. The fan.
H. A pulley, to move the bonnet from the stone.

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the disease; and they have fallen into decline on removing to a different locality. It is not improbable that the cause of this exemption may arise from the tannin in the oak-bark.

The object of the treatment being to change the character of the blood, it is obvious that such must be a work of time, and that the difficulties of the cure are greatly increased by delay. Whenever there is diseased action in any organ, it is important at once to commence the treatment; as the longer it continues, the more difficult is it of cure. In diseases of long standing, we have to cure, not only the diseases themselves, but also to rectify the disposition which the system acquires of habituating itself to diseased action. In medicine no axiom is sounder than that habit is second nature. Indeed, it frequently happens that, although the original disease is removed, the functional derangement produced by it continues for a long time. The effect does not necessarily cease on the removal of the cause.

With a view to the prevention of Consumption, we should not wait until symptoms of tubercles manifest themselves; but the

treatment for the strengthening of the chest should commence at an early period,—that maxim of medicine being of especial value in reference to this disease, that it is easier to prevent than to cure. Knowing the constitutional tendency to the disease by reason of hereditary predisposition, our strenuous efforts should be directed to prevent the germination of the noxious tubercles in the system. This we shall effect by commencing the treatment on the first advent of any indication of weakness about the chest, without waiting for the outbreak of serious symptoms. In this disease, it is not asserting too much to say that procrastination is death.

The one thing needful in the prevention and cure of Consumption is the warmth of the sun; and the one thing to be avoided is the breathing of damp air.

Many persons never tire of repeating the cuckoo-cry of Consumption being incurable. In one sense Consumption is incurable; but so are all other serious diseases. The same people who contend that Consumption is incurable, would consider any one insane who

insisted on the incurability of such diseases as inflammation of the lungs or liver; yet they are incurable, if patients fail to follow the directions of their physician. If a person, while suffering from inflammation of the liver or lungs, neglects the behests of medical science, and acts diametrically opposite to the wishes of his medical attendant by exposing himself to the risk of producing fresh accessions of diseased action in the organ affected, it is as plain as the sun at noon-day that he has a disease which no earthly skill can cure, and may therefore be said, in one sense, to be incurable. If, on the contrary, a patient with one of the diseases specified does that which his physician wishes him to do, and avoids that which he tells him not to do, there is every human presumption of the case terminating favourably. And I confidently affirm that this holds good with Consumption. But by reason of the medical instructions involving a considerable departure from ordinary habits, necessary to be persevered in for a long period, and any relaxation from which is liable to be attended with fatal consequences, the plain fact of the matter is,

that Consumption is not cured so frequently as it might be, because, after a time, patients get tired: they feel better, and indeed are better; they think the danger is over, when it is not; and the treatment breaks down, not from any error in it, but from the patient not following it up for a sufficiently long time. Taking such a case as this, it is common enough for people to say, "If Consumption were curable, Lady This, and That, and Mr. So and So, would surely have lived; for they always took every precaution." This is usually considered quite conclusive on the point, and all the hearers are satisfied that Consumption is incurable. As the comfort, and indeed the lives of a good many, depend upon this, we will look at it a little closely. It is absolutely impossible for any one, other than a person constantly in close attendance on a patient, to know the precise nature of the medical instructions which have been given; and it is just as difficult to ascertain whether they have been scrupulously followed. Indeed, it is in the nature of things for not only the patient, but even every one in attendance, to relax somewhat after a time

the close restraint which the physician's judgment knows to be necessary for the cure; and this is the reason why it is frequently most difficult, even for the medical attendant himself, to be certain that his own instructions have been perseveringly followed. How impossible, then, must it be for another, who, probably enough, does not know what the instructions really were, to ascertain that no deviation has taken place from them! But the proof of the curability of Consumption is not dependent on contingencies which may arise under certain conditions,—it rests on the cures which have been achieved; it needs no argument to sustain it, as living witnesses, now in the enjoyment of perfect health, themselves can testify to their having suffered from the same symptoms precisely which their own blood-relations have had before them, and who have died of Consumption.

I have seen persons who had suffered from the symptoms of Consumption, and many of whose near relations had died of the disease, lose the symptoms one by one, and gradually, in the course of time, become stout hearty people, on their changing their residence

from a cold and damp climate to a warm and dry one. In many of the cases I have referred to, they were so unmistakable, that there cannot be a question but they would have died of Consumption, had they continued to reside in the place of birth. But the proof of the curability of Consumption rests on even stronger ground than this; for I have myself seen the cicatrix of an old ulcer in the lungs. When I was attached to the Military Hospital at Fort Pitt, Chatham, on opening the lungs of a soldier who had died of disease of some other organ, and who had not suffered from any chest-symptoms while in that hospital, the cicatrix of an old ulcer was discovered, and the surrounding portion of the lungs was in a healthy condition. It is absolutely certain that this soldier had suffered from Consumption, and had been cured of it: and I do therefore hope that we shall hear no more of the cuckoo-cry of Consumption being incurable.

Although, as just now shown, Consumption is capable of cure, it is nevertheless hopeless to anticipate a reproduction of destroyed structure, and that is the only way in which

a cure can be effected when a considerable portion of the lungs has been converted into tuberculous excavations. So long as there remains in a healthy condition as much lung as is required for the necessities of the system, there is a possibility of cure; but when the case has been suffered to go beyond this, it is as useless to attempt it, as it would be to try to press back the surges of the ocean with the point of a pen-knife; for a cure is impossible. Still, even in such a sad case as this, medicine, although it cannot cure the disease, can very greatly relieve the patient's sufferings, and prolong his life. There being a point beyond which this disease is incapable of cure, affords no plea for the idle cry of Consumption being incurable, inasmuch as the same holds good of every other disease of a serious character.

If the dictates of sound judgment and medical knowledge were strictly acted up to, pulmonary Consumption could be eradicated from those classes of society which are not straitened for pecuniary means. The prevention of Consumption, when undertaken at an early age, and persevered in until every

indication of the affection has disappeared, is as much a matter of certainty as any thing in medicine. But then, it costs a great deal of money to change the climate from time to time, and to adopt all the other means which are required to bring up the system to such a point of vigour as to be proof against Consumption; and this is the reason why this disease, in the nature of things, will always continue to be attended with a very considerable mortality. The wealthy have the power in their own hands of eradicating the disease from their order, by judicious marriages, and persistent attention to their offspring from the day of birth; while poorer persons may greatly lessen its ravages by taking as many precautions as their means will permit.

