

A treatise on consumption; embracing an inquiry into the influence exerted upon it by journeys, voyages and change of climate. With directions for the comsumptive visiting the south of Europe. And remarks upon its climate. Adapted for general readers / By William Sweetser.

Contributors

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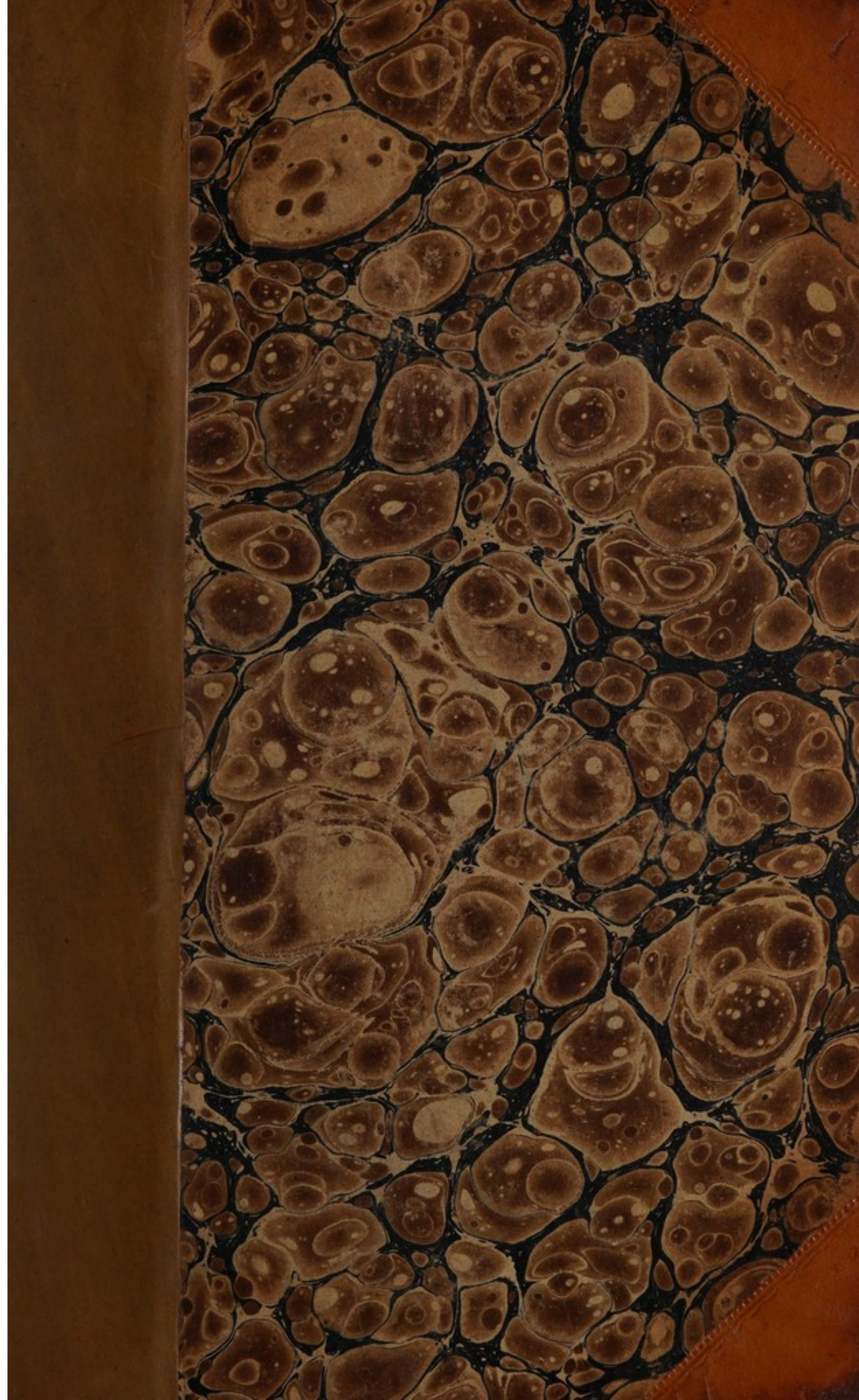
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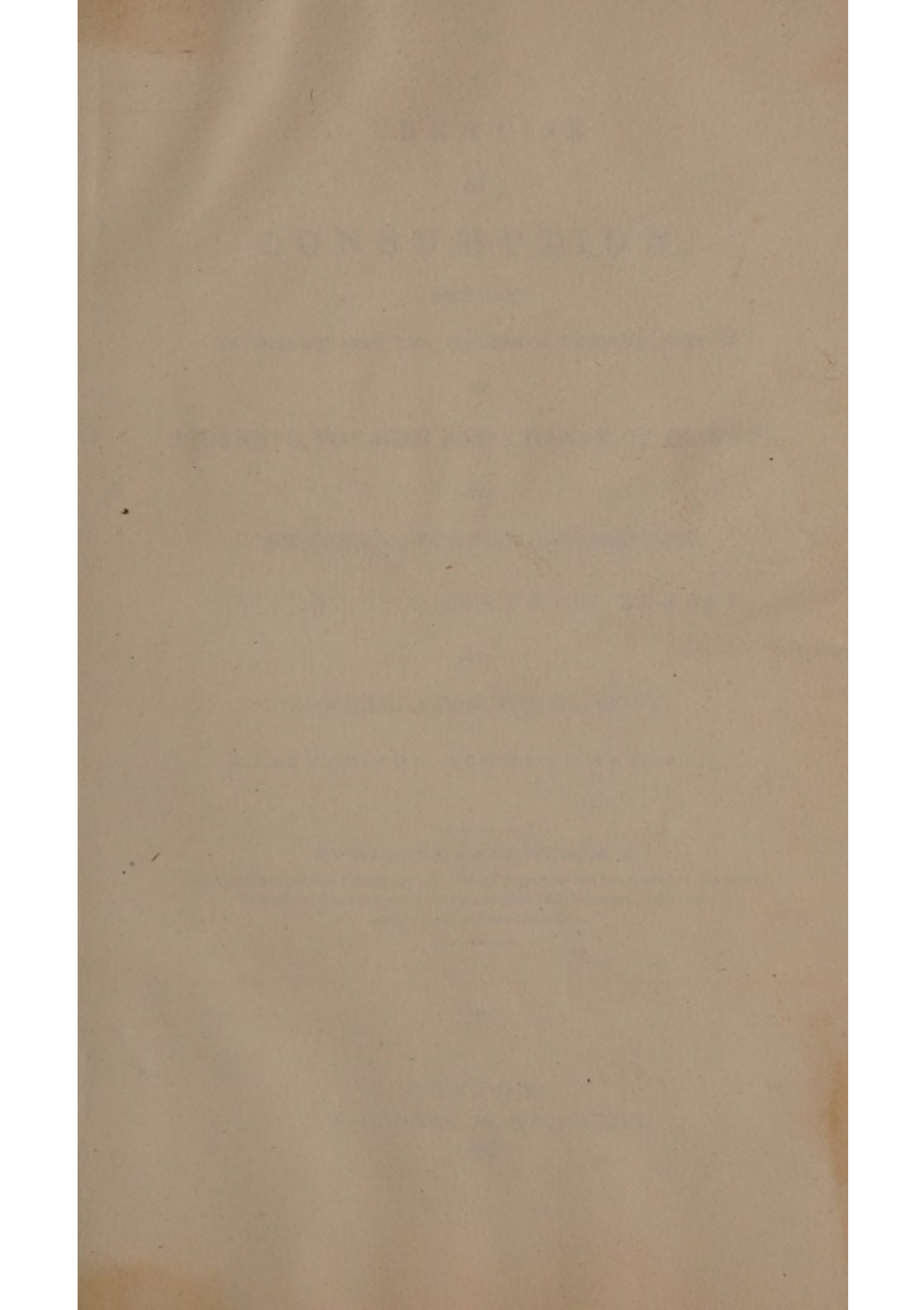
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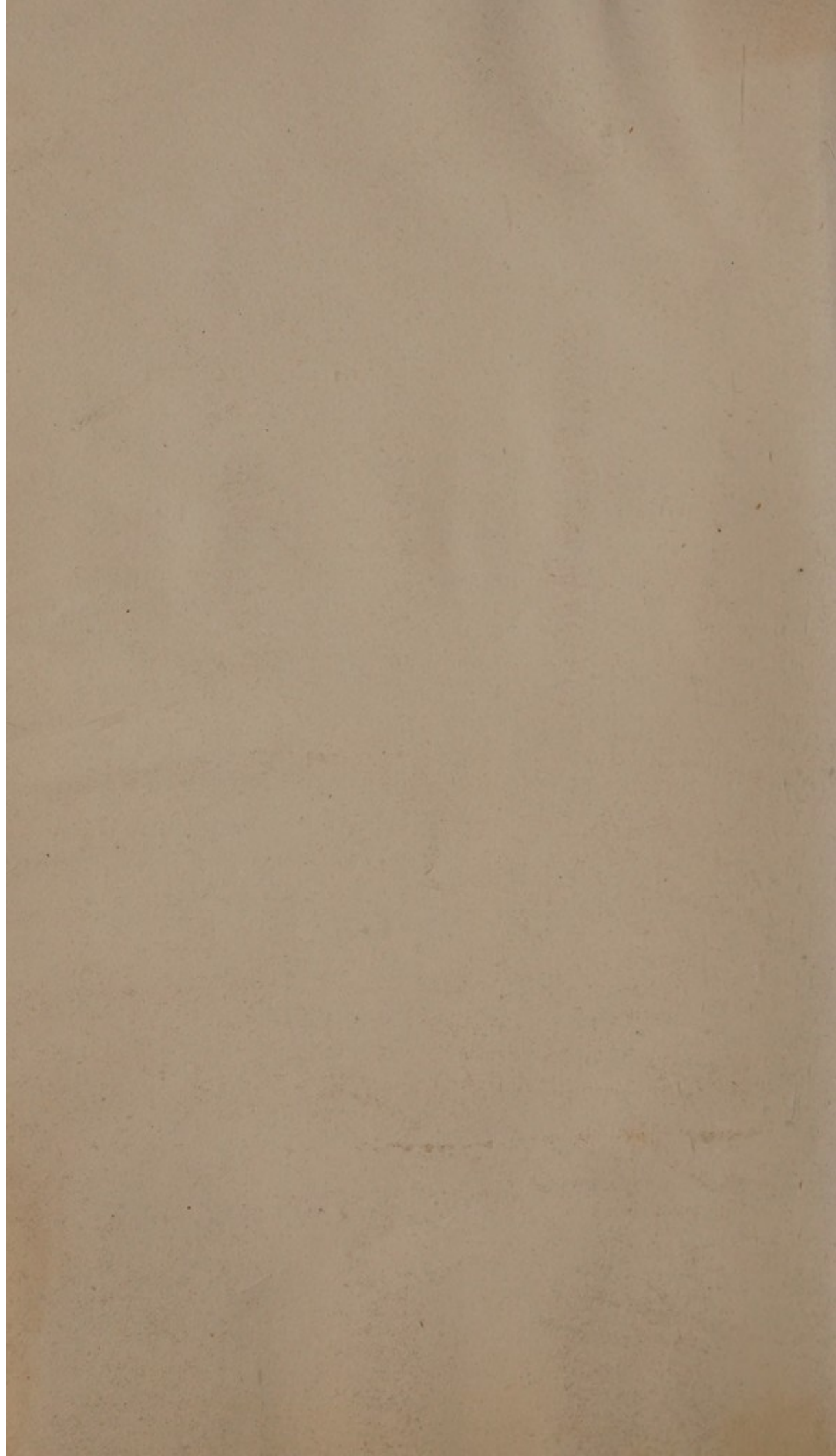


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T R E A T I S E
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(C O N S U M P T I O N ;)
E M B R A C I N G
AN INQUIRY INTO THE INFLUENCE EXERTED UPON IT
BY
JOURNEYS, VOYAGES AND CHANGE OF CLIMATE.
WITH
DIRECTIONS FOR THE CONSUMPTIVE
VISITING THE SOUTH OF EUROPE,
AND
REMARKS UPON ITS CLIMATE.
ADAPTED FOR GENERAL READERS.

BY WILLIAM SWEETSER, M. D.

Late Professor of the Theory and Practice of Physic in the University of Vermont ;
Fellow of the American Academy of Arts and Sciences, and of the
Massachusetts Medical Society.

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INTRODUCTION.

I AM not ignorant of the objections urged against the introduction of medical works to the public generally; and well know the hazard of countenancing the popular employment of active medicinal agents. The disposition among mankind is already too strong to tamper with our art, to trifle with the well-being of the animal constitution, and needs be repressed rather than encouraged. But a brief statement of the design and plan of the present volume, it is believed, will exempt it from the objections usually raised against works of this character.

In the first place, I shall give a brief and general history of consumption, and the climates in which it is most prevalent, its relative mortality, &c. Next, I shall introduce a general view of the lungs and their functions. Then the pathology or nature of the disease will be considered. The physical characters indicating a tendency to consumption. Its relative prevalence in the two sexes, and the

ages during which it is most frequent. Then a concise account will be given of hemoptysis, or bleeding from the lungs. Next, the causes of consumption, and their means of prevention, so far as known, will be examined. The history of the symptoms will next follow. Then an account of the diet and regimen best adapted to the premonitory and declared state of the malady. And lastly, I shall particularly consider the influence exercised by sea voyages and change of climate on the disease, and the period and circumstances in which these means will be likely to exert a beneficial agency, and shall give some necessary directions in regard to them.

I shall purposely omit the consideration of active medicines, which may be demanded in the confirmed state of the disease, being convinced that these can only be rightly and safely employed under the immediate direction of a medical attendant.

The special designs of the present work, are to make known the causes of, and best means of preventing the fatal malady under consideration; that those unfortunate individuals, especially, who bear in their physical organization its indications, or those who are their guardians in early life, may be apprised of their danger, and thus induced to a seasonable resort to those preventive measures

which have been found most effective in raising the energies of the system, and repressing its diseased tendencies. That the premonitory or threatening signs of the disease may also awaken an early solicitude, and incite to a timely application for medical aid. And to communicate some little information on the question relating to sea voyages and warm climates in consumption, which is often so momentous to the sick, and so embarrassing to friends.

Technical terms will be avoided, as far as possible, in the ensuing volume, so that it may readily be comprehended by all who feel an interest in its subject.

I am not aware that any work precisely of the character designated is now before the public; and whether such a one is wanted, and if so, whether the present will answer such want, the public must decide. I cannot, however, but indulge the hope that I may be able to impart some instruction to that numerous and unhappy class of individuals, who seem marked for the victims of consumption, which may tend either to prevent its development, repress it in the beginning of its course, or, if no more, smooth the destined passage to the grave.

TREATISE ON CONSUMPTION.

CHAPTER I.

GENERAL REMARKS ON THE DISEASE — THE SITUATIONS WHERE
IT IS MOST PREVALENT — ITS RELATIVE MORTALITY.

CONSUMPTION* may be traced back to the earliest periods of medical history. Hippocrates, commonly styled the father of medicine, and who lived more than four hundred years before the Christian era, knew it, and has well described its melancholy course; and though ages have rolled on with all their changes, this bane of human life still remains the same—has never abated in its fatality—never rested from its work of destruction. No condition, no period of human life, can claim immunity from its ravages. It respects not station, for it is a disease equally of the rich and the poor. It attacks childhood in its weakness, youth in its bloom and elasticity, manhood in its power, and age in its decrepitude.

It has a range over a wide extent of latitude; visiting people dwelling in different climes, and of

* Phthisis, Phthisis pulmonalis, Consumption and Pulmonary Consumption, when used in the following pages, will express one and the same disease.

the most dissimilar manners and habits of life. But it is especially active in what are denominated temperate climates—more even than under the intense cold of extreme northern latitudes. It should be borne in mind, however, that the degree of latitude which would be temperate in Europe, would be very cold in America. Paris enjoys a temperate climate, and yet it is two degrees farther north than Quebec.

The disease prevails, more or less, throughout Europe; and has its victims even under the bright skies of Italy, and of the islands and southern borders of the Mediterranean. It exists in the island of Madeira, once so celebrated as a residence for the consumptive, as well as in other islands of the Atlantic; and even those between the tropics are not wholly exempt from it. Its ravages in the more northern part of America are but too familiar to my readers.

High northern latitudes, as already remarked, where the cold is intense and uniform for a large portion of the year, seem less favorable to the prevalence of consumption, than those which are more temperate. In Russia, for example, the relative proportion of deaths from it, is considerably less than in England or France, and the result of various inquiries has satisfied me that it prevails less in Lower Canada than in the Northern, or even Middle States. Laennec has asserted that its frequency diminishes among the inhabitants of high mountainous coun-

tries, particularly the Alps, whose winters are long and severe.

Several causes may be influential in giving this greater immunity from consumption to the dwellers in the severe climes of the north.

The character of both their soil and climate necessarily calls forth active and laborious habits of life, which increase all the physical energies, and consequently the ability to resist disease. The effect, too, of uniform and severe cold, especially when associated with bodily activity, is to elevate and strengthen the vital actions. It is the sudden and great vicissitudes of the winters and springs of temperate climates, against which the inhabitants cannot always be guarded, that are so harmful to the lungs, and in short to the whole economy. The animal body has within itself a power of adaptation to almost any atmospheric condition, if constant, or if the variations are so gradual as to allow time to rally its reacting principle.

In cold countries, moreover, every thing is ordered with special reference to the effectual protection against the severity of the climate. The little period of warmth and sunshine is passed mainly in preparation for the long and dreary winter which is to ensue. The inhabitants defend their bodies by thick clothing, and the furs of animals; and their houses are so constructed as most securely to shelter against the cold, and by means of stoves are constantly maintained at a high temperature, so that the amount of suffering endured, may really be no

more, and perhaps in many instances it is less, than among the people of more temperate climates, who guard themselves less cautiously against the occasional rigors of their uncertain winters.

The natives of cold latitudes—or such is in correspondence with my own observations—accustom themselves to warmer clothing, even in a like temperature, than those who dwell under milder skies. A Canadian will often be seen dressed in his winter clothing, his throat and breast protected by a large shawl, in a temperature in which an inhabitant of our Middle States—of New York or Philadelphia, for example—would hardly put on an additional garment, and the front of his chest would, very likely, be guarded only by a thin linen shirt.

Furthermore, the air during the cold of northern winters is drier, and consequently conducts off the animal heat less rapidly than the more moist winter atmosphere of temperate climes. It is also sharper and more exciting, and more certainly ensures reaction of the extreme vessels of the surface of the body. Every one knows how red the face and hands become, when exposed to a dry and keen winter air, and how rarely colds succeed to such exposure; and, on the contrary, how pale and chilled is the surface, under the influence of a cool and damp atmosphere, and how frequently colds and pulmonary affections are the consequence. We are driven, too, to more brisk action in a dry, sharp air, to excite the circulation and overcome the painful sense of cold on the surface, than when under

the depressing influence of a damp and chilly atmosphere, which seems to impel all the blood to the interior of the body. Who does not experience better health and spirits, and a stronger disposition to action, on a clear, cold December's day, than when acted upon by our chilling easterly winds of spring?

As society advances in refinement and luxury, the causes of consumption become multiplied, and the disease is consequently more prevalent than among people whose minds are more calm, and whose habits more primitive and simple.

Various computations have been made of the relative sum of mortality from consumption in various countries and climates of the earth. But on this subject we can only expect an approximation to accuracy. The science of medical statistics is far from being advanced in any country; and in our own, especially, it has been attended to but very little. Our bills of mortality not being ordinarily kept by those competent to the task, are apt to be loose and inaccurate, and the names of different diseases are frequently confounded with each other. Any data, therefore, from this source, are too uncertain for accurate philosophical deductions. It should be observed, too, that the term consumption is employed by many in a sense too vague and extended, being allowed to embrace, not only affections of the lungs very different in their nature, but sometimes even diseases of other parts, under which the individual gradually wastes away and dies; whereas —

as I shall soon show—it ought to be limited to one peculiar affection of the organs of respiration.

Dr Sydenham said that two thirds of those who died of chronic diseases, in Great Britain, fell victims to consumption. The estimates of Drs Heberden, Young and Woolcombe, show us that an average of about one in four of the deaths which happen in Great Britain, are from the disease I am describing. It is a curious fact that in Bristol there is the greatest relative amount of mortality from consumption—and among its native inhabitants—of any place yet compared with it; although this town is in the southern part of England, and is a great resort for consumptive individuals.

Laennec states that in Paris, and the great cities in the interior of France, the proportion of deaths from consumption is well known to be one in four or five.

In the United States of America, the ratio of deaths from the disease will of course vary according to latitude—being greatest in the Northern and Middle States. In Boston, the average of deaths by it, compared with other diseases, may be about one in from four to five. In New York, the proportion will probably vary but little from this. In Philadelphia, it may be about one in five. And as we advance south, hepatic diseases and fevers increase, and consumption gradually diminishes.

CHAPTER II.

GENERAL VIEW OF THE LUNGS AND THEIR FUNCTIONS.

As the disease under consideration has its location in the lungs, and as some of my readers may be unacquainted with human physiology, I trust it will not be deemed irrelevant if I introduce here a very general and concise account of these organs and their function.

Anatomical description.—The lungs or *lights*, in company with the heart and large blood-vessels, to which they form an important appendage, are inclosed in a distinct cavity, familiarly known as the thorax, or chest. It is formed by the sternum or breast-bone, the ribs and their muscles, the spine, and at the inferior part by a large flat muscle, called the diaphragm or midriff, which forms a sort of floor for the thoracic cavity, and separates it from that of the abdomen, immediately below, and which contains the stomach, liver, intestines, &c.—organs immediately subservient to the functions of digestion and assimilation. The great organs, therefore, of respiration and circulation, have no direct connexion with those of digestion, and the functions immediately associated with it.

There are two lungs, a right and a left, separated by a vertical, membranous partition, passing from

the sternum to the back-bone, and dividing the chest into two nearly equal cavities. The right lung is a little larger than the left, possessing three lobes, while the latter has but two.

The form of the lungs is conical, their base resting, as it were, on the diaphragm, and their apex in contact with the most elevated part of the thorax. They are remarkably light and spongy; their texture is extremely delicate; and so compressible are they that, though in their natural condition completely filling the chest, they are capable of being so reduced as to occupy only a space of two or three square inches.

They are composed essentially of elastic air-tubes, very delicate membranous air-cells, blood-vessels, and are externally invested by a strong, shining membrane, which is reflected from them over the interior of the thorax, forming for it a complete lining; it is called the pleura, and is the membrane which is inflamed in the disease termed pleurisy.

In the natural condition of the lungs, their external surface, or investing pleura, is in contact with, but does not adhere to, the pleura lining the thorax; yet, as slight inflammation readily occasions such adhesion, it very commonly exists to a greater or less extent; but unless extensive, does not seem materially to impede respiration.

I may describe the lungs as reared up in the following manner. An elastic air-tube, called the trachea or windpipe, opens into the superior portion of the throat—and consequently communicates

with the mouth and posterior part of the nostrils—by a curious mechanism, in which the voice is mostly formed, called the larynx. This tube passes down the neck, enters the chest, and then forks into two divisions called *bronchia* or *bronchi*, from a Greek word meaning the throat, one going to each lung. They then subdivide, and go on ramifying again and again, becoming smaller and smaller, and less and less elastic, until they ultimately terminate in the minute vesicles or air-cells to which I have before alluded. These air-cells, with the air-tubes conducting to them, may be viewed as the frame work of the lungs, and constitute the greater proportion of their substance. The cells, too, always containing more or less air, it is to them that these organs owe their light and spongy character.

The union of these little vesicles is effected through the medium of a fine membrane denominated cellular, which, though so abundant in many other structures of the body, is here very small in quantity. Every where upon these cells, minute vessels are ramifying, to carry to them blood to be acted upon by the vital air they are continually receiving, and to convey it back again in its course to the heart, after having undergone its mysterious aerial change.

It appears to have been a grand principle of nature in building up the beautiful and important organs of respiration, to provide that the greatest possible quantity of blood should be brought under the influence of the greatest possible amount of air.

The number of the air-cells exceeds all accurate calculation. They have been estimated in man at between one and two hundred millions, and as presenting a surface of fifteen hundred square feet. They exercise, too, as may readily be conceived, the most important agency in the breathing function, since it is during the passage of the blood over their delicate coats that the essential vital influence is wrought upon this fluid.

Physiology of the function of respiration.—The diaphragm, in its relaxed and natural state, ascends upward into the chest in the form of an arch. When respiration is to be effected, its centre, which is tendinous, is drawn down by the contraction of the flat muscle attached to, and encircling it, and the whole midriff is thus brought into the form of a plane, and the cavity of the thorax consequently becomes enlarged. The ribs, likewise, which form almost the entire walls of the chest, hanging in their natural state, obliquely to the spine, or from above downward, are elevated by the contraction of their muscles, augmenting still more the capacity of the thorax. The lungs, and air-tubes conducting to them, are but passive agents in the function. Bearing in mind now, that the air is an elastic fluid, ever tending to an equilibrium, and that more or less of it is always contained within the air-cells, it will easily be conceived that as the thoracic cavity enlarges, this residuary air must expand to avoid the vacuum which would otherwise take place between the exterior surface of the lungs and the in-

terior surface of the thorax ; and the next and necessary consequence is, that the denser air from without must rush into the mouth or nostrils, one or both, and through the windpipe into the lungs, to restore the balance between it and the rarefied air within. It is literally a mechanical action, on the principle of suction, and may be nearly imitated by closing the valve of the common bellows, and drawing air through its nose by enlarging its cavity.

Ordinary expiration is almost a passive act ; it is a restoration of the active agents of respiration to their natural or relaxed condition, and depends in a great measure on their physical properties, especially the elasticity of their cartilages. Hence it is the last act of the dying, and they are said to expire.

In placid breathing, as in healthy young children when at rest, there is but slight, if any motion of the ribs, the diaphragm alone acting. Hence we see how ordinary respiration may be maintained when the thorax is so confined by dress that all motion of the ribs must cease. If, however, under such restraint, extraordinary physical exertions, or strong moral emotions increase the demand for air, and consequently for extended and rapid motions of the ribs, a sense of suffocation is immediately experienced, and fainting and even death may ensue, unless free play is speedily given to the ribs, by taking away the mechanical obstruction which impedes their motions. Thus it is that we often loosen our garments when under the influence of severe

exercise or strong passion, and that persons afflicted with diseases of the heart or lungs, or any which much affect the respiration, suffer great distress from the influence of a tight dress, or any cause which restrains the thoracic motions.

From the increased ossific depositions in the advance of life, the ribs become less movable, which is probably one reason why old persons are apt to breathe with embarrassment on exercise.

It may be readily understood, too, how the habit of exercise, calling for increased motions of the ribs, may tend to maintain, and even augment their facility of action, and may thus add to the vigor of respiration, as well as of all the other important functions of the body.

Habitual tranquillity of respiration, with strong capabilities in reserve for extraordinary exertions, indicate, on a general principle, health and bodily vigor. Broad shoulders and a well developed chest have ever been associated with physical strength; and in all the masterpieces of sculpture, a large thorax and great muscular development are united. Wide shoulders and narrow hips constitute the *beau ideal* of the manly form, in which we admire the indications of strength; but in woman, whom we love for her delicacy, weakness, and dependence on our own power, the contrary conformation is witnessed, and is most pleasing to us.

The inferior animals, in like manner, display strength and activity in proportion to the relative size of their respiratory organs. Birds are endowed

with a remarkably extensive breathing apparatus, and their astonishing physical power is amply evinced by their rapid and long continued flights.

That light, elastic, invisible fluid, called the atmosphere, which encompasses our globe, is the essential agent by which the vital change is wrought in the blood during its passage through the lungs. It is composed of twenty or twenty-one parts or volumes of oxygen, and seventy-nine or eighty of azote or nitrogen; which relative proportion holds constant, whether the air analyzed be taken from the deep valley, or the lofty mountain—from the foul lazar-house, or the open fields of the country. Unhealthy or impure air, then, owes its character not, as was formerly imagined, to a deficiency of its oxygen, or a change of relation between its constituent elements, but to noxious effluvia or gases, which may be derived from various sources.

The atmosphere on the surface of the earth is, I believe, never found entirely pure—that is, comprising only oxygen and azote. It has always combined with it a minute though variable quantity of carbonic acid or fixed air; also watery vapor, varying in amount in different locations and under different circumstances. The *aroma* of plants and their flowers, and the numerous gases and volatile particles given off during respiration, and the decay of animal and vegetable substances, are in like manner often blended with it. Some of these are necessary, as a certain amount of water in solution; and those pleasing odors exhaled from many families

of the vegetable kingdom, beside the enjoyment they impart, may exercise a healthful influence on our constitutions. Others, however, as the subtile effluvia and gases arising from decomposing organized matter, are extremely pernicious to human life, and are probably a source of many of the maladies from which we suffer.

The air, too, differs in the interior and on the sea-coast, in towns and in the country. It is denser and contains more impurities in valleys than on hills. It is likewise unquestionably affected, though insensibly, by the character of the soil; which influence, however, can only be inferred from effects on the human constitution. The night air is less wholesome than that of the day.

The fact is well known that diseases are often materially benefitted by simple changes of air, independent too of any remarkable discrepance of temperature. Analytic chemistry, however, is not yet sufficiently advanced to acquaint us with those various modifications of the atmosphere which so essentially influence the human body, both in its healthy and morbid states.

The precise nature of the agency exercised by the air on the blood is not understood. The function of respiration appears to exist on the borders of chemistry and vitality, and is more or less influenced by the laws of each.

The air that is expired is discovered to have experienced a material alteration in its chemical composition. A portion of its oxygen has disap-

peared, its carbonic acid is increased, and the sum of its azote remains about the same. And by continuing to breathe the same air, nearly all the oxygen will vanish, the carbonic acid will be still further augmented, while the amount of nitrogen is but slightly altered.

It was long believed that oxygen was actually absorbed into the blood, and that by such union the vivifying powers of this fluid were renewed. This theory not being found tenable, another was substituted—viz. that the oxygen, instead of being retained in the blood, merely united with and carried off its impurities, thus restoring its necessary integrity. The deleterious agent acquired during the circulation, was supposed to be carbon; and the oxygen of the atmosphere having a strong affinity for this principle, was thought to combine with it chemically, forming the expired carbonic acid. Other theories have also been advanced on the subject, yet none satisfactorily account for all the phenomena of respiration.

The oxygen of the atmosphere is proved to be the essential principle through whose instrumentality the life-giving power of the blood is restored; and not unlikely, it may act by uniting with and conveying away something, which, if retained, would prove fatal to the animal economy. It is not improbable, moreover, that a portion of it may actually be absorbed; and some experiments have gone to show that a minute quantity of azote disappears during respiration.

Oxygen, though so essential to vital existence, is too stimulating to be breathed in its unmixed state, and would soon destroy life were it not, as in the atmosphere, largely diluted with nitrogen. No other combination of it, except what nature has prepared for us, is capable of supporting vitality for any considerable time.

It has been estimated that an adult will consume about forty-five thousand cubic inches of oxygen in a day; but it is plain the amount must be greatly influenced by circumstances, as diet, exercise, moral feelings, &c. The more ample the chest, and active the circulation, the larger will be the quantity consumed; and other things being equal, the greater will be the bodily vigor.

CHAPTER III.

BRIEF VIEW OF THE PATHOLOGY OF CONSUMPTION, OR THE DISEASED CHANGE WHICH TAKES PLACE IN THE LUNGS.

SINCE the publication of Laennec's philosophical work on the chest, in 1819, the term phthisis pulmonalis, or consumption, has been very properly restricted to a condition of the lungs in which there exist certain morbid productions, soon to be described, denominated *tubercles*. Previous to this period, a wider latitude was given to the disease, it being allowed to comprehend several affections

of the lungs, distinct in their nature, varying in their degree of fatality, and requiring different forms of management; the obvious tendency of which was to retard the philosophic knowledge of the complaint, and consequently lead to error, both in prediction and treatment.

An individual, for example, may be afflicted for months or years with a chronic cough and expectoration, ultimately, however, subsiding and leaving him in health. Or it may continue, with remissions perhaps, through life; the subject dying of some other disease. Or, lastly, it may result in emaciation, hectic fever, night sweats, with many other of the symptoms of consumption, and ultimately terminate in death, and yet not be this disease, but chronic inflammation of the mucous or lining membrane of the air-tubes, known by the various names of chronic bronchitis, chronic pulmonary catarrh, and cold on the lungs. The intemperate in the use of spirituous liquors, and old men, are often its subjects, though it is not confined to such. It is aggravated by cold, damp weather, by irritating substances inhaled into the lungs, and by all undue excitements. It not unfrequently yields, even when it has been of long duration, to the influence of sea voyages, journeys, and mild climates; and hence may constitute many of those cases reported as declared consumption, which have recovered under the use of such means. The most careful examination on the part of the physician is often demanded to distinguish it from genuine consumption, and the

diseases may in some instances be confounded even by the most experienced and judicious in our profession.