Some persons are so unreasonable as to expect a cure without the exercise of any self-denial. They appear to consider that they have earned recovery when they have paid their medical fees and taken the medicines prescribed for them. Such people regard health as their right, and seem to consider their medical attendants as acting unfairly by them, so long as they are de-

prived of it,—as if, indeed, their medical men had robbed them of it,—though their modes of living have probably enough been of such a character as to invite disease. It is well that every body should know that there is no such thing as a fee-simple in health, and that the precious commodity can only be regarded in any case as a tenant-at-will. Health is a jealous mistress, that exacts constant attention from those who would enjoy her favours. In the course of practice, medical men every now and then have to combat the most frivolous objections to the course of treatment which they think it right to recommend, as being, in their judgment, the best adapted to effect a cure. As an illustration, I will mention an occurrence which took place a few years since during my professional attendance on a gentleman whose life was in the utmost danger. On my recommending that his hair should be cut very closely, a friend of his remarked to me, the patient being insensible, "Oh, that will be very inconvenient for my friend, his head will look so curious!" To which I replied, "Your observation is just; but, however

inconvenient the loss of his hair will be for your friend, the loss of his life would be still more so." My wishes were carried out, and the gentleman recovered, mainly, I believe, from the relief afforded to his brain by the removal of his hair. Wildly, indeed, do some people, even when seriously ill, talk about their disinclination to adopt remedies which interfere, however slightly, with their ordinary habits. Such persons must learn, that while Consumption can never be cured by any species of conjuration, the happiest result may be anticipated from a continuous observance of well-devised rules, modified from time to time to suit the varying requirements of the case. When a physician is giving a patient the benefit of the experience of his whole lifetime, it is disheartening in the extreme for him to be met with impatient indifference, and to be told, perhaps in so many words, that a cure is expected with but little inconvenience and by a given time. People, when ill, must not expect impossibilities; but should feel thankful for improvement, however gradual, in their health.

In all the diseases which afflict the human

frame, it is of the first importance that treatment should be commenced at as early a period as possible; as it will be found far more difficult for the constitution to shake off a disorder which has affected it for some time than when it has been only of a short duration. This applies even when there is no tendency in the disease to get worse; but it applies with ten times more force in the case of pulmonary Consumption, which can hardly ever be said to remain stationary, one of its most distinguishing characteristics being the insidious manner in which it undermines the constitution. In this disease, treatment, to be successful, must be promptly adopted at the first advent of the earliest symptoms.

In the treatment for the cure of this disease, it is right at first to attempt no more than to stay its further progress into the healthy part of the lungs; the absorption of the tuberculous depositions being a work of time, and to be achieved only after the character of the blood has been changed, and when nature has recovered her healing powers.

It is the blood which is scrofulous, and hence it is that the disease breaks out at

various parts of the body; and so with Consumption, we must look for its cause in the vitiated state of the blood. That it is so is certain, because when the lungs are affected with Consumption or tubercles, almost every portion of the human frame is also liable to tuberculous disease. This can arise only from the blood carrying the seeds of disease with it; and permeating as it does every part of the system, almost every portion of the animal economy is subject to the tuberculous disease with which itself is affected. After regarding the matter in this light, there is no difficulty in determining the quarter to which we should direct our attention with a view to free the blood from the poison of the tuberculous disease, or, in other words, to cure Consumption. Our efforts, therefore, must be directed to strengthen and purify the blood to so great a degree as to clear it of its morbific influence. This, however, is a work of time, and can only be achieved by steady perseverance and continuous self-denial. And surely this is but a small penalty to pay, compared with the prize which it is sought to gain. On the one side is sickness, long and lasting,

terminating in death; on the other is the greatest of all human blessings—health.

The only reason why Consumption is less readily curable than scrofula is, because it affects organs of such importance to life, that any derangement of their healthy action is attended with the most imminent danger; while the absorbent glands, the chief seat of scrofulous affection, are comparatively of little moment. For example, an absorbent gland may be entirely destroyed, without producing much constitutional irritation; whereas when the function of the lungs is disturbed, the whole of the system suffers.

There is one method of preventing the approach and of arresting the progress of disease, which is not adopted so frequently as could be desired. Change of air, with its consequent change of scene, is a most powerful remedy when judiciously employed. Although medical men are not insensible to its advantages, they too frequently fall into the error of recommending a trial of it only after disease has effected so firm a lodgment in the system as to baffle all attempts to remove it. Before the remedy of nature is employed, the

patient is compelled to endure a perfect martyrdom of every variety of treatment. Now it is fair to conclude, that as change of air is highly beneficial in curing diseases after the strength of the system has been undermined, it would be much more so were it employed in their earlier stages.

In no disease is change of climate attended with such satisfactory results as in impending Consumption. The reason of this is obvious enough. Consumption being a disease of the lungs, the quality of the air which they have to respire necessarily exerts great influence on the disease. It will perhaps surprise those persons who have not considered this question, to learn, that it is computed, and I think with reason, that the average quantity of air respired in twenty-four hours amounts to three thousand gallons. Taking each inspiration to draw into the air-cells only one pint of the atmosphere, and allowing eighteen respirations in the minute, we arrive at the quantity specified. Again, all the air drawn into the lungs during one inspiration is not expelled on the next expiration; for only a small quantity of air in

the lungs is exchanged, it being impossible to expel it all. When, therefore, we know that the atmosphere not only every where surrounds us, but that we breathe as much as three thousand gallons a day of it, and that our insides always contain a large quantity of it, we cannot be surprised at the cures produced by change of climate.

However warm and sheltered a place may be, it would be wrong to recommend a continuous residence in it; as it is far better not to remain in one locality throughout the year, but to be constantly changing the abode in accordance with the seasons; and when removing from place to place, to prefer a voyage by sea to a land-journey, unless the change takes place during the winter months. A mild climate, protected from northerly and easterly winds, should be chosen for winter and early spring, and a more bracing atmosphere for the summer. When the sea-voyage is well timed, during agreeable weather, greater benefit results from it than from a residence on shore. It strengthens the tone of the whole of the system, increases the appetite, improves the digestion,

and thereby conduces greatly to the increase of the blood-producing power. The peculiar fancy of the invalid should always be treated with attention in reference to the place of abode; for example, it would be wrong to send an invalid to a place against which he has an objection, although possibly it may be groundless. The whole object of our treatment being to keep the invalid on the best terms with himself and every body around him, his whims or notions should receive every consideration.

Hastings and Ventnor are warm and sheltered places, and fitted for the residence of consumptive persons. The climate of Penzance is mild; but there is no shelter from bleak winds, and therefore it is unsuitable. The air of the Channel Islands is bracing; but residents must take care to choose their abode in a spot which is protected by the surrounding country from the high winds so prevalent in that locality.

Observation of the winter vegetation of the northern and southern coasts of England shows at once that Devonshire and Cornwall, where tender plants flourish in the open air throughout the winter, are especially fitted

for the residence of those persons who need a mild atmosphere. As with the vegetation, so with the far more highly organised human economy. Lungs, which in the north of the island would be destroyed by the piercing cold, perform their functions in a healthful manner in the mild climate of its southern parts.

Torquay, although nicely situated, is nevertheless open to the grave objection of being a town converted into a consumptive infirmary. From the prevailing fashion which has arisen in recent times among invalids of resorting to this town when too late, when the disease is too far advanced to admit of cure, weak-chested persons, whose cases fairly admit of the happy prospect of speedy recovery, lose much ground while residing there by being subjected to the depressing influence of having constantly paraded before their eyes the victims of the disease who make the shore of Torbay a brief resting-place to the grave. The tombstones in the neighbourhood bear ample evidence to the cheerless fact, that the mortality among the casual residents there is excessive. Were the site of Torquay

the best adapted of any in England for the residence of weak-chested persons, the injurious effect produced on the sensitive minds of the consumptive, by being obliged to witness the sad spectacle of so many sufferers gradually hastening to the grave, would alone deter me from advising a residence in that neighbourhood. Knowing, as I do by experience, how greatly, whether for good or evil, the mind acts on the body, I should almost as soon recommend a consumptive invalid to become an inmate of the ward of an hospital as to be a resident at Torquay.

But Torbay is not the most desirable situation for the residence of a consumptive invalid; for the coast of Devonshire trends southerly from Torquay down as far west as the Bolt; and many a sweetly-sheltered spot may be seen between Berry Head and the westward of the Start, superior in every respect to any place in Torbay. Turning our backs on Torquay, and leaving behind us all the blighted hopes and wasted forms of its numerous sufferers, let us hasten westward, to seek a retreat for an invalid where he shall be freed from all depressing influences. Skirt-

ing Torbay and inclining somewhat southerly, we leave its western town—historic but fishy Brixham; breasting the hill at its rear, we then enjoy the delicious prospect of the romantic Dart meandering between its well-wooded banks, the land-locked harbour of its port, and the broad expanse of the Channel. At the foot of this hill, and fronting the town of Dartmouth, is the village of Kingswear, the southern part of which is admirably adapted for a consumptive invalid, being efficiently protected from all northerly and easterly winds by almost perpendicular hills of a great altitude, and sheltered from westerly winds by the hills over Dartmouth; while it is open to the refreshing and invigorating sea-breeze from the south. The part I refer to is near a house built some years since by the Rev. Mr. Holdsworth. Any one can test the worth of my opinion by noticing, in early spring-time, how much more advanced is the vegetation at Kingswear than at any place in the neighbourhood, or, indeed, in England. No mournful cavalcade of moribund countenances here afflicts the eye; for all is cheeriness and health. On shore we see the

rose-coloured cheeks and broad chests of the hardy villagers, and afloat the iron muscles of the adventurous sailors, whose sturdy frames and stout hearts, nourished in this healthful spot, have borne the flag of England over every sea.

Crossing the harbour, and hastening westward through the town of Dartmouth as speedily as its roughly-pebbled pavement will admit of, we leave Mount Boone, the lovely seat of Sir Henry Seale, on our right; and when on the summit of the hill, a view is spread out before us delightful indeed to look upon. Start Point, with its friendly light, bounds the broad sweep of Start Bay; the green water of the Channel, bearing on its heaving bosom argosies from every shore, freshens and glads the heart with its buoyant and ever-varying appearance; while landwards stretch out on every side many a sweet prospect. From the point at which this hill touches the sea-shore, which is at Little Dartmouth, to the westward of the village of Street, there is a succession of warm sequestered nooks. These are all well protected from the east-winds by the hills

standing from north to south; and when they incline westerly, the shelter becomes perfect from both easterly and northerly winds. It is a succession of hill and dale; the scenery is most beautiful, and all nature is redolent of health. In the neighbourhood of the town of Salcombe also—which is certainly the warmest and most sheltered town in England, and far superior to Torquay—many a better spot for the residence of a consumptive invalid may be found than any where in Torbay.

This tract of country possesses many advantages over Torquay for the residence of weak-chested persons. It is warmer, the scenery is more diversified; for at Torquay you see Torbay, and Torbay only: there are three rivers; one, the Dart, of exceeding loveliness—a beautiful trout-stream—which comes down by Blackauton and is lost in the lake at Slapton Sands; and the river at Salcombe. The rides are far more varied than any where in Torbay; and healthful amusements are not wanting, there being three packs of hounds in the neighbourhood—the Slapton harriers, Mr. Netherton's harriers near Blackpool, and

the famous foxhounds of Sir Henry Seale. But above all and beyond all is the surpassing advantage of freedom from the depressing influence necessarily attendant on living in a consumptive town. In Torquay every thing speaks of Consumption; it is, in fact, a sea-side watering-place with diseased lungs. It has no amusements other than those which might be expected to be found in such a place. The tract I speak of is full of the varied beauties of nature; and a person so disposed may enjoy every description of field-sports, which are highly beneficial in strengthening the blood-producing power. And of this I am well assured, that many a life might be saved by a residence there, which would be lost at Torquay.

It not unfrequently happens that consumptive invalids do not derive the full benefit of a residence in the southern parts of England from the circumstance that, finding the climate much warmer than the one to which they have been accustomed, they think they may go out in the open air at almost any time without suffering injury. This, however, is a fallacy; for although the southern

coast of Devonshire and Cornwall is warmer than the other parts of England, a great deal of rain falls there; and it is also worthy of attention, that when it does not rain, the atmosphere on that coast is frequently saturated with moisture; the reason of this being that the prevalent westerly winds blow over the whole expanse of the Atlantic, and deposit much of their moisture on the first shore. Therefore it will be prudent for invalid residents on the southern coast to be especially cautious in not going out of doors during damp weather. By the adoption of this precaution, and by taking as much out-door exercise in dry and warm weather as their systems can bear without fatigue, they will derive the greatest amount of benefit from their change of residence.

Although much moisture in the atmosphere creates a difficulty, by reason of the lungs being thereby prevented from ridding themselves of the watery vapour which the necessities of the system require should be eliminated by those organs, nevertheless a certain amount of moisture is necessary to temper the keenness of the air. Thus, east-

erly winds are prejudicial to persons with weak lungs, an absence of watery vapour causing them to be too piercing for the delicate air-cells of the lungs.

Speaking generally, the most judicious course that can be recommended for a consumptive invalid is, to pass six months on the south-west coast at some place between Torbay and the Bolt, and the remainder of the year at other parts of the island. For example: a person should go down near the Start Point about November, and remain there until the easterly winds of spring have blown over, which will probably be at the end of April. About the 1st of May he should go to London, and not leave it till the end of June; when he should take a turn in the Highlands of Scotland for about two months. This brings him to the commencement of autumn, which should be passed at Brighton; and about November he should again start off for the south-west coast, to hear the melodious cheer of Sir Henry Seale to his hounds.

A continuous residence on the south-west coast of Devonshire is not desirable, by rea-

son of its being relaxing in summer. During the winter and spring, however, there is no part of our home-empire at all comparable to the neighbourhood of the Start as a residence for a consumptive invalid. It is so near the sea as to possess all the advantages of an insular position, without being so exposed as Penzance and the Channel Islands to tempestuous gales; while lofty hills protect many a charming spot from all easterly and northerly winds. The winter and spring should therefore be passed somewhere in the neighbourhood indicated, great judgment being used as to the amount of out-door exercise to be taken. When the system is equal to it, and the weather propitious, horse-exercise should be taken, and as near the sea as possible. When the summer commences, a change to London will be agreeable and beneficial. The attractions of our great metropolis will afford a pleasing contrast for a time to the quietude of Devonshire. When London tires, and the hot weather sets in, a run in the Highlands of Scotland for a while will be of great service. Brighton is the place for autumn, because its air is dry and invigorating after

the heats of summer; and shelter from the coming winter should be sought again on the south-west coast of Devonshire. Were this course adopted, the medical treatment being perseveringly continued throughout, and every precaution taken during the journeys or voyages, great results would be achieved. Many would be cured; all would be relieved.