Tubercle, derived from the Latin word *tuberculum*, meaning a little excrescence, tumour or swelling, is used in the technical language of medicine to designate a peculiar morbid production of the following description. At first, or in the stage in which tubercles are usually first recognised—for some have described a prior stage—they are insulated, of a light yellowish color, opaque, friable, and resemble cheese in their appearance and consistence. They vary in size, the largest often surpassing that of a common chestnut, and Andral tells us they even approach the bulk of an ordinary orange—this, however, is certainly rare when they are single—whereas, the smallest which are discoverable may not exceed in size the head of a pin. Their form in the lungs is usually round or roundish, which Dr Carswell considers accidental, and owing to the equal opposition offered on all sides to their development. In this stage they are called *crude*, or *immature*.

Tubercles, when formed, commonly go on augmenting in size, more or less rapidly, according to varying influences, their consistence also diminishing, till they are converted into a fluid mass, resembling common pus, or unstrained whey, and sometimes stained with blood, or a black matter formed in the lungs. This is the stage of maturation, or softening. The fluid mass now soon finds

its way into the air-passages, and is discharged by expectoration, leaving an ulcerous excavation which may extend more or less rapidly, or remain nearly stationary for an indefinite time, continuing to pour out tuberculous matter, and in some rare instances what has been regarded a healing process may ensue; that is, the walls of the tubercle contract, leaving a whitish, puckered cicatrice. It is this softening of tuberculous matter that in common language is termed ulceration of the lungs.

It is probably a very rare circumstance that a single tubercle only exists in the lungs; in such a case the symptoms produced would be very slight. In ordinary cases, the tubercles are more or less numerous, forming groups, and as they grow in size, extend toward each other, and often become blended into one mass, and may discharge their matter into the air-passages by a common ulcerous opening. Hence may be explained those large ulcerous excavations which are often found in the lungs of persons who have died of consumption.

Tubercles may be more or less numerous, and advance with greater or less rapidity, rendering the case more severe, and swifter in its course. In some instances, the greater portion of both lungs is found apparently converted into tuberculous matter in different stages of its progress. And where the predisposition is strong, there is sometimes an actual infiltration of a cheesy or tuberculous matter into the cellular structure of the lungs. So little of the sound lungs is at times found remaining, that we

marvel how life could have been maintained under such abridgment of the breathing function. It proves, however, the astonishing power possessed by the animal constitution of adapting itself to circumstances when they are gradually induced.

Tubercles, with rare exceptions, are first developed at the superior, and usually posterior, part of the lungs. Hence, when they have extended throughout the organs, they will almost always be found larger and more advanced at their summit than at their base.

Laennec believed that tubercles, in the greater proportion of cases, appear first in the right lung. The observations, however, of Louis, and of most other eminent pathologists, go to show that the left lung is the more frequent seat of tubercles than the right.

Tubercles may remain in their crude or immature state from a few weeks to a number of years, before undergoing the process of maturation; or, at least, there is much reason for believing this, though it is not susceptible of positive demonstration. Many times the symptoms do not distinctly proclaim themselves until the stage of softening has commenced in one or more of the tubercles.

In many cases, as happens in common abscess, a cyst is formed to insulate the tuberculous matter from the sound portion of the lung, inclosing it, as it were, in a bag.

In some rare instances, a tubercle, instead of suppurating or softening, undergoes a cretaceous

transformation, or becomes a hard and gritty mass, containing an unusual quantity of phosphate of lime, and not unfrequently resembling dry putty. In this condition it may lie dormant, or produce but slight irritation, and hence this change has been regarded as one of nature's attempts at a cure, and in which she partially succeeds.

The eruption of tubercles is commonly consecutive, and the first is seldom so abundant as to prove fatal; hence may be explained the remissions, and even intermissions, so often noticed in the disease.

In the victims of consumption, tubercles are not usually confined to the lungs alone; but, there existing for the most part a general tuberculous disposition, they may be developed in any organ or structure of the body; and in proportion to the intenseness of the constitutional taint will generally be their diffusion throughout the system. Thus tubercles occur in the larynx, affecting the voice and deglutition; in the bowels, liver, kidneys, &c., and in some cases even in the brain and heart; and rarely, in some of the instruments of locomotion, as the muscles, &c.

These morbid productions are not peculiar to our own species. The monkey family, when removed from their native tropical climes to colder regions, and kept in an unnatural state of confinement, very frequently die tuberculous. In menageries, these animals are often afflicted with a cough, and not uncommonly die manifesting all the symptoms of

consumption, and their lungs, as well as various other organs, are found filled with tubercles.

They have been found, also, in other tropical animals dying in menageries—in the lion, for instance; and among birds, the parrot often becomes their victim. They happen, likewise, to many of our domestic animals, as the horse, ox, cow, sheep, hog, rabbit, and other of the mammalia. The dog is very rarely affected by them.

“All the milch cows in Paris, and no doubt elsewhere, become tuberculous after a certain period of confinement. I have been informed that for some time after the disease has commenced, the quantity of milk obtained is greater than before, and that their flesh is more esteemed by the unsuspecting epicure than that of the healthy animal. A circumstance of the same kind is mentioned by Aristotle, who observed tubercles in the pig, the ox, and the ass; in regard to strumous pigs, he says, that when the disease (*grandines*) exists in a slight degree, the flesh is sweeter.”*

Tubercles have also been found in our domestic birds, as the turkey and fowl. They have likewise been discovered in reptiles; and some recent observations have detected something resembling tuberculous matter even in insects.

M. Andral tells us that most of the animals in whom he has proved the existence of tubercles, are either those transported from a hot to a cold climate, where they are deprived of their liberty and exer-

*A Treatise on Pulmonary Consumption, by James Clark, M. D., p. 167.

cise, as in the instance of monkeys and parrots, or else confined in damp situations, without sun, and almost without air, as cows, pigs and house rabbits, or exposed to constant alternations of heat and cold, or to constrained and violent exercise, as is the case with the horse. We shall see, hereafter, that like circumstances tend to originate tubercles in the human subject.

CHAPTER IV.

PHYSICAL CHARACTERS INDICATING A PREDISPOSITION TO CONSUMPTION—RELATIVE PREVALENCE OF THE DISEASE IN THE TWO SEXES—PERIODS OF LIFE DURING WHICH IT IS MOST FREQUENT.

Physical signs.—It is a matter of common observation, that a tendency to consumption, or the development of tubercles in the lungs, is frequently associated with striking peculiarities of physical constitution. The same traits, likewise, indicate what we denominate a scrofulous or strumous habit. In truth, there appears to exist a close relationship between scrofula and tubercles, and not unlikely they are but a modification of one and the same morbid condition. Hence the terms scrofulous and tuberculous are not unfrequently employed to express an identical diseased tendency, and may often be so used in the present treatise.

But I will proceed to delineate these constitutional

marks, some of which have been noticed since the earliest days of medical science. A fair, delicate skin, often of a waxy whiteness and clearness, approaching to semi-transparency, and looking as though it had been blanched. A bright redness of the cheeks, more especially on their prominences, is not uncommonly displayed in such subjects, and contrasts strongly with the soft paleness in its vicinity. This red tint often appears as though it had been laid on with a brush. When absent it is very readily induced, as well as general flushing of the face, from the influence of trifling excitements, whether moral or physical; hence there may be observed frequent transitions of color, the countenance now being lighted up with a blooming red, which in a little while fades into a sickly whiteness. Such complexions are generally esteemed handsome, but to the experienced eye, it is a beauty fraught with the mournful associations of its transitory nature.

The upper lip of such individuals is apt to be tumid; their teeth are often large, of a pearly whiteness, and sometimes brittle, and very subject to decay. The eyes are light, retaining the peculiar blue tint of infancy, and their white has a dull pearly appearance. In some, the pupil of the eye seems enlarged. The hair is flaxen, fine and thin; the muscles and skin soft; the limbs round and smooth; the whole organization seeming as though but imperfectly evolved, many of the characters of childhood continuing to mark even adult age; or

the male assimilating to the delicacy of tissue and conformation of the female. There is but feeble energy of the circulation, particularly in the extreme vessels; and the blood even—from a deficiency in its fibrin and red globules—has been remarked to be thinner and more watery than natural.

The skin rarely executes well its functions. Sometimes it is unnaturally dry; at others, the perspiration is too abundant. Some are liable to partial sweats, especially of the extremities. The skin, mucous or lining membranes of the internal organs, and lymphatic glands, are very subject to become diseased, their affections usually being of a chronic character, and at times terminating in peculiar abscesses and ulcers, which are very tardy in healing, often remaining nearly stationary for weeks or even months. Such are called scrofulous abscesses and ulcers, and always indicate a tainted constitution. Soft swellings of the lymphatic glands about the neck are very common in early life, remaining for a long period, or in some instances, running on to suppuration. They are usually aggravated by cold, and relieved during the warm season.

To the physical signs mentioned, others are often added, as slender, and—owing perhaps to weakness or softness of the bones in early life,—not unfrequently, ill-shaped lower extremities. The chest, too, is, for the most part, relatively small. It may be wide, yet very thin, when measured from the sternum to the spine, so that broad shoulders,

though they commonly, still do not necessarily indicate a spacious thorax. Sometimes the chest looks as though it had been laterally compressed, and the breast bone thus projected forward like that of a bird. To such conformation the term *chicken breasted* is fitly applied.

The neck of such subjects is frequently long, the shoulder blades stand off from the body, and they are disposed to become round shouldered, or to allow the chest to settle or bend forward, hence often exhibiting a remarkable sinking in of the breast, and are termed hollow breasted.

Associated — as we might anticipate, — with this faulty conformation, and general frailness of structure, is a defect of energy in the different functions of the body. Digestion, circulation, &c. are feeble, and readily become disturbed. Severe exertions soon tire the muscles, and occasion shortness of breath, or panting.

Owing to feebleness of the vital, and consequently adjusting powers of the system, such persons do not bear well extremes either of heat or cold. Hence in hot weather they are apt to experience a lassitude of the muscles, and a consequent indisposition to active exertion; and in the cold seasons they often suffer much, particularly in the extremities, from defective power to create the requisite animal temperature. Their health on the whole, however, is better in the warm than in the cold seasons. Our damp and chilling easterly winds, and all sudden vicissitudes of weather, are extremely hurtful

to them, readily exciting catarrhal and other affections.

If we lay the ear upon the chest, and hearken to the respiration, we shall commonly find it to be noisy and rapid, when compared with that of a healthy individual of the same age and sex, and placed under like circumstances. Thus the respiration of the consumptive, even in adult life, will often continue *puerile*, as it is technically termed, or loud, sonorous and frequent, as it is remarked to be in children.

It is a very common belief that the unfortunate subjects of the constitution described, are apt to display, in union with amiable and placid tempers, an early acuteness, and brilliancy of intellect, and a general precocity, which is too frequently the sad harbinger of premature decay. Hence the lament so often heard, that the most lovely and promising of our race become the victims of consumption. Within the limits of my own experience I can recall to memory some of the purest and most interesting characters who have fallen early sacrifices to this destructive malady. Individuals whose hearts ever glowed with the warmest affections, whose feelings were keenly susceptible to every virtuous enjoyment, and whose whole moral nature was as beautiful as the delicate tissue with which it was united.

It surely does seem that the general delicacy of structure of such constitutions, is, in many instances, associated also with a delicacy of moral character; still, striking exceptions are by no means uncommon.

It should be had in mind, too, that we are disposed to regard as the purest and best, those who are taken from us in the early period of their career, when hope has raised high our expectations of their promised usefulness. And, moreover, that we are always prone to cherish the virtues of the dead, while we magnify the faults of the living. In the grave only, all jealousy, and envy, and hatred sleep.

This constitution may be original, or the result of what are deemed accidental agencies, among which may be mentioned, living — especially during the period of growth, — in low, cold, damp situations, deprived of the genial influence of the sun's rays. Under like circumstances, plants grow up pale, tender and watery, bearing but little resemblance in external form and complexion to similar ones reared in the open air and sunshine. Crowding together individuals in ill-ventilated places, as in manufactories ; poor and insufficient diet, and various other causes presently to be noted, which depress and waste the energies of life, or prevent the due development of the physical organization.

I have portrayed a combination of characters, moral and physical, more or less of which may exist, and with greater or less distinctness, in different scrofulous or tuberculous constitutions. I would not, however, that it should be inferred, that every one displaying the traits delineated, must inevitably perish of consumption, though, under favoring circumstances, such are always in great hazard. In

some, however, the consumptive taint is so strong, that they seem destined, in spite of all human means, to become the early victims of the disease.

Tubercles, however, though very often, are not exclusively associated with the characters mentioned. They are frequently developed in persons of quite an opposite temperament, viz. with black or brown hair, black eyes, and dark complexions, sometimes clear and handsome, but more usually sallow and swarthy. Some of the most melancholy instances of scrofula, and most fatal cases of consumption I have ever witnessed, have been in such individuals. The temper is apt to be more gloomy, dissatisfied and irritable, and the intellect less acute than in the other class of consumptive subjects.

Consumption, then—in our own country, and probably, also, in the northern parts of Europe—is most frequently associated with the first described constitution; quite common, and often very fatal in the second; and it will at times declare itself in the best apparent bodily formation, and to which no suspicion of it had been affixed. No constitution, no temperament can, therefore, claim entire exemption from its invasions. I have witnessed it, in a few instances, in persons with ample and well developed chests, and endowed with great bodily vigor and strength of wind. Dr Clark tells us, that several of the celebrated English pugilists have died tuberculous.

Relative prevalence of phthisis in males and females.
The reports of the Paris hospitals, which are on a

very extended scale, and made by the most scientific and accurate medical observers of France, unite in proving a greater relative mortality from consumption in females than among males. Louis' general inference from a large number of cases, carefully noted by himself, is, "*que le nombre des phthisiques chez les hommes, et chez les femmes était comme 70 est à 92.*"*

Dr Clark, in his work already quoted, has given a table drawn from the medico-statistical reports of different countries, showing a result more favorable to the females. But the Doctor himself considers this table to be quite imperfect, and admits that any inference from it can be viewed merely as an approximation to the truth. Our own reports are not sufficiently extended or perfect, to shed much additional light on the question.

The females of cold and variable climates are, also, the more frequent subjects of scrofula than the males. And that peculiar swelling of the throat called *goitre* or *bronchocele*, which has been thought to bear some kindred to scrofula, is more commonly witnessed in women than in men. It prevails in some districts of our own country, as on certain parts of the Connecticut river, and on the borders of some of our northern lakes; but is seen on a vastly more extended scale among the Alps, and other mountain ranges of Europe, as the Apennines, and Pyrenees. In some situations among the Alps, *goitre* is so common as to seem almost a local char-

* Recherches sur la Phthisie, p. 523.

acteristic. But wherever I have had opportunities of observing the affection I have remarked females to be its more frequent subjects.

Both the organization and habits of females have been supposed to afford reasons why they should be the more liable to consumption. Their native softness and delicacy of structure approximate them to that physical condition which I have described as so often united with a tendency to scrofula and tubercles. Males, as has already been said, who are predisposed to these affections, often resemble the female in many of their constitutional characters. This dainty organization, too, of the female economy, seems incompatible with that full energy of life which is needful to react against those vicissitudes of climate so operative in the generation of tubercles. The adjusting powers of the female constitution in relation to climate, I conceive, on a general principle, to be inferior to those of the male.

Females have also been thought to be more subjected to the influence of the exciting causes—those tending to develop the disease when the predisposition to it already exists,—than males. Their physical education in early life is but little regarded. They usually exercise less, are less exposed to the open air, and to those various other occasions and circumstances which tend to elicit bodily vigor, than our own sex. From the fashion of their dress, their bust is more exposed, and the necessary motions of their chest more impeded than

in males; and, perhaps, on a general principle, they clothe less warmly, especially their feet, than ourselves. These things are, at any rate, worthy the consideration of the female part of the community.

Periods of life during which consumption is most usually developed. Tubercles have been found in the lungs at almost every period of existence, from infancy to decrepitude. Laennec discovered them in the chest of a woman upwards of ninety-nine. Still, all ages are by no means equally obnoxious to them. Hippocrates thought consumption to be most frequent from eighteen to thirty-five, and the best modern observations go to confirm the accuracy of this ancient sage.

As females mature sooner, the disease is apt to be developed a little earlier in them than in males. Andral thinks that males are especially liable to pulmonary tubercles between the ages of twenty-one and twenty-eight, while females are more exposed to them before twenty. Laennec's observations led him to a like opinion with Hippocrates, viz. that tubercles are most frequently declared in the lungs between the periods of eighteen and thirty-five.

The following tables, showing the relative proportion of deaths from phthisis after the age of fifteen, are from Louis' work on this disease,* already quoted. The former is drawn from the observations of Louis himself, the latter from those

* p. 533.

of M. Bayle. They both unite in proving the most considerable number of deaths to happen between the ages of twenty and forty.

TABLE FIRST.

Age.	Number of deaths.	Age.	Number of deaths.
From 15 to 20,	11	From 40 to 50,	23
" 20 to 30,	39	" 50 to 60,	12
" 30 to 40,	33	" 60 to 70,	5

TABLE SECOND.

Age.	Number of deaths.	Age.	Number of deaths.
From 15 to 20,	10	From 40 to 50,	21
" 20 to 30,	23	" 50 to 60,	15
" 30 to 40,	23	" 60 to 70,	8

Dr Clark has given two tables collected from observations made in different cities and countries, whose general average goes to show that the greatest number of deaths from consumption, happen between the ages of twenty and thirty; next in proportion, between thirty and forty, and then between forty and fifty. He observes that "This remarkable agreement of all the places, warrants the conclusion, that after the fifteenth year of age, fully one half the deaths from consumption occur between the twentieth and fortieth years, and that the mortality is about its maximum at thirty, and from that time gradually diminishes."*

Sometimes boys and girls at about the age of puberty grow up with astonishing rapidity, so much so that the whole system becomes debilitated in consequence of the great draft made upon its powers

* On Pulmonary Consumption, p. 137.

to support this sudden increase of the body. Under such circumstances, if a predisposition to consumption exists, it will be occasionally developed.

Girls at this period—I mean when ripening into puberty—if predisposed to tubercles, are in greater hazard than boys, owing to the difficulty which their feeble energies often experience in establishing the function peculiar to the female constitution, which is to be set up at this time. Thus their health may become deranged, a train of unpleasant symptoms, generalized under the term *chlorosis* or *green-sickness*, ensue, and, without the strictest caution, consumption be the melancholy result.

CHAPTER V.

HEMOPTYSIS, OR PULMONARY HEMORRHAGE.

As a bleeding from the lungs is usually associated with the disease under consideration, and not unfrequently exists among its earliest indications, prior to describing the symptoms of consumption, I will give a concise account of this species of hemorrhage, so alarming to the minds of most persons.

Predisposition.—In some constitutions there seems to exist a general predisposition to hemorrhage, its seat being determined by age and the influence of what we denominate occasional causes, as local irritations, &c. In some individuals, such a tendency is indicated by the external appearance.

Thus the red blood appears to penetrate further than is usual into the fine or capillary vessels of the skin; and so minutely injected are they at times, as to give to the parts where they particularly abound, as the face, for example, the semblance of being painted. In some instances, I have noted the lips and cheeks to look almost as though smeared with blood, or as though this fluid was just ready to ooze from its minute vessels. Such a complexion, however, is not necessarily associated with the tendency to hemorrhage; yet, as stated, will occasionally be witnessed.

Again, the disposition to hemorrhage may exist only in the lungs, or be wholly local.

Symptoms.—The signs soon preceding the flow of blood, vary in different instances. They may be distinct and strongly marked, or hardly appreciable. Among the threatening symptoms may be mentioned, some sense of weight, oppression and anxiety about the chest, with more or less embarrassment of breathing, especially during exercise, and a consequent unusual solicitude for fresh air. I have in mind one individual who remembered no other sign premonitory to an attack of pulmonary hemorrhage, than that he was obliged, contrary to his usual custom, to sleep with a window open, else his breathing became distressed, and his slumbers unquiet.

A sensation of heat under the breast bone, lassitude, shivering, constriction and paleness of the skin, coldness of the extremities, and perhaps

feebleness of the pulse, are sometimes the hasty forerunners of a discharge of blood from the lungs. Or a feverish state may precede it, as increased heat and dryness of the surface, pain in the back, loins, &c.; some degree of hardness in the pulse, and, in short, the signs of inflammation or plethora of the lungs, or lining membrane of the air-tubes, the crisis of which, or the mode adopted by nature for relief, is a hemorrhage.

Occasionally, the bleeding happens without any sensible premonition; consequent, perhaps, to some little excess of stimulation, undue exposure to cold or heat, or other occasional causes to be noticed; and in rare instances, without being referrible to any exciting cause. Still, I believe that careful observation will show the majority of cases to be ushered in by some febrile excitement, and signs of preternatural determination of blood to the lungs.

Immediately anterior to the hemorrhage, there is ordinarily experienced a slight irritation or sense of tickling in the throat, occasioning a hawking, combined, perhaps, with a more or less distinct cough, by which, blood, frothy, or filled with air-bubbles, and of a bright arterial or vermilion color, is ejected. It is rarely dark colored or clotted, save in some instances toward the end of the attack.

The quantity emitted varies materially in different cases, commonly from several mouthfuls to a tea-cupful, yet may occasionally much exceed even this latter quantity. Owing, however, to its bright color, and admixture with other expectorated fluids

and saliva, and the alarm of the moment, its amount is very apt to be exaggerated.

In simple bleeding from the air-passages, where the lungs are unharmed, and the system not reduced by other diseases, the discharge is rarely so abundant as to excite immediate apprehensions. Those profuse and terrifying discharges which sometimes occur, are, for the most part, associated with disease of the lungs, or heart, or with extreme prostration of the powers of life from other maladies. There is, also, another species of hemorrhage from the lungs, more deep seated—the blood being effused into the air-cells—more profuse, and far more dangerous, termed by Laennec and other modern French writers, *apoplexié pulmonaire*, or pulmonary apoplexy, from the close resemblance between the effused blood here found in the lungs, and that which is often seen in the brain of those who have died of apoplexy.

In some cases of hemoptysis, pure blood is not thrown off at first, but the common mucus of the air-passages, more or less tinged with it. This bloody mucus may be expectorated for a longer or shorter period, and then cease, or be followed by a considerable gush of pure blood.

Sometimes the hemorrhage will continue in a slight degree for several days; again, it immediately relieves the loaded vessels, and ceases. It may continue to recur at more or less distant intervals, or no return of it be ever again experienced.

The effect on the system is sometimes quite trifling, the individual being almost at once able to

attend to his ordinary avocations. At others, fainting ensues, and a general prostration of the bodily powers, quite disproportioned to the amount of blood lost.

Hemoptysis will often afford sudden relief to embarrassments in the lungs, as a bleeding from the nose frequently cures headach and oppression of the brain.

Causes.—Most of the causes of pulmonary hemorrhage are of a similar nature to those which tend to originate consumption, and which are hereafter to be described. Among them may be enumerated cold and variable conditions of the atmosphere, as during our winters and the early part of spring. Exposure to cold and dry winds. Diminution of atmospheric pressure, as on the ascent of very lofty mountains. Extraordinary exertions of the function of respiration, as in playing on wind instruments, and in long continued and loud speaking. Moliere, we are told, died of pulmonary hemorrhage immediately after the fourth performance of his *Malade Imaginaire*. Irritating substances inhaled into the lungs. Intemperance in the use of vinous or spirituous liquors, or whatever occasions a plethoric state of the system. Undue physical exertions; thus I have known it come on immediately after long and very rapid walking. Sudden suppression of habitual discharges, or cutaneous eruptions. Strong moral affections. Broussais relates an instance where a lady sitting on the grass, felt a living frog fall into her bosom from the claws

of a bird of prey, and was instantly seized with so copious an hemoptysis that she survived but a few minutes. It is a familiar fact that in some constitutions bleeding from the nose is liable to ensue under the sudden influence of violent passions.

Relative prevalence in the two sexes.—The observations of the French writers go to prove that this affection is more common among females than males. Louis tells us in the proportion of three to two. Hemorrhage from the stomach, or vomiting of blood, has appeared to me to be more frequent in women than in men; but I much question whether the observations of our medical men in relation to bleeding from the lungs would lead to like results with those of the French physicians.

Ages in which it most commonly occurs.—Hemoptysis is not usual before puberty. In New England I think the greater number of instances of it will be found to occur between the ages of eighteen and thirty-five or forty. Still it may happen even in old age. The limited number of cases observed by Louis in reference to this question, go to show that as many males are affected with it above, as under forty years of age.

Pathology, or nature of the disease.—The commonly received opinion is, that hemorrhage from the lungs is owing to the rupture of a blood-vessel, and which is supposed to heal with very great difficulty. Such may sometimes be the case, as in the last stages of consumption, where there is great destruction of the organization of the lungs; yet in ordinary in-

stances, the blood is effused from the pores of the mucous or lining membrane of the air-passages, independent of any rupture, in the same manner as it sometimes oozes from the gums, eyes, skin, and other parts, in scurvy, the last stages of low fevers, &c. The vessels which in their natural state admit the passage only of colorless fluids, as the watery exhalation from the lungs, and the transpiration by the skin, having their healthy functions altered, or greatly depressed, allow the red blood to pass them. The popular apprehension, therefore, from a *broken blood-vessel*, is, for the most part, unfounded.

Danger of the disease.—The affection I am considering is in a special manner alarming, from its frequent and intimate connexion with consumption, and hence should ever awaken the most anxious solicitude when occurring in a system predisposed to this disease.

Hemoptysis, though often, still is not necessarily associated with a consumptive habit, but may happen in persons of well formed chests, whose lungs are in other respects sound, and in whom there exists no reason for suspecting any tuberculous tendency. Some persons are liable to occasional spittings of blood, and without any material effect on their health, during a long life. Dr Heberden saw a woman at seventy, in good condition, who for fifty years had never been free from spitting of blood above two years together.

Treatment.—It comes within my plan to say but little on this subject, as the various active remedies

sometimes demanded, as bleeding, blisters, powerful astringents, &c., should only be employed under the immediate direction of a physician.

During the attack, and commonly for some days succeeding it, perfect rest and absolute silence are to be observed. The apartment of the individual ought to be large and cool, and fresh air freely admitted. A vegetable diet of a simple and digestible character, should be strictly adhered to, and the drinks taken cool, and acidulated with some of the vegetable or mineral acids, as the lemon or elixir vitriol. Every stimulant, in short, both of a moral and physical nature, should be scrupulously avoided.

With a view to check the bleeding, Dr Rush advised the use of common salt, which has now become quite a popular remedy. It may be taken in the dose of a teaspoonful every half hour till the hemorrhage abates.

Alum, also, may be safely resorted to where the bleeding is profuse and the system prostrated, in the dose of eight or ten grains or more, dissolved in about a gill of soft water. Or if time is allowed, alum whey may be employed, prepared thus: Two drachms of alum added to a pint of milk, and this boiled and stirred till all the whey is separated, then strained, and one or two tablespoonfuls taken every quarter or half hour. Iced water and the common elixir vitriol may also be employed to check the hemorrhage.

After the bleeding has ceased, and especially if

any predisposition to tubercles is suspected, the various means preventive of consumption, hereafter to be enumerated, should be assiduously prosecuted. Journeying, sea voyages, and mild climates are in a particular manner beneficial to the subjects of hæmoptysis.

CHAPTER VI.

HISTORY OF THE SYMPTOMS OF CONSUMPTION.

I PURPOSE in the two ensuing chapters to give a general account of the phenomena witnessed during the ordinary course of well marked cases of tuberculous phthisis.

There exist in consumption, as well as in many other affections of the chest, an important and interesting class of symptoms, called *physical*; but as they can only be appreciated by the scientific and experienced physician, they will of course be omitted in the present work. They are derived especially from *auscultation* and *percussion*. The former, means a hearkening to the modifications of sound produced in the chest by disease, during respiration, coughing and speaking, either by the ear applied directly to it, or through the medium of an instrument denominated the *stethoscope*. The latter, or *percussion*, consists in eliciting sounds by suddenly striking some part of the chest with the

hand, or tip of the fingers, and instituting a comparison between those so produced in healthy and morbid states of the organs within the thorax.

Premonitory and early symptoms.—The mode of attack and progress of consumption vary in different cases. In some instances, an irritating cough will come on, after a time subsiding, then recurring, till finally the characters of the disease become too plain to be mistaken. Again, the cough, with occasional and slight remissions, may last for months, and in rare cases even for years, before the true nature of the disease is fully made known. Here the protracted cough is probably owing to the irritation of crude tubercles in the lungs. It may be dry, or accompanied with a more or less free expectoration of the common mucus of the air-passages, and often closely resembles that resulting from an ordinary cold, to which cause it is usually attributed.

Sometimes the earliest symptoms of the disease are those of an acute pulmonary catarrh, or *cold on the lungs*; or an hemoptysis may awaken our first suspicions. Occasionally it is ushered in by symptoms of lung fever, or acute pulmonary inflammation, as severe pain in the side, great embarrassment of respiration, heat and dryness of the skin, flushing of the face, rapid and hard pulse. Under right management, these phenomena may quickly subside, or at any rate abate in their severity, but consumption is unexpectedly declared. Under such circumstances, there is probably an attack of acute

inflammation in the vicinity of crude tubercles already in existence, excited, perhaps, by their irritation, which reacting on these morbid bodies hastens on their suppurating or softening process. Such cases not unfrequently run their course with great celerity, and constitute instances of acute phthisis to which I am presently to allude.

I will now describe the more usual and regular course of consumption. — At first there will probably be experienced some slight irritation in the larynx or top of the windpipe, more strikingly remarked in the morning on first rising from bed. Various circumstances will be observed to aggravate or excite it, as going up stairs, ascending any steep elevation, or quick exercise of any description; exposure to cold air, loud or long speaking, a deep inspiration, &c. This irritation occasions a hawking, or a slight cough, by which a little frothy fluid like the saliva, blended perhaps with the common mucus of the air passages, is discharged. These symptoms excite but trifling regard, and are commonly attributed to transient and accidental causes.

In union with the above, careful observation will almost always detect other suspicious signs. Though in some instances, there may exist an unusual and more or less constant mental excitement, yet more ordinarily there is manifested an unaccountable sense of languor, attended with a diminution both of the intellectual and physical capabilities, and a consequent disinclination to the accustomed occupations

of life. The breathing too, especially in a confined room, or a crowd, is less free and tranquil than natural, on which account there is an unwonted anxiety for fresh air. The respiration, moreover, becomes especially disturbed on ascending quickly an elevation, or from any active physical exertion, or sudden moral emotion.

Pains in the chest and other parts, as the shoulders and extremities, fixed or wandering, and more or less distinct and constant, are occasionally noticed among the earliest symptoms of consumption. In some instances pain may not be experienced at all, or only at the end of a deep inspiration. I am inclined to think that a sense of uneasiness, or oppression about the chest, is more frequent in the early stage and regular forms of the disease, than acute pain.

Indigestion or dyspepsia may exist among the earliest signs of consumption, and by particularly engrossing attention, too often diverts it from the primary and momentous disease. But though symptoms of indigestion usually mark the commencement of phthisis, yet, when the disease has fully established itself in the system, the digestive organs not unfrequently experience very obvious relief.

Cases happen, however, where from the very first, the digestive function appears to maintain its integrity, and remains comparatively unharmed amid the progressive ravages of this wasting malady. I have not a few times remarked this in subjects displaying a deep tuberculous taint, and in whom the

disease never deviated in its onward course; the lungs, if I may so say, seeming by a sort of revulsion, to engross and concentrate within themselves, all morbid action. In such cases we feel more assured of the fatal termination, inasmuch as no hope can be indulged that the symptoms are the secondary result of digestive derangement.

Extreme irritability of temper—more especially when dyspepsia is present,—not unusually attends the early period of consumption, manifested by frequent and unreasonable bursts of passion, and a striking perversion of moral feeling. I have in general, however, remarked the temper to be more uniformly calm, placid and resigned, in those subjects described as possessing a fair complexion, with a general softness and delicacy of structure, than in such as display the opposite temperament.

The voice often undergoes an alteration, more or less remarkable in different cases. It may be hoarser and deeper toned, or smaller and more feeble than natural, and talking is apt to weary and excite the cough. In some instances it becomes unusually shrill, harsh, and unpleasant to the ear.

There are some extremely severe cases of consumption, in which the larynx, or organ particularly concerned in the formation of the voice, participates very early in the disease; hence speaking becomes difficult, painful, and occasions an irritating cough, and ultimately can only be conducted in a whisper.

The victims of consumption, in its early stage certainly, and many times, almost to its close, appear

quite unsuspecting of danger, and even seem loath that such suspicion should rest in the minds of others. Hence they incline to speak lightly of their complaint, particularly to their medical adviser, often keeping back some symptoms, and giving too favorable a representation of others, so that, unless wary, he may be led into error.

The condition of the mind, as already asserted, varies in different cases and at different times, in this early stage. Sometimes the thoughts are clear and even brilliant, and the individual has turns of being particularly cheerful and disposed to conversation.

Burnings of the feet and hands are now often experienced, alternating, perhaps, with coldness. In truth, tuberculous subjects often suffer much from coldness of the extremities, particularly of the feet. Flushing of the face is, likewise, readily brought on by indigestion, or any physical or moral excitement.

The eyes often vary from their natural expression. In some instances being morbidly bright, in others dull and vacant. The nights are apt to be restless, and the slumbers disturbed by unpleasant dreams.

Such threatening signs should ever awaken the most lively apprehensions, and, in a special manner, if there exist indications of a consumptive predisposition. They may occasionally last for a considerable period without manifesting any remarkable change or aggravation, or may even undergo an evident abatement. It is these delusive pauses, so common in consumption, which serve to cherish hopes that flatter but to deceive.

The disease, however, when once begun, for the most part, goes on advancing — though with more or less uniformity and rapidity in different instances, — till every doubt of its melancholy nature is banished from the minds of all, save, perhaps of him who is its unhappy subject.

Symptoms of the disease when fully declared.—The flesh now wastes very rapidly, and even in cases where the appetite and digestive powers appear but little impaired. The pulse are constantly accelerated, and become extremely rapid under any excitement, whether of a moral or physical character.

The countenance exhibits a surprising change. It is shrunken, contracted, its features sharpened, and a deathlike paleness is often seen alternating with a glowing hectic flush.* The eye frequently appears enlarged, owing to the dilatation of its pupil, and its expression unnatural and painfully glaring.

Vicarious pains are oftentimes experienced in different parts of the body, though by no means constant or essential to the disease. They exist in different degrees, and are very apt to be regarded as rheumatic affections.

Pains in the chest afflict most subjects at some periods of the disease, but are not essential to it, being absent in some cases. Sometimes they are trifling and occasion but little suffering, at others

* In occasional instances there may exist some bloating of the face, even when the disease is fully manifested; and some individuals from its natural shape and abundance of cellular substance, show emaciation of the face much less readily than others.

they are acute and distressing. They are particularly experienced during inspiration.

The observations of the best modern pathologists render it highly probably that—certainly in the majority of cases,—the acute pains suffered in the chest are not owing to the tubercles existing there, but to common inflammation in portions of the lungs or pleura in their vicinity, and excited by their irritation. Louis attributes them to partial chronic pleurisies, causing those adhesions between the external surface of the lungs and inner walls of the chest, so commonly found after death in the neighborhood of tubercles or tuberculous excavations. The most weighty reasons for this belief are, that tubercles in other situations are not apt to cause pain; and furthermore, that pain in the chest may not exist at all, or be only occasional and transient, while the tuberculous disease is constantly progressing.

Oppression and embarrassment of the respiration will of course be experienced, though often in a less degree than we should anticipate, having in mind the great destruction that is going on in the lungs. Instances even happen where the breathing is but little disturbed, save under the influence of causes not connected with the malady; as undue exertions, moral emotions, indigestion, the injudicious use of tonics and stimulants, a too nutritious diet, or the supervention of common inflammation. Sometimes, distressing palpitations of the heart are added to the other embarrassments experienced in the chest.

Irregular and transient feverish symptoms often occur in the early stage of consumption, but as it progresses, distinct paroxysms of hectic fever take place. In some, they occur early; in others, not till near the close of the disease; the disposition to hectic seeming to be more or less strong in different constitutions.

The phenomena of hectic fever vary somewhat, though not essentially, in different subjects. At first, there may be but one paroxysm in the twenty-four hours, commencing in the latter part of the day or evening; but, for the most part, in the advance of the disease, two fits occur; one happening near noon, and lasting, perhaps, till the latter end of the afternoon, when the symptoms abate, or remit for a short period—differing somewhat in its duration,—a new access occurring some time in the night, may be not till midnight. The second fit is commonly the more severe and perfect. The new paroxysms are oftentimes ushered in by chills, or at least an increased sensibility to cold; and occasionally marked rigors have returned at regular periods, imitating some forms of our agues. As the disease draws towards its termination, the remissions become less and less distinct, till at length the sufferer appears almost constantly to be laboring under a hectic paroxysm.

There are peculiarities about this fever which cannot fail to strike even the most ordinary observer. A bright, and often distinctly circumscribed flush paints the cheeks, heightened by contrast with the

paleness in its vicinity. In union with this hectic glow, the morbid brightness of the eyes, the contraction of the brows, and sharpened features, give to the whole countenance an expression of the most unnatural and painful character.

Sometimes one cheek displays a much brighter color than the other, or the flush may even be limited for a period to one side of the face.

During the hectic fit, the cough becomes aggravated, and the expectoration less free. There is an uncomfortable burning of the extremities, and a distressful restlessness. The pulse are greatly accelerated—sometimes exceeding a hundred and twenty beats in a minute,—are often very small, and occasionally slightly hard. The state of the respiration varies, becoming somewhat more rapid, yet it is often less disturbed than might be anticipated from the aggravation of the other symptoms. The head is often quite free from pain or uneasiness, and though the mind may be occasionally somewhat confused, yet it is more frequently clear, and a little excited.

The digestive powers do not appear to suffer materially. The tongue is often moist and clean, though a little redder than natural, and the thirst not necessarily great. Toward morning, a sweat breaks out, at times extremely profuse, soaking almost through the bed, and greatly exhausting the bodily energies. It is particularly abundant when the disease is far advanced, the body seeming almost as though it was dissolving into a fluid, hence the

term *colliquative* is applied to such sweats. The sufferer now becomes a little more tranquil, perhaps falls into a sleep, and unless the sweating continues profuse, awakes somewhat refreshed. As in our common agues, this sweating constitutes the crisis or termination of the paroxysms when regular, and, as in them, is frequently attended with much distress, as well as exhaustion.

In some cases of consumption, debilitating sweats are sure to ensue whenever the individual falls asleep. Many times they attend even the early stage, being general, or partial and transient. There are instances, too, in which the sweats either do not occur at all, or not till toward the very close of the malady; and also where they have come on, and then intermitted, not recurring till shortly before death.

When the hectic fever has become manifest in females, the menstrual discharge, if not already suppressed, commonly stops. Perhaps becoming irregular for a longer or shorter period anterior to its cessation. Sometimes a suppression of this function is among the earliest manifestations of phthisis, when heating and stimulating remedies, highly aggravating to the disease in the lungs, are too often resorted to, with a view to restore the discharge, under the false idea that its interruption is the occasion of all the other difficulties. Here, as too often happens in medicine, an effect is mistaken for a cause. Whenever signs of consumption begin to display themselves, all remedies should be

administered with special reference to the state of the lungs, and if we can relieve their morbid condition, all the other symptoms growing out of it will, as a necessary consequence, subside.

The cough, at the period of the disease I am describing, generally assumes a more decided character, and is readily brought on by slight exertion, or excitement of any description. In many instances it is extremely severe, frequent and harassing, accompanied with difficulty of expectoration, and allowing but short and uncertain intervals of rest to the unhappy sufferer. It is more especially apt to occur, and in an aggravated degree, on first awaking in the morning, and in a particular manner on rising from the horizontal posture. At this time, it is not unusually attended by some vomiting. Though in some cases, sickness and vomiting arise from other causes, and are very frequent and distressing, yet they are for the most part excited by the cough.

The quantity of matter expectorated is by no means a sure indication of the degree of pulmonary disease. It may be large when the affection is neither extensive nor advanced in its progress, and quite small, though the lungs are crowded with tubercles, and many in their stage of suppuration.

The sensible qualities of the expectoration have been a good deal studied as indications of the existence of phthisis. It was once imagined that a discharge of pus from the lungs was sufficient evidence of ulceration in these organs, and hence a

variety of chemical tests were employed to distinguish it from the common mucous secretions. Pus is more opaque, and ordinarily heavier than mucus, sinking in water, and has also a sweetish taste. But its presence in the expectoration is far from proving the existence of consumption, since it is often secreted by the lining membrane of the air passages in common pulmonary catarrh.

The matter expectorated in consumption is not derived solely from the ulceration which is going on in the lungs. In the early period of the disease, anterior to the maturation or softening of the tubercles, it must be supplied altogether from the mucous membrane of the air tubes, as in a common cold. Later, the softened tuberculous matter is added; and Laennec supposes that the internal surfaces of tuberculous excavations are capable, in some instances, of secreting pus. The tubercles, more particularly when matured, become a source of unnatural irritation to the lining membrane of the air-passages in their vicinity, greatly augmenting as well as depraving its secretions. These different substances are, for the most part, so intimately blended with each other, that their individual characters are not easily discriminated.

The relative proportion of the tuberculous, compared with the other constituent matters, though varying in different instances, still is apt to be much smaller than is generally believed. Laennec—supposing the daily discharge to exceed a pound, and taking into view how slowly excavations empty

themselves,—thinks it probable that the matter from the tubercles cannot amount to more than twelve grains; that is, a thousandth part of the whole. The relative amount must of course vary greatly, and cannot be accurately computed; yet I conceive that Laennec has placed his estimate too low. Consumption, then, commonly excites a pulmonary catarrh, to which is referrible the larger proportion of the expectoration.

In some individuals there is secreted by the tonsils, a concrete, cheesy substance, of a dirty, yellowish white color, and much resembling the matter of crude tubercles. I have known it formed quite largely, even in health; and under the supposition that it came from the lungs, to be the occasion of much alarm. But it is very rare during any stage of consumption, that tuberculous matter of this consistence is expectorated. If rubbed between the fingers, it emits an extremely disagreeable fetor, which is not the case with crude tubercle.

As yet, we are acquainted with no one sensible property of the expectoration which invariably indicates to us the presence of tubercles in the lungs. Still, a careful observation of its different modifications and progressive changes will, in union with other symptoms, afford important aid in detecting their existence. I will, therefore, briefly notice some of the appearances of the expectorated matter, which are generally, though not uniformly witnessed in the disease under consideration.

At first the cough may be dry, or attended by the

discharge of a watery or slightly viscid, colorless, frothy fluid. As the disease advances, the expectoration becomes thicker, more opaque, greenish, and has frequently intermixed with it, small lines or fine streaks of a yellow color. Little yellowish or dull white specks are also often observed in it, varying in size from that of the head of a pin to a grain of rice; and Bayle has compared them to this grain when boiled. Sometimes the expectoration assumes the form of roundish masses, displaying a yellowish white or ash color, and shaggy surface. Dr Forbes has described this peculiarity as consisting of a series of globular masses of a whitish yellow, rugged, woolly surface, resembling somewhat little rolled balls of cotton or wool, and which usually, but not always, sink in water. He has noticed it most frequently in young subjects of a strongly marked scrofulous habit, and in whom consumption was hereditary. He states, too, that this character of the expectoration has always seemed to him as surely marking the existence of phthisis. Still, in some rare instances, it has been seen to exist in simple catarrh.

Numerous other modifications of the discharge are also witnessed. It is oftentimes extremely adhesive, being detached from the fauces with much difficulty. At times it closely resembles pus from a common abscess, and may exhibit a yellowish, greenish, or grayish color. In some instances, a little blood will be intimately blended with the matter, assimilating it in its hue to brickdust. Or there

may be a slight hemorrhage imparting to it a bright red color. It will occasionally, also, nearly resemble unstrained whey. It may be very fetid, slightly so, or what is more common, without any remarkable unpleasant odor. Sometimes there will take place a sudden and copious discharge of purulent matter, perhaps quite offensive to the smell, and, being usually attributed to the breaking of an abscess, is the occasion of no small alarm both in the minds of the subject and his friends.

Instances occur, where the cough is but trifling through the whole disease; and also where it does not come on till its latter stage. Cases have even happened, where there has been either no cough at all, or not till a few days prior to dissolution. Such, to be sure, are exceptions to the ordinary course of consumption, yet important to be noticed, since a cough is so generally regarded as essential to its existence. How often the expression is heard from the lips of those wasting under this disease—"Why, I am sure I cannot be in a consumption, for I have no cough!" The malady is not to be known by the cough, merely, but by the careful observation of all its various symptoms, and in their relation with each other.

There are nervous coughs, gastric coughs, &c., which, without careful examination, may sometimes excite the suspicion of consumption. The veteran spirit-drinker is liable to a morning cough, not unfrequently leading his friends into the erroneous opinion that he is laboring under this fatal malady;

and he himself is very willing that it should be referred to any cause rather than the true one. It is very harassing on first rising in the morning, for it is at this period especially that the intemperate man must taste the bitter dregs of his yesterday's delicious cup. This cough is commonly terminated by the expectoration of a tough glairy mucus, and often by a vomiting of a greenish bitter fluid, more or less blended with tenacious mucus. It is, for the most part, the consequence of a deranged state of the digestive organs, yet if there is any predisposition to tubercles in the lungs, it will, probably, sooner or later call them into existence.

As the disease progresses, more or less rattling is heard in the air passages, caused by the air passing through fluids there accumulated. It has with truth been remarked by Laennec, that in some cases the subjects are sensible of the gurgling of tuberculous matter, and can even point out the spot from whence the expectoration comes. Respiration, too, is often accompanied by a dry wheezing sound, and by another peculiar one which has been denominated the *dry mucous rattle*. This latter appears to proceed from the upper part of the windpipe, and may be distinctly heard at a considerable distance. It has aptly been likened to the ticking of a watch, and the sound of a click wheel. It would seem as though a portion of concrete, dry mucus yielded with a sudden jerk to the passage of the air, and thus occasioned this clicking noise. It is almost always present at some period of the disease, usu-

ally in its advanced stage, and is more or less constant in different cases.

A diarrhœa, often the result of tubercles and ulcerations of the bowels, is a common and distressful attendant of the last stage of consumption, and, in union with the night sweats, causes a rapid wasting of the substance and powers of the body, and hurries on the sufferer to his grave. Obstinate and painful constipation, sometimes alternates with the diarrhœa, and piles or hemorrhoids, and perhaps dysury may be joined to the other afflictions.

The diarrhœa comes on sooner or later in different cases. Sometimes happening but a short period before death; and in rare instances it has not occurred at all. It now and then supervenes at an early period of the disease, existing even among its first indications, and continuing, with more or less urgency, and perhaps occasional remissions, to its termination. It has accompanied some cases of consumption of a year's, or even several years' duration, through their whole course. Those, even, who merely labor under the tuberculous disposition, in occasional instances, suffer much from irritability of the bowels and diarrhœa, oftentimes alternating with constipation, and frequently exciting hemorrhoids. Some physicians have thought that consumptive subjects are especially liable to *fistula in ano*; I have often witnessed it in such, but that they are more liable to the affection than others is by no means confirmed.

CHAPTER VII.

SYMPTOMS OF THE COMMON FORM OF THE DISEASE CONCLUDED.

Last period and termination of consumption. As the malady draws near its fatal close, the most melancholy phenomena — and which have been but too truly portrayed from the time of Hippocrates to the present, — are exhibited. The emaciation is frightful, and the most mournful change is witnessed in the whole aspect. A few months have deprived the countenance of almost every trace of its natural expression. The nose is sharpened, *nipped in*; the cheeks are hollow, the cheek bones appear unnaturally prominent, and are usually reddened by a hectic glow, contrasting strongly with the ashy paleness in its vicinity. The fat of the face being mostly absorbed, the contraction of its different muscles is witnessed through the skin, rendering the expression harsh and painful. The eyes are commonly sunken in their sockets, and, from the emaciation about them, seem enlarged, and often look morbidly bright and *staring*. The white of the eye, being almost without red vessels, displays frequently a remarkable glistening whiteness shading into a pearl blue.

The lips are thin, often pale and retracted, and, in the language of Laennec, *seem to express a bitter smile*. The neck appears long and oblique, and the

shoulder blades stand off — to use a comparison as old as Hippocrates, — like the wings of birds. The ribs, particularly on the upper and fore part of the chest, become unusually distinct and prominent, owing to the retraction of the fleshy spaces between them. The chest in some instances — probably to adapt itself to the wasted state of the lungs, — becomes generally or partially contracted.

The belly is flattened and sunk. The various joints, from the emaciation about them, appear enlarged and unseemly; and all the comeliness, and pleasing symmetry of the human form are destroyed, for the fat, that important material, which gives to the limbs their roundness and nice proportions, and is so essential to the harmony of our whole physical organization, is wasted away.

From the exposure of the fingers, their appearance particularly attracts attention. Their joints seem enlarged and disproportioned by contrast with the emaciated interspaces; their extremities become unnaturally tapered, and the nails, losing their support, incurvate like the claws of birds.

The pulse all the while is extremely frequent and feeble, and the voice often deep, hollow, pectoral, its tones seeming to reverberate in the chest.

The animal functions, that is, the five senses, intellectual, moral, and muscular powers, do not participate in the disease to the extent that might be imagined. A deafness sometimes occurs, but it is by no means frequent.

The animal muscles often retain their capabilities to an astonishing degree, when we consider the ravages that are going on in organs so immediately essential to life as are the lungs. Some subjects, wasted nearly to the condition of a skeleton, their existence, in all human probability, limited to the briefest span, are still capable of more or less bodily exercise, perhaps of daily walking some miles. I have known the subjects of consumption to walk or ride abroad even to the day of their death. But if the individual, either on account of the climate in which he dwells, or any other causes, is abridged of his requisite exercise, and restrained within the limits of his chamber, his muscular powers, partly for lack of use, will soon fail.

Amid all the ravages of physical disease which I have endeavored to portray, the mind often remains comparatively unharmed. A strange illusion, however, remarkably characteristic of consumption, will not unfrequently retain possession of it. Thus the sufferer is oftentimes cheerful, confident, buoyed up by a deceitful hope, when the disease has declared itself to all about him in language that cannot be misunderstood. Intellects of the highest order have been the subjects of this pleasing deception. Even distinguished members of the medical profession, perfectly familiar with the disease, and who could not have mistaken it in another, have, themselves being its subjects, become entirely blinded in regard to its nature, and yielding to this peculiar delusion,

have laid plans of future conduct, and reared airy castles of future enjoyment.

I think I cannot better exemplify this mental deception under which consumptive subjects are so apt to labor, than by a few short extracts from the life of Dr Armstrong — a highly eminent physician of London, and whose writings have been much read on this side of the Atlantic, — who fell a victim to the disease I am describing.*

“He would seldom admit to those about him that there was any thing serious in his case, and he seemed occasionally to have almost convinced himself that he labored under chronic pleurisy.”†

The following quotation is from a letter of the brother in law of Dr Armstrong, to Dr Boott. “He [Dr Armstrong] told me after you were gone that he was quite satisfied both yourself and Clark thought his case hopeless, and that he saw through your evasions of his questions on this point, but that such a conclusion was by no means warranted by the symptoms and circumstances of it. In short, he seems determined to recover, in order to confute you both.”‡ Even when his disease was quite far

* Memoir of the life and medical opinions of John Armstrong, M. D. &c., with an inquiry into facts connected with marsh fever. By Francis Boott, M. D. &c., in two volumes. London. This work not only does high credit to the talent and medical acquirements of its author, who was the intimate friend of Dr Armstrong, but likewise eminently displays that warmth of heart, and ardent benevolence of feeling, which so strongly mark his character, and which he exemplifies in so many acts of disinterested kindness toward those Americans who are so happy as to form his acquaintance while sojourning in London.

† Vol. I. p. 79.

‡ Ibid, p. 81.

advanced, he writes thus in a note to Dr Boott — “On the whole, I am better, and determined to be quite well this day five weeks.”*

Only a few weeks prior to his death, Dr Armstrong returned to London from the country, whither he had gone for the improvement of his health, and again entered upon the active duties of his profession. About three weeks previous to his dissolution, he hastily summoned Dr Boott in a state of great affliction, under the false idea that one of his ribs was fractured, and that this had all along been the cause of his illness. Soon after this, he took to his bed, from whence he never more arose.

We are reminded by these quotations, of another circumstance worthy of note in the disease I am treating, viz. that its subjects are often disposed to attribute their symptoms to some accidental affection, — in short, to any thing rather than the true cause, seeming unwilling to labor under even the suspicion of so deadly a malady. Hence at one time Dr Armstrong referred all his symptoms to chronic pleurisy, and in the last stage of his disease to a fractured rib.

Consumption, when simple and established in the system, as a general rule, appears to exercise on the brain a morbid influence inferior to that of diseases in the abdomen even of a much less serious character; this important organ being far more intimately united by sympathetic relations with the stomach, liver, &c., than with the lungs. The

* Memoir, p. 85.

dyspeptic, for instance, though laboring under but slight disease, is often irritable, gloomy, and very apprehensive of its event. If, however, the consumptive subject is of a melancholic temperament, and his malady complicated with morbid conditions of the stomach, liver, or bowels, the mind may display quite a different cast from that described.

This mental illusion referred to, may be protracted for a longer or shorter period in different instances. Almost always, however—sometimes suddenly, and but little before death,—the individual is awakened from it; new light seems to burst upon his mental vision; he becomes aware of his approaching dissolution, and often with an astonishing calmness and clearness of mind, prepares himself for the solemn event. A short period previous to his death, Dr Armstrong became perfectly conscious of the nature of his disease, spoke freely of its termination, and with composure and resignation communicated his last wishes to his friends.

My mind here cannot but revert to the case of a much esteemed medical friend and associate,* who recently fell a victim to the malady I am describing. This gentleman formed an interesting illustration of the beautiful moral character which is sometimes seen united with the tuberculous predisposition. But different from what happened in the

* Benjamin Lincoln, M. D., Professor of Anatomy and Physiology at the Medical School of the University of Vermont. Formerly Lecturer on Anatomy in the University of Maryland, at Baltimore, and in the Medical School of Bowdoin College.

instance of Dr Armstrong, the delusion in regard to the nature of his complaint, though existing at first, was not lasting. During almost a year prior to dissolution, he was perfectly convinced of the existence of tubercles in his lungs, and his mind was fully prepared for their fatal result.

The temperament of this gentleman was sanguine, his complexion light, and apt to become a little flushed under excitement. His eye mild and bright, quickly lighting up when his feelings became interested, and his whole countenance beamed with intelligence, and was ever varying to express the amiable affections of his heart.

His high moral susceptibility, and the intense interest afforded him by all his pursuits, and more especially those of an intellectual character, gave to his life a continued pleasurable excitement, which even pain—his almost constant attendant,—could not suppress.

One of the most interesting and beautiful traits in his character—and the more so from its rareness,—was his active benevolence. No labor, no personal sacrifice appeared too great, would it but enhance the happiness of others. This devotion of self to the benefit of those about him, was almost carried to a fault, and I doubt not had some concern in the early development of the disease to which he fell a victim. The ardor and enthusiasm which he manifested in all his pursuits, was truly astonishing. A sort of instinct seemed to urge him on to make the most of the short life which in the plans of

nature was allotted to him; and few, I am convinced, have ever experienced so much enjoyment in so brief a space. It seemed, in truth, almost impossible for him to be unhappy.

His friends well know how ardent was his love for science, and with what zeal and success he prosecuted it. And the public stations to which he was invited, and the satisfaction he gave in them, eminently evinced both his talent and acquirements.

The subject of this case possessed a strong, deep and sonorous voice, and believed himself endowed with a remarkable immunity from pulmonary complaints, and would often allude with much satisfaction to the imagined health and vigor of his lungs. For many years he was the almost constant subject of pain, often quite severe, and which was referred to rheumatism.

During the period of one of his courses of lectures, soon after retiring to bed, he was suddenly, and without any striking premonitory signs, attacked by a hemorrhage from the lungs. About a teacupful of pure frothy blood was discharged, leaving him perfectly easy, with but trifling exhaustion, though greatly astonished at the unlooked-for invasion. A careful examination of the chest was now made, by means of the stethoscope and percussion, which led to the suspicion—for the first time entertained,—of the existence of tubercles in the upper portion of the right lung. Such, however, was his enthusiasm of character, and his strong sense of duty to his class, that the strictest injunctions only, could re-

strain him from his lecture-room on the ensuing day.

At the end of three days, he again entered upon his duties, delivering two, and sometimes three lectures a day. In a short period, a second, though slighter hemorrhage occurred, but which he would not allow to confine him a single day from his arduous engagements. His health now—though he had no subsequent attack of hemoptysis,—depreciated gradually, and in a little more than a year, during which time, though in the most infirm condition, he delivered another eloquent and laborious course of lectures, he was compelled to abandon his professional duties, and seek in the bosom of his home those attentions and consolations which his declining health required. In a little time, all doubts which had heretofore existed in regard to the nature of his complaint were removed from his mind, and he calmly resigned himself to his fate. He suffered but little from his disease, and with a grateful heart, and sensibility peculiar to his character, enjoyed the kindness of friends, and those pure comforts which the sick man can find no where but in the peaceful haven of his home. In a letter written a few months previous to his death, he expresses himself thus:—
“There can be no doubt that I am laboring under confirmed phthisis; but its advances are slow. I suffer comparatively very little, have nothing like hectic, although much emaciated and quite weak. No man was ever so well provided for with all the comforts of *home* as I am. O! what madness to go

away from home to die!" In a letter of a little later date, he says—"I suffer almost nothing, am quiet and happy." He died at the age of thirty-two.

Different phenomena and degrees of suffering mark the termination of consumption. In some instances, life, wasted to the most feeble spark, goes out almost insensibly. Again, dissolution is preceded by more or less painful and exhausting symptoms, as excessive sweats and diarrhœa, often involuntary, and at times attended with colic pains. Or the powers of the system may have become so reduced, that expectoration can no longer be carried on, to free the lungs of the matters accumulated in them. Or a mass of softened tuberculous matter may suddenly flow into the air-cells and air-tubes of the lungs, causing speedy suffocation. Or slight hemorrhages may occur, gradually wasting the little strength that remains, or terminating, after a while, in a gush of blood from the lungs, so copious that life immediately yields. Sometimes, a profuse hemorrhage comes on at once, pouring from the mouth and nostrils, and causing almost instant suffocation.

The hemorrhages occurring in the last stage of consumption, are probably, in most instances, referrible to a rupture of the coats—previously thinned by ulceration, or weakened by the disease,—of one or more blood-vessels in the lungs.

For a short time prior to dissolution, the cough and expectoration diminish, and frequently, almost or wholly cease; this may be owing to a diminution

of nervous sensibility, the necessary consequence of exhausted vitality, and is commonly viewed as a harbinger of speedy death.

In the latter period of consumption, a dropsical swelling of the feet and ancles is frequently observed; and occasionally such effusions happen in other situations, yet they occur here less early, and are more usually confined to the inferior portion of the lower extremities, than in most other fatal organic diseases.

A low delirium may come on toward the close of life; yet in the majority of instances, the mind maintains its integrity to the last.

Circumstances influencing the progress and phenomena of the disease. — Consumption, like every other malady, is liable to be more or less influenced in its phenomena and progress by fortuitous circumstances. If the system is deeply imbued with a tuberculous taint, the disease, other things being equal, will be more perfectly developed, and its advance will be more regular, and suffer less interruption than in a constitution more faintly impressed with the consumptive predisposition. If the individual dwells in a cold and variable climate, and is consequently restrained within doors, and abridged of his needed exercise, the vital energies will more quickly decline, and the disease proceed more rapidly, than under softer and more equable skies, where he can daily exercise his limbs abroad, and inhale the fresh air of heaven.

Extremes either of heat or cold, always hurry forward the disease when once established.

If the subject is intemperate, and irregular in his habits of life, or his mind ill at ease, his malady will be accelerated in its march, and the suffering aggravated; and on the other hand, its progress may be retarded, and its symptoms alleviated by a due attention to diet and regimen, and a judicious medical treatment.

Pregnancy, when happening early in consumption, will frequently occasion a remarkable interruption of its symptoms, the cause often of flattering hopes which must end in sad disappointment. The female not uncommonly passes through her full period of gestation, her labor is probably natural, and often easy, and followed, perhaps, by a free flow of milk. Soon, however, the secretion of this fluid lessens, and ere long ceases altogether. The cough, with all the other melancholy symptoms now return, and the disease runs on, with an impetus seemingly augmented by rest, to its fatal conclusion.

If conception happens — as is sometimes the case, — in the advanced stage of consumption, the labor will usually come on before its natural period, and death may occur during or immediately after it, — or if life does not yield at this time, it will probably be of but brief continuance.

When the tuberculous predisposition is very strong, pregnancy may act as an occasional cause to arouse it into action. Hence it is that frail, scrofulous young females not uncommonly fall into consumption soon after the birth of their first child.

CHAPTER VIII.

VARIETIES OF CONSUMPTION — ACUTE — CHRONIC — LATENT. —
 RECAPITULATION OF SOME OF ITS CHARACTERISTIC SYMPTOMS.

Acute variety.—Consumption, in occasional instances, is very acute, running its course with great celerity. Such is sometimes observed to be the case where it immediately succeeds to common fever, scarlet fever, measles, or to other influences acting forcibly in the development of a tuberculous disposition. Its most frequent subjects are young persons, and those whose systems are deeply imbued with the scrofulous taint. Dr Clark very rightly asserts that the short course of the disease, is in some cases more apparent than real. “The tuberculous disease of the lungs, though latent, has been making silent progress, until, from exposure to cold, or violent exertion, an attack of catarrh, of pneumonia, or of hemoptysis is induced: after which the usual symptoms show themselves, and, owing to the extent of the tuberculous deposit, the disease proceeds in its course with unusual rapidity.”

In this acute variety, there appears to be a very rapid and extensive development of tuberculous disease in the lungs, attended, no doubt, for the most part, with more or less common inflammation. The symptoms come on suddenly and violently, perhaps

after the individual had been *complaining* for some time, though without evincing any distinct signs of consumption. The hectic fever is acute; the emaciation proceeds rapidly, and the disease hurries through its different changes with a frightful speed, terminating often in from six to ten weeks, and in rare cases, death has happened in three weeks. Such instances are commonly and very aptly termed *galloping consumption*. In some parts of the south of France, as Marseilles, the disease often runs its course very rapidly, and with very acute symptoms.

In some delicate, weakly and highly tuberculous subjects, the disease proceeds very swiftly, life yielding even in the course of several weeks, although the symptoms may never be very severe, or strongly manifested. Here the vital or reacting powers are inadequate to give a bold relief to the symptoms, or to maintain a long struggle against the influence of the disease. Such individuals seem as frail as the leaves of autumn, and fall almost as readily. They are often peacefully sinking into the arms of death, before their danger is even suspected.

Chronic consumption.—Consumption, in strictness of language, may in the majority of instances be called chronic, yet we use the term to designate especially such cases as are very tardy, and liable to interruptions in their course.

The symptoms in this variety are apt to come on slowly and insidiously at first; also, at a later period of life—frequently after the fortieth year,—than in the more ordinary form of the disease; and to

appear in constitutions in which the consumptive predisposition is not very forcibly portrayed.

Its subjects are constantly infirm, and although they may be able, with occasional interruptions, to prosecute their ordinary avocations, yet it is with far less alacrity, both mental and physical, than heretofore. They grow pale and thin, and though the appetite may often be good, they rarely regain their flesh. They are liable to dyspepsia, and sometimes to diarrhœa. The cough, from which they are seldom wholly free, is much aggravated during the winter season, or whenever the weather becomes damp and variable, resembling that of a common catarrh, to which they are believed to be very subject; they endure, therefore, but little exposure. They are short-breathed, and bear but trifling fatigue; and are ever compelled to be scrupulously careful of their health, for which reason they are apt to be ranked among that unhappy class of individuals, who receive so little sympathy from their fellow mortals, called valetudinarians.

The aggravations and pauses in chronic consumption are more or less frequent and distinct in different cases; the former being far more common in the cold, the latter in the summer months. Hence the sufferer will often appear to be fast approaching the goal of his being, his fate is even pronounced, when unexpectedly to all, the threatening symptoms abate, his health rapidly grows better, and thus, for the time being, he disproves the prediction both of physician and friends.

Life here is always extremely precarious; the disease being in continual danger of aggravation from the action of various incidental causes. The supervention of influenza, lung fever, pleurisy, common fever, &c., will ever place life in the greatest jeopardy.

It is in these tardy cases of consumption, and in a particular manner during the interruption of their symptoms, that a mild climate, and a judicious regard to diet and regimen, often exercise a marked and happy influence.

Chronic phthisis may continue for several years, subject to pauses in its course, of longer or shorter duration. Instances are even recorded where it has lasted for forty years. Louis has given us cases of ten, twelve, fourteen, and twenty years' duration.*

In such protracted states of the disease, there probably happen successive eruptions of tubercles, but not sufficiently numerous at any one time to destroy life. Laennec asserts it to be in the subjects of such chronic cases, that cicatrices are most commonly discovered in the lungs after death.

Latent consumption.—The characteristic features of consumption are not always clearly manifest. Some, or nearly all its important and distinguishing symptoms may occasionally be wanting, and yet the malady be surely, though insidiously, advancing. The subject is in ill health, is feeble, his flesh is

* Recherches sur la Phthisie, p. 183.

wasting, yet the thought of consumption is far from his mind. But such symptoms, especially occurring in a scrofulous constitution, should awaken serious apprehension, and the lungs be forthwith subjected to the most careful medical examination, since every thing depends on the detection of the first invasion of the disease.