When the winter is not passed on the southern coast of Devonshire, one of three courses should be adopted: the patient should proceed to Rome, Madeira, or Australia. Residents in Madeira enjoy the great advantage of being able readily to suit their abodes to the variations of the temperature. In cold weather they can live at Funchal; and in depressing heats they can move up the hill to a more elevated position. The southern coast of France is not fitted for a winter residence for consumptive persons, by reason of the bleakness of the northerly winds; neither is Malta, pulmonary Consumption being very fatal to the residents in that island.

The best climate for the recovery of consumptive patients has, strangely enough, escaped the attention of physicians. It is

within my own personal knowledge, that the whole of the southern portion of New Holland, or Australia, is most admirably suited for the residence of persons who have a tendency to Consumption. The climate is warm, dry, and equable; there is a continuous sunshine for two months or more—I have known it extend to six months—without a drop of rain; then three or four days of heavy tropical rain follow. Thus the number of days during which rain falls in the year is very small: the winter and spring are pleasant, refreshing, and still equable. These are the characteristics, as I have myself experienced, of the climates of Western Australia, South Australia, and New South Wales.

In those cases which Devonshire fails to cure, and in which the money-cost is a secondary consideration, the proper remedy for the prevention and cure of Consumption is, to change temporarily the coldness and dampness of the English climate for the warmth and dryness of the Australian sun and its pure atmosphere. After a short residence in Australia consumptive patients become the heartiest of the community; they appear to

revel in the dry heat, which to persons with nervous or heart-affections is extremely oppressive. Many a valuable life would be preserved, if, on the advent of consumptive symptoms in approaching adolescence, a voyage to Australia, at the right season of the year, were undertaken, with a residence of a month or two in the country. A person leaving England in the autumn for Australia, and remaining there a short while, would enjoy continual summer until his return. In point of fact, he would enjoy three summers without any winter intervening. Were judicious medical treatment adopted during his absence, it is as certain as any thing human can be, that on his return his lungs would be far stronger than when he left England. Were the voyage to be undertaken in a large yacht, or in one of the admirable ships belonging to Mr. Green of Blackwall, and which are models of good arrangements, but little inconvenience would be experienced. The sea-air and the sea-bathing, when proper, conjoined with a continuance of medical treatment, would achieve such results as to create surprise and delight at their extent.

A good deal of ingenuity has been exercised in endeavouring to determine the reason of the admitted benefit arising from a long voyage at sea. Some contend that it is the inspiration of the sea-air which effects all the good; while others say it proceeds from the breathing the vapour of the tar which is on board the ship. I have no doubt that benefit results from both these circumstances; but, in my opinion, one essential element of the success has been overlooked, which is, the constant motion of the vessel keeping the function of that important organ the liver always in a high state of efficiency. This is attended with a great increase of the digestion, and therefore necessarily conduces to the development of the blood-producing power.

Whenever the strength will permit, horse-exercise should be taken; and, if possible, on the sea-shore, or as near it as may be. A breathing gallop on a well-bred horse, inhaling the sea-breeze at the time, gives a glow to the system which no medicine can impart, circulates the blood freely through every vessel, raises the spirits, and acts as a fillip to

the whole being, without causing fatigue or languor, and is of the greatest service to the blood-producing power.

Although change of climate is of the first importance in this disease, and beyond a doubt has saved many a valuable life, still those persons need not despond whose means or whose occupations prevent their availing themselves of this admirable auxiliary in the prevention and cure of Consumption. When persons are unable to go to a warm and dry climate, they are always able, more or less, to bring a warm and dry climate to themselves. As this is a highly important part of the subject, and on which a great deal depends, it will be well to look at it with every attention; the more especially as it involves the well-doing of so many of our fellow-creatures, those being but the small minority who are enabled to remove to any considerable distance from their place of residence.

In the first place, then, the position and aspect of the house inhabited by the invalid is to be attentively considered. It should be sheltered from the easterly, northerly, and north-easterly winds, and the best shelter

consists of high hills in the rear; and the front of the house should look to the south or south-west, and if within reach of the sea-breeze so much the better. The soil on which the house stands should be of such a character as to admit of the rapid percolation of water through it. Gravelly soil is therefore to be preferred, and clay-lands to be avoided. Not only should the ground on which the house itself stands be of a gravelly nature, but the country around it should partake of that character; or else we may have a constantly moist atmosphere surrounding the abode, thereby neutralising in a very great degree the dryness of the actual site. A clay-soil in the high ground to the rear should always be avoided; or otherwise the rain, not being able to pass through the clay, will run down the hill, and thus render the situation damp, which would but for that be dry. The foundations should be substantially laid, with deep cellars underneath, so as to elevate the house above any damp exhalation from the soil; the walls should be of a considerable substance; and the windows and doors of the rooms in which the invalid resides should be

double. The preferable part of the house for the invalid is that portion which in London is termed the first floor, and in some parts of the country the second floor; for then he will be sufficiently raised above the ground, and still not be too near the roof.

In warming a house a great deal may be done by having a large fire in the hall or entrance, which will effectually warm the whole of the staircase, and will be found much more efficient in keeping up one uniform temperature than any amount of fires in particular rooms: the reason is this, that the air which enters the rooms is warmed by means of the fire in the hall; and thus we shall procure a warm and dry atmosphere.

Before dismissing this very important subject, I must beg of all invalids to have a good thermometer in every room in which they reside, and also in the staircase. The sensible heat is frequently very different from the actual temperature, and a reference to a good thermometer affords the only means of ascertaining the true state of the atmosphere. In addition to thermometers in the rooms, it will also be advisable to have one or two

placed outside the house, but so situated that they can be read from the inside. And it is only by the adoption of this expedient, that, in this exceedingly variable climate, a person can clothe himself in appropriate costume.

Many persons of good means, and wasteful in some respects, consider it excessively extravagant to have a fire in a bed-room. This feeling is highly prejudicial; for many a consumptive invalid has taken a death-cold from leaving a too warm sitting-room to go into a bitterly cold bed-room. What can be more unwise than for an invalid, after having wrapped himself up with every possible caution while in a hot sitting-room, and after having most carefully screened himself from the slightest draught of cold air, to change this suddenly to a bitterly cold and possibly also damp room? While in the warm room, he is so protected that not a breath of air can visit his cheek too roughly; and when he gets to his bed-room, with the pores of his skin opened by the heat of the sitting-room, he strips himself of every particle of clothing, then puts on a cold nightgown, and gets into a cold bed! It is impossible that any

state of things can be more conducive to the formation of disease of the lungs. It is true that after the invalid is in bed, he gets warm after a time; but by reason of the coldness of the room, so heavy an amount of bed-clothes has to be heaped upon him as to be injurious from their weight alone, while his system is weakened by exhaustive perspirations, from his remaining covered throughout the whole of the night with the same heavy bed-clothes which, on his first getting into bed, were absolutely needful to remove the chilliness he suffered from the shock of being suddenly plunged, while in a state of perspiration, into a cold-air bath. Such a person would deem it the height of folly to leave a hot room in the evening, and jump into a bath of cold water when his skin was perspiring, and, on leaving it, get into a cold bed, after he had merely wiped his skin dry, but without using friction. He would think it unwise for an invalid to act as described; but it is as foolish to take a cold-air bath under these circumstances, as it would be to take a bath of cold water. In point of fact, the cold water would be the less hurtful of

the two; for some slight reaction would necessarily take place from the mere drying of the skin; while in the case of the cold-air bath no kind of friction is used, and therefore reaction cannot take place so soon.