The malady under consideration may likewise be obscured and rendered latent by a complication with other morbid affections. A diarrhœa, for example, occurs in a tuberculous subject, and continuing in a more or less aggravated degree, all attention is diverted to it, and cough and expectoration being absent, or so trifling as hardly to excite observation, not the slightest suspicion of consumption is entertained. The strength and flesh, however, waste rapidly under its influence, life ultimately yields, and the lungs are found crowded with tubercles, for the most part in a crude state. Here, if I may so express it, the diarrhœa seemed to swallow up, or concentrate within itself, all diseased action. Such cases must have fallen under the observation of most physicians, and may be found alluded to by certain medical writers. Thus Laennec tells us that some instances of phthisis beginning with diarrhœa, prove fatal without being attended either by cough or expectoration, and that here crude tubercles are usually found in the lungs.

Insanity and hypochondriasis supervening to consumption, may obscure its phenomena, and perhaps for a time interrupt its course. The disease, how-

ever, still exists, and life will probably sooner or later yield to its influence.

When consumption happens in the course of, or becomes complicated with, certain chronic diseases, as liver complaints, old agues, scurvy, &c., its phenomena are often so blended with, and modified by, those of the other morbid affection, that the most careful scrutiny is demanded to separate them. Dyspepsia, especially, when existing simultaneously, and its symptoms being the most prominent, will not unfrequently divert all attention to itself; and it is only, perhaps a short period before death, that the great emaciation, in combination with other symptoms, proclaim the hopeless disease that has been going on in the lungs. Obstinate dyspepsia existing in a suspected tuberculous habit, and accompanied with much emaciation—even though cough and other characteristic signs of pulmonary tubercles be absent—should still awaken fearful apprehensions, and the chest forthwith be submitted to a cautious examination.

Very many of our common consumptive cases, are unquestionably latent at their commencement, being referred to slight colds or affections of the stomach. In by far the greater proportion, however, even of latent instances of the disease, the symptoms become sufficiently manifest at some period before death.

Consumption may be obscured, particularly in its early stage, by ulceration of the larynx, or superior portion of the wind pipe, and the epiglottis, or valve

which guards its entrance; an affection to which I have before made allusion. Here the earliest manifest signs are irritation in the throat, causing a frequent hawking, difficulty of speaking and swallowing, pain about the top of the windpipe, especially on pressure, and emaciation. The subject, and usually his friends, are disposed to look to the throat as the seat of the whole disease, and to imagine that health would return, could the trouble existing there be removed. But there is a deeper seated difficulty, for tuberculous disease, and often very extensive, is commonly all the while rapidly advancing in the lungs. Andral asserts that the larynx is rarely if ever found in a state of ulceration, unless there are at the same time tubercles in the lungs. Such cases are denominated laryngeal. The ulcers found in the larynx are often of a strictly tuberculous character.

I will now conclude the symptoms of consumption by repeating a few of its early phenomena, which, when seen in combination, should ever awaken our most lively solicitude.

Some little oppression and embarrassment of the breathing, scarcely observable, perhaps, when the individual is calm and at rest, but becoming very manifest during exercise—especially on ascending an elevation—and under the influence of vivid emotions. A slight, though pestering cough, not yielding, like ordinary catarrhal coughs, to common expectorant medicines. It may be dry, but is more usually attended with the expectoration of a some-

what viscid, frothy fluid. It is also apt to be aggravated in a measure by the horizontal posture, or a sudden change of position, as on going to, or rising from bed. Pain somewhere about the chest, in the majority of cases not strongly marked, and in some detected only at the latter period of a deep inspiration. It may be either stationary or wandering. Unnatural and irregular heat of the surface of the body. Burning of the hands and feet, more particularly toward evening, and at night, often alternating with coldness. Pulse uniformly a little increased in frequency, sometimes accompanied with a slight hardness, and very readily accelerated on exercise, or sudden emotion. A sense of lassitude, occasioning an indisposition either to moral or physical labor. A gradual failure of strength and loss of flesh, perhaps even when the appetite is sufficient, and the digestive powers not materially injured. And, furthermore, if the subject, in union with such symptoms, exhibits the constitutional peculiarities commonly associated with a tendency to the disease, and has derived his being from consumptive parents or ancestors, scarcely a rational hope can be indulged in his favor. The disease may pause in its progress, and thus life be protracted, and flattering expectations encouraged, but it is ultimately sure of its victim.

CHAPTER IX.

CAUSES OF CONSUMPTION, AND MEANS OF PREVENTION.

Predisposing and occasional causes.—The causes of consumption, as also of most other diseases, are generally divided into two sets—the predisposing, and occasional or exciting. The former tend to induce that mysterious condition of the animal economy, or individual parts, in which they take on with great facility particular kinds of diseased action, and which constitutes what we term a predisposition to disease. It is often innate and derived, its causes acting on the offspring through the constitution of the parent. The latter, or occasional causes, serve to call into action diseases to which a tendency already exists, from the influence which has been exercised by the predisposing causes. To illustrate—if several persons were suddenly subjected to the impression of a cold, damp atmosphere, though disease might be generated in all, yet perhaps no two would be affected alike. One might have rheumatism; another, gout; another, erysipelas; another, pulmonary disease, &c. Here, the sudden exposure is the immediate or occasional cause of diseased action in each, but the peculiar character of the disease is believed to be determined by the other or predisposing causes. With a solution of muriate of cobalt, or sympathetic ink, we

may trace on paper figures of various descriptions, as men, horses, birds, trees, &c., which shall be perfectly invisible when cold, but bring them near the fire, and they all immediately become apparent to the view. Now the heat had no concern in the formation of these different figures, but simply in rendering them visible. Just so with exciting causes, they may often have little to do in giving distinctive character to the disease; but like the fire, in its action on the invisible ink, call into sensible existence those, which, if I may so speak, are already sketched out in the constitution.

It is well known that certain seasons and climates act as predisposing causes of particular diseases. Thus it is that exposure, improper diet, and other occasional causes, may sometimes excite dysentery, at others fevers, inflammation of the lungs, &c.

When an individual is constitutionally inclined to consumption, all causes which derange the health, or act injuriously on the lungs, or, in short, every thing that tends to develop the disease, is called an occasional cause. We here distinguish but one set of causes, the other having already accomplished their mysterious work in the economy. But when this predisposition is not marked, then, to give individuality to the disease, the agency of predisposing causes is believed to be necessary.

Though I have thought it proper to explain this distinction usually made between the causes of disease, yet it must be acknowledged, that practically it is often attended with much difficulty. The two

sets of causes will not unfrequently be so confounded with each other, that no accurate line can be run between them. The predisposing, too, may act at the same time as exciting causes, their impulse being sufficient both to determine the disease, and to quicken it into active existence. And furthermore, what we ordinarily denominate occasional, may, under some circumstances, operate as predisposing causes. In the ensuing examination, therefore, of the causes of consumption, I shall not attempt to keep in view any nice distinction between the two sets to which I have alluded.

Hereditary origin of a consumptive predisposition.—The transmission from parents to their offspring of particular conditions of organic structure, associated with a facility in the production of certain diseases, as consumption, gout, insanity, and probably a host of others, is now undisputed in medical science.

Sometimes physical traits marking the morbid tendency, are declared in the complexion, external conformation, &c., as I have stated often to be the case in consumption. In the greater proportion of instances, however, such tendency is dependent on modifications of the physical constitution not appreciable by our senses. But the importance of the subject will, I trust, excuse me for introducing here a few remarks of a somewhat general character on the transmission of hereditary peculiarities.*

* On this subject much valuable information may be found in Mr Lawrence's Lectures on Physiology, Zoology, and the Natural History of Man. Also, in Mr Combe's work on the Constitution of Man, and Spurzheim's on Education.

It is a familiar fact that children commonly inherit in a greater or less degree, the looks and the general constitution of their parents; sometimes especially of the father, sometimes of the mother; or the moral and physical characters of both parents may be blended in the offspring. Which exercises the greater influence upon the progeny, male or female, is yet a matter in dispute; but that it varies in different cases, is sufficiently obvious. Thus, we observe in some families that almost all the children closely resemble the father; whereas, in others, the mother seems to be the type upon which they are especially formed.

In occasional instances, children will partake more of the looks and general constitution of their grandparents, or some of their ancestors, than those of their parents. Thus morbid predispositions will now and then appear to skip over, or at least to lie dormant in one generation, and then declare themselves with their original vigor in the next. A consumptive constitution, therefore, may be hereditary in an individual, though it was never displayed in his parents. That such things are, we know; but why or how, philosophy has failed to teach us.

Certain accidents, as they are commonly styled, are well known to be transmitted in families for very long periods. "The thick lip introduced into the imperial house of Austria by the marriage of the emperor Maximilian with Mary of Burgundy, is visible in their descendents to this day, after a lapse

of three centuries.”* The English porcupine family form, also, an illustration of this power of transmitting constitutional peculiarities. They derived this name from the circumstance of the greater part of their bodies being covered by dark colored warty or horny excrescences, an inch in height when at their full size. They were shed annually in the winter or autumn, and succeeded by a new growth of the same substance. The first porcupine man had six children, all with the same rough covering, which came on in them about nine weeks after birth. This same condition of the skin was also seen in some of the grandchildren.

That peculiar variety of the human race termed the Albino is also propagated in certain families. More or less of the members of some families have for ages been marked by supernumerary fingers or toes, or perhaps both. Now suppose individuals possessing a like innate peculiarity, as six fingers or toes, or any other malformation of *exactly* the same character, to intermarry, such would in all probability be perpetuated in their offspring. If the peculiarity belonged to only one of the parents, some of the children might inherit it, while it was absent in others. An interesting fact in point was related to me a few years since by Mr (now Professor) Zerah Colburn, the gentleman who was so extensively known in early life for his extraordinary powers of calculation. One of his parents (his

* Lawrence on Physiology, Zoology, and the Natural History of Man.

father) had a supernumerary finger and toe on each hand and foot, which malformation he inherited, being born with six fingers on his upper, and six toes on his lower extremities. Some of his brothers displayed the same peculiarity, others not. The extra fingers were cut off in infancy. The lady whom he married was a distant connexion of his own, and inherited exactly the same malformation. She had borne him three children, two of whom were twins, and all with a supernumerary finger and toe, on each hand and on each foot. Desirous of learning some more particulars in regard to this peculiarity, and especially whether it would continue to be transmitted to his offspring, I recently addressed a communication on the subject to Professor Colburn, to which he kindly replied, acquainting me with the following additional and interesting facts, which I will give in his own language. "I do not know at what period this peculiarity was imported into this country. It came, I believe, from Scotland, in the name of Kendall. From the Kendalls it came into the family of Green, by marriage. My grandfather married a Green, and thus it got into our family. How many, if any, of my uncles had this mark, I know not. My father had it on each hand and foot; of his children, one brother and myself have it complete. One other brother has *one* odd finger; he has two children, twins, and both completely furnished with odd fingers and toes. The other brothers and sisters have it not, either themselves, or in their children. My wife is great-granddaughter of my

grandfather; her mother has one finger and one toe extra. This fact accounts for her being born with the full complement of supernumerary fingers and toes; they were cut off at her birth, by the attending physician. Since I saw you I have been favored with another daughter, with like accoutrements, and have not any doubt but, even though I had as many children as Gideon of old, by my present wife, they would all show alike in this respect, and be, as my four daughters now, six fingered, and six toed. The descendants of Kendall generally have this distinction, or can tell of some kinsman who has."

In some of our little secluded villages in New England, striking resemblances and constitutional characteristics, may, for reasons which will now be sufficiently obvious, not unfrequently be seen among their native inhabitants. The same thing may also be remarked on a more extended scale among tribes, as the Jews and Gypsies, who by separating themselves in a great measure from other people, have for ages retained certain distinctive peculiarities of countenance.

Among the inferior animals—and the same general laws govern their propagation as our own—it is ever found injurious to the stock to exclude a limited number of individuals from the rest of the race, and allow them to breed in and in. The breeders of animals being well apprized of this fact, are in the habit of introducing frequent crosses

among their stocks. A like necessity for this *crossing* exists also in the vegetable kingdom.*

The law restraining marriages between near relatives, is as old as Moses, and not unlikely had its origin in observation. The remark that it is unlucky to marry with cousins, has grown almost into a proverb, and, as with many other popular sayings, may be based in wisdom. In unions between blood relations, the various imperfections existing in families, as the morbid predispositions, &c., are liable to be perpetuated, and, in consequence of an impulse received from both parents, are often aggravated in the offspring. In support of this assertion, the degeneracy of the nobility of Spain and Portugal, and many of the royal families of Europe, has been frequently adduced.

“Members of families,” says Dr Clark, in the work from which I have before cited, “already predisposed to tuberculous disease, should at least endeavor to avoid matrimonial alliances with others in the same condition; but above all, they should avoid the too common practice of intermarrying among their own immediate relatives,—a practice at once a fertile source of scrofula, a sure mode of deteriorating the intellectual and physical powers,

* We find in Mr Combe’s work on the Constitution of Man, the following quotation, “A provision of a very simple kind, is, in some cases, made, to prevent the male and female blossoms of the same plant from breeding together, this being found to hurt the breed of vegetables, just as breeding in and in does the breed of animals. It is contrived, that the dust shall be shed by the male blossom before the female is ready to be affected by it, so that the impregnation must be performed by the dust of some other plant, and in this way the breed be crossed.”

and eventually the means of extinguishing a degenerated race."

As similar constitutions tend to perpetuate, and dissimilar to neutralize, the faults and infirmities of each other, the union of different temperaments, other things being equal, would increase the probability of a healthful organization to the offspring. To illustrate—we will suppose a male and female to be united, each possessing a lymphatic or phlegmatic temperament, the diseases of which are apt to be scrofulous or tuberculous. Now, though such morbid predisposition was slight in the parents, so that both enjoyed a fair share of health, yet, by receiving a double impulse in the child, it might very likely be so exaggerated that he would display a marked scrofulous habit. Or imagine a union of dark complexions and the melancholic temperament, for the same reasons hypochondriasis or insanity—often associated with such temperament, when strongly marked—might be distinctly developed in the offspring, though never manifested in the parents. But on the other hand, when temperaments opposite in their features come together, as melancholic and sanguine, or phlegmatic, the bold and harsh points of each will probably be softened, and their morbid susceptibilities consequently become neutralized. I say probably, because, as has already been affirmed, a child may bear semblance in complexion, form and constitution to one parent only. It may be inferred, too, from what has just been said, that there will be less hazard of a deteriorated offspring

in marriages between blood relations, if there is a contrariety in temperament.

Would not different complexions and temperaments—I mean of course in the same race—if abstracted from all other sources of influence, like opposite electricities, affect, or tend to each other? This, however, is a mere suggestion, the accuracy of which cannot be established in a state of society where such a multiplicity of factitious causes, as interest, ambition, association, &c., are continually swaying the affections between the sexes.

Other things equal, a healthful constitution in the parents will be likely to impart itself to the offspring; and, on the contrary, if the parents are diseased, or too young, or too old, infirmities will be entailed on the children, and commonly in proportion to their degree in the parent or parents. The exceptions that are witnessed will not affect the general rule.

That a great amount of infirmity and suffering in the community may be referred to ill-sorted matrimonial connexions, appears to be a fact too obvious for contradiction. The folly, avarice and vices of parents, are often visited, in the form of scrofula, gout, insanity, mental imbecility, consumption, &c., upon their innocent children and children's children, even to remote generations. We study, and learn how to improve the breed of our horses and other domestic animals, while deteriorations in the human race—and I fear for reasons too forcible to be overcome,—are allowed to go on unheeded. This subject awakened attention, and laws were

enacted in relation to it, among the ancient Scots, but such, however, to which we of the present day should hardly be willing to submit. Old Burton quaintly says—"I think it has been ordered by God's especial providence, that, in all ages, there should be, once in six hundred years, a transmigration of nations to amend and purify their blood, as we alter seed upon our land." And an analogous thought is also expressed, more at large, by Sir Humphry Davy. "You saw," says he, "in the decline of the Roman empire, a people enfeebled by luxury, worn out by excess, overrun by rude warriors; you saw the giants of the North and East mixing with the pigmies of the South and West. An empire was destroyed, but the seeds of moral and physical improvement in the new race were sown; the new population resulting from the alliances of the men of the North with the women of the South, was more vigorous, more full of physical power, and more capable of intellectual exertion than their apparently ill-suited progenitors; and, the moral effects or final causes of the migration of races, the plans of conquest and ambition which have led to revolutions and changes of kingdoms, designed by man for such different objects, have been the same in their ultimate results—that of improving by mixture the different families of men. An Alaric or an Attila, who marches with legions of barbarians for some gross view of plunder or ambition, is an instrument of divine power to effect a purpose of which he is wholly unconscious,—he is carrying a

strong race to improve a weak one, and giving energy to a debilitated population: and the deserts he makes in his passage will become in another age cultivated fields; and the solitude he produces will be succeeded by a powerful and healthy population. The results of these events in the moral and political world, may be compared to those produced in the vegetable kingdom by the storms and heavy gales so usual at the vernal equinox, the time of the formation of the seed; the pollen or farina of one flower is thrown upon the pistil of another, and the crossing of varieties of plants, so essential to the perfection of the vegetable world, produced.”*

To return to the consumptive predisposition.—As children, at the earliest periods of their existence, at birth even, are sometimes affected with tubercles, and when no taint of the sort can be traced in the family, there must be other conditions, beside those mentioned, existing in the parent's constitution, or certain unknown influences operating in the production or growth of the embryo, impressing upon its organization tuberculous disease, or a propension to it.

Sometimes consumption sweeps off whole families of children and yet we cannot trace it to an hereditary origin. Laennec has observed that numerous families are at times destroyed by the disease, whose parents were never affected by it. He mentions an instance in which the father and mother died upwards

* Consolations in Travel.

of eighty years of age, and of acute maladies, after having seen fourteen children, born healthy, and without any indications of a disposition to phthisis, successively carried off by it, between the ages of fifteen and thirty-five.*

Dr Clark, also, informs us that instances have come under his observation, "where whole families have fallen victims to tuberculous consumption, while the parents themselves enjoyed good health to an advanced age, and were unable to trace the existence of the disease in their families for generations back."

It is highly probable that a greatly deteriorated state of health in parents, whether from excessive dissipation, or any other cause, may occasionally entail on the offspring the tuberculous predisposition.

A vitiated state of health in the mother during pregnancy, may unquestionably exercise a deleterious influence upon the new being whose integrity and life are so intimately connected with her own; and perhaps that physical condition connected with a disposition to tubercles, may sometimes be thus originated.

The health of the female, therefore, at such time being important to the perfection of her offspring, should be most strictly regarded, and more especially if her constitution is naturally delicate. The diet ought to be light and of the most digestible

* *Traite de l'Auscultation, &c.* 2e edition, tome 1er, p. 651.

character, and if her system is plethoric, or disposed to inflammatory affections, she should principally be confined to vegetable food. A popular, but very erroneous opinion exists, that women should feed high during pregnancy, and is no doubt the occasion of the frequent necessity of abstracting blood during this state. Those various stimulants, too, taken under the palliating name of medicines, as cordials, tinctures, &c., and in short, all stimulating drinks, should, as a general rule, be scrupulously avoided. The same may be said of all active medicinal substances—and more especially calomel and other mercurial preparations,—since they must act indirectly on the tender offspring, as yet but little capable of bearing their influence. If the weather is suitable, and no special circumstances forbid, daily and moderate exercise should be taken in the open air. Close and crowded apartments, late hours, and all species of dissipation, ought to be carefully shunned, and the mind kept at ease, free from all undue excitements, and the influence of the depressing passions. The bowels should be regulated, when needful, by the mildest means practicable.

By pursuing such a course, and thus maintaining the health as perfect as is compatible with the existing state of things—though it must, of course, vary in different constitutions,—the best possible security will be given to the welfare of the offspring.

CHAPTER X.

CAUSES OF CONSUMPTION CONTINUED.—THOSE WHICH ACT INDIRECTLY, OR ON THE GENERAL SYSTEM.

EVERY thing which operates on the living body, and more especially in infancy and early life, either directly or indirectly to disturb, depress or exhaust the vital powers, is inimical to the due and healthful development of the animal constitution, and may tend to originate, when the climate favors, a tuberculous habit.

Climate.—Under the general history of consumption, I have spoken of the climates in which it is most prevalent, and have, therefore, but few additional remarks to make on the subject. A cold and variable climate, and particularly if subjected to the influence of high winds, may be ranked among the most prominent causes in the production of consumption. It is during those seasons of the year when the most frequent vicissitudes are experienced—as in our springs, for example,—that the disease is in a special manner apt to reveal itself.

Tubercles often follow the sudden migration from a warm to a temperate or cold country. The negroes who are removed from their native tropical abodes to harsher climes, become the very frequent victims of tuberculous diseases, and the danger is

generally proportioned to the suddenness of the change. "The native African who removes immediately to Europe, seldom lives over two winters in it; whilst the negro who has been brought to the West Indies, and subsequently to the Southern States of North America, previously to his arrival in more northern countries, and enjoys necessary food and clothing, will often not suffer materially from the change."*

It would appear from a table in Dr Clark's treatise on consumption, showing the relative mortality of this disease among the blacks and whites of the West Indian army, during the period of eight years, that negroes are more obnoxious to it than Europeans. It appears from this table, that in every thousand deaths among the whites, a hundred and twenty, or a little more than one eighth, are from pulmonic diseases; whereas, in every thousand deaths among the blacks, four hundred and seventy-two, or nearly one half, are occasioned by pulmonic diseases.

Insufficient clothing, and undue exposure.—Females in a particular manner are apt to expose themselves, with too slight clothing, to the vicissitudes of our climate. Their common practice, also, of wearing thin shoes and stockings in the cold seasons, is certainly, in delicate constitutions, attended with no little hazard to health. The extremities, in scrofulous young girls especially, should always be guarded with the most watchful care.

* Copeland's Medical Dictionary. Article, Climate.

The clothing generally of weakly and tuberculous individuals, the vital reaction of whose bodies is always feeble, should ever be scrupulously adapted to the variations both in the hygrometrical and thermometrical states of the atmosphere. Warm garments should be put on whenever the sensations indicate, whether it be January or July.

Delicate children ought always to be warmly clad, and the dangerous experiment of attempting to harden them by exposure, avoided; since to endure such ordeal, they should be already hardy. Hence it is that in savage life few weakly children live to grow up.

Exposure to a cold, damp air, without exercise, or not sufficient to ensure reaction, or to a current of cold air blowing on some part of the body, may, perhaps by suddenly checking the healthy function of the skin, or in some other way not understood, derange the pulmonary function, and thus be instrumental in developing tuberculous disease in the predisposed.

Diet.—In a state of society, where all the arts of cookery are brought into requisition to tempt the palate, errors in diet are almost inevitable, and may not unfrequently operate as the occasional cause of consumption. They may relate to the quantity or quality of the food, or to both.

In infancy and childhood, a careful attention to the diet is of the highest consideration, for faults in regard to it, at this period especially, must produce the most baleful influence; either creating morbid predispositions in the system, or strengthening and

exciting such as already exist. The nourishment should be in sufficiency to answer the demands of the economy, but never in excess. If the diet is defective in early life, the organs will not be duly developed, and the body will be feeble, and continue puerile in many of its characters—a state before shown to be intimately associated with a consumptive predisposition. And on the other hand, if it is superabundant and exciting, a plethoric and inflammatory state of the system will be induced, highly incompatible with the equable and healthful play of the different functions, and tending indirectly to waste the energies of life. How often is it, that fat, plethoric, meat eating children, their faces looking as though the blood was just ready to ooze out, are, with the greatest complacency, exhibited by their parents as patterns of health! But let it ever be remembered that that condition of the system popularly called rude or full health, and the result of high feeding, is too often closely bordering on a state of disease.

A mixed and indigestible diet is too frequently allowed to young children, injuring the digestive powers, vitiating the general health, and, if there is a tuberculous tendency, hastening it into active existence. A due adaptation of the food, both in respect to quantity and quality, to the age, constitution and habits of life, is always of the highest importance as it regards the health of the individual.

Nature, the safest of guides, has plainly indicated

the diet she has designed for early infancy, and mothers will do a positive wrong to their offspring by neglecting her dictates. The child, during its early existence, should derive its nourishment exclusively from human milk, and from that of the mother, unless circumstances forbid, when an amiable, temperate, healthy young nurse should be employed. I specify such qualities, because it is well established that turbulent and evil passions, bad diet, stimulating drinks, and depraved health from any cause, necessarily vitiate the secretions, and among others, that of the milk, rendering it more or less deleterious to the tender being it is designed to nourish. Medicines introduced into the system of the nurse, act speedily on the infant, and in truth, few secretions are more affected by incidental circumstances than that of the milk. It therefore behoves every nursing mother, who regards the well-being of her offspring, and especially if her constitution is feeble and delicate to pay particular attention to all those circumstances of diet and regimen which tend to ensure moral and physical health.

Children who are brought up by hand, as it is termed, are apt to be infirm and to die in early life. Infants that are weakly, and suspected of a tuberculous taint, should be nursed at least a full year. If the mother is predisposed to tubercles, it is certainly a question worthy of consideration, whether it would not be more prudent to employ a healthy nurse for her offspring.

A solid animal diet should, to say the least, never be allowed to childhood till the teeth are sufficiently advanced to effect its mastication with facility. The frequent practice of the nurse of artificially breaking down such food, or of actually chewing it in her own mouth for the infant, is hostile to nature's clearest indications, and cannot be too strongly reprobated. A diet of milk and mild farinaceous articles, with, perhaps, light animal decoctions, appears best suited to the early years of life. Tea, coffee, and other stimulating drinks, are surely not required, and their effects on the system at this tender period of existence, are undoubtedly pernicious.

There exists a prevalent idea that scrofulous and tuberculous individuals require a full and nutritious diet, and hence they are often urged to a free use of solid animal food. Such ought certainly to be well nourished, but excessive nourishment may create the very evils it is designed to remedy. I believe it to be very rare in any constitution, surely when not influenced by habit, that more than one meal of solid animal food is required during the twenty-four hours. And whenever there exists an evident inflammatory tendency, as is the case in some scrofulous systems, solid animal food, if used at all, should be taken with the greatest precaution. Persons who labor or exercise much in the open air, will bear a more full and nourishing diet than those of sedentary habits; and, other things being equal, different constitutions require a more or less nutritious diet.

Impure atmosphere.—Impure air is inimical to health at all periods of life, but is particularly injurious in childhood and youth, when the bodily powers are unfolding themselves. Wholesome air, in truth, is equally essential with wholesome food, to the development and integrity of the human constitution. Hence it is that crowding individuals together in close, ill-ventilated apartments, as is often the case in boarding schools, manufactories, and workhouses, is extremely prejudicial, and may operate when long continued, especially if combined with deficient exercise, both as a predisposing and exciting cause of tuberculous disease. This is probably among the most influential causes of the frequency of scrofula in the children reared in the manufactories and workhouses of Europe.

The apartment of children should always be large and airy, and exposed some part of the day to the sun's rays, to prevent the damp and chilly state of it, which might otherwise exist. The practice of putting several children in one close chamber, and three or even more in the same bed, which may be sometimes witnessed, is deserving of the greatest reprehension.

Dwelling in narrow, damp lanes in crowded cities, and particularly under ground, deprived of the kindly influence of the sun's rays, favors the development of tubercles, in the predisposed, at any period of life; and in infancy and childhood, as before stated, may actually originate that condition of the system which tends to their production.

Hence the frequency of scrofulous and tuberculous affections in the children of the very poor in cities, who, at the same time that they are badly nourished, commonly reside in such unhealthy situations, and are often so crowded together, and dirty, that the air in their miserable hovels becomes highly polluted.

Low, cold, damp, marshy situations, where the air is much confined, are very unfavorable to the health of children, depressing all their vital powers, and in a special manner contributing to the production of tuberculous disease.

“It is not generally known,” observes Dr Clark, “how limited may be the range of a damp, unhealthy atmosphere: a low, shaded situation may be capable of inducing tuberculous disease in an infant, while a rising ground a few hundred yards distant may afford a healthy site for his residence.”

A pure, fresh, mild air, is always of the highest consideration in those who already labor under a tuberculous taint; and in the early years of life, its importance is inestimable. The more children of such constitutions can be exposed to the open air, the greater will be their chance of escaping the fatal malady to which they are predisposed; and it is probably owing to their being more out of doors, that they thrive better during the summer season, in the country, than in the town. Many writers regard the air of towns as more favorable to the consumptive than that of the country; this may be

true under some circumstances, but it is a subject still open to inquiry.

Want of exercise.—The injurious consequences resulting to health from indolence and sedentary occupations, especially when aided by the influence of a confined atmosphere, must be familiar to every one. Nature manifestly designed us for active beings, and if we thwart her wise purposes, our sure retribution will be infirmity and disease.

It is exercise that awakens all the healthful actions of our bodies, calls all the living energies into increase of life, and from our very physical constitution we need it, and in early life, crave it almost as we do our food and drink, and pine and sicken when deprived of it.

Exercise in childhood is absolutely requisite to ensure the full and equable development of the animal frame. It also imparts to the animal tissue a firmness, density and redness, the contrary of that pale, soft and delicate condition of it, so commonly associated with a tuberculous habit; and must, therefore, tend in a measure to diminish the consumptive predisposition when it exists.

That exercise is most advantageous which calls numerous muscles of the body into simultaneous or successive action. When, however, children are allowed to play at will, they naturally fall into such gambols as are not only most agreeable to their minds, but healthful to their bodies.

Few things are more adverse to the welfare and perfect development of the physical organization,

than to confine young persons to daily tasks, where one set of muscles only is called into action ; and in a special manner if the labor is severe, long continued, and conducted in a confined atmosphere. Thus, children doomed to the manufactories of Europe, often grow up sickly, scrofulous, disproportioned, and deformed.

Excessive labor, at any age, tends to exhaust the powers of the constitution, and consequently to favor disease, and should, therefore, as well as all violent and straining exercises, especially such as embarrass the respiratory function, be guardedly avoided by those who are predisposed to consumption. That exercise will be most beneficial which affords pleasure to the feelings, is pursued in the open air, and can be long continued without fatigue. Riding on horseback ranks among the best exercises for consumptive subjects ; it calls into action numerous muscles of the body, is associated with the full benefit of the fresh air, ensures the free play of the organs of respiration, and can be long persisted in, by those accustomed to it, without weariness. Walking is a natural exercise, and yields to none in healthfulness when the strength is such that it can be sufficiently long continued. But I have again to speak of these exercises under the treatment of consumption.

Intemperance.—Intemperance of any sort, but particularly in the use of distilled spirits, must be classed among the common causes of consumption. The rum drinker is apt, sooner or later, to be affected with a

cough, especially troublesome when he first rises in the morning, which, if the predisposition exists, will, for the most part, ultimately terminate in tuberculous disease of the lungs.

Suppression of habitual discharges.—A sudden check of perspiration, of long established cutaneous eruptions, or of any accustomed discharge, whether natural or artificial, as of issues, setons, hemorrhoids, &c., may call into action phthisis, or any other morbid predisposition which exists in the economy.

Unnatural excesses of youth.—There are some unnatural practices of youth, which contribute to induce that feeble and vitious state of the system, called cachetic, in which tubercles declare themselves with facility, and when the disposition to them already exists, to hasten their development.

Abuse of mercury and other active medicines.—The free employment of calomel during childhood, or repeated salivations at any age, have been often ranked among the causes of consumption. That mercury, if used to excess—like any thing else tending to injure the general health,—may act in the predisposed as an exciting cause of tubercles, hardly admits of a question. And furthermore, if such practice is persisted in during early life, it may actually generate that condition of the system which predisposes it to tuberculous affections. A pale, sallow, and often semi-transparent complexion, accompanied with cough and other indications of a cachetic state of the constitution, will not unfrequently be observed to follow the long continued

influence of mercury on the system. I have often witnessed such peculiar manifestations of injured health, in the children of those *gifted mothers* who are in the habit of rashly administering portions of calomel for almost every trifling ailment which they exhibit; thus sapping the energies of their constitutions, creating often the very diseases they think to cure, and laying the foundation for infirmity, suffering and premature decay.

In children of pale, delicate complexions, and scrofulous constitutions, mercury should be employed, even by the physician, with the utmost caution, and only in cases of urgent necessity. But if the mother of such frail offspring keeps calomel among her family medicines, and, looking upon it as a sort of panacea, deals it out on her own mistaken judgment—we can only commend them to the mercy of Heaven.

Some experiments in relation to mercury as a cause of tubercles, were made in France, by Professor Cruveilhier, on dogs. Crude mercury was injected into the lungs through the air-tubes, and into the cellular texture of other organs, and tubercles—as they were thought,—with a globule of mercury in their centre, was the result. M. Andral is of opinion that if these experiments were conducted on a larger scale, genuine tubercles might be found in the lungs of some of the animals subjected to them; but, with his usual good sense, he remarks that he should be inclined to view them, in such cases, as the product of a peculiar disposition

excited into action by the artificial irritation created by the mercury in the air-passages.