Some persons, impressed with the necessity of having the bed-room warmed in the winter months, adopt the scarcely less injudicious plan of having a fire lighted in the bed-room only just immediately before the invalid enters it. Under such circumstances the fire is of very little use, because the atmosphere of the room remains almost as cold when the invalid removes his warm clothing as it would have been had no fire been made at all. After viewing this serious matter in this point of view, it is manifest that the atmosphere of the bed-room, in which the figure is nude, should be not only as warm, but in fact warmer than the sitting-room, in which the person is carefully clad. The obvious plan of determining the temperature is to have thermometers in both rooms; and if their indexes are carefully read, no apprehension need be entertained of this vital matter being mismanaged.

After the invalid is in bed, in ordinary cases the fire should be allowed to go out, the heat of the bed-clothes, superadded to the animal heat of the system, being sufficient to keep up the temperature during the night. The same system of fires should be adopted in the morning, the air of the room being warmed before the invalid rises from his bed.

Many will object to this plan of proceeding, from what they will conceive to be its excessive extravagance. Let such persons calculate the cost, the very trifling cost, of the fires as now recommended, and place as a *per contra* the mere pecuniary cost of the medicines necessary for the cure of the severe catarrhs only which have been caught by the absence of such fires during one winter; and they will, I am satisfied, be convinced that it costs less money to warm the air of the room in which an invalid undresses himself than it does to pay for the medicines which he is obliged to take to cure the catarrhs which this cold air causes. The pecuniary extravagance is, in truth, the other way; but were the money-loss on the other side,

what would that be, compared with the extravagant expenditure of health and life for the sake of a few paltry shillings in a year?

Conscious of the risk attending draughts of cold air in a bed-room, many persons are in the habit of stopping all ventilation in the room by closing the chimney. And it is really astonishing to notice, as I regret to say I frequently have occasion to do, with how much ingenuity this is effected. When the stove is so fashioned as not to permit of the chimney being stopped by the mere falling down of an iron-plate, which is the case with many, then a misdirected dexterity is called into play, and all kinds of household materials are perseveringly inserted until ventilation is effectually prevented. Were the persons who adopt this too common procedure to use their brains a little before they use their hands, they might possibly enough arrive at this conclusion, that in stopping up the chimney of a room, they change it from a room into a cupboard; and that when a person lives in a cupboard for several hours, he does so at great risk, by reason of his breathing over again the vitiated air, from

which the vivifying principle has been extracted by his own lungs; for it is a matter of certainty, that when the door and window of a small bed-room fit quite closely, it is attended with the greatest risk for a person to remain throughout one night in it with the chimney totally closed, because the foul air cannot get out, and no pure air can come in.

In every place particular spots may be selected which are better adapted for the residence of consumptive invalids than the neighbourhood generally. In London, for example, we should avoid for such persons the bleak air of the hills, and our attention should be directed to Brompton and Kensington, because they are in sheltered positions, and the air is pure from the country during nine months in the year. Were the south side of the town properly drained, as it is to be hoped it will some day be, many a healthy spot might be found there; but in the present condition of the sewers in that part of London, a residence there cannot be recommended. We shall often effect a great deal by a careful consideration of the position of

the residence, as affecting the salubrity and mildness of the air which an invalid has to breathe. For example, of two houses in the same street, one may be far more fitted for a residence than the other. To give only one illustration of my meaning, the windows of one may all look to the north-east, while in the other they may face due south.

Again, without leaving the neighbourhood of London, great advantage will result from an occasional change of abode. During the warmth of the summer the heights of Highgate, Hampstead, or the Surrey hills, will not be too cold; while at that season of the year the air of Brompton and Kensington is too relaxing. And a similar kind of change of residence may be effected in every locality with the greatest advantage to the invalid.

The purity of the atmosphere exercises a great influence on the blood-producing power of the system. In the keen air of a mountainous district blood is made out of food which, if not absolutely indigestible, would be assimilated with great difficulty in the close atmosphere of a town. By reason of the purity of the atmosphere, a sufficiency

of good blood is made out of potatoes in the wilds of Tipperary, and out of oatmeal in the highlands of Scotland; while in the closeness of towns a better description of food is taken, but with a less valuable blood as the result.

There are no medical men who enjoy such favourable opportunities as medical officers in the army of acquiring the means for arriving at a sound conclusion on the manner in which the blood-producing power of the system is affected by the various circumstances of locality, food, occupation, &c., by reason of its being an important part of their duty to examine recruits as to their fitness for the service, who come from all parts of the United Kingdom, from almost every variety of avocation, and from various positions in the social scale. Thus the army medical officers have at their command materials for forming a judgment on this essential point, of which all others are deficient. At one period of my professional life I was peculiarly well situated for gathering information of this character; for when the regimental hospital of the 51st Light Infantry, of which I had charge, being a medical officer of the regi-

ment, was transferred, on the 51st embarking for Van Diemen's Land, to the hospital of the Provisional Battalion at Chatham, then and for many years under the vigilant superintendence of my very worthy friend Dr. Piper, I had to examine not only all the recruits for my own regiment, but also a large proportion of the recruits who joined the Provisional Battalion; and as that force is constituted of the depôts of all the infantry regiments serving in India, the numbers of recruits whom it was my duty at that time critically to examine were very considerable indeed. I noticed that the muscles of the Irish and Scotch recruits, and also of the English agricultural labourers, were larger and firmer than those of town-reared men; and whereas blood-making diet had been consumed by the townsmen, the food of the others had consisted of less nutritious materials. The townsmen had been bred on steaks, chops, and stout; but they lacked the firmness of frame and the capability of enduring fatigue of the Irish or Scotch, who had been raised on potatoes and oatmeal. This inferiority of muscular development on

the part of the townsmen did not arise from their not having taken as much out-door exercise as the countrymen; for many of their occupations were such as to compel them to be constantly in the open air. This being so, there is only one way of accounting for the apparent anomaly, and that is, when the atmosphere is pure and bracing, sufficient vigour is given to the system to enable it to make a sufficiency of good blood out of food which in a vitiated and confined air would scarcely support life, and would inevitably lead to the foundation of scrofula or pulmonary Consumption.