In the year 1810, a large quantity of quicksilver was taken from the wreck of a Spanish vessel on board the English ship *Triumph*, of seventy-four guns, and the boxes principally stowed in the bread room. Many of the bladders in which it was confined—owing to the heat of the weather, and to having been wetted during their removal,—soon rotted, and several tons of the mercury were diffused through the ship, mixing with the bread, and more or less with the other provisions. The consequence was, that very many of the officers and crew experienced severe salivations, and other deleterious effects from the mercury that was taken into their systems, two dying from its influence; and that nearly all the live stock, as well as cats, mice, a dog, and even a canary bird, died. But how did it affect the lungs? The account informs us that the mercury was very deleterious to those having any tendency to pulmonic affections. That three men, who had previously manifested no indisposition, died of pulmonary consumption; and that one man, who had before suffered from lung fever, but was entirely cured, and another, who had had no pulmonic complaint before, were left behind, at Gibraltar, with confirmed phthisis.

The too frequent abuse of any active medicine in early life, may not unlikely tend to generate, strengthen or excite the tuberculous tendency.

Hard water.—Some physicians have regarded the

use of water holding in solution large quantities of salts, as of lime, &c., to be a cause of scrofula and tubercles. There is, to be sure, no sufficient evidence of the truth of such an opinion, still a consideration of the influence exercised on the human constitution by impure water, is of no small moment, and well merits the attention of the medical philosopher.

Excessive mental labor.—Mental exertion when severe and long continued, tends to disturb the just equilibrium of the nervous power, to impair the bodily vigor, and, especially if united with confinement in a close atmosphere, may often aid in calling into action a consumptive predisposition.

Overstrained application, in childhood and youth particularly, is fraught with the greatest danger to the welfare of the physical constitution, and is at the same time at war with the plainest dictates of nature, which may be read in the instinctive propensities of all young animals. Will not the young of most kinds, if left to their own inclinations, quit their place of confinement, and go forth into the pure air and green fields, there, by their innocent and pleasing gambols, to educate their various muscles, and to invigorate all their living powers?

Such, in truth, is the propensity to action in childhood, that one of the most cruel punishments inflicted upon it, is restraint from motion. What a picture of gayety and happiness is exhibited by young children just freed from the confinement of a school room! All their gambols and boisterous mirth, and

all the intensity of pleasure derived from the contraction of their muscles, but serve to display nature's designs in relation to them at this period of their existence.

I mean not to be understood that the higher powers are to be neglected, but only that they should not be forced, while the physical education, upon which so much of the health and happiness of future life depend, is disregarded. The intellectual powers can only be unfolded by degrees, and in correspondence with the development of the physical organization. The brain of childhood is soft and delicate, and its capabilities must not be expected to equal those of more mature life. Whenever it is overworked, and forced into unnatural precocity, it must be at the expense of the other functions of the living economy, and an early death is too frequently the mournful catastrophe. The pride of parents too often incites them to force the minds of their offspring, to the neglect of their physical improvement. If a child can but be made a prodigy in intellect, no matter how puny and feeble he becomes! If he can but recite well his Latin and Greek, no matter though he cannot run, and jump, and frolic, and digest his food like ordinary boys; these are but vulgar endowments! There is such a thing, however, as educating a child to death.

As tuberculous children not unfrequently display a precocity of mind, proud hopes of their intellectual distinction are awakened, to which all other considerations yield; their physical health is consequently

but little regarded, and the melancholy result is, that these high wrought expectations are all buried in a premature grave. How many gifted minds fall victims, either during their college life, or what is far more frequent, when the flattering promises of their youth are becoming realized in the intellectual splendor of manhood, to the unconquerable disease I am describing! and which sad conclusion is too often referrible to neglect of early physical education.

A very common and erroneous practice has existed, of putting weakly children to sedentary occupations. They cannot bear hard labor, and so, forsooth, are often shut up from morning till night in a close atmosphere, poring over their books, or perhaps with their legs crossed on a tailor's bench. If a parent can afford to *bring up to learning* but one boy out of the family, the most delicate is generally selected. This, however, is not as it should be. Though a feeble, scrofulous child may not be adequate to very hard labor, yet he should be brought up to such occupations as are associated with bodily exercise, and much exposure to the open air,—for example, agriculture or a seafaring life; which, by imparting new energy to the system, may enable it to resist the development of disease.

Females during the period of their education, are, unquestionably, too often overworked. They must learn too much in too short a time; for, in addition to the numerous studies of their schools, fashion has rendered necessary to them a multiplicity of accom-

plishments. Physical exercise is thus too apt to be neglected, and the soundness and vigor of their bodies, so essential to their own happiness, to that of their husbands, and to the well-being of their offspring, sacrificed.

School girls who are much confined and take but little exercise, often grow up pale and sallow; their skins rough, their faces pimpled; also feeble and nervous, subject to headach, pain in the side, indigestion, &c. Such appearances are more particularly apt to be manifested about the period of puberty, and when a disposition to tubercles is suspected, measures which tend to prevent their development should forthwith be pursued; as frequent exercise in the open air, by walking, riding on horseback, &c. — a mild and easily digestible diet, a free state of the bowels, warm clothing, especially of the feet, and often repeated dry friction of the surface.

It should ever be borne in mind, that physical education, highly essential to all, is of the first and most vital importance in delicate and tuberculous children; since it is only in early life that we can hope to counteract such morbid tendency.

The depressing passions. — These are, unquestionably, in a state of advanced society, a frequent cause of phthisis in the constitutionally predisposed, and may, in some instances, even originate it in untainted bodies. Laennec is inclined to attribute the prevalence of the disease in cities, to the numerous and close relations among men, creating more frequent

occasions for the activity of all the gloomy and bad passions of the heart.

Nostalgia, or homesickness, is always associated with mental depression, sometimes very intense, and is commonly ranked among the causes of consumption. Morton entitles one of his species of phthisis, *a melancholia*. But who is not familiar with melancholy examples of consumption, following close on disappointed ambition, the loss of property, the death of some near and dear relative, some bosom friend, or disappointed affections?

Laennec suggests it as worthy of remark, that the depressing passions, when long operative, seem to contribute most to the growth of cancers and the various other accidental productions which are unlike any of the natural structures of the body. He records a very striking example, which was ten years under his observation, of what he conceived to be the effect of the depressing passions. The following is a translation of it. "There existed, during the time mentioned, at Paris, a recent religious community of women, who, on account of the extreme severity of their regulations, had obtained only a conditional toleration from the ecclesiastical authority. Their diet though austere, yet did not exceed what the powers of nature could endure. But the rigor of their *religious* rules was productive of effects both melancholy and surprising. Their attention was not only habitually fixed on the most terrible truths of religion, but they were tried by all kinds of opposition to induce them, as soon

as possible, to renounce entirely their own proper will. The effects of this course were alike in all. At the end of one or two months, the catamenia were suppressed; and in one or two months more, phthisis was evident. They not being bound by vows, I urged them, on the first manifestation of the symptoms of the malady, to quit the establishment; and almost all who followed the advice were cured, though many of them had already exhibited evident signs of phthisis. During the ten years that I was physician to this household, I saw it renewed two or three times by the successive loss of all its members, with the exception of a very small number, composed principally of the superior, the grate keeper, and the sisters who had the care of the garden, the kitchen, and the infirmary; and it is worthy of remark that these persons were those who had the most frequent distractions from their religious austerities, and that they frequently went out into the city on duties connected with the establishment.”* This is certainly a curious and interesting relation; yet I conceive that other causes, as want of exercise, austere diet, confined air, must have lent their aid in the production of the disease. The same author likewise tells us, that almost all the individuals whom he has seen become phthisical without the signs of the constitutional predisposition, appeared to owe the origin of their malady to deep or long continued sorrow.

* *Traite de l'Auscultation médiate et des maladies des poumons et du cœur.* Tome 1er. p. 647—8.

Grief depresses all the functions, causes paleness and coldness of the surface, oppression of the heart and lungs, derangement of the skin, and hence may frequently operate as an exciting cause of consumption, as well as an indirect and oftentimes unsuspected one of many other maladies; still the causes of diseases are so numerous, and so commonly act in combination, that we should never, without the most careful scrutiny of all the circumstances of the case, rest upon any individual one, to the exclusion of all others.

CHAPTER XI.

CAUSES OF CONSUMPTION CONTINUED. — THOSE WHICH ACT MORE DIRECTLY ON THE LUNGS.

Mechanical and chemical local causes.—It is well known that there are numerous occupations which must expose those who are engaged in them to the inhalation of various irritating substances into the lungs. Morgagni alluded to such a cause of pulmonary disease, and since his time, much importance has been given to it in the writings of many physicians, especially of Great Britain.

We are told by Dr Johnstone, of Worcester, that phthisis is so common among persons employed in dry grinding, or pointing needles in needle manufactories, that they seldom live to be forty. Wepfer

gives an account—I quote from Dr Good's Study of Medicine,—of the disease proving endemic at Waldshut on the Rhine, where there is a cavern in which mill-stones are dug and wrought; the air is always hot, even in the winter, and a very fine dust floats in it, which penetrates leathern bags, and discolours money contained in them. “All the workmen become consumptive if they remain there for a year, and some even in a shorter time; and they all die unless they apply early for assistance.” Those engaged in the manufacture of gun-flints, are also observed to suffer much from pulmonic complaints. It is probably the sharp and angular particles of silex, the metals, and some other substances, that are especially irritating to the lungs. It is not proved that the coal smoke in cities, or the common dust of their streets are at all noxious to the organs of respiration; on the contrary, the inhalation of a smoky atmosphere has even been imagined beneficial in many of their affections. Thus it has been asserted that the progress of consumption is less rapid in smoky towns than in the purer air of the country and of the mountains.

Mr Thackrah, in his work on the effects of trades on health, has given us some interesting information in relation to the morbid influence exercised by various irritating substances inhaled into the lungs. I trust, therefore, I shall be excused for introducing here a few short quotations from it, bearing on my subject.

“In the flax-mills, all the departments, with the

exception of the spinning and reeling, produce dust." "The dust, largely inhaled in respiration, irritates the air tube, produces at length organic disease of its membrane, or of the lungs themselves, and often excites the development of tubercles in constitutions predisposed to consumption."

"The process of heckling flax is generally the most injurious to health. A large proportion of men in this department die young. Very few can bear it for thirty years, and not one instance could we find of any individual who had been forty years either in this or any of the dusty rooms."

"*Draw-filing cast iron* is a very injurious occupation. The dust is much more abundant, and the metallic particles much more minute, than in the filing of wrought iron." "The particles rise so copiously as to blacken the mouth and nose. The men first feel the annoyance in the nostrils. The lining membrane discharges copiously for some time, and then becomes preternaturally dry. The air-tube is next affected. Respiration is difficult on any increase of exertion; and an habitual cough is at length produced; and morning vomiting, or an ejection of mucus on first rising, is not unfrequent. The disorder varies, of course, with the constitution of the individual; but the common termination, when men pursue the employment for years, is bronchial or tubercular consumption." The case is remarked to be more certainly fatal where there exists in the constitution a predisposition to tubercles in the lungs.

We are furthermore told, that though the minute particles detached by the file are so decidedly injurious to the lungs, still—"The dust from old iron, which is thrown off so copiously as to deposit a thick brown layer on the dress of the dealers in this article, produces no inconvenience." "It is then the *form* rather than the material, the spiculæ, the angular, or pointed figure of the particles detached, which we conceive the chief cause of injury."

It is remarked that the filers are almost all unhealthy, and remarkably short lived, and only one instance was found of a man's following the employment for twenty years. "At two of the principal machine manufactories of Leeds, there are only two filers of the age of forty-eight; and in neither case, I believe, has the individual pursued the labor uninterruptedly from boyhood." Magnetic masks or mouth-pieces, by attracting the particles of iron, and consequently diminishing the quantity entering the lungs, have been found in a measure to remedy the evil; still, however, they are but little employed.

The following citation from Dr Clark's treatise on consumption, still further, and very strongly, illustrates the evil resulting from mechanical irritations of the lungs. "But the history of the grinders of Sheffield, recorded by Dr Knight, affords one of the most striking examples of the pernicious influence of the inhalation of mechanical irritants with which we are acquainted; and the deleterious effect of such inhalation is further illustrated by the difference between the health of the dry and that of the

wet grinders. The grinders 'altogether amount to about two thousand five hundred; of this number, one hundred and fifty, namely, eighty men and seventy boys, are fork-grinders; these grind dry, and die from twenty-eight to thirty-two years of age.' On comparing the diseases of these men with that of the other mechanics in Sheffield, he found that of two hundred and fifty grinders, one hundred and fifty-four labored under disease of the chest; while only fifty-six were similarly affected in the same number of workmen engaged in other trades."

Chemists and druggists are well known to be exposed to various effluvia and gases, some of which are more or less prejudicial to the lungs. Mr Thackrah says, "persons employed in laboratories are frequently sickly in appearance, and subject to serious affections of the lungs. They are often consumptive. Few old men are found in laboratories."

It should be remembered, however, that many of these artisans are exposed to other deleterious influences beside those mentioned, as confined atmosphere, intemperance, constrained postures, &c. If the rooms in which the workmen are employed are well ventilated, or their occupations are conducted in the open air, much less injury to health is experienced, and they hold out longer than under the contrary circumstances.

If there exists in the constitution a predisposition to consumption, then the mechanical irritations described will be very likely to excite it into action;

otherwise, simple bronchial or pulmonary inflammation will probably be the result of their agency. When, too, the system is exempt from the tuberculous taint, a speedy restoration to health is the common consequence of a seasonable removal from the influence of the local causes.

There are several occupations which, though often associated with very disagreeable exhalations, still appear to claim a remarkable immunity from consumption. Thus it has been remarked to be a very rare disease among butchers and others engaged in slaughter-houses. It should be remembered, however, that the habits of such persons are generally active, and that they are much exposed to the invigorating influence of the open air. Tallow chandlers, glue makers, and tanners, are all obnoxious to the inhalation of unpleasant animal odors, yet are observed to be but little liable to pulmonic affections. Thus Mr Thackrah advises for those predisposed to phthisis, a selection from the employments of tanners, leather-dressers, glue makers, butchers, tallow-chandlers, and brush makers.

Stooping.—An acquired habit of stooping, especially in early life, by lessening the capacity of the chest, and thus impeding the free play of the lungs, may sometimes aid in developing disease in these organs. It is essential, not only to the health and vigor of respiration, but likewise of the whole body, that the air should pass with facility into the lungs, pervading all their minute cells, that it may duly

exercise its vital influence on the entire mass of blood as it circulates through them.

When any organ is so restrained in its function as to accomplish it with labor and difficulty, actual disease in such organ is very likely, earlier or later, to ensue.

The children at our schools should never be allowed, while studying or writing, to incline their thorax forward and lean upon their desks; as during growth and the pliancy of youth, the habit of stooping is very readily acquired. Feeble and scrofulous children are very much disposed to permit their shoulders to settle down and tend forward, or, as it is usually expressed, to become round shouldered, thus still farther abridging a chest which is often already too small. In such, therefore, the habit is to be particularly watched and guarded against. Such tendency is best overcome by exercise in the open air, cold bathing, nutritious diet, and in short, by all those means which impart vigor to the constitution.

Let me urge it, then, as a point of the highest moment in physical education, that children, instead of approximating themselves to the condition of the quadruped, be taught to stand erect in the dignity of their nature. To throw the shoulders back, and the chest forward, thus affording free play to those organs whose function is so immediately essential to the health of the whole economy. The bending of the body should always take place at the loins, rather than in the thorax.

Students, clerks, tailors, watchmakers, shoe-

makers, females engaged in sewing, as dress makers, &c., and in short, all whose occupations induce them to lean forward, are liable to pain in the side; and when other deleterious causes, as deficient exercise and confined atmosphere, are at the same time exerting their influence, are in great danger of falling into consumption; which danger is of course very much increased if there exists a marked predisposition to the disease. As compression, too, must also be induced on the stomach and other digestive organs, their functions are liable to be more or less impeded, and hence may be one cause of the frequency of dyspeptic symptoms among persons of such employments.

Furthermore, if, owing to abridgment of the chest, from the cause mentioned, or that which I am immediately to consider, the air does not completely penetrate and distend the lungs, portions of them, from disuse—nature having rendered the exercise of our organs essential to their integrity,—will ultimately refuse to admit it, and thus the sphere of respiration may become permanently contracted. The instruments, too, which are concerned in the mechanical part of the function, as the cartilages and muscles, become rigid and unyielding, and lose the facility and extent of action they were designed to possess, and which are so necessary in cases of extraordinary muscular exertions, which must always be associated with a corresponding increase of action in the breathing function. Hence will ensue shortness of breath under any unusual

exercise, as ascending elevations, and the danger of pulmonic disease will be augmented.

Unnatural confinement of the chest by dress.—All tight dressing, especially in childhood and youth, is incompatible both with the equable development, and the free and necessary motions of the body. The dress of infants should always be perfectly loose, and undue pressure on any part of their bodies be carefully guarded against. In some parts of the South of Europe, there exists a most barbarous custom of binding up young infants from the toes to the armpits, like mummies, so that all freedom of bodily motion is restrained. In some instances I have even seen the arms included, and bound closely to the sides. In such fashion, probably, were the swaddling-clothes of the ancients, and it is astonishing that a practice which would seem so obviously injurious, should be still persevered in, and among civilized people.

Undue confinement and straitening of the chest must at all periods of life be prejudicial, and in a particular manner to such as are predisposed to consumption. Hence the practice of *tight lacing*, as it is now technically termed, we almost always find classed among the causes of phthisis, as well as of numerous other bodily ills.

It is surely an erroneous notion that young and growing females need the support of stays. At this time of life, the whole body should be allowed the most perfect freedom of motion, that those exercises may be indulged in without restraint, which tend to

develop and strengthen the animal frame, and ensure to it its beautiful and healthful proportions. Improper restraint in early life of any of the important physical actions will always endanger weakness and deformity.

In mature life, if the practice of artificially contracting the chest is carried to an extreme, it must necessarily embarrass respiration, favor pulmonic disease, and injure, more or less, other important functions of the system. The sphere of the heart's action, especially, being much diminished, palpitations and faintings are not an uncommon consequence.

The chest, as I have already said, may be very much restrained, and yet while the individual remains at rest, and the circulation is tranquil, no material embarrassment be experienced; but if from physical exertion, moral excitement, a full meal, or any undue stimulation, the heart's action becomes accelerated, and more extended respiration is consequently called for, syncope, and even death, unless relief is immediately afforded, may be the sudden result.

Though the use of bodices in the female dress does unquestionably in some, and perhaps in many instances, exercise an injurious influence on the lungs, and is especially hazardous in those disposed to diseases of the chest, still I believe the dangers of it have been in a measure caricatured. Some of those who have raised the war-cry against it, have certainly attempted to prove too much—have fixed

their minds too intently on this, as a cause of pulmonary disease, to the neglect of many others which were at the same time operative. I fear it is becoming too much the fashion of the day to exaggerate the evils we wish to correct. In our quixotic efforts to reform abuses, loud and unmeaning declamation is too frequently substituted for calm and sober reasoning; and injudicious attempts made to awaken prejudice, and to frighten, to drive people into what is termed the right course. Let the truth be stated; the whole truth, and nothing but the truth. Whenever we exceed its bounds, a reaction against our cause is sure to follow.

In Paris, the head-quarters of corsets and all the machinery for straitening and deforming the chest, the influence of dress—according to the careful observations of Louis,—in the production of consumption, is not very manifest.* I would by no means, however, defend the practice of *tight* lacing, since it may doubtless, in the manner explained, operate as adjuvant to other causes of consumption, and, in a special manner, tend to hasten its development in those already predisposed to it. But fashion has built up too many prejudices in favor of this part of female attire, to allow any hopes of its speedy abandonment.

I feel it my duty, however, to urge those females who are feeble and predisposed to consumption, not to abridge, by the smallest fraction, the capacity of

* Sur la Phthisie, p. 531.

the chest; but on the contrary, to pursue the various exercises and all other means which promote its free and perfect expansion.

Dr Clark advises, for improving a narrow and contracted chest, the practice of Dr Autenrieth, of Tübingen, of deep and frequent inspirations. "I have been in the habit of recommending the full expansion of the chest, desiring young persons, while standing, to throw the arms and shoulders back, and while in this position, to inhale slowly as much air as they can, and repeat this exercise at short intervals, several times in succession: when this can be done in the open air, it is most desirable, a double advantage being obtained from the practice. Some exercise of this kind should be adopted daily by all young persons, more especially by those whose chests are narrow or deformed."*

Extraordinary exertions of the lungs, in public speaking, playing on wind-instruments, &c.—That a sort of physical education, or a system of judicious exercise, may be required to elicit the full capabilities of the lungs, is rendered highly probable both from analogy and observation. The exercise, however, ought to be gentle, regular, and such only as nature has manifestly designed for the organs.

It is a popular belief, and not without foundation, that singing is a healthful exercise of the pulmonary organs. It calls the muscles of respiration into free action, and causes the frequent and full expansion of the lungs. But if it be carried to excess, and the

* Treatise on Pulmonary Consumption.

organs of respiration overstrained and fatigued, it may become an occasional cause of consumption. Reading aloud from day to day, and public speaking, when not carried to fatigue, may tend to invigorate the lungs; whereas, violent efforts of this sort, and more particularly if periodical, and at considerable intervals, as happens in the case of our clergy, endanger pulmonic disease; and when is added to them the influence of free living, and sedentary habits, the hazard will be greatly enhanced.

Playing on wind-instruments is always particularly perilous to those individuals who are predisposed to pulmonary hemorrhage, or consumption.

Contagion.—The propagation of consumption by contagion was advocated by Morgagni, and several other eminent physicians of former times. In the southern parts of Europe, the belief in its contagious character still continues very prevalent, and in some places the furniture of a room where an individual had died of consumption, is either changed or destroyed. “At Rome,” says Dr Clark, “a gentleman of my acquaintance was refused lodgings from suspicion that he was consumptive; and it was only after a friend’s engaging to pay for all the furniture of the lodgings, should he die, that he was admitted.” And a law once existed there, by which the proprietor of the house in which a consumptive patient died, could claim payment for his furniture, which was burnt.*

* On the Climate and Diseases of the South of France, Italy, &c., p. 41.

Laennec tells us that he produced a tubercle in his finger by slightly grazing it with a stroke of the saw, while examining some vertebræ containing tubercles. He rightly observes, however, that but little importance is to be attached to a single instance. Perhaps it was not a genuine tubercle. Laennec does not consider phthisis to be contagious in France, and such is the common opinion of the French physicians.

“In England,” says Dr Heberden, a very accurate medical observer, “we have very little apprehension of the contagious nature of consumption; of which, in other countries, they are fully persuaded. I have not seen proof enough to say that the breath of a consumptive person is infectious; and yet I have seen too much appearance of it, to be sure that it is not; for I have observed several die of consumptions, in whom infection seemed to be the most probable origin of their illness, from their having been the constant companions, or bedfellows, of consumptive persons.”* Dr Cullen asserts that in many hundred instances which he had seen, there was hardly one that appeared to him to have originated from contagion. At the present day, but few, if any, English or American physicians regard consumption as a contagious disease; and the people associate freely, eat, and sometimes even sleep with those laboring under it, without the slightest apprehension of danger. It often happens, it is true, that

* Commentaries.

several, and occasionally all the members of a family, will in quick succession become the victims of consumption; but as there is usually, in such instances, either an hereditary predisposition, or a tendency from some other cause to the malady, we may, for the most part, rationally attribute its successive and rapid development to occasional influences, operating upon such unfortunate families, when the disease is once introduced among them. These are undue confinement, fatigue, loss of sleep and mental anxiety, in attendance on the sick; and often grief, too deep to be comforted, for the loss of near and dear kindred. Such causes must derange the health, weigh down and exhaust the energies of life, and thus favor the activity of any morbid susceptibility which may exist in the constitution.

The conclusion, then, to which I think we must arrive on the subject, is, that though phthisis is probably not contagious, still we cannot regard the question as determined; and, in truth, so multiplied and complicated, often, are the causes which may lend their aid in the production of pulmonary tubercles, that it is oftentimes extremely difficult to satisfy ourselves of the degree, or even certainty, of the agency of any one taken individually. As, however, it is not impossible that this, like some other diseases, may be contagious in a low degree, and under favoring circumstances, I would, by all means, urge caution against unnecessary exposure to relatives and friends laboring under consumption, as inhaling their breath, remaining long with them

in small and close apartments, and particularly sleeping in the same bed with them. Such caution is more especially necessary for those who are already predisposed to tubercles.

CHAPTER XII.

CAUSES OF CONSUMPTION CONCLUDED.—THE INFLUENCE EXERCISED BY OTHER DISEASES IN THE PRODUCTION OF TUBERCLES IN THE LUNGS.

Hemoptysis, or hemorrhage from the lungs.—It is a common belief that pulmonary hemorrhage occurring, consumption is very likely to follow as its consequence. In other words, that they stand in relation to each other as cause and effect. There is not, however, adequate evidence that tubercles can be produced by a simple bleeding from the lungs. Though a few modern pathologists have, to be sure, thought that they may be excited by the irritation of coagulated blood in these organs, yet by far the most common opinion among eminent medical men, both English and French, is that hemoptysis is a symptom rather than a cause of consumption. That tubercles, in their early stage, excite an irritation in the lungs, the consequence of which is the hemorrhage. Thus hemoptysis following mechanical injury, great physical exertion, a violent fit of passion, long and loud speaking, or any undue

excitement, or a suppression of habitual discharges, in a healthy constitution, is by no means necessarily succeeded by phthisis. But when it arises without obvious cause, more especially in a scrofulous constitution, then symptoms of consumption, for the most part, soon reveal themselves; for the tubercles are already in existence, of which the hemorrhage is but an indication.

Pneumonia, or common inflammation of the lungs, usually called lung fever.—It is not proved that common inflammation of the lungs happening in an untainted constitution, is capable of originating tubercles. Both the observations and reasoning of Laennec induced him to conclude that tubercles are not the result of common inflammation of any of the constituent textures of the lungs, but that their development is owing to a general condition of the system. The careful investigations of Louis have led him also to a like conclusion; and which he conceives to be warranted by the whole history of pneumonia. Thus the inflammation in this disease is for the most part first developed at the base of the lungs, and from thence extends to their summit; whereas tubercles develop themselves almost uniformly in an inverse manner. Pneumonia rarely occupies the two sides of the chest; phthisis almost always affects both lungs. Phthisis is less frequent among males than females; whereas the contrary is true with regard to lung fever.

The same remarks are also applied to pleurisy; and in chronic pleurisy, where tuberculous granula-

tions have been developed, M. Louis has often found tubercles in the side not pleuritic, in like manner as in the side affected with the pleuritic inflammation. Though, therefore, he does not regard it *impossible* that lung fever may exert an influence in the development of tubercles—it being difficult to limit possibility,—still he thinks such influence to be yet very conjectural.*

Dr Forbes informs us “that of eighty phthisical subjects, into whose previous history he had particularly inquired, only seven had ever been affected with peripneumony, and four of these had been perfectly free from any pectoral affection for several years before the invasion of the phthisis.”†

But though common inflammation is probably incapable of generating tubercles in sound constitutions, still it may produce them where there is already a predisposition to their formation, or arouse them into action when they exist in a dormant state. When, too, tuberculous disease has declared itself, the supervention of common inflammation may greatly hasten its progress.

Pulmonary catarrh, or cold on the lungs.—Mankind are much inclined to attribute the origin of most of their maladies to *taking cold*; and consumption, especially, is almost always referred to some particular period of exposure, to wetting the feet, sleeping in damp sheets, or a neglected cold. Dr Cullen

* Sur la Phthisie, p. 525.

† Note to his translation of Laennec on the Chest.

inclined to the opinion that consumption was liable to follow catarrh only in constitutions already predisposed to it. He says, “the beginning of phthisis so often resembles a catarrh, that the former may have been mistaken for the latter. Besides, to increase the fallacy, it often happens that the application of cold, which is the most frequent cause of catarrh, is also frequently the exciting cause of the cough which proves the beginning of phthisis.”*

These views of Dr Cullen, though at variance with common opinion, are in strict accordance with those of our best modern medical writers. Thus Louis considers that the influence of pulmonary catarrh in the production of phthisis, is no better demonstrated than that of lung fever; and as in this latter disease, he affirms that females who, according to his observations, are more exposed to phthisis than males, are less subject to pulmonary catarrh. Thus of a hundred and forty-nine cases of the disease collected during three years, only about one third were among females; and, alluding to lung fever and pulmonary catarrh, he says—“*le sexe qui semble le plus exposé à la phthisie, est le moins sujet à l'une ou à l'autre de ces phlegmasies, et cela dans la proportion d'un à trois.*”†

Andral, also, states that for inflammation of the lining or mucous membrane of the air-passages to be followed by the production of pulmonary tubercles, it is necessary to admit a predisposition.‡

* Practice of Physic.—871.

† Sur la Phthisie, p. 526—7.

‡ Clinique Médicale, tome 4e, p. 30, 3e edition.

Epidemic influenza may often hurry on chronic cases of consumption, or render them acute, and may also excite into action the tuberculous predisposition. Hence those who have long labored under coughs and other pectoral symptoms, frequently die during this epidemic. Still it does not appear that it has the power to generate tubercles in healthful constitutions.

The most rational conclusion from all the knowledge we have on this subject, appears to be, that in those individuals predisposed to consumption, there often exists a great irritability of the lining membrane of the air-passages, rendering them very subject, on any undue exposure, to a cold on the lungs, and which may excite tuberculous disease in them, or hasten it when already existing. But the evidence is far from being satisfactory, that it can generate pulmonary tubercles in sound constitutions.

It should ever be kept in mind, too, that a pulmonary catarrh is frequently one of the first symptoms of consumption, and is a result of the irritation of tubercles in their early stage, and hence is very likely to be mistaken for a cause.

Dyspepsia, or chronic indigestion.—Indigestion, when long existing, may doubtless act as an exciting cause of consumption in those already inclined to it; but more proof than we now have is needed to show that it is capable of originating tubercles in constitutions not predisposed to their formation. The little cough, and frequent hawking, at times

associated with dyspepsia, may be owing, in part, at least, to an irritation transmitted along the mucous or lining membrane of the digestive organs to that of the air-passages, which is continuous, and affords an example of what in medicine is termed continuous sympathy. Sometimes even distinctly marked symptoms of pulmonary catarrh may be produced and maintained by a morbid condition of the organs of digestion. I may adduce the example of the immoderate spirit drinker. His fits of coughing are frequently very severe, especially in the morning, and are often terminated by vomiting. This cough, if he persists in his habits, may continue for years, be regarded as consumptive, and death finally take place, and yet no tubercles be found in the lungs. If, however, there exists a tuberculous predisposition, then genuine consumption will in all probability be the final result.

Dr Philip, in his treatise on indigestion, has delineated a new variety of consumption termed dyspeptic; and has thus given great importance to indigestion as a cause of consumption, and doubtless led many whose experience and power of discrimination are inferior to his own, into the error of confounding the catarrhal cough, described as sometimes associated with dyspepsia, with true phthisis. When pulmonary tubercles are actually excited by indigestion, the case becomes one of ordinary consumption, differing only in the character of its cause; and there surely can be no philosophical reason for elevating it into a distinct variety; otherwise, the

varieties of consumption might be made as numerous as its imagined causes.

It is certainly a question well worth considering, whether dyspepsia is so frequent a cause of phthisis as we have been taught to believe by many modern pathologists. Some dyspeptics live to a good old age, and are remarkably exempt from pulmonic complaints.

In scrofulous and tuberculous constitutions, indigestion is often, though by no means always, witnessed; but here there is apt to be a general feebleness of all the physical functions, in which that of digestion is likely to partake. In such, then, the dyspepsia is not to be regarded as a cause, but as an effect of the same condition of the system which tends to the production of the pulmonary tubercles. To be sure, if the derangement of the digestive function is maintained and aggravated by improper diet, the development of consumption may thus be hastened, as by any other cause which disturbs the general health.

It should furthermore be considered, that indigestion occurring often as a symptom of the early and obscure beginning of consumption, is very likely to be regarded in itself as a primary affection, and the phenomena of the real malady, which afterward become plainly disclosed, to be looked upon as its consequence. This confusion of cause and effect—*post hoc ergo propter hoc*,—is unfortunately of every day occurrence, both in the science and practice of

medicine, and operates as no trifling obstacle to its philosophical advancement.

It is not my purpose to undervalue the importance of the integrity of the digestive function to the health of the lungs, and to that of all the other organs of the animal economy, still I cannot avoid the conviction that the too exclusive attention given to it by some, has not unfrequently led to a neglect of other important causes, as well as phenomena of disease. Though the stomach has doubtless enough of evil to answer for, yet I cannot believe it to be such a Pandora's box as Mr Abernethy and some other modern pathologists would induce us to think. Fashion, however, is not without its sway even in the healing art, and we are all too prone—discarding our own proper reflection and observation,—to fall into the opinions to which its magic influence has given currency. It is far easier to sail along with the tide of popular belief than to strive against its force.

Continued, remittent, and intermittent fevers.—All forms of fever have been looked upon by different medical writers as causes of consumption, and most physicians must have witnessed instances of its development during convalescence from fever, and often of an acute character. In some cases of this kind, tubercles may already have existed, and their progress only been hastened by the supervention of the fever; whereas in others, the fever operated, perhaps, as merely an occasional cause, calling into action a tuberculous predisposition. Whether con-

sumption is ever thus originated where no tendency to it exists, is questionable, still the long continued influence of obstinate fevers, especially of old agues, on the system, may, by enfeebling and deranging its powers, bring it into that condition in which tuberculous disease readily arises.