This part of the subject I regard as of high importance, being satisfied that when not entirely overlooked, which very generally happens, it is scarcely ever sufficiently considered. I have recently had under my observation a case which affords a striking illustration of the truth of this principle. A child about five years of age, on leaving the country, where he had resided some months, was as robust and hearty as a child could be; he was rosy, fat, and could eat and digest almost any thing. During his residence in a

remarkably airy and open part of the town he gradually lost his flesh and his appetite, and in the course of about two months he became thin in his body, attenuated in his face, and, in fact, in that short time he was changed from a healthy child to an exceedingly delicate one, notwithstanding his enjoying every description of medical aid, and living on the most nutritious food. On returning to the country, he as rapidly improved as in town he had retrograded. The same change occurred when he was again brought back to town, and the same improvement took place when he was again sent into the country. So marked was the alteration in this case, that there can be no doubt that if kept permanently in town he would have been either scrofulous or consumptive, by reason of the London air not enabling him to make blood enough to support the necessities of his growing frame. In town he had more constant attention, food of a more nutritious character, than when in the country, and quite as much out-door exercise in one place as in the other; and therefore it is obvious that his altered condition could arise only

from his system being unable to turn his food into blood while residing in the town air. Although adults do not show an alteration of this kind so readily as children, it is nevertheless certain that they are affected by the same influences which act so perniciously on younger persons. And whenever it is important, as it always is in Consumption, to bring up the system to its highest blood-producing point, the purity of the atmosphere is a subject deserving the most serious consideration.

Again, the peculiar idiosyncrasy of the individual in regard to the atmosphere is one which should in every case be fully regarded. For example, a keen mountain air, which enables many persons to make blood rapidly, is too bleak for others, who do better in an atmosphere that is less pure. Indeed, many cases have come under my observation of persons who make blood quicker, and thereby enjoy more robust health, when residing in close parts of London than when living in the open country; and this, too, sometimes happens in individuals who have been reared far remote from any town. Such persons

breathe comfortably and enjoy good health in cloudy London; and when residing in the country, their respiration is laborious, and their system suffers proportionately. Therefore it is right to ascertain, not only that the air of a place is pure, it must also be considered whether there is any idiosyncrasy of constitution inimical to such atmosphere, before we recommend a residence for a consumptive invalid.

Change of air is of so much benefit, that I am satisfied it is attended with advantage for an invalid to change his residence occasionally, for a short time, even when he removes to a less pure atmosphere, and to one which does not suit him so well as the air in which he has been living. The same principle applies also to change of diet. It is well for an invalid who has been living according to book, as it were, for a long time, to change his kind of diet now and then, even when in so doing he takes a description of food which is not so digestible as that to which he has been accustomed. In both cases the change is beneficial, and acts as a kind of fillip to the system, which loses its tone if kept in one

uninterruptedly monotonous condition. This may appear paradoxical; but in practice it will be found to be so. It is undeniable that it is proper occasionally to change a medicine which a patient has been taking for some time, although it may have agreed with him very well. Substituting some other medicine for a little while, and then returning to the original prescription, is well known to benefit a patient more than an uninterrupted course of one medicine, however well fitted that may be for the nature of the complaint. The advantage, in my opinion, is experienced when the patient returns to the original medicine; and so is it with the food, and so also with the atmosphere.

When the atmosphere is damp without rain, as much water is taken into the lungs during respiration, as when there is a fall of rain. Many consumptive invalids have suffered from not being aware of this circumstance; for, perceiving there was an absence of rain, they have ventured to walk out during a time when the air was saturated with moisture, and serious illnesses have resulted from this inspiration of damp atmosphere

into their lungs. In this climate it is at all times necessary to be on the alert against the inspiration of cold air surcharged with water; for, as it is one of the main causes of Consumption, so is it most particularly to be avoided during the treatment. It is less hurtful for an invalid to inhale cold than damp air; for when the atmosphere is cold, a person by taking good sharp exercise warms the whole of his body, and thence it happens that the cold air, in passing through the mouth, throat, and windpipe, actually becomes warmed before it enters the lungs; whereas the same quantity of water remains in the air when it enters the lungs as on its entrance into the mouth, and therefore it is most important that all persons with a tendency to Consumption should avoid as much as possible the respiration of damp air.

When the uvula is elongated, it often occasions some of the symptoms of tubercular Consumption; for the point of it first touching one side of the throat, and then the other, produces a constant cough, which no medicines nor medical appliances can cure; and the cough, from its permanency, is so ex-

hausting, that after a time a good deal of emaciation takes place. It is a rule with me always to notice whether the uvula is longer than natural, in every case of permanent cough which comes before me; and when I find that it is so, there is only one thing to be done, and that is to remove it, which operation may be performed without any difficulty: and it is curious to add, that the loss of it is never missed; persons speaking, breathing, and singing as well without as with the uvula. While on this subject, it is right to mention, that there may be an elongated uvula and confirmed Consumption as well; and in that case the permanent cough may proceed from disease of the lungs, and not from irritation of the uvula.

Diseases of the uvula have not received an attention commensurate with their importance. When the uvula becomes elongated, and at the same time dropsical, it is attended with much danger; for the patient, in taking a long breath, may unfortunately draw his uvula into the top of the air-passage, and should he do so, he is at once suffocated; for the dropsical uvula being in fact a long bag

filled with water, closes the passage and prevents the air entering the lungs, and no effort of the patient in coughing is able to dislodge it. I feel satisfied that many cases of sudden death are caused in this way. My attention was first directed to this point some years since, when I was at Chatham. The case was this: a soldier of the 27th regiment, while in hospital for catarrh and inflamed throat, suddenly jumped upright in his bed in the middle of the night, then fell backwards, and before any medical officer could see him he was dead. On examining the body, it was found that his uvula, elongated and dropsical, was firmly impacted into the top of the air-passage, thus effectually closing it; and I entertain no doubt that many other persons have died from the same cause.

It is of the utmost importance, in the course of the successful treatment of this disease, to keep the stomach and liver in healthy action. When the stomach is distended with wind, which very frequently happens during the diseases of that organ, it encroaches on the space which belongs to the lungs, and thus increases greatly the difficul-

ties attending respiration. The same thing occurs when there is congestion of the liver; with this addition, that its enlargement being solid, it offers a greater obstruction to the free action of the lungs. The state of the liver is even of more consequence to the well-being of young than of older persons. Whenever the liver is torpid, which it is very prone to be, unless a sufficiency of vigorous out-door exercise is constantly taken, the whole of the system sympathises with it. As every drop of blood in the body is formed by the digestive apparatus, of which the stomach and liver are the most important members, it is obvious that we must keep them in vigorous healthy action when we are endeavouring to increase the quantity of the blood and to improve its quality.

The prevention and cure of the disease being dependent on the system making a sufficiency of blood, the state of the stomach necessarily becomes an object of the highest importance, as all the blood is made by it. When the stomach is incapable of a thorough digestion, the food, instead of being turned into blood, acts as an encumbrance, and be-

comes a nucleus of disease. A person's individuality is in nothing so prominently characterised as in the powers of digestion, some being able to turn almost every kind of food into blood, while others can digest only comparatively few articles of diet; and this personal peculiarity needs the most attentive consideration. The diet should be plain and blood-making; such, for instance, as hot roast and boiled mutton, with good bread, and sufficient stimulus—but no more—of wine or beer to enable the stomach to digest the food. The object being to make blood with as little waste as possible of the strength of the stomach, useless things,—and hurtful, therefore, because useless,—such as pastry, &c. should be carefully avoided. How many raspberry-puffs, or how many turnips, must a person digest to make as much good red blood as one mutton-chop will give him?

When the blood-producing power is at a low ebb, it is important that the meals should be taken at exactly-recurring periods. Careful observations of the phenomena of the human economy show us that there is a great disposition in all the functions to pe-

riodicity; and therefore, when the powers of digestion are weak, we should call upon the stomach to act at precisely the same hours on each day. The food of soldiers, sailors, and prisoners makes more blood, taken as it is always at exactly the same periods of the day, than if their meals were irregularly timed. Too much stress cannot be laid on this point; for the formation of a sufficiency of good blood is the pivot of the successful treatment of Consumption.

In this disease such an amount of sleep as may be needed by the patient's individual habit should, in every stage, be granted. There is no restorative known to our art so bracing to an over-fatigued state of the body as sweet refreshing sleep, and particularly after the frame has been shattered by a violent coughing of long duration. Should the patient have every other prerequisite for recovery, his case will end badly if he is unable to procure good sleep. With children of a tuberculous tendency, this point is worthy of constant attention. The desire which many parents have of making their children active, induces them to deny proportionate rest to

their growing frames; and they disturb the poor weakly darlings out of that sleep which would be of the utmost service to them. This is most pernicious. Children should go to bed early, and their sleep should not be interrupted. Whenever a weakly person, of whatever age, is sleeping quietly and soundly with easy respiration, his rest should not be broken; for sleep is the tonic of nature: it relieves exhaustion, strengthens the nerves, and enables the frame to sustain fresh exertion.

Sleep is the repose of nature. Sleep freshens and invigorates the functions of the body, and enlivens the operations of the mind. So necessary is sleep to the animal economy, that there can be no life without it. In proportion as sleep is sound and unbroken, so is the health firmly established; while no single symptom is so decisive of the presence of disease as troublous disturbed sleep. In no one act is the dominion of nature over us more clearly manifested than in sleep, in which all the artificial distinctions of rank are lost in the one indispensable necessity for repose. During healthy sleep all men are equal. Those, indeed, whose lots are the

more severe in their wakeful hours—those whose inheritance is severe bodily toil and hard suffering—are in some sort repaid by the sweet forgetfulness of sound sleep for their striving labours in the day.

All created nature is up and doing in the day-time, while rest is taken at night. The busy hum of the animated world is hushed into repose during the placid quietude of night. The sprightly warblings of the airy choristers, the lowing of the kine reverberant over the fertile plain, the busy murmurings of the countless myriads of the created world, are stilled by the advance of night, when all nature reposes and is at rest. Not even do the flowers—those handmaidens of purity and innocence—open their unconscious beauties to the mighty obscurity of night; they yield up their fragrant odours to the rays of the rising or the noon-day sun, and close their peeping graces at the dim approach of evening. As night comes on, the restless wish for exertion is succeeded by an unconquerable all-pervading desire for repose. All nature proves that night is the time proper for rest. The incongruities of a highly arti-

ficial state of existence may turn day into night; but the consequences will neither be light nor easily removed.

Sleep is indispensable to the life of all animals: some, however, require more than others. Man, whose mind is active and always in operation, is less able to bear any infringement of his regular rest than many of the lower animals, whose instinct is merely passive. In addition to the greater complication of his organic formation, which would alone require a more unbroken regularity in the periods of repose, the operations of his ever-active mind wear out and exhaust his powers even more than the exertions of his body. When the mind and body are both active, regular periodical sleep is more imperatively needed than when the physical organisation only is busily occupied. So that, however necessary regularly-recurring sleep may be to the lower animals, it is of far more importance to man.

The quality of sleep is exceedingly various. In firm robust health it is sound, uninterrupted, and refreshing; while during disease it is either heavy, leaden, or disturbed by

repeated starts. There is a close and uninterrupted sympathy between the stomach and the quality of sleep. An indulgence of the appetite in consuming an indigestible supper is sufficient with very many persons to produce sleep of the most disagreeable description—frightful dreams and hideous visions startling them throughout the gloomy night, and making them long for the setting-in of daylight to dispel the horrible creations of their disordered imaginations.

When sleep is unquiet and disturbed, so far from strengthening the frame, it would positively appear to weaken it. The man who has passed a night in the enjoyment of quiet sound sleep rises in the morning with invigorated frame and elastic spirits; while he who has tumbled and tossed himself in every conceivable direction drags himself out of his bed at the first dawn of day, tired and worried by the vexations of the night. It is easy to perceive, at a glance, in the morning, whether a person has rested well during the preceding night. The man who has slept well has a pleasing, healthy, contented look; while he whose sleep has been confused and

disturbed appears worn out, discontented, melancholy: the one is in high spirits, the other is evidently out of sorts. The man who has had a good sound night's rest eats a hearty breakfast, and sets about his daily occupations with a cheerful mind; but he who has passed a bad night loathes the very sight of food, and it is only by a great effort he can manage to begin his tiresome routine of duty. But not only is the effect of perturbed sleep so clearly apparent in the morning, it is evident throughout the entire day; for it creates a sourness of disposition, and an unconquerable drowsiness, which does not go off until nature is allowed to remedy the evil by throwing her mantle of quiet sweet sleep over the jarred system.

When disturbed sleep has been caused by an indigestible supper, it has a great tendency to reproduce itself. After a night of frightful dreams and vexatious startings, the system is so worn out, that the stomach, having lost its tone, is nauseated at the sight of food until quite the latter part of the day, when the appetite returns with increased power, owing to long abstinence; whence it follows,

that a hearty meal is consumed at the worst possible period of the day. And when the frame is jaded by the absence of periodical repose, and a full meal is eaten late in the day, there will almost certainly be experienced an irresistible desire for sleep immediately after. If this should not, or cannot, be resisted, a night of restless inquietude will be sure to follow. And the oftener this happens, the more frequently it is likely to happen again; so that every time of its recurrence fastens it on the habit of the constitution.

Sleep being so powerful a means of preserving the body in health, it cannot but be exceedingly interesting to consider under what circumstances sweet refreshing sleep takes place, and how we may avoid the annoyance of being weakened by passing whole nights of inquietude and restlessness. As sleep is one of the most efficacious agents in keeping every function of the system in a healthy state, so does the healthy performance of every function possess a potent influence on the quality of sleep; and thus the healthiness of one action has a direct tendency to produce the healthiness of every other;

whereas the disease of one portion of the body is always disposed to spread to some other. All parts of the body sympathise with one another. There never can exist any very serious disease in any portion of the frame, without its affecting more or less every division of the system. Sleep, the repose of nature, is especially liable to be affected by the derangement, however temporary, of any function: a slight cold, which is scarcely felt, is sufficient to produce the most disturbed sleep. Cleanliness, exercise, and a regular system of dieting, have great power in causing sound refreshing sleep, and thereby increasing the blood-producing power of the system.

In the course of practice, it frequently occurs to me to have occasion to direct the attention of the friends of consumptive patients to the improper positions which their beds occupy. I often find them so placed as to be in the direct line of draught of cold air from either windows or doors, and sometimes from both, to the fire-place. A little reflection readily rectifies this serious mistake. It is right for fresh air to enter the room; but the

position of the bed must be such as to prevent the patient in it from being subjected to a rush of cold air blowing over him. And when the bed cannot be moved, it is still easy enough in every case to prevent an injurious draught from either window or door by such means as will suggest themselves to the mind of every one.