Several eruptive fevers may be ranked among the occasional causes of consumption.

Small pox.—This disease is often attended with a good deal of irritation about the air-passages and lungs, and therefore is particularly dangerous in the scrofulous and phthisical.

Scarlet fever.—Phthisis is sometimes excited by scarlet fever; becoming developed especially during convalescence from it, and often running its course with great speed.

Measles.—This disease being ordinarily accompanied by more or less pulmonic affection, is a more frequent occasional cause of consumption than either of the two preceding. Hence, occurring in phthisical constitutions, and after the age of puberty, the state of the lungs should be watched with the greatest solicitude, and in a particular manner during the period of convalescence from the eruption, since then is the time of greatest danger to the lungs.

I have treated in connexion, as will have been seen, the causes of phthisis, and its means of prevention. Such association was deemed necessary to save the repetition which would otherwise have been unavoidable. In many instances, in truth, we

need but to know the cause of a disease to be enabled to shun it; in other words, to teach its cause is to teach its prevention. I have only to add, therefore, that to prevent the development of consumption in the predisposed, all those measures are to be employed whose tendency is to maintain a healthy equilibrium of all the functions, and so to ensure such a state of vigor of the system as shall be incompatible with the development of the morbid predisposition. These means I have briefly stated; and in addition I may here mention sea bathing as a valuable tonic, during summer, for weakly and scrofulous children. It is not safe, however, unless reaction, indicated by a glow of heat on the surface, speedily follows. This reaction will be more certainly insured if the digestive organs are first regulated, and brisk friction of the surface is practised immediately before and after the bathing. Rapid sponging of the body with cold salt water may in like manner be often employed with advantage. In very delicate children, with feeble powers of reaction, tepid bathing, especially with salt water, may be useful.

CHAPTER XIII.

TREATMENT OF CONSUMPTION.

It is very questionable—humiliating as must be the acknowledgment to the pride of science,—whether we have hitherto made any advances in our strictly medical treatment of consumption. And yet the numerous pretended specifics that have been continually announced, and the confidence with which even physicians of eminence often speak of their own remedies, might lead one to imagine that phthisis was as much under our control as some of our most manageable diseases. I believe it will be found a general truth, that the more fatal is a malady, the more numerous will be the remedies that *certainly* cure it. There are some diseases, already alluded to, much resembling phthisis, and which, being comparatively innocuous, have recovered during the use of very simple and often opposite remedies; and hence it is that such have often acquired a false repute in the cure of consumption. It is in fact only of late years that we have understood the true character of the disease, and been enabled to distinguish it from several other affections of the lungs bearing a likeness to it.

We can then, in our present state of knowledge, only hope to retard the course of consumption, indirectly and negatively, by acting on the consti-

tution through the instrumentality of diet and regimen, and by relieving incidental affections with which it may be complicated. Medical science has yet discovered no remedy which exercises a direct and specific healing influence on the tubercles themselves.

The details of the medical treatment not coming within the design of the present work, I shall confine myself to a consideration of such means—and they are by far the most important,—as all may comprehend and safely employ.

Irritation on the surface of the body.—It seems to be a fact highly probable in physiology, that the function of the skin is in some measure auxiliary to that of the lungs; thus a healthy and active state of it, is ever favorable to facility and freedom of respiration, and is especially important to those whose lungs are diseased, or predisposed to disease. Pulmonic diseases are but little prevalent in equatorial regions, where the heat maintains a constant determination of blood to the surface, and a high activity of the cutaneous function.

Excitation of the skin, then, is certainly a remedy of no trifling value to the consumptive. To effect it, various methods are employed. Dry friction by means of a brush or coarse cloth, extended over the whole body, being more particularly active on the chest, may be advantageously practised twice or thrice a day, and continued till a considerable glow of heat is excited. The thorax may also be repeatedly sponged with warm salt water, then wiped dry

with a coarse towel, and the dry friction protracted till reaction is produced. When the skin is cold and quite inactive, stimulating substances may be applied to it, as strong vinegar, alcohol, camphorated spirit, water of ammonia, and other alkaline solutions. Such are termed rubefacients, and often exercise a marked palliative influence on some of the symptoms of consumption, as the cough, dyspnoea, and local pains. They ought to be warmed and applied with brisk friction, which is especially necessary with respect to some of them, to prevent the unpleasant sensation of coldness which would otherwise follow their rapid evaporation.

That uncomfortable sense of burning often experienced in the hands and feet, in the fore part of the night, will be greatly alleviated by bathing them with cool alcohol.

Flannel next to the skin may be of service to the consumptive, by the irritation it produces, as well as the defence it affords against cold. A large plaster of Burgundy pitch, or something of a similar nature, worn on the chest, will also serve the double purpose of maintaining an external local irritation, and of shielding it in a measure against the atmospheric vicissitudes.

Issues, setons, blisters, &c., may be suited to some cases and stages of consumption, but as they ought only to be employed by the counsel of the physician, a consideration of them will of course be omitted.

Diet.—In establishing a plan of diet for the con-

sumptive, the constitution, previous habits of life, particular symptoms in individual cases, should all be kept strictly in view. Only general rules, therefore, subject to modification from circumstances, can be laid down in regard to it. Where a strong inflammatory disposition exists, only the mildest vegetable diet is admissible; and on the other hand, where this tendency is but small, a somewhat more nutritious and stimulating food may be allowed. I have witnessed a few instances where solid animal food and wine were taken through the whole disease, and without obvious injury. Such, however, are to be viewed merely as exceptions to a general rule, and exceptions, I am convinced, of a much more rare occurrence than is commonly imagined.

The rapid wasting of the flesh, and exhaustion of the powers of life, I acknowledge, often appear to indicate stimulants and a more nutritious diet; but the indication is, for the most part, deceptive; and, if yielding to it, meat, wine, tonics and condiments are indulged in, the cough and embarrassment of respiration, as well as the other morbid phenomena, will commonly be aggravated, pulmonic inflammation perhaps be excited, and the result very likely be an increase, instead of a diminution of the general emaciation and exhaustion. The truth is, the loss of flesh is not ordinarily referrible to defective diet, but to the influence exerted over nutrition by the disease which is going on in the lungs; and in proportion as the action of this is lessened—

which is best effected by a mild diet—will be the improvement in the nutritive function.

In the advance of consumption, when the expectoration and night sweats are very copious, pulse feeble, strength sinking, and flesh, as it were, melting away, and the inflammatory tendency small, cordials and somewhat more stimulating and concentrated diet may be demanded to support a little longer the expiring flame of life; but the effects of such a course, even in these extreme cases, should be critically watched, lest injury result from it.

A mild, farinaceous and milk diet, I consider to be generally best adapted to consumptive subjects, and its quantity must be varied according to circumstances. For example, other things being equal, one who was mostly confined to the house, would require, and be capable of digesting less food than another who passed much of his time in exercise in the open air. It should ever be remembered that the healthful nourishment obtained from food, is not in proportion to the quantity taken into the stomach, but to that which is digested perfectly and with facility.

I trust I need hardly caution those laboring under consumption, against the use of those various indigestible articles of food, as pastry, new bread, &c., which by deranging the digestive function, will sympathetically aggravate all the other symptoms.

Some consumptive persons have a very great appetite, so that it is almost impossible to restrain them within the bounds of moderation in their diet,

and are often in the habit of vomiting their food when taken in excess; nature thus relieving the stomach of a task too great for its powers of performance.

In those cases where nausea and vomiting are very troublesome, it will be requisite to give nourishment in a more concentrated form, and in small quantities frequently repeated. Solid food is here better retained in the stomach than liquids.

Few articles have enjoyed a higher and more permanent reputation as a diet in consumption than milk. It appears to hold a rank intermediate between vegetable and solid animal food. It is quite nutritious, in most constitutions readily assimilated, and occasions less vascular excitement than flesh, and hence seems peculiarly adapted to most cases of consumption. If, therefore, milk is agreeable to the palate and stomach, it may be viewed as a fortunate circumstance, since little difficulty need then be apprehended in regulating the diet. To some persons, however, from peculiarity of constitution, it is both unpalatable and indigestible, and of course cannot be employed.

In some constitutions, milk taken in its raw state is apt to run into the acid fermentation; this, however, may often be prevented by boiling it, and very certainly by adding to it a small quantity of lime water or soda. Lime water in such combination, is also particularly serviceable in cases where there exists much irritability of the bowels, and tendency to diarrhœa.

Cream diluted with warm water, and a little pure sugar added to it, forms often a bland and agreeable food for the consumptive, even when they cannot bear milk.

In the United States of America, when milk is spoken of as a diet, that of the cow is generally understood to be meant; but human milk, and that of asses and mares, which bears a near resemblance to it, enjoy much more popular repute in phthisis.

The varieties of milk differ especially in the relative proportion of their proximate principles. Human milk is sweeter—containing more sugar,—thinner, of a bluer color, and, according to Dr Paris, yields a larger proportion of cream than that of the cow, but the butter cannot be separated from its cream by agitation. On remaining at rest, it deposits part of its curd. It certainly contains more oily matter or cream than the milk of mares or asses, but does not differ materially, in respect to this constituent, from cows' milk; its proportion varying, probably, in different specimens which may be compared.

The relative amount of the cream, and of course the other constituents, is doubtless much influenced by the diet of the individual. In females who are vigorous and eat much animal food, the milk becomes very rich and oily; and it has been found that by restricting them to a vegetable diet, the proportion of cream becomes manifestly lessened.

The milk of asses and mares nearly resembles that of the human species in consistence, color and

smell, and in its large relative amount of saccharine matter when compared with that of the cow, but it contains less cream.

Goats' milk affords a thick, unctuous cream, but perhaps less in quantity than that of the cow, or at any rate, less separates from the other constituents. But the diet of animals, and probably other circumstances, must of course more or less influence the character of this secretion, which will explain the want of agreement in the analyses of it by different chemists.

Some of the older physicians believed—and the opinion is not wholly obsolete at the present day,—that human milk was the diet suited above all others to the consumptive, and even specific virtues would seem to have been attributed to it. Hence some remarkable recoveries from consumption have been recorded as following its habitual use; and I have in mind an instance published in one of our modern medical journals, of a physician who asserted that he had cured himself of consumption by daily sucking his nursing patients. Perhaps one cause of this repute of human milk, may have been the difficulty of obtaining it; as the estimate we set upon an article is very apt to be in proportion to its scarcity. Its analysis certainly affords no satisfactory reasons for a superiority in consumption over the other varieties of this secretion. For obvious reasons, however, its virtues are not likely to be brought fully to the test of experience.

Asses' milk is certainly a very good diet for the

consumptive, and from its being somewhat thinner and weaker than that of the cow, may have some advantages over this latter in cases exhibiting a marked inflammatory tendency. It may be procured in most places on the continent of Europe where the consumptive are in the habit of resorting. Madame Starke—a familiar name to European travellers,—warns us that in purchasing asses' milk it is requisite for some trusty person to watch the milking of the ass, to prevent the infusion of hot water. “The man who milks the ass usually carries, under his cloak, a bottle filled with hot water; some of which he contrives to mix with the milk so expertly, that it is difficult to detect him.”

Goats' milk has no advantage, of which I am aware, over that of the cow. The greater ease, however, of obtaining it, causes it to be much employed by consumptive travellers in Italy. Goats are here daily driven about the cities, to the doors, or even apartments, if required, of the different dwellings, and the milk drawn from them as it is purchased. Thus it may be taken warm and fresh from the animal, in which state it is especially bland and digestible. It is, however, occasionally rendered very unpleasant from the impregnation of the rank exhalation from the goat.

In our own country, the milk of the cow is in by far the most common use; it is generally agreeable to the palate, and affords, for the most part, a mild and nutritious diet for those laboring under pulmonic difficulties. When the circumstances of the

case render it too nutritious and exciting, it may either be diluted with pure water, or used in combination with some of the demulcent vegetable decoctions. Stale light bread, or biscuit, may of course be added to the milk.

Milk boiled and thickened with some farinaceous substance, as oatmeal, rye meal, arrow root, &c., is much more agreeable to some persons than in its pure and raw state; and thus, too, the constipating effect produced in many constitutions by crude milk may be in a measure avoided.

Many of the mild subacid fruits, as strawberries, raspberries, oranges, roasted apples, &c., from their laxative and refrigerant properties, may, if the bowels are not irritable, be admitted with advantage into the bill of fare of the consumptive. Baked sweet apples combined with milk are to most people a very grateful, digestible, and somewhat laxative diet.

Whenever any inflammation is indicated in the lungs, by pain in the chest, heat and dryness of the skin, frequent and strong pulse, or when there is evidently much inflammatory disposition, a strictly vegetable diet should be adhered to, and of the mildest character, as decoctions of arrow root, tapioca, barley, &c., with biscuit; or such substances may be made into plain, light puddings, and eaten sparingly.

Several demulcent articles are in common use in pulmonic affections, affording a bland nourishment, and at the same time tending to alleviate the cough

by soothing, as has been supposed, the irritation about the upper part of the windpipe. Among them may be particularized, gum arabic, gum tragacanth, and Iceland moss.

Iceland moss, especially, has possessed a good deal of reputation in consumption, for its demulcent, nutritive and gentle tonic properties. When its tonic properties are not desired, it may be deprived of its bitter principle by repeated washings, or by macerating it in a weak alkaline lie; it then acts like any other mild, mucilaginous and nutritious substance. In this way it is used as an article of diet by the inhabitants of Iceland, and some other parts of the north of Europe. To prepare it, a pint and a half of water should be added to about an ounce and a half of the moss, and boiled down to one pint. Of this, one or two ounces may be taken at a time, either alone or combined with milk, with the addition of a little sugar, to render it more palatable.

To the taste of many persons, these vegetable demulcents are made more grateful by the addition of a small quantity of fresh lemon juice; and they may be rendered slightly laxative, when such an effect is desirable, by boiling with them sliced prunes or figs.

There are a few other articles of diet which have been more or less employed in consumption, and hence deserve a brief notice.

Raw, new laid eggs are a little laxative, and many consumptive persons take them with at least

apparent impunity. To most individuals they are more pleasant when slightly boiled. If boiled hard they become extremely indigestible. In some persons, from constitutional peculiarity, eggs are always difficult to digest, and by such, of course, should never be eaten. Fresh eggs only ought to be employed by the sick.

A few varieties of shellfish are in some repute as a diet in consumption, the most esteemed of which are oysters. These are a favorite article of diet, and are used quite freely by many consumptive invalids. They are most digestible when taken directly from the shell, being simply warmed. That, however, they possess any advantage over, if equal to, the other sorts of diet recommended, I am by no means satisfied. Cooked with butter and condiments, they are very difficult of digestion, and in this way should never be eaten by the sick. "Oysters, in my opinion," says Dr Paris, "enjoy a reputation which they do not deserve: when eaten cold, they are frequently distressing to weak stomachs, and require the aid of pepper as a stimulant; and since they are usually swallowed without mastication, the stomach has an additional labor to perform, in order to reduce them into chyme. When cooked, they are still less digestible, on account of the change produced upon their albuminous principle. It is, however, certain, that they are nourishing, and contain a considerable quantity of nutritive matter in a small compass."*

* On Diet, p. 111.

The flesh of the frog has had considerable esteem as an article of diet in phthisis, and I have known some consumptive subjects to become very partial to it. It is a light and delicate meat, and much resembles that of the tortoise. The thighs and legs are alone eaten. In the United States frogs are scarcely regarded as an article of food; but in France they are held to be a dainty and choice dish, and can be procured only at a very high price. The thighs are there eaten fried, fricasseed, and made into soups. They are of a peculiar variety, and fattened in a particular way for the purpose; and, though the French have been reproached for their meanness in eating them, they are a luxury too expensive to be enjoyed except by the most wealthy epicures.

Snails have likewise been advised to be eaten by the consumptive. The snail is mostly composed of a viscid, slimy matter, readily dissolved in milk or water, by boiling, giving a thick mucilaginous solution. Hence a decoction of these animals may form a very good demulcent diet. They are occasionally employed as food in some parts of Italy, where they abound; and in Sicily, at Cape Passaro, I saw them collected and eaten with wild garlic with much apparent relish. If, therefore, a consumptive invalid is disposed to eat snails, there surely can be no objection to it.

We find also recommended in some of the older writers, millepedes, and the flesh of toads and vipers, but as such substances are not likely to be much in harmony with the refinement and delicacy

of modern tastes, they may be left without further remark.

All stimulating drinks are of course to be avoided in consumption. Wine is only admissible in rare instances, and under particular circumstances. When a fluid diet is principally taken, but little other liquid will be needed. The character of the drinks ought generally to be mild and refrigerant, as pure water, lemonade, a decoction of common balm acidulated with lemon acid, &c. As alkaline medicines have been in considerable repute in phthisis, though without any definite theory of their mode of action, I am in the practice of advising, as a common drink, a weak solution in water of the carbonate of soda. When there is a tendency to acidity in the stomach, this is especially useful. To the employment of weak black tea or cocoa, in the morning and at night, there can generally be no particular objection.

CHAPTER XIV.

TREATMENT OF CONSUMPTION CONTINUED.

Exercise and fresh air.—There is no remedy which more deservedly holds a high rank in the early stage of consumption, than exercise in the open air; and where practicable, therefore, should never be neglected. If the pursuits are sedentary,

and more particularly if requiring confinement in a close atmosphere, they should be abandoned on the first indications of the disease, and a large proportion of the day, when the weather permits, be spent out of doors, and in such exercises as are agreeable to the bodily strength. Were I required to mention the remedy which promised most in the onset of consumption, I should say, daily, gentle and protracted exercise in a mild and equable atmosphere.

Exercise and pure air, by invigorating digestion and all the functions of the body, must consequently elevate the restorative powers of the constitution. The frequent inhalation, too, of a mild air into the lungs, may not improbably exercise some healing influence upon them when only slightly and partially diseased. Exercise, moreover, determines the blood to the surface of the body, rendering the cutaneous function more active and healthful, and may in this way also contribute to the advantage of the lungs.

Though exercise in the open air may not be expected to cure confirmed phthisis, yet if judiciously pursued from day to day, the strength will hold out better, the individual will be rendered more comfortable, will retain more sources of enjoyment, and his existence will probably be longer protracted than it would have been under confinement. And, furthermore, if it be conjoined with prudence in diet, and proper regimen in all other respects, and the first crop of tubercles be small, the living and reacting powers may be so much elevated, as to

bear up under the influence of the disease, and a new development of tubercles may be delayed, and in some rare instances, where the consumptive predisposition is not strong, may even be permanently prevented.

But admitting even that recovery is hopeless, yet surely it is no trifling blessing for one destined to linger through a tedious and ultimately fatal malady, to retain in some measure his physical powers, his ability to help himself, and daily to walk or ride abroad, enjoying the cheerful scenery of nature, and experiencing the exhilarating influence of motion and the pure air of heaven. These remarks are of course not applicable to the very acute cases of consumption, but to those—constituting by far the greater proportion,—which are slow in their advances.

The muscular powers, though the disease be confirmed, may, by a regular and judicious system of exercise, not only be maintained for a considerable period, but sometimes even become augmented by such training. Thus I have known consumptive subjects, who at first could not walk half a mile a day without experiencing fatigue, get by continued practice to walk four, five, or more, with perfect ease, though the malady was all the while gradually advancing. In a few rare instances I have even known the habit of walking abroad to be continued until the very day of death.

The exercise should be regular, and neither so violent nor long continued as to create exhaustion.

The practice of exercising unduly one day, and lying by the next to recover from the fatigue, is, to say the least, very injudicious.

Exercise ought not to be taken immediately after eating, unless very gentle, and the meal had been sparing. It had better, too, be pursued in the fore part of the day, when the sun has risen so high above the horizon as to have dispelled the damp vapors which form during the night. At this period, the physical capabilities, even in health, but more particularly in organic diseases, are usually greater than in the latter part of the day. The night air should always be shunned, and in hot weather, exposure to the intense rays of the sun.

During exercise, the mind, if possible, should be pleasantly engaged—not left to brood over the infirmities and dangers of the body. Hence the importance of a definite and interesting pursuit, as botany, mineralogy, or some other branch of natural history; also of journeying in pleasant countries, where novel scenes and objects are continually awakening interest. Hence, too, exercise, if solitary, is generally attended with less advantage than when enjoyed with pleasant company. Man is a social animal, and commonly thrives best in society. In short, exercise, to impart all its benefits, must be made a pleasure, not a task. These remarks apply with special force to those inclined to mental depression.

The modes of exercise are to be suited to the tastes, habits and powers of the individual, and varied according to varying circumstances.

Walking.—When the bodily vigor is sufficient, and no particular circumstances forbid, walking should form at least a part of the daily exercise. It is the most natural mode of exercising the body, and calling all the muscular system into active exertion, maintains the general physical powers more certainly than the passive motions. Many other arguments, too, might be adduced in its favor. It is independent, and suited to, and within the reach of all conditions of life. Here, at least, the poor man is on an equal footing with the rich. It can be taken, too, whenever the inclination urges, unrestrained by the will or convenience of others. How often it happens that invalids who cannot or will not walk, are compelled to forego the advantage of fresh air and exercise, because the harness or carriage is out of order, or the horse has lost a shoe, is lame, or cannot be spared; or the father, or brother, or husband is engaged, or does not feel in the mood. But to no such impediments is walking subjected.

Walking is often brought into disrepute by individuals, perhaps feeble and unused to it, urging it too far in the beginning. The physical powers must be educated to it by commencing moderately, pursuing it regularly, and gradually increasing it in correspondence with the increase of the muscular capabilities. Some invalids, however, dislike walking, or do not possess bodily vigor to protract it sufficiently to obtain the necessary exposure to the fresh air, and of course must resort to other modes.

I am inclined to think, however, that many, both sick and well, omit this exercise rather from indolence, or defect of moral energy, than lack of muscular power.

Riding on horseback.—In England, horseback exercise is highly esteemed in pulmonic complaints. The succussion given to the body, united with the quick passage through the fresh air, seem in a special manner to invigorate the pulmonary function, and to afford often marked relief to its embarrassments. In chronic catarrhs it is particularly serviceable. This exercise can be longer continued—when once accustomed to it,—without fatigue, than walking, thus affording the important advantage of protracted exposure to the open air in combination with pleasant exercise.

Sydenham, one of the most distinguished of the older English physicians, looked upon horseback exercise as a particularly efficient remedy in chronic complaints of the lungs. Speaking of a cough and consumption, he says—“But the best remedy hitherto discovered in this case, is riding sufficiently long journeys on horseback, provided this exercise be long enough continued: observing that the middle aged must persist in it much longer than children or young persons. For, in reality, the Peruvian bark is not more certainly curative of an intermittent fever, than riding is of a consumption, at this time of life.” And in another place, he says—“But the principal assistant in the cure of this disease, is riding on horseback every day; in-

somuch that whoever has recourse to this exercise in order to his cure, need not be tied down to observe any rules in point of diet, nor be debarred any kind of solid or liquid aliment, as the cure depends wholly upon exercise."

It is certainly a very valuable species of exercise in pulmonic complaints. Long journeys pursued on horseback, through pleasant countries, and during the warm season, are often of peculiar advantage to those strongly predisposed to consumption, and may likewise be useful in its incipient stage, particularly when complicated with any obstruction in the liver. But that pulmonary tubercles, when once declared, and to any considerable extent, can be cured by horseback riding, no one, I imagine, will at the present day contend. Coughs, the effect of simple pulmonary catarrhs, may doubtless often yield to its salutary influence, and as the older physicians drew no nice distinctions between them and consumption, we may easily account for Sydenham's faith in horseback exercise in this latter disease.

Riding in a carriage, and swinging.—These are more gentle exercises, and may often be employed with advantage, particularly by those who are too feeble to pursue the other modes which have been mentioned. In former years, considerable efficacy was attributed to the motion of swinging in consumption. We can only regard it, however, as a very gentle passive exercise, somewhat analogous in its effects to that of sailing; and when it affords

amusement to the mind, and can be conducted in the open air, it may not be without its value.

Inhalation of vapors, or volatile substances, and gases.—The practice of inhaling the fumes from different resins and balsams in pulmonic complaints, is of very ancient date; and within a few years, breathing the vapor of heated tar has been brought into some repute in consumption, especially by Sir Alexander Crichton. Dr Beddoes considered a residence in a cow house as exercising a most happy influence in the cure of consumption, which he attributed to its equable temperature, and the effluvia there inhaled. Van Swieten and some others have attributed virtue to the odor of the fresh earth in affections of the lungs, whence the employment of gardening has been advised in them; and for the same reason, the old remedy of the earth bath was approved by Van Swieten. This consists in burying the individual up to the chin in fresh mould. It is not in use at the present day.

The great immunity from consumption enjoyed by those engaged in certain occupations, as butchers, tanners, tallow-chandlers, brush-makers, &c., has by some been referred to the influence of the vapors and gases to which they are so much exposed. The gas arising in some coal mines has been thought beneficial in the disease; and it has been remarked that the miners of Cornwall are less subject to phthisis than most other persons. Among many of our country people, the occupation of making charcoal, or tending *coal-pits* while burning, is looked

upon as very serviceable in affections of the lungs, the benefit being attributed to the fumes given off and inhaled during the slow combustion of the wood. The clearing of new lands by burning them over, is likewise an employment in considerable repute in the interior, for the consumptive. Here smoke is continually inhaled with the air, and is imagined to exercise a healing influence on the lungs. Thackrah asserts that the progress of consumption is not so rapid in smoky towns as in the pure air of the country and the mountains.*

The inhalation of watery and medicated vapors, and of chlorine, have also been employed in phthisis, but with varying results.

Under certain modifications of consumption, some of these means may act as palliatives to the cough and dyspnœa; still I imagine that most of the instances which have derived material and lasting benefit from them, were cases merely of chronic pulmonary catarrh. In some instances of consumption, the more irritating vapors are decidedly injurious, and have even occasioned pulmonary hemorrhage. The steam of simple warm water is sometimes quite soothing to the lungs when irritable, and the cough dry, and can, at any rate, be productive of no harm. "When," observes Dr Clark, "the air of a consumptive patient's room is very dry, the cough frequently becomes more troublesome, and some advantage is derived from a basin

* Effects of Trades on Health.

of warm water placed near the patient; the vapor diffuses itself in the air of the chamber, and renders it more soothing to the irritated surfaces of the air-passages, while it saves the patient the irksome labor of inhaling."

CHAPTER XV.

TREATMENT OF CONSUMPTION CONTINUED.

Sea voyages.—Sea voyaging in warm latitudes, I conceive to be one of the most effective means in eradicating, or at least, keeping dormant the tuberculous disposition. Phthisis is not commonly developed, even in the predisposed, during long voyages, and it is not frequent among sailors during their seafaring life. Undertaken, too, on the first indication or threatening of the disease, it may tend to repress its development, or if not, to alleviate its symptoms, and protract its course. Even in cases advanced in their progress, the symptoms are not unfrequently ameliorated while on the ocean, though on landing they commonly return with all their severity. The consumptive should always voyage in mild seasons or latitudes, so that all the benefit of daily exposure to the equable atmosphere of the ocean may be experienced.

In those cases described, where the disease advances very slowly, with occasional pauses in its

course, voyages, especially during these intervals of activity, may often be undertaken with marked advantage.

The advantages of sea voyaging are referrible to several causes. It is associated with almost constant muscular exertion, and of so gentle a character, that, while it invigorates, it occasions no undue exhaustion of the living energies. While standing or even sitting on board a ship in motion, a continued muscular effort is demanded to maintain the equilibrium of the body, and which will be proportioned to the degree of the ship's motion. Hence the muscular weariness and sensation of uneasiness, or even pain, in the back, experienced, especially towards evening, by those unaccustomed to the sea. The waddling gait of sailors on first landing after a long voyage, will enable us to form some estimate of the excess of muscular exertion demanded to maintain the equilibrium of the body at sea, over that which is necessary on shore. When the sea is rough, and the ship is rolling and pitching, there is a continued action of numerous muscles, both by day and night, accompanied, when on deck, with a sensation similar to that produced by swinging. I conclude, then, that one of the benefits of voyaging is probably referrible to the constant muscular exercise associated with it.

The moist air, slightly impregnated with salt, which is constantly inhaled, may likewise aid in soothing the function of respiration. At any rate, it is apt to be carried on more quietly, and its embar-

rassments are often greatly alleviated, whilst sailing on the ocean.

Sailing, furthermore, tends to diminish the circulation when unduly excited, and to calm and equalise it. It also quiets the nervous system, and like rocking and similar motions, disposes to sleep. Sailing on the Tiber was a favorite remedy among the Romans in chronic complaints of the lungs.

The influence of voyages in consumption has also been attributed in a large measure to the sea sickness which is ordinarily induced. Sickness and vomiting are generally beneficial in chronic inflammations of the lining or mucous membrane of the air-passages, and may, therefore, afford some relief to the catarrhal affection which is apt to be associated with phthisis. If, too, the disease were complicated with some hepatic obstruction, or other disorder of the digestive apparatus, the sea sickness might benefit these coincident affections, and thus, perhaps, indirectly the pulmonary malady; but that it can exercise any direct favorable influence over the course of tubercles, we have no satisfactory evidence; on the contrary, if severe and long continued, by greatly reducing the living powers, it might be productive of serious evil.

The equable temperature of the ocean, doubtless contributes much to the advantage of voyaging. The temperature, when out of soundings, is in a great measure regulated by the mass of waters, whose range of heat is very limited. Hence there is an exemption from the influence of those sudden

and great vicissitudes of heat and cold so common on land—particularly in our own climate,—and so extremely prejudicial in all descriptions of pulmonic complaints. Thus, persons experiencing much embarrassment of respiration when on the seaside, will often be very sensibly relieved by sailing only so far from the shore as to be without the immediate influence of the land breezes.

At sea, then, in a proper latitude, the invalid can all day long enjoy the benefit of exposure to a pure and equable atmosphere, which, in union with the continued exercise, exerts the most happy influence on the pulmonary function. To take cold at sea, when out of soundings, is not a common circumstance, though one may be exposed to bad weather, to the night air, or even be drenched by the waters of the ocean. But, though colds are rare, they sometimes happen; hence invalids should always be warmly clad when exposed on deck to the night air or inclement weather.

When the ship arrives on soundings, then the vicissitudes of temperature are again experienced, and the susceptibility of the body to their influence being augmented from having become habituated to an equable atmosphere, colds and their train of evils are very common, and the greatest precaution is necessary on the part of the invalid. On the banks of Newfoundland the weather is almost always cool, and usually foggy; hence the sudden change from the mild air of the deep blue sea to this chilly and misty atmosphere, may expose the consumptive in-

valid to much risk, unless he cautiously guards his body against its injurious influence. The night air should be here particularly avoided.

From what has been said it will be understood why small islands far removed from the mainland—other things being alike,—afford a more equable, and consequently better climate, in pulmonic complaints, than continents, or islands of large extent. Ever as the influence of the ocean becomes increased—as even on islands in our harbors, and on peninsulas nearly surrounded by a large extent of deep water,—the temperature becomes more equable, and the effects of atmospheric vicissitudes consequently less frequent. Persons who, during the hot season, are in the habit of visiting Nahant—a peninsula extending far out into the ocean,—must have noted how little subject they are, while there, to catarrhs, and with how much more security they can bear exposure to the night air, than in the neighboring city of Boston.

There is, moreover, something associated with the moisture of the sea air—possibly some slight stimulating effect from the salt dissolved in it,—which renders it less unhealthy than the vapors from fresh water. Hence individuals are more liable to colds, particularly from exposure to the night air, in the vicinity of our large lakes, than when dwelling on the seacoast.

It may be, too, that some principle exists in solution in the air at sea, which is capable of exercising a beneficial influence in scrofulous or tuberculous

constitutions. I have already remarked that alkaline medicines—a solution of soda, for example,—have enjoyed considerable reputation in tuberculous affections. There is much evidence that iodine—a peculiar chemical substance obtained from kelp, and probably existing in very minute proportion in the waters of the ocean,—possesses some healing influence in scrofula. May it not be then—I advance it but as a mere suggestion,—that the scrofulous and tuberculous owe some of the advantage which they often derive from long sea voyages, to the soda, and perhaps iodine also, which exists in solution in the air, being taken into the system by absorption, especially through the medium of the lungs? They are constantly soaked, as it were, in a sea vapor bath, and this vapor being continually inhaled, the absorption of it into the system must be uninterruptedly going on. Those tumors on the front of the neck, called goitres, and which have been already alluded to as seeming to bear some relationship to scrofula, are frequently cured by sea voyages, or even removing from the interior situations where they prevail, to the sea shore. They are often also very rapidly absorbed under the influence of iodine.

The salutary effects of voyages in pulmonic complaints, have been also thought to be, at least, enhanced by the smell of tar and resinous substances used about the ship; and I believe it was this supposition that first suggested the inhalation of resinous fumes in consumption.

The effect of sea voyaging must doubtless vary more or less in different constitutions, some deriving much more advantage from it than others. Certain individuals have a great dislike, or even dread of the ocean, hence care little for their food, are unhappy, and perhaps under the depressing influence of fear all the time they are on shipboard. Whether any benefit could accrue to such, would, to say the least, be very problematical. In some, too, the sea sickness is so very extreme and lasting, as to more than counterbalance all the advantages which have been mentioned. Most voyagers, however, after a time, become accustomed to their new mode of life, and their health evidently improves under it. Still inconveniences and sufferings are to be anticipated at sea by all, and are often most keenly felt by the sensitive invalid, causing him, at first, most heartily to repent of his undertaking.

As one of the greatest evils to those unaccustomed to sailing is sea sickness, I trust it will not be deemed irrelevant if I introduce from my note book a few observations, made while at sea, on this distressing affection.

Sea sickness.—Few, save veteran sailors, feel their stomachs as undisturbed when the ship is rolling and pitching, as when she glides smoothly through the water. Even though vomiting may not ensue, still headach, and at night disturbed sleep, and perhaps frightful dreams, will often afflict those who have not been long accustomed to the sea. The unnatural motion communicated to the body

very likely imparts its first influence to the brain, and the stomach becomes secondarily affected. Some dizziness, or swimming, as it is often termed, of the head, almost always precedes nausea and vomiting. The vision, too, has some concern in the production of the sickness, since looking at the water when rough, or when the ship is moving quickly through it, may produce nausea, or add to it when already existing. It is a familiar fact, that in some persons, sickness is very speedily excited by looking steadily out of a vehicle in motion, on the ground, or any objects by which it is rapidly passing. Fixing the eyes steadily, even when the body is at rest, on objects passing swiftly before them—a train of steam cars, for example—is apt to occasion a slight vertigo, and if continued for any length of time, might in some actually produce nausea and vomiting. The motion of swinging is much like that of sailing, and in many persons very readily induces giddiness and nausea.

There is a very marked difference in different constitutions in the facility with which sickness is occasioned by certain motions of the body. Some cannot even ride in a carriage, especially if it is close, without suffering from nausea and vomiting. In some individuals, sea sickness is apt to be very severe and protracted; whereas, in others, it is but slight, and in occasional instances, it is never experienced at all. I have observed a few cases in which the head always became affected with pain and vertigo whenever the sea was rough, though

nausea and vomiting never followed. The susceptibility to sea sickness is so great in some persons, that the slightest motion of a vessel will excite it, or perhaps even association produced by the odors from the ship, or the creaking of the spars in a calm.

The popular remarks made on this sickness would lead to the belief that it is distinguished in its amount of suffering, as well as other characters, from that following most other causes. But I imagine that the great distress and depression attending it, are in a principal measure referrible to the lasting operation of its cause, from which there is no escape, and its consequent long persistence. Sickness maintained for a definite period by the repeated introduction of small portions of tobacco, lobelia, tartar emetic, &c., into the system, would probably be as distressing as that produced for the same length of time by a ship's motion.

The predisposing cause of sea sickness is intimately associated with the physical constitution, and evades our most searching curiosity. The healthy and robust, with vigorous digestive organs, are apt to be the most readily and severely affected. Dyspeptics many times either escape it entirely, or experience it but in a slight degree. Thus persons laboring under obstructions of the liver, or other derangements of the digestive organs, who go to sea anticipating benefit from sea sickness, are often heard to complain that they cannot vomit freely.

Some consumptive invalids suffer long and severely,

and become very dangerously reduced by sea sickness; whereas others are almost or entirely free from it.

From what observation I have had opportunities to make, I am inclined to the common opinion that females are more apt to suffer from sea sickness than males. Children, from the ease with which they vomit, and the pliability of their systems, and consequent facility of adaptation to circumstances, suffer less, and sooner recover from it, than adults. It is astonishing to observe how soon young children learn to adapt the action of their muscles to the motion of the ship! Probably the brain and other internal organs become educated with equal facility to the new circumstances under which they exist.

In old age, the nervous sensibility being diminished, there usually exists less susceptibility to this sickness than in youth or adult life.

From observations on the subject—too limited, however, to be much relied on—I have been inclined to the opinion that the French, and I may add also the Italians, are more obnoxious to sea sickness than the English or Americans. Do the former possess a higher degree of nervous susceptibility than the latter? The English, however, from their local situation, are most of them from early life much habituated to the water.

Habit, sooner or later, and more or less perfectly in different constitutions, blunts the susceptibility to the affection I am describing. In some it is very

aggravated for two or three days, then ceases, and is not again experienced during the whole passage, be it longer or shorter. In others it will last a week or more; and again, others are hardly free from it, unless when the sea is very smooth, until they arrive in port. The disposition to it is in some constitutions entirely eradicated by the first voyage, while in others, more or less sickness is experienced at the commencement, at least, of every succeeding one.

Some persons only suffer when the sea is very rough, whereas others are affected by the slightest sensible motion of the ship. When the waves run high, or the vessel rolls much during a calm, sickness is apt to be very general among passengers. It has been noticed that in violent storms, when actual danger is present, sea sickness will often cease, yielding to the new and stronger feeling of terror.

The symptoms are much the same as in sickness at the stomach from other causes; yet as the cause is here permanently operative, the nausea is more constant, more depressing, and the retching more violent, so much so that blood is in some instances actually emitted from the stomach. Bile, also, is usually vomited in greater or less quantity; not, as is commonly imagined, because it is already in the stomach, but that the violent and inverted action of this organ is extended to the liver, augmenting the biliary secretion, and drawing it by means of this inverted motion into its own cavity. This free dis-

charge of bile, then, is for the most part merely an effect of the nausea and vomiting, and hence is likely to be serviceable only in particular cases of torpor and obstruction of the liver.

In some constitutions, every thing taken into the stomach turns to an intense acid, and possibly this organ may at times actually secrete an acid. Again, the gastric secretions may be morbidly acrid.

The whole alimentary canal probably partaking, in a degree, in the inverted action of the stomach, and but little consequently passing downward from it, natural passages by the bowels become very rare. I have known persons to cross the Atlantic without having a single intestinal operation. Constipation is apt to be very troublesome at sea, in many, even, who are not at all affected with sickness.

The suffering from sea sickness is often very extreme, prostrating all the energies of mind and body, so that the individual may become quite reckless of his fate; still he gets but little pity, or perhaps is even made the subject of sport. Our strong sympathies are, for the most part, awakened only by those diseases which are supposed actually to threaten life, though they may be far less painful than others which are entirely disregarded. But such is the instinct of our nature—and it is, doubtless, in reference to our preservation,—that sympathy should be especially called forth where life is in peril.

Sea sickness has in some rare instances proved

fatal. Should there exist at the time an advanced aneurism of a large vessel, as of the aorta—the main artery conveying the blood directly from the heart,—the violent straining might occasion its rupture, when death would instantly ensue. So, too, if there was advanced organic disease of the heart, or of any other highly important organ, excessive vomiting might be attended with fatal consequences.

Aggravated sea sickness is always dangerous when there exists any chronic inflammation of the stomach and bowels; and even where they are very irritable, and disposed to inflammation. In feeble, nervous habits, as in delicate and irritable females, although it sometimes appears to improve the health, still it may be productive of serious injury, or at least of an exhaustion of the vital powers, from which a long period may be required to recover.

When the vomiting and sickness have ceased, the appetite generally becomes very keen, digestion active, and the subject speedily acquires flesh and vigor. It is commonly observed that the health is better and the appetite greater where free vomiting has taken place, than when nausea alone, or perhaps with some slight retching, has existed. In regard to the increase of appetite, the same thing happens after other affections of the system in which there had been great waste of the body, with but scanty ingestion to supply it; the hunger and quick digestion being the result of a necessity experienced by

the system in its wasted state for new and rapid supplies. The pure air of the ocean, and continued exercise communicate also an additional stimulation to the digestive function.

Treatment.—We are acquainted with no remedy which is certainly preventive or curative of sea sickness. A very slight experience will teach us the inefficacy of the various pretended specifics. Most persons must undergo a seasoning on ship-board, must become habituated to the new and unusual motions to which the body is subjected, before they can claim exemption from this distressing affliction; still, by a judicious care of diet and regimen, not a little may be done to mitigate its severity.

Many on going to sea, particularly for the first time, entertain very erroneous notions on the subject of their diet. They imagine that the stomach can digest almost any thing, and in almost any quantity, and that the more substantially they fortify it with food, the less will be the chance of sea sickness. The consequence is, that they many times begin their novel mode of life by both eating and drinking to excess, and thus the stomach becomes early disordered, and sickness is not only more certainly insured, but is rendered much more severe. I have seen some also, during the intermission of sickness, and return of appetite, eat all sorts of indigestible substances, under the false and pernicious idea that cramming was their best remedy against its renewal. But the offensive articles were soon

rejected, the instinct of the stomach being a better guide than the intellect of the brain.

It should ever be remembered that at sea there is a change in almost all our habits, that we live under an entirely new condition of things, and one to which time alone can perfectly adapt our systems. The greatest prudence, therefore, in regard to diet is at first particularly demanded. The food ought to be mild, of easy digestion, and taken only in moderate quantity. On board of our packet ships, the meals occurring frequently—there being four during the day,—tempting with their variety, and passengers having little other employment, they often eat to pass away the time. Three sparing meals a day are certainly quite enough for those unused to the ocean.

Wine is generally injurious to those disposed to sea sickness, and particularly so when there is any tendency to acidity of the stomach. Under the latter circumstances, the light acid wines, as champagne for example, are in a special manner prejudicial. Not unusually, the morbid effects of wine, as acidity of the stomach, nausea and headach, are principally experienced on the day following its employment.

When the sickness has once commenced, then the diet should be of the most mild and simple character. Gruel, arrow root, or other light vegetable decoctions with biscuit, or black tea with dry toast, may be taken. Sometimes after long vomiting, a few mouthfuls of salted meat, or codfish, or

pork sliced thin and fried very brown, will operate as grateful stimulants to the stomach, probably owing to the salt which is united with them. Not unfrequently a burnt crust of bread in water can be retained better than any thing else. It too often happens, however, when the sickness is severe, that every thing swallowed is almost immediately rejected.

A small quantity of bland food taken occasionally, is oftentimes serviceable, by involving and diluting the morbid and irritating secretions of the stomach, and thus relieving the unpleasant sensations experienced in this organ from their action on its delicate internal surface. A little mild food, too, acting as a natural stimulus, tends to call forth the healthful function of the stomach. When food is taken with the special view to relieve nausea, perhaps, as a general rule, solid—as ship bread or dry toast,—is better than liquid. Fluids should always be taken in very small quantities at a time, since any distention of the stomach by them in its irritable state, is apt to favor the vomiting.

When the irritability of the stomach is extreme, and the vomiting urgent, then mucilaginous fluids, as decoctions of arrow root, tapioca, barley, &c., must be mainly relied upon to sooth the organ, and afford a little nourishment, as under such circumstances, it is rare that any solid food can be digested.

When an excess of acid in the contents of the stomach is evinced, it may be readily neutralized

by small draughts of a solution of the carbonate of soda in water, or the common soda water; and on the other hand, when there is much vomiting of bile, and the gastric matters are bitter and alkaline, small quantities of lemonade or cider, and some of the subacid fruits, as oranges, grapes, roasted apples, may be employed with most advantage. Vegetable acids are much esteemed at sea, and are, for the most part, pleasantly stimulating, very grateful to the stomach, and not uncommonly relieve slight nausea; but when that sensation denominated heart burn exists, or there has been a vomiting of acid matters, then they are rarely proper.

The employment of active medicines in simple sea sickness, I conceive to be seldom admissible, as their effect is more frequently to aggravate than to quiet the disorder of the stomach. Opium is sometimes given, but though its immediate action may be soothing, yet when this is passed, the stomach, from its secondary effects, is generally left even more disturbed and irritable than previous to its administration. Its tendency is ever to impair more or less the digestive powers, and to aggravate the constipation of the bowels, and in some constitutions its use is always followed by sickness of the stomach. This medicine, therefore, is only allowable in those extreme cases which are attended with alarming exhaustion, or with much pain and spasmodic action.

In some instances of great exhaustion, mild aromatics or cordials, as peppermint water, warm wine

and water, &c., may be demanded. Hot punch and spirits, which are in repute among some, may afford temporary relief, but their ultimate effects are generally prejudicial. Friction and pressure over the stomach with the hand, may sometimes afford transient relief in slight nausea. Compression by means of a broad bandage passed round the abdomen has had some repute as a remedy. Sometimes it does appear to impart a little relief, but at others no observable benefit results from it.

The fresh air is always highly necessary to the sea sick. As the cabin of a ship cannot with facility be thoroughly ventilated, and the air in it is consequently often very close, and not unfrequently tainted with the peculiar nauseating odor of bilge water, it is important that the individual should remain on deck as much as is practicable; and even when the sickness is so severe as to render the horizontal posture requisite, if possible it had better be maintained in the pure air above.

Owing to the change of diet and general habits, and to some circumstances not well comprehended, constipation of the bowels is apt to be a very obstinate evil at sea; hence a laxative vegetable diet, comprising subacid fruits, stewed prunes, &c., if such can be retained on the stomach, is generally indicated. The occasional employment, too, of mild cathartics, as the extract of butternut, castor oil, &c., or mild injections, if circumstances admit, are in many instances demanded.

I have simply stated the general principles of

management in sea sickness, which may of course require more or less modification in different cases. In conclusion, I believe I may safely assert that most persons who make up their minds to go to sea, must also make up their minds to suffer more or less under this affliction; those who are so fortunate as to escape it, form only exceptions to the general rule.

CHAPTER XVI.

TREATMENT OF CONSUMPTION CONTINUED. — CHANGE OF CLIMATE.

General remarks on the influence of change of climate.—The high importance of fresh air and daily exercise, as a preventive mean, to those who are predisposed to consumption, and as a remedy for those who labor under its threatening symptoms, is now very generally acknowledged. If, therefore, the climate in which such unfortunate individuals reside, is so bleak and variable as to confine them for a considerable part of the year within doors, they should surely migrate, at least during the cold season, and without delay, to one whose skies are more genial, and where these inestimable advantages—air and exercise,—may be more constantly enjoyed.

There are also other modes in which mild climates may favorably influence the pulmonary function.

The skin and liver are more active and disposed to disease in warm than in cold latitudes, while the reverse is true in regard to the lungs. As previously suggested, the cutaneous function does appear, under some circumstances, to act as a compensating power to that of the lungs, for which reason its augmentation—and perhaps the same is true in regard to the function of the liver,—may lessen the demand on these organs.

Character of the climate to be selected.—The climate aimed at, should be mild, equable, moderately moist, and still. Hence a residence in sheltered valleys is preferable to one on hills. A dry atmosphere, as usually exists on elevated lands, rarely agrees well with pulmonic complaints. A very hot climate, too, is likely to hasten the advance of consumption, when it has already begun. Hence it may be comprehended why a residence which might be judiciously chosen for winter, would form a very improper one during the summer.

Laennec and a few other physicians have advised that an abode be selected near the seacoast, that the full influence of the sea air—imagined to possess peculiar virtues in the disease,—may be experienced. On small islands, and on capes and peninsulas extending far into the ocean, the temperature being more or less under the controlling influence of that of the waters, must enjoy a superior equability, and the air also be maintained in a uniform condition of moisture, which are doubtless advantages in difficulties of the lungs; but whether the

ordinary residences near the seacoast on continents, or extensive islands, possess any advantage over those in the interior which enjoy an equally mild and uniform climate, facts and observations are yet wanting to enable us to judge. Eminent medical men have certainly differed much in opinion on this question.

Though I have stated the general character of the climate suitable for the consumptive, still varying circumstances in different cases may demand somewhat different conditions of it. Thus some are benefitted by a degree of heat which to others would be quite prejudicial; and though a moderately moist atmosphere is generally superior to a dry one, yet exceptions may doubtless occur. Qualities which I deem to be essential, are mildness and equability.

But now comes the question—and strange as it may seem, one which has never been settled,—where on the face of earth can a habitation be found, enjoying in perfection the conditions required in consumption? Or where can one be found in harmony with the varying and irritable feelings of all the motley groups of sensitive invalids who yearly wander forth in search of health? It is ever too hot or too cold, too wet or too dry; in truth elysium could hardly satisfy them all.

The opinions of the sick, in regard to the character of a climate, should always be received with a good deal of caution. Their bodies are apt to be morbidly sensitive—readily susceptible to the slightest atmospheric vicissitudes; their feelings

often irritable, and not unusually disappointed, from having indulged in too high anticipations of the perfection and remedial power of distant climes. Hence may be explained the opposite accounts so frequently given of the same climate by the sick and the well. Incidental circumstances, too, as variation of seasons, must of course influence the opinion of those whose residence in a particular climate is but temporary. Travellers are far too prone to draw general inferences from hasty and insufficient observations.

The results, moreover, derived from thermometrical observations, are far from affording a true criterion of the character of a climate in its relation to the human body, since the agitation or stillness of the air, its moisture or dryness, materially influence the rapidity or slowness with which it conducts off the animal temperature. Our bodies, too, will experience an influence corresponding to the suddenness of the atmospheric transitions, whether in regard to heat, moisture, or motion. It is plain, then, that our sensations can by no means be accurately measured by the rise or fall of the mercury in a glass tube.

Banishing, therefore, all idea of a faultless climate, we have only to make the best selection—all circumstances taken into consideration,—which our present knowledge renders practicable.

In the choice of a climate, it is a matter of no little importance to go where all those comforts and attentions so necessary to the sick, may be readily

obtained, and furthermore where the mind can find enough of occupation and amusement to prevent it from brooding over the ills of the body. There are doubtless many locations in different parts of the earth—in South America, for example,—whose climate is far superior to that of the south of Europe, where consumptive invalids are so much in the practice of resorting. But then the country being mostly in an unsettled condition, and the requisite comforts of life difficult to be had, the advantages of the climate are more than counterbalanced by these evils. Very numerous other obstacles may also stand in the way of a selection of the best climate, abstractly viewed, even though it be known.

For those who are inclined to mental dejection, large cities—for reasons too obvious to need repeating,—will generally afford more favorable residences than small and obscure towns.

Period when change of climate may be advisable.—There can be little question in regard to the expediency of a change of climate—granting, of course, the present to be a bad one,—as a preventive measure in those who are scrofulous and predisposed to consumption. Thus scrofulous tumours will oftentimes quickly diminish, and ulcers of the same character heal kindly, under the assuasive influence of journeying and a residence in southern climes. And I have already asserted that tubercles are far less apt to be developed under mild and equable, than under cold and variable skies.

I consider, then, that individuals dwelling in our

northern states, and who are satisfied that they labor under a consumptive predisposition, owe it to their own safety, forthwith—not staying till the malady has declared itself,—to remove to a more southern latitude, there to pursue their occupations, and there to establish their future home. I am fully persuaded that very many, by seasonably migrating to a softer and less fickle clime, and regarding at the same time those preventive rules of diet and regimen already laid down, might escape the untimely grave which would here be almost inevitable. And, taking a rational view of the case, why should one sacrifice health and life, which duty so imperiously commands us to preserve, to local ties and associations. In youth—and this is the time for removal,—these may easily be broken, and new ones as easily created; and with improvement of health, and continuance of life in prospect, additional happiness may be reasonably anticipated. To obtain to any extent the advantage of a southern clime, the removal should be as far as the southern part of Georgia, or, to say the least, as far as South Carolina.

When, however, the disease has begun to develop itself—when more or less of the premonitory signs mentioned awaken our fears, and raise the suspicion that the tuberculous disposition is quickening into active existence, then it is that the question in regard to change of climate becomes one the most responsible in its nature, and calling for the utmost prudence in its decision.

I am apprehensive that some, at least, of the medical profession do not sufficiently estimate the weight of responsibility they incur in sending their consumptive patients to foreign climes. Before banishing an invalid from his friends and home, all the circumstances of his case should be carefully investigated, and the probabilities of advantage from such a step duly calculated; and after all it is but a computation of chances, in which the best informed and most judicious may at times err.

In making up an opinion, too, on this subject, there are circumstances unconnected with the disease, which should always be taken into the account. If a person had wealth to command all the attentions and best comforts which a foreign land can afford, we might with less hesitancy advise him to the step, than one straitened in his pecuniary means, and who would consequently be compelled to endure many more hardships and deprivations. The feelings and habits of the individual are also to be consulted. One who enjoys, and is accustomed to travelling, other things being equal, will experience less difficulties, and derive more advantage from it, than another, whose thoughts and wishes have all been bounded within the narrow circle of his own home. The latter has to learn to travel, and here, as in every other instance, experience must be bought with a price.

Sex, moreover, ought to influence the decision. Females, from their nature, as well as the customs of society, are far more dependent beings than our-

selves. Man may roam the seas and the earth at his pleasure; hardship and change are his enjoyment, and the world his home. But woman is more the creature of domestic life, and her happiness is more intimately blended with its quiet comforts and tender associations, and the sacrifice of these—especially when her body is sensitive and infirm,—often casts a deep shadow over all her feelings. Hence to her, travel is oftentimes a painful task—a series of inconveniences. All circumstances of the disease then being alike, it might be proper for a male to go abroad, when it would not be for a female.

It is no easy matter to designate exactly the period and circumstances of consumption when the experiment of change of climate may be prudently tried, and here we can do no more than approximate to truth. I will say, then, when the symptoms have but recently begun to declare themselves, and are slight, when there is a little cough, some trifling though not very marked disturbance of respiration, with the addition of some dyspeptic symptoms, and commencing emaciation, or if there had been a pulmonary hemorrhage, then it is that a change of climate may hold out a chance, at least, of protracting existence; and though it be but a chance, if no incidental circumstances forbid, ought it not to be afforded? Admit it to be but as one to four or five; would not all, life being the stake, wish to avail themselves even of this hazard? At such period of the disease, too, journeying is ordinarily well sus-

tained, and is almost invariably associated with at least a temporary increase of bodily vigor.

Furthermore, if on a cautious examination of the chest by the physical means now in use, and a critical investigation of all the phenomena, there is reason to suspect the disease to be limited to but a small portion of the lungs, then change of climate, and the sailing and journeying, one or both, necessary to effect it, may assist the constitution to bear up under such limited disease, and to oppose a new development of tubercles. I am aware that it is no easy matter to acquire the accuracy of knowledge in regard to the extent of the malady which will here be needful, yet, disclaiming any pretension to infallibility, we must act according to the light we possess.

Again, when the disease is manifestly of a very chronic character, and subject to interruptions in its symptoms—which variety I have described,—the subject would probably be rendered more comfortable, and live longer, in a mild and equable climate, than in one more severe and variable.

Though the importance of a speedy resort to the measure under consideration, if to be pursued at all, is indisputable, yet it too often happens that the slight symptoms frequently marking the early dawn of the malady, are regarded as of insufficient moment to render it necessary. The occasion is not yet urgent enough to induce the unfortunate subjects to incur the expense, trouble, or imagined danger of such an undertaking. They are unwilling,

for an illness apparently so trifling, and which they are expecting will soon pass off, to forego the comforts of domestic life—to sever the ties of friendship and kindred, to dwell in distant and unknown lands. All the obstacles and sufferings of the change being magnified, and the disease flattering them, they wait a little longer, and still a little longer, in short, till it is too late, and then they are willing to go—perhaps do go, and either never return, or experiencing no benefit, hasten back, with no other hope save of the melancholy satisfaction of dying among their friends. It is this procrastination that has tended to bring into disrepute a remedy which if seasonably resorted to, might many times be productive of the most happy results.

When, therefore, consumption is beyond a doubt established—when its existence is indicated by the various signs which both science and observation have made known to us—in short, when we feel assured that tubercles are softening or suppurating, change of climate affords no hope, save, perchance, in those rare cases before specified, where the crop of tubercles already developed is imagined to be too small to destroy life, or in which the disease is very chronic and intermitting. With such exceptions, it may not only be useless, but may really aggravate the disease, and hurry its fatal termination.

There are incidental circumstances, too, necessarily connected with this change, which must be more or less prejudicial to the feeble invalid. As,

for example, the nervous excitement and disturbance associated with the preparations for a removal to a distant country. The agitation and moral depression consequent to parting with friends, kindred, home and native land, with the solemn idea weighing on the mind that the separation may be final. Moreover, in this weak and dependent state, one feels with augmented sensibility the privation of those nameless little attentions, and heartfelt sympathies of home, which smooth the sick man's pillow, calm the pains of disease, and render even the visage of death less frightful.

Let me then urge, let me exhort those laboring under manifest consumption, not to yield up their domestic comforts, and the last melancholy satisfaction of breathing out their life amid the sympathies of those bound to them by the most endearing ties, to linger, suffer and die in a strange land.

CHAPTER XVII.

TREATMENT OF CONSUMPTION CONTINUED.

Directions for the consumptive travelling to the south of Europe.—As the invalid in a foreign land stands in need of numerous little comforts and attentions, which may easily be dispensed with in health, and which money alone can secure, he should not go abroad without a sufficient supply of this necessary

article. If the sick man has not means for all his necessities, but must be all the while anxious in his mind, and contriving or perchance even quarrelling to save a penny, and is consequently forced to debar himself of the comforts, and may be even of the needful accommodations of life, he had far better be at home. No invalid, then, should decide upon going abroad without first counting the cost, and making due provisions for all that his health and comfort may require.

Some assured friend or relative, or, in defect of such, a trusty attendant, should always accompany the invalid in his travels. This I consider of essential importance. If he looks to strangers, even though they be his own countrymen, for attentions and kindnesses, he will too often find himself disappointed. The company of the sick and feeble is apt to be shunned by the healthy and active, who are travelling with different motives, and who wish no bar to the freedom of their movements, and the prosecution of their pleasures. The services of foreigners to the sick, as might be suspected, are commonly heartless, and with the single view to gain. Heaven have mercy on the unhappy stranger who becomes sick and helpless in the south of Europe, with no friend or companion to look to for aid or consolation, and with, perhaps, but an imperfect knowledge of the language of the country! Those who have unfortunately experienced such a situation, can alone tell all its horrors. But if to this condition is added straitened pecuniary cir-

cumstances, imagination can hardly picture greater misery.

The individual should be well furnished with woollen garments. In travelling in the south of Europe, warm clothing will be found especially needful to protect the body against the great transitions from the heat of the valleys to the cold of the mountains, so frequently experienced in crossing the numerous Apennines. Thick clothing is needed even as far south as Naples and Sicily, with occasional exceptions, during the whole of the winter, and more or less till the beginning of May.

Before the consumptive invalid begins a voyage or a journey, if any undue excitement or an inflammatory disposition is manifested in his system, it should, as far as possible, be subdued; since travelling, more particularly on land, often adds to any excitement which may already exist. Every other morbid affection, too, which may serve to complicate the disease, as disorders of the stomach, liver, &c., should, as far as is within our ability, be alleviated.

If bound for Italy by the way of France, it will be necessary to embark certainly by the beginning of August, that the mountains may be crossed some time during the month of September. Should circumstances delay a departure till this latter month, it will be more prudent to sail for Leghorn, Malta, or some port in Sicily, for which, vessels with tolerable accommodations may usually be found, either in New York or Boston. The most weighty objec-

tion to this course, is the tedious quarantine to which one is liable to be subjected. At any rate, the consumptive should never venture crossing the mountain ranges separating France from Southern Italy, later, at furthest, than the early part of October. Mild weather, to be sure, as seasons vary, may be experienced on the mountains beyond this period, still there is hazard, and it should not be adventured. In truth, in passing the high points of the Alps and Apennines at the most favorable season, more or less vicissitudes of weather are to be anticipated, and in a few hours even, a variety of climates may be experienced.

The most usual routes pursued in travelling from the northern part of France into Italy, are over Mount Cenis to Turin and Genoa, and over the Jura Alps and the Simplon to Milan. The latter is the more northern route, somewhat colder—the peaks of the Simplon being covered with perpetual glaciers,—and the road over this mountain, when I passed it, was considerably out of repair, and generally much inferior to that over Mount Cenis. Still it is a short and very interesting route, and may be safely taken by the consumptive—if their lungs are not very irritable, and the day is fair when they cross the mountain,—in summer, or the first month of autumn. If October has commenced, the passage of Mount Cenis should be preferred.

A route still further south, which is often chosen, is by the south of France to Marseilles, thence to Nice in Piedmont, and from here crossing the Mar-

itime Alps, by the new road which was opened for carriages in 1827, to Genoa. Should the invalid, on arriving at Marseilles, feel himself inadequate to a further land journey, or should his lungs be too irritable to endure the cold of the mountains, he may generally go by steamboat to Leghorn, and from this latter place—if he designs proceeding directly to the south of Italy,—in the same manner to Civita Vecchia, which is but forty-seven miles from Rome; and in this way, the mountainous and tedious journey from Florence to Rome is avoided. Some delay, however, may often be experienced from the irregularity of the steamboats, so frequent on the Mediterranean.

Circumstances, however, in individual cases, must influence more or less the decision in regard to the course to be pursued. Generally when one is in a condition to undertake the journey at all, the mountains, if not later than September, may be crossed with safety.

The journey itself, indeed, is by no means destitute of advantage. When judiciously conducted, and the weather is pleasant, material improvement in the health will often be experienced from its influence.

In journeying, there is a continued succussion of the body, and a constant exposure to, and passage through the fresh air, imparting a beneficial influence to the lungs as well as to all the rest of the animal economy. The mind, too, is agreeably excited by the succession of new objects and scenes of

interest which are continually presented to it, and the perplexities of business, and the real or imaginary cares and troubles of life, are to a greater or less extent, banished from it. Hope, too—the hope of returning health, the most salutary of all stimuli, which, while it elevates and equalises the different functions, leaves no exhaustion behind,—is at the same time exercising its kindly influence. Hence, the body is rendered less susceptible to atmospheric changes, and acquires new vigor, the appetite improves, the sleep is more sound, the temper, if previously irritable, becomes more even and cheerful, the landscapes of nature seem more gay, life holds out brighter promises, and the pleasure of existence is augmented. Such may be the happy results of journeying, if sufficiently long continued, and rightly managed. I think, therefore, during the warm seasons, the consumptive will find advantage in making frequent changes of situation, instead of remaining stationary.

Journeying and continued change of scene are in a special manner beneficial in instances where dyspepsia, liver complaints, lowness of spirits, irritability of temper are associated with the predisposition to, or early threatenings of the disease.

Travelling should always be so conducted by the invalid that neither his mind or body be overwrought. In regard to the mind, it is proper that it be amused and pleasantly excited, but it should never be fatigued. Italy, in a particular manner, so abounds in objects awakening the most eager curiosity, and

interesting associations, that there is constant hazard of undue mental and physical exertion. Few labors are more fatiguing to one in health—and how much more so must they be to the feeble and infirm?—than a continued routine of sight seeing. The powers of both mind and body are often thus drawn upon to excess during the day, and at night the individual finds himself in too high a state of moral excitement and nervous irritability readily to compose himself to rest. This is more especially apt to happen in the large cities of Italy. The principal exertions of the invalid should be made in the fore part of the day, thus affording time for the consequent nervous disturbance to become quiet previous to retiring to repose at night.

Natural scenery always tasks the mind far less than the works of art, since while it delights, it commonly imparts serenity to the feelings.

Travelling for health, then, and travelling for instruction, are very different things, and are to be very differently conducted.

It is equally important that undue physical, as that undue moral labor be avoided. The invalid should ever travel at his ease. Let the system be pleasantly excited by exercise, but never exhausted by fatigue, and more especially at unseasonable hours. Hence the practice of travelling all night, or even for successive nights, in a *malle poste* or *diligence*, is greatly to be reprobated. The regular hours of sleep should be scrupulously observed, and the night air carefully shunned by the consumptive.

I would, in a special manner, warn the consumptive, whether journeying or stationary, of the danger of visiting the churches of Italy. These are almost always cold and damp, and occasion a chill like that experienced on entering a cave or cellar in the summer season. The feet, too, unless thick shoes are worn, are apt to suffer from exposure to their cold marble floors. The risk is also increased, owing to the necessity, imposed by religious custom, of visiting them bareheaded. A person in health, even, cannot remain long in them without suffering from their chilling influence. The consumptive invalid, then, should never enter these places unless his body is well guarded by warm clothing, and his head protected by a handkerchief, or some other unforbidden covering. The church of St Peter, at Rome, however, affords an exception to these remarks. Owing, probably, to its immense size, its air is generally mild and pleasant, and its yearly range of temperature is only about ten degrees.

In regard to the different modes of travelling in the south of Europe, the most eligible and independent is posting in one's own carriage. By this method, the routes, stopping places, periods of travelling and rest, may all be adjusted to suit the ability and convenience of the individual; and it will be found of no trifling moment to the feeble in health to have it in their power to rest when they please, and to stop where they can enjoy the most suitable accommodations; for really a mean, dirty

Italian albergo, is no place for a delicate and susceptible invalid.

Another cheaper and very customary manner of travelling, is in a *vettura*. This is much slower than posting, there being no change of horses. The daily distance ordinarily travelled in this way, is from thirty to forty miles; hence one must be on the road for long continued periods. As, too, the *vetturino*, or driver, is obliged to accomplish fixed daily tasks, and often with dull horses, he will usually, unless a definite bargain is made to the contrary, set out very early in the morning, and is not unfrequently driven to encroach more or less on the evening. Only one stop is made during the the day, which is about noon, for the purpose of refreshing the horses, and allowing a *déjeuner à la fourchette* to the passengers. This is commonly protracted about two hours, sometimes longer, and is not unfrequently in the very last place one would have selected for so tedious a delay. As, too, the daily distances must be as equally divided as possible, the advantage of the best lodgings for the night cannot always be enjoyed. By making, however, a definite contract, and paying, of course, an extra price, some of these evils may be avoided; and the individual who cannot afford posting, and is content to journey slow, may thus get along with a tolerable degree of comfort. A written contract should always be made with a *vetturino*, and all the articles of it carefully specified.

Those rules of diet and regimen which I have

already stated, are all, as far as practicable, to be observed while travelling. Many persons entertain the false idea that when journeying there is no longer necessity for restricting themselves in regard to their food or drink; but if the consumptive traveller, under such belief, indulges his appetite without restraint, the digestive function will probably soon become deranged, and the pulmonic symptoms consequently aggravated; thus the advantages of journeying will be forfeited, and even the measure itself may be brought into unmerited reproach.

Frequent meals, when travelling, are, to say the least, quite unnecessary. When riding constantly, one can usually fast longer without experiencing that peculiar faintness at the stomach, the result of abstinence, than while idling about at home. As a general rule, the consumptive traveller had better take his breakfast previous to setting out in the morning, and dispense with the regular meal about noon—the *déjeuner à la fourchette*—so common in France and Italy, and take in its stead, if food be needed, a little bread and milk, macaroni, or fruit.

The day's journey ought to be concluded before sunset, and only a plain and frugal repast taken. The not unfrequent practice of dining at eight or nine in the evening, and almost immediately after retiring to bed, is surely improper for the invalid.

Those persons who, laboring only under the tuberculous predisposition, are travelling as a preventive mean, may take a proportion of solid animal food, and perhaps with safety indulge in a sparing

use of the light wines of France and Italy; but by those in whom the symptoms of consumption have begun to manifest themselves—most certainly if there exists an inflammatory tendency,—both wine and solid animal food had, as a general rule, better be forborne.

When journeying in Italy, the invalid should not cross the Campagna di Roma or the Pontine marshes either early in the morning, before the sun has risen sufficiently high to have dispelled the damp vapors which condense upon them during the night, nor toward evening, when the formation of these vapors has begun, since then, especially, the air becomes chilling and poisonous. Generally, in passing these unhealthful situations, additional garments are needed, and unless the sun is high and warm, the carriage should at least be partially closed. The Italian travellers well understand their deleterious character, and hence on arriving upon them, particularly toward nightfall, wrap their cloaks about them, draw up the carriage windows, and shuddering exclaim, *aria cattiva!* All the peasantry, too, seen here toward evening, are closely muffled in their cloaks, or protected by the skins of their flocks. But I will employ a few moments—and I trust the digression will be pardoned,—in a cursory description of these places, so long noted for their unhealthfulness.

The Campagna encircles Rome, and hence is necessarily crossed in going to this city in any direction. It is something more than a hundred

miles in extent, and its surface somewhat undulating, — its soil is a sandy loam, covered with a green turf, and here and there may be seen the bramble, genista or broom, gorse, thistle, wild poppy, some shrub oaks, &c. It is destitute of trees, and even its shrubbery is not very abundant. Occasionally a little stagnant water may be observed, yet it is, for the most part, dry, and resembles an extensive and desolate heath. Its uniform expanse, especially when seen through a hazy atmosphere, bears no little resemblance to the sea itself. Only a few acres of its soil appear to be reduced to cultivation, and though in the proud days of Rome so populous, it now scarcely comprises a thousand inhabitants, and these poor and sickly, and instead of clustering together in cheerful villages, are seen scattered only at distant intervals over this lonely waste. Silence and desolation are its melancholy characteristics, and every thing seems ominous of its threatening character. Few objects here meet the eye, save the solitary post house, or the miserable hut of some wretched shepherd or herdsman, or a dreary ruin rising amid the solitude—a remnant of other ages, and a monument of departed power.

In the atmosphere of the Campagna there exists a mysterious poison, supposed to arise from its soil, termed malaria, so fatal to human health and life, that man cannot long withstand its influence. It is insensible, and consequently known only by its effects; and in the aspect of the soil there is nothing to indicate its production. It appears to become

more concentrated, and of consequence more highly active at night than during the day.

The Pontine marshes are situated about forty miles south of Rome, and on the way to Naples. Their name—*Paludes Pomptinæ*,—is derived from *Pometia*, which was a very considerable town anterior to the foundation of Rome, and was seated in their vicinity. These marshes extend about twenty-four miles in length, and vary from six to twelve in breadth. They are bounded on one side, or the west, by the Mediterranean sea, and on the other the Apennines sweep round them with a graceful curve. At their southern and western extremity is seen the lofty and classical promontory of Circello, the fabled residence of Circe, daughter of the sun.

From the time of Appius Claudius, who constructed the celebrated Appian Way, the efforts and ambition of emperors and popes seem to have been more or less directed to the draining and rendering salubrious these pestiferous fens; hence dikes and canals are seen almost every where passing through them, designed to collect the waters descending from the neighboring mountains, and convey them to the sea.

Though they are denominated marshes, yet their northern portions, certainly, more resemble rich meadow lands. As, however, we advance south, they exhibit in a greater degree the characters of a marsh; much sluggish and standing water is seen, and often covered with an abundance of a green vegetable scum; and numerous streams are observed

passing over, or slowly winding their course through a rank growth of vegetable matter peculiar to marshes, as the reed, flag, bulrush, &c.

The soil of the Pontine marshes is a little undulating and broken, and consists of a dark, and in some spots, of a reddish or yellowish loam. Much of it is now reduced to cultivation, and fields of grain, and rich pastures covered with horses, oxen and herds of buffaloes, meet the eye in every direction.

These grounds are even more destitute of population than the Campagna. Save the lonely post house, the straw shelter of the laborer, and the guard house of the soldier, at its regular intervals, no signs of human habitation cheer the view. The peasants dare not sleep here, but when the vapors of night begin to condense upon the plains, retire to their villages on the mountain sides, and in the morning descend again to their labors. The soldier condemned to this dangerous spot as a safeguard to the traveller, is almost the only permanent resident; and toward evening, fires are seen blazing about his dwelling, as a security against the poisonous influence of the malaria.

As with the Campagna, there is associated with these luxuriant plains a subtle and inscrutable poison, highly deleterious to moral energy, health and human life, and which is more particularly active at night. An unpleasant odor is sometimes perceived here toward evening, similar to what I have occasionally experienced in passing some

marshes in our own country which are associated with the production of agues.

It is a common opinion that the air here occasions drowsiness. All I can say on this subject is, that the first time I passed these marshes, the three persons in the coach beside myself, were sleeping most of the time, and that I felt not a little inclined to do the like. It should be considered, however, that travellers are apt to be very early risers.

The road over these grounds is remarkably fine, broad and dry, and built upon the foundations of the old Appian Way.

When the invalid has arrived where he designs spending the winter, a matter of no small consideration is that comfortable lodgings be secured, else all the kindly influence of milder skies may be counteracted. It is not unusual for persons who migrate for the winter to more southern latitudes, actually to suffer more from cold than they would have done at home. In the south of Europe—and the like is true wherever the hot weather much exceeds the cold,—the dwellings are all planned to afford defence against the heat; hence the floors are commonly of tile or marble, and without carpets; the entries and staircases spacious and airy, and the fireplaces, when there are any, seem rather constructed to retain than to transmit the heat. The apartment of the consumptive ought always to be selected in a warm and sheltered situation, with a southern aspect; and the floor should be carpeted, and fuel procured, and cold weather provided for,

as at home. There will probably be but a few days during ordinary winters, even in the south of Italy, that the invalid will not need a little fire, at least in the morning and evening, to take off the unpleasant chill occasioned by the dampness so usual in the houses there.

Though the pulmonic symptoms be much alleviated by a winter's residence abroad, still the individual should not, under the flattering belief that his health is confirmed, return to the climate from whence he fled for safety, otherwise he may learn, when the cold of winter returns, that his disease was but partially repressed, and perchance when it is too late to derive benefit from a repetition of the change. The truth is, one who is strongly predisposed to consumption, and more especially if he has experienced any of its threatening symptoms, can never be safe, during the cold months, in the northern parts of the United States. If, therefore, he would avail himself of the best security for his life, he must spend his winters and springs, at least for a long course of years, in less rigorous climes.

The hot months of the year should never be passed in the south of Europe, since intense and long continued heat is likely to be injurious to those predisposed to consumption, and is almost sure to accelerate the disease when it has begun to develop itself. Hence the consumptive traveller should always so arrange his plans as to advance south in the autumn, and return north in the summer. Dr

Clark, with his accustomed good sense, advises Lausanne and Geneva as summer residences for the phthisical. I conceive, however, that it will be better, if practicable, to make frequent journeys from place to place during the warm season, than to continue long stationary in any one.

CHAPTER XVIII.

TREATMENT OF CONSUMPTION CONTINUED.

Climate of the south of Europe.—What we term the south of Europe, comprising many degrees of latitude, different locations in it must consequently vary materially in their annual range of temperature. Other circumstances, too, beside the degree of latitude, as elevation, vicinity to the sea, contiguity to high mountains, and their relative position, whether north or south, will greatly influence the temperature, as well as other conditions of the climate of particular situations.

Many invalids, I apprehend, visit the south of Europe with too exalted expectations in regard to its climate, and finding it like all others, imperfect, they become disappointed, and exaggerate its faults. The truth is, a winter cannot be escaped in Europe; and he who, even in its most southern and favorable situations, fancies only bright skies and balmy airs during winter and spring, will probably soon dis-

cover his error. The tramontana, or north wind of Italy, passing over the glaciers of the Alps, and the snowy tops of the Apennines, is particularly bleak, and extremely perilous to those laboring under affections of the lungs, unless their bodies are cautiously defended against its chilling influence. The great power, too, of the sun's rays in the clear atmosphere, so common in Italy, causes this wind to be more keenly felt by the invalid, when it suddenly blows upon him. It also alternates with the sirocco, or southeast wind, which comes from the burning sands of Africa, relaxing every pore of the body, and rendering it painfully susceptible to this piercing mountain blast. Though no part of Italy is exempt from the unwelcome tramontana, still, in some of its more southern portions—Rome, for example,—the Apennines, which longitudinally bisect it, serve to break the force of the winds, and to render the air more tranquil.

Though the tramontana and sirocco are truly disagreeable, yet I fancy that the accounts given of them by many English writers, will appear to Americans—I mean those in good health,—to be too highly colored. The truth probably is, that the English being less accustomed to great extremes of temperature than ourselves, feel them with a more acute sensibility. In England, the air being always more or less influenced in its passage over the ocean, receiving or imparting caloric, the atmospheric transitions, though sudden, can rarely be very great. No cold blasts from glaciers, and snow-clad moun-

tains are experienced, and the hot airs of the south are all tempered by the ocean, before arriving at this healthful isle.

Though I have repeatedly experienced the tramontana, and in February, and on elevated situations, yet I never endured such painful effects from it, as described by Dr James Johnson, in his valuable and interesting work on change of air. Speaking of Genoa, he says—"When I mounted the higher light-house, (Fanale,) perched on a rocky promontory near the commencement of the Mole, to enjoy the magnificent scenery of Genoa and its neighborhood, the tramontane blast was so piercing, that, hardened as I was against atmospheric transitions, I was yet unable to withstand it for more than a few minutes at a time, and repeatedly was I obliged to retreat into the lantern to recover my breath, and elude the icy current of air from the mountains!" And again—"The tramontane comes down from the Alps or Apennines with such a voracious appetite for caloric, that it sucks the vital heat from every pore—shrivels up the surface of the body—impels the tide of the circulation, with great violence, upon the internal organs,—and endangers the lungs, or whatever other structure happens to be weakest in the living machine." Of the effects of the sirocco, too, he speaks in language equally strong—"YESTERDAY the SIROCCO—'Auster's sultry breath,'—steamed over Naples, depressing the animal spirits and the vital energies to the lowest ebb. It is impossible to convey in words

any adequate idea of the sedative effects of this wind on mind as well as body. I tried to respire in freedom on the roof of the Vittoria,—on the Chiaja,—the Mole,—the Chiatomone; but found no relief from the nervous depression and muscular languor induced by this mephitic composition of rarefied air and aqueous exhalation. I hired a calessino and drove round the promontory of Posilipo—and afterwards ascending to the airy castle of ST ELMO, wandered through the beautiful church of ST MARTINO—but all in vain! From lassitude of body and dejection of mind there was no escape, while this accursed blast prevailed.”

It is for like reasons, too, that our anticipations of the richness and beauty of the skies of Italy—being founded on the high-wrought descriptions of the English, who take their own as the standard of comparison,—are seldom fully realized.

From the geographical position of Italy, the range of atmospheric vicissitudes are greater than in England, but happen at longer intervals. In the northern portion of our own country, however, these transitions, at the same time that they are more frequent, are also to a much more considerable extent than in any part of the south of Europe.

In the southern portions of Europe, the winters are relatively short, and long continued periods of pleasant weather are often experienced during them, when the inestimable advantage of exercise in the open air may be daily enjoyed. The springs, however, are often cool and unpleasant, and hence Dr

Clark regards it as a more difficult matter to find a proper residence for spring than for winter.

Taking all circumstances, then, into consideration, and making due allowance for evils which must be encountered, I am inclined to think, that with proper care and forethought, the consumptive invalid may winter pretty comfortably in some judiciously chosen spot in the south of Italy. That there are, as previously stated, locations on the face of the earth far preferable in regard to climate, cannot be questioned; but then, beside being obnoxious to numerous inconveniences, they present but few inducements, either of pleasure or instruction. An invalid might be readily persuaded to sojourn in the south of Europe, where all the comforts of life, and the most refined enjoyments both of sense and intellect, would be anticipated, though he might be very loath to abandon his home for a small and solitary island, or some half civilized spot in South America.

I will now briefly remark on the character of a few different locations in the south of Europe, as winter residences for the consumptive. I shall restrict my observations to the larger towns and cities, as the inferior ones, and villages—particularly of Italy,—are usually dirty; their population poor and squalid, and they are often wanting even in the ordinary comforts of life. It is, then, in the great towns, only, in southern Europe, that the invalid can feel secure of such accommodations and attentions, as may be needful to him.

South of France. — Several towns in the south of France, as Marseilles, Montpellier, Hyeres, &c., were formerly more or less resorted to by those afflicted with pulmonic complaints. They are liable, however, to cold dry winds from the north and northwest — the latter termed the *mistral*, — and affections of the lungs are quite common, and in some of them, as Marseilles, for example, are apt to be very acute. Hyeres, being in a measure sheltered from the north and northwest winds by a range of hills, the climate is milder, and pulmonic diseases are said to be less prevalent, than in most other places in this portion of Europe. It is a place of much resort for French valetudinarians. Still it is not exempt from the influence of the north winds, and as a winter residence, it is quite too cold for the consumptive. In truth, one who has crossed the wide Atlantic in search of a more favorable clime, should not be satisfied to rest any where in the south of France.

Nice in Piedmont. — This town, in 43° 42' north latitude, is situated in a small plain, bounded on the south by the Mediterranean, on the north by the Maritime Alps, and on the west by the river Var. The superior mildness of its climate, depends mainly on the lofty mountain barrier, which partly shelters it from the northern blasts. The thermometer during the coldest months, seldom falls, save at night, to the freezing point; the mean temperature of winter, is about 48° of Fahrenheit's scale, and the daily range is probably as small as at most other

places on the continent. The atmosphere is generally clear, and somewhat dry. It is exposed, however, to the chilling northeast and east winds, which are very frequent during spring.

Nice is quite a resort for English invalids, and has enjoyed no small share of fame, as a residence in the disease under consideration. Still, careful inquiry has found its atmosphere to be too dry and exciting for most pulmonic complaints, and the cold winds alluded to as prevailing in the spring, render it decidedly unsafe at this season.

Genoa in Sardinia.—In latitude 44° 24' north. The city, in the form of an amphitheatre, at the head of the gulf of its name, is seen rising high up on the precipitous and craggy sides of the Apennine, whose lofty ridges seem to overhang every part of it, save that toward the sea, and this is shut in by high walls, and thus in part protected from the bleak winds coming from the Mediterranean. The Apennines sweep round the harbor in a semi-circular form, and terminate in two capes inclining toward each other.

With a few exceptions, lanes or wyndes, no more than eight or ten feet broad, are alone seen in this singular city; and as the houses rise on each side of them to the height of from six to nine stories, they seem like deep and narrow trenches or fissures, where the sunbeams never enter, and from whose depths, the cheerful heavens are hardly seen; and, as the din of carriages is never heard in them, they are characterised by a stillness at once striking and solemn.

Owing to the geographical position of Genoa, its climate is cold and variable during winter and spring, and the winds which come from the mountains are chill and piercing. Still, the invalid who could content himself to dwell amid the gloom of one of its narrow passages, in a low and sheltered situation, might feel secure against the dangerous tramontana, and enjoy a quite equable temperature. Here he might pursue his exercise in cool weather, but when the airs came soft and gentle from the Mediterranean, then he could resort to some more open space — to one of its wide and beautiful streets,* or to the broad and extensive rampart, which, being open to the sea and sun, forms so delightful a promenade in the mild days of winter. From circumstances growing out of the peculiar construction and situation of this city, Dr James Johnson is inclined to think highly of it as a winter residence for the consumptive.

The little time I passed in Genoa, was in the month of February; the weather was then unusually mild — no outside garment being at any time required, — and the sky was remarkably clear and beautiful.

As only a few streets are passable for carriages, walking is the exercise that must be mainly trusted to by the invalid. The common method of conveyance here, for those unable or unwilling to walk, is

* There are but three principal streets in Genoa; Strada Balbi, Strada Nuova, or street of palaces, and Strada Nuovissima. These are wide, clean, handsomely paved, and truly magnificent.

the sedan chair. Many of the streets are so steep — steps being often required to mount from one to another, — that the consumptive cannot ascend them without endangering more or less embarrassment of respiration, such ought, therefore, to be avoided, and the more level ones selected for the purpose of exercise.

Genoa certainly appears to be a very agreeable place of residence. Its population is about eighty-five thousand. It abounds in sumptuous marble palaces, enriched with choice paintings, and other works of art ; in handsome churches, and other public buildings of high interest. Its new theatre, is also particularly spacious and magnificent. Numerous gardens, elevated on terraces, adorn the city, and the neighboring country, in some directions, is romantic and beautiful. Many of the southern fruits abound here, as the citron, orange, fig ; and extending high up on the mountain-sides, is seen the ever verdant olive.

The hotels in Genoa are commodious, and furnish all requisite comforts at a cheap rate.

Though, however, the consumptive invalid might probably, in the way mentioned, pass a winter and spring in this city, with safety, still, if no special circumstances contravene, I would certainly advise him to continue on his journey yet further south.

Pisa in Tuscany.—The latitude of this city is 43° 43' north. It stands low, being situated in an extensive alluvial plain, stretching from the base of the Apennines to the Mediterranean at Leghorn.

The Apennines sweep partly round it, though at some distance, affording beautiful mountain scenery, and a partial shelter against the bleak north winds.

Pisa contains about eighteen thousand inhabitants; it is enclosed by high walls, and divided into two nearly equal parts by the Arno, which curves gracefully through it. The streets are, for the most part, wide, and straight; handsomely paved with large flat stones, and tolerably clean.

Silence and inactivity are the striking characteristics of this city, and its lonely streets and scattered population afford but feeble memorials of its former grandeur, when it was the capital of a great and warlike republic, and a hundred and fifty thousand inhabitants dwelt within its walls.

Its two most beautiful streets are the Lung' Arno. These are broad, quiet and clean; extending along the curved and handsome quays, on one side bounded by the river, and guarded by a wall breast-high, and on the other, lined by fine ranges of lofty buildings. These streets — free from the bustle and noise of a more busy and thriving city, — afford pleasant promenades for the invalid. Much of the scenery about Pisa, is soft and varied, and without its walls, are many agreeable walks and rides which may be enjoyed in fine weather.

Pisa being situated in a low vale, on the banks of a river, but a few miles distant from the sea, and sheltered, in a degree, on the north, by mountains, possesses a somewhat still, moist, and, for the most part, a rather mild atmosphere. Its climate much

resembles that of Rome, being, however, a little cooler, and something more moist; and north of Rome, there is probably no town in Italy superior to it for the consumptive. It also forms a particularly tranquil residence for those desirous of retirement. In February I found the air quite soft during the day, though a little frosty at night.

In Dr Clark's work on the climate of Italy, &c. we find the mean results of the temperature of Pisa for the six winter months of three years, (1814, '15, '16,) taken from the observations of Professor Zanini, made at sunrise, 2 P. M., and sunset. The mean temperature of January, was $44^{\circ} 08$; maximum of absolute temperature $60^{\circ} 06$, minimum $22^{\circ} 55$. February—Mean $47^{\circ} 79$; max. $58^{\circ} 55$; min. $20^{\circ} 75$. March—Mean $52^{\circ} 77$; max. $66^{\circ} 88$; min. $34^{\circ} 7$. October—Mean $63^{\circ} 23$; max. 77° ; min. $47^{\circ} 79$. November—Mean $52^{\circ} 99$; max. $66^{\circ} 43$; min. $33^{\circ} 15$. December—Mean $45^{\circ} 91$; max. $57^{\circ} 65$; min. $22^{\circ} 77$. Fahrenheit's thermometer was employed. The most prevalent winds were from the northeast.

Though Pisa, however, probably offers as many advantages in pulmonic difficulties as any other town in the south of Europe north of Rome, still its climate is somewhat variable, and the unwelcome tramontana will at times intrude itself even into the most sheltered spots. High winds, too, especially in the spring and autumn, are also occasionally experienced; and in the former season, are oftentimes quite sharp.

The invalid, on arriving at Pisa, should be particular to select his lodgings on the Lung' Arno, on the northern bank of the river, which being more immediately sheltered from the tramontana, and exposed all day to the sun's rays, enjoys an obviously milder temperature than the Lung' Arno on the opposite side. It also forms a warm and pleasant winter promenade. The consumptive, however, should be well apprized, that the very fact of its relatively high temperature enhances the danger of a sudden transition from it, in cool weather, to more unsheltered situations.

Pisa is a considerable resort for the English during the winter season, and there are many objects here to interest the stranger. Living is likewise cheap, and the hotels and lodging houses are very comfortable.

Leghorn in Tuscany.—This city is about fourteen miles south of Pisa. It is a noisy, bustling, dirty place, overrun with loathsome beggars—comprising sixty thousand inhabitants within the circuit of two miles, and, being a free port, the motley crowds from all parts of the earth are seen congregated in it. Having sprung up in modern times, it presents but few objects of interest to the traveller. It is much exposed to strong winds, and all things considered, is quite unsuitable for those suffering from pulmonic complaints.

Florence in Tuscany.—Situated in latitude 43° 46' north, in the luxuriant and romantic Val d'Arno Florence is truly a delightful city. Its streets are

broad, comparatively clean, and handsomely paved; its buildings fine; its society good; all the comforts of life are readily obtained in it, and at a trifling expense, and it abounds in every thing to interest and instruct the visitor of taste and cultivated intellect. Still, in favor of its climate for the consumptive invalid, but little can be said. It being exposed to the bleak tramontana, and the burning sirocco, it is liable to be very cold in winter, and hot during summer. So cold is it during some winters, that the Arno becomes frozen, and even the northern amusement of skating has been witnessed upon it. The air is commonly quite dry, the skies clear and brilliant, and the winds often high; and when they blow cold from the mountains, remind us, in some faint degree, of our own winter northwest blasts.

I passed a short period in Florence in February. The skies were clear, the air was quite dry, the north wind for the most part blew cold, rushing through the streets, sweeping round their corners, and often incommoding one with clouds of dust. I again visited it in the early part of May, and then experienced considerable rainy weather, and frequent high and cool winds, and became affected in consequence with a pulmonary catarrh. Pulmonary complaints are, in truth, quite common here during winter and spring. A fire, in the morning and evening, will not unusually be required by the sensitive invalid, even in the month of May.

The consumptive subject may, doubtless, tarry here with safety, for a little time, in the middle of

autumn, or at the close of May and fore part of June; but at other periods there is danger that the weather will be either too hot or too cold for his safety. The dryness of the air also forms an objection to it as a residence for persons of a consumptive habit.

If the individual laboring under pulmonic complaints happens unfortunately to be in Florence during the cool seasons, he should procure a residence on the Lung' Arno, on the north side of the river, this being exposed to the sun's rays, and sheltered by the city from the tramontana.

The principal drive and promenade of the Florentines, is the Cascini or cow pasture. These grounds include the farm and farm house or lodge of the Grand Duke. They are pleasant, handsomely ornamented with forest trees, extend several miles along the right bank of the Arno, and are always open to the public. In the warm months, they form an agreeable place for exercise, either walking or riding, but are bleak and exposed, and consequently to be avoided by the invalid during the cold seasons.

Rome.—The location of this city is in the Campagna di Roma, in latitude $41^{\circ} 54'$ north. Were we to found our judgment of the climate of Rome on the evidence of its ancient historians and poets, it would be any thing rather than favorable. But a material change must have taken place in it in modern days, for the streets of this city are now

very rarely whitened by snow, and the current of the Tiber is no longer seen obstructed with ice.

The atmosphere of Rome is moderately moist, and more serene than that of most other cities in Italy. This, at least, is true of that portion of it which, being built on the ancient Campus Martius, lies low and sheltered by the surrounding hills. A good deal of clear and pleasant weather is also experienced both during winter and spring, when the consumptive may be abroad with safety. Still let not the invalid flatter himself that even here the air will be uniformly mild. The tramontana from the snow clad Apennines will at times find its way into the most sheltered parts of the city; and though perhaps less severe than in most other towns in Italy, yet is, for the most part, extremely uncomfortable. The atmosphere is occasionally quite cool in Rome, even in April and the early part of May, so that great coats, in the morning and evening at least, may be required on going abroad, and fires become absolutely essential to the comfort of the invalid. To be sure, such weather is but little regarded, and perchance hardly remembered by the healthy traveller, glowing with excitement from exercise, and the intensely interesting objects around him; but far otherwise will be the case with the feeble and delicate, who are abroad in search of health.

The visits I paid to Rome were in the months of February and April, and were, of course, of inadequate duration to warrant any general conclusion

in relation to its climate from them alone. My short sojourn in February impressed me very favorably in regard to it as a mild winter residence. The atmosphere was mostly still, and though the mornings were somewhat cool, yet the sun, when sufficiently elevated, was pleasantly warm, and the consumptive might have been abroad in the open air with safety and comfort. In April—most of which month I spent in this city,—though on many days the sky was clear, and the air serene and balmy, yet I experienced more uncomfortable weather than I had anticipated at this season. There were a number of rainy days, cool and high winds were not unfrequent, and in the morning and evening outside garments were often needed even by those in health, and fires certainly by the invalid. On the hills and in the forum I was often incommoded by strong winds, and in the latter situation, especially, from the quantity of dust raised by them. I learnt, however, that this month was more unpleasant than ordinarily happens. It must of course be expected that different seasons will vary more or less in their mildness or severity; still, to be duly guarded against them, one should be apprized of the most unfavorable conditions of a climate that may occur.

Dr Clark has given us a table of the mean results of the temperature of Rome of three years, (1815, '16, '17,) for the six winter months, from observations by Professor Conti, of the Collegio Romano. The observations were taken at 7 A. M., 2 P. M.,

and 9 P. M. According to this, the mean temperature of October was $61^{\circ} 32$; maximum of absolute temperature, $76^{\circ} 78$; minimum, $43^{\circ} 92$. November, mean, $53^{\circ} 5$; max. $69^{\circ} 12$; min. $33^{\circ} 8$. December, mean, $46^{\circ} 22$; max. $62^{\circ} 12$; min. $29^{\circ} 52$. January, mean, $45^{\circ} 16$; max. $59^{\circ} 45$; min. $27^{\circ} 72$. February, mean, $48^{\circ} 53$; max. $64^{\circ} 62$; min. $27^{\circ} 5$; March, mean, $52^{\circ} 18$; max. $66^{\circ} 65$; min. $35^{\circ} 15$. The prevailing wind during winter is from the north.

The mean annual temperature of Rome is about 60° of Fahrenheit's scale.

Rome is regarded by Dr Clark as a preferable situation, for the generality of consumptive subjects, to those more commonly advised; and he considers it as affording especial advantages during spring—being then less liable to keen and cutting winds than most other places which he had visited. He also adduces some cases in corroboration of the favorable influence of its climate. The result of my own limited observations and inquiries, certainly goes to sustain the accuracy of Dr Clark's opinion; and taking all things into account, I am disposed to think that the majority of those laboring under pulmonary affections, will be as well satisfied in Rome, and, with due forecast, may pass the winter and spring there as comfortably, and be subjected to as limited atmospheric vicissitudes, as probably in any other city in the south of Europe.

Here, however, as in all other places, many precautions are necessary on the part of the invalid.

In cool and windy weather, the hills, the forum, and other exposed parts of the ancient city should be avoided, and exercise be taken in the lower and more sheltered situations on the Campus Martius; even here, however, many of the streets being narrow and deprived of the genial influence of the sun's rays, are often damp and chilly. The museums are apt to be cool, and not unfrequently damp, and it is unsafe to tarry long in them. The same may also be said of the ruins—at least of the subterranean ones,—of the old city; and hence when visited, extra clothing should be worn, and the stay among them be short. The customary visit to the Colosseum by moonlight, cannot be made without hazard by those suffering under pulmonic complaints. Of the danger of visiting the churches of Italy, I have already warned the invalid.

The consumptive subject should never go abroad, unless the weather be unusually mild, until the sun has risen so high as to impart its grateful warmth to the body; and should return to his lodgings before it has sunk below the horizon. Evening visits will always be hazardous to the susceptible invalid, since the houses of Rome are open, and often damp, and the entries and staircases being generally spacious, are subject to disagreeable currents of air. The floors, too, being of tile or marble, and rarely carpeted, are apt to communicate an unpleasant chill to the feet.

A peculiarity about Rome, of no small advantage to the invalid anxious for tranquillity, and in whom

the avoidance of all strong excitements is desirable, is, that though abounding in every thing calculated to awaken interest and impart instruction, yet, instead of exciting, its general effect is to beget a calmness and even solemnity of feeling, which may tend indirectly to allay physical action. Such is the influence of its natural scenery, its climate, the stillness within its walls. We feel it amid the silence and solitude of its forum; and when contemplating the soft beauty and melancholy grandeur of its ruins. A quiet and solemn majesty appears to characterize almost every thing in this remarkable city. Its very beggars often display a gravity and stateliness really ludicrous, and quite peculiar to the haughty descendants of ancient Rome.*

Some few of the streets of Rome are broad and well paved, tolerably neat and handsome, and many of the public rides and promenades about the city are very pleasant. Various interesting excursions, too, when the weather permits, may be made by the invalid to neighboring towns and villas. The water is remarkably good here, milk abundant, and, in short, all the necessaries and comforts of life are easily and cheaply procured. The pleasantest lodgings are in the Piazza di Spagna, or somewhere in its immediate vicinity.

Consumption, though not unfrequent at Rome, yet is less common than in many other cities in the

* "There is," says Dr Johnson, "a sedative principle in the air of the Campagna, which, with the stillness of the atmosphere, and the silence of the streets of Rome, tends to tranquillize, perhaps benumb the feelings, and lulls to repose."—*On Change of Air, &c.*

south of Europe. Its course here is remarked to be somewhat chronic.

Naples—In latitude 40 50' north. Its position much resembles that of Genoa. It is partly built on the steep and craggy declivity of a range of tufa hills, which rise abruptly from, and seem to crown its beautiful and picturesque bay. Its eastern part, however, extends over more level ground.

Though the winters in this city are something warmer than at Rome, and the average annual temperature a little higher, still, owing to its elevated position and exposure to the almost unobstructed winds from the Mediterranean, Naples is subject to greater and more frequent atmospheric transitions than Rome. Many, however, have represented its climate as the finest in Europe, and perhaps this may be true so far as concerns those in health. There are times when the weather is indeed charming. When the air breathes upon us so balmy and voluptuous, that, with the exuberance of vegetation and the grand and beautiful scenery which nature has here lavished with such prodigality, we can actually fancy ourselves in the Campagna Felice, or the Elysium of the poets. When even the querulous invalid might cease to complain, and imagine that his ends were accomplished—that a harbor of safety was at length found. But the gentle zephyr may soon give place to the rude mountain blast, before whose chilling breath speedily vanish all our pleasing illusions of an elysian climate on earth.

Naples is more obnoxious to high winds than

Rome. Those, too, coming from the sea, are, at certain seasons, often quite keen and chilling. Its skies are for the most part bright, and its climate is generally viewed as more exciting than that either of Pisa or Rome. In the early part of spring, it is also particularly liable