Of all the means in use to produce counter-irritation on the chest, I have the greatest liking for mustard-poultices. A mustard-poultice never troubles a person after it is removed; whereas a blister, especially with weakly people, is frequently a long time before it is healed; and until the blistered surface is entirely skinned over, it is always troublesome, and sometimes causes so much local irritation as injuriously to affect the system. A mustard-poultice is very manageable, can never do harm, and always does good when there is pain or any kind of irritation in the chest.

When there is reason to apprehend congestion of any portion of the lungs, dry cupping should be adopted without delay, as it affords the greatest relief to the respiratory

function, without lessening the quantity of blood in the body. By a judicious application of the dry cupping-glasses, first to one part of the chest, and then to another, that most beneficial plan, traction, being also adopted, the blood congested in the lungs is brought to the surface of the skin at once, and with immediate benefit, to the comfort of the patient.

In my practice, I find that when traction is rightly used, at the right time, it is attended with very beneficial results. The proper manner of using traction is to exhaust the air under strongly-formed glasses, which are to be placed over the affected part; this brings the blood to the skin; and then they must be drawn along the body, considerable pressure being employed, or the external air will get under the glasses. In this way a good deal of counter-irritation is produced at once, to the great relief of the patient.

It is idle to talk of Consumption being cured by any one medicine. It is folly to say that this or that aperient is capable of curing Consumption, or that any acid or alkali can do so, or that blowing through a tube

after a particular fashion can achieve success: the thing is impossible. Again, it is most pernicious to talk, as some medical men do, of being able to cure Consumption by frequently-repeated general blood-lettings. When there is congestion, or inflammation of the lungs,—and this is sure to arise more than once during the progress of a protracted case of pulmonary Consumption,—temporary relief is afforded by bleeding from the arm. But although the pain is alleviated by the blood-letting, the system is weakened by the loss of blood; and therefore it is bad practice to adopt the remedy, because the same end can be attained by other means less depressing to the power of the constitution. Again, songs of triumph have been sung on the cures effected by a constant administration of emetics. It is distressing that such wild notions should have entered men's minds. Consumption can be cured only by using the right remedy at the right time; and it frequently occurs, that every description of medicine has to be employed at different times, to meet the varying requirements of the case. There is no royal road to the cure of Con-

sumption, and it is idle to talk as if there were.

I have a great opinion of the value of cod-liver oil in pulmonary Consumption. I have witnessed extraordinary results from it, when the system has been in a fit state for its exhibition. When given internally, the dose at first should be very minute, and increased but gradually, or the stomach will reject it. When there is a disposition to nausea, hydrocyanic acid, or creosote, should be combined with it. In my opinion, it is better to use it as an embrocation to the chest than as an internal medicine; and in that case it should be rubbed in with long-continued friction. This plan is beneficial during irritation of the organs of the chest, and is also far less disagreeable to the patient than taking it into the stomach.

Any one may make cod-liver oil, by cutting up into very small pieces the size of mince-meat the liver of one cod-fish, which should be placed in a saucepan containing two quarts of cold water. The saucepan, covered with its lid, should be put over a slow fire until the water boils, and then it should simmer gently

for two hours; after which it should be set in the cool for a few minutes, when the oil which will be found floating on the top may be removed with a spoon, and should be filtered through blotting-paper by the aid of a funnel. Cod-liver oil has a great power in increasing the strength of the lungs, and so also has creosote, which may be exhibited either in substance or vapour.

So long ago as the time of Bishop Berkeley, the value of tar in diseases of the chest was known; for we read in the 5th page of his *Siris*, that he found tar-water succeed beyond his hopes in a consumptive cough, and, as appeared by expectorated pus, an ulcer in the lungs. Neither cod-liver oil nor creosote should be administered during any inflammatory action in the lungs; but when given at a proper time, they are attended with the best results.

Half a drachm of freshly-prepared charcoal,—that obtained from beech-wood, is, I think, the best,—taken in honey or treacle three times a day, is an admirable restorative for debilitated constitutions of the consumptive diathesis.

Physicians appear to have overlooked one great objection to the use of any description of inhaler. I allude to the effort necessary to draw up the vapour. This is trying and hurtful to persons with weak lungs, by reason of its compelling a forced action of organs in a state of debility, the inevitable result of which is the advent of irritation. I am satisfied that many persons, who have become worse from breathing medicated vapours through inhalers, would have been benefited by respiring the vapour of chlorine, creosote, or sedative medicament, provided the kind adopted were suitable to their states, and the vapours diffused throughout the atmosphere of a room. When used in this manner, the patient quietly and slowly walks into a medicated atmosphere, remains in it a few minutes, and then leaves. This is done without any pulling or drawing at an inhaler, and therefore without any extra exertion on the part of the lungs. Patients should breathe the atmosphere of a room moistened with the vapour of hot water when the external air is dry and keen, as during easterly and north-easterly winds; and the vapours of

chlorine and creosote should be respired, with the view of strengthening the lungs. Neither of the latter vapours should be breathed during any sort of inflammatory action. The vapour of chlorine may be obtained in two modes; one is by putting about a fourth of an ounce of the peroxyde (black) of manganese into a small china vessel, and pouring on it about two ounces of muriatic acid, and allowing them, when mixed together, to float in a vessel of tepid water. This will disengage a quantity of vapour about sufficient for a moderate-sized room. The second and more preferable method is to expose a quantity of chloride of lime to the atmosphere by loosely spreading it on a flat shallow plate, by which chlorine is disengaged more gradually than by the previous process. About three ounces of the chloride should be used. It often happens that benefit results from the inhalation of chorine, although at the time it may produce cough; and it is of great service when the breathing is oppressed. The furniture should be removed from an apartment in which chlorine vapour is disengaged in large quantities, as it has great bleaching

power. I am of opinion, that when properly timed, chlorine and creosote in vapour are very beneficial.

Doubtless the vapour of creosote is better than tar-vapour, because it is less irritating; creosote, in fact, being pure tar, that is, the tar of commerce freed from its impurities. The vapour of creosote is readily obtained by mixing creosote and water together in a large spoon, and holding it over the flame of a candle. An ordinary-sized room would require seven drops of creosote and half an ounce of water. Now and then the vapours of opium and hydrocyanic acid may be inhaled with the greatest advantage. Two ounces of the strobils of the hop, infused in a pint of hot water, frequently allays irritation in the lungs when inhaled.

Spasmodic difficulty of breathing is occasionally benefited by inhaling chloroform; it is, however, a remedy attended with a good deal of hazard, especially when there is any affection of the heart or brain, and should only be adopted when both those organs are known to be sound, and free even from any functional derangement. There is one method

of relieving this distressing symptom which is applicable to all cases, and which is of the greatest service. A piece of sponge, after being soaked in a saturated solution of nitrate of potash, should be thoroughly dried, and then ignited on a plate placed near the patient: it acts almost magically, affording instant relief.

THE END.

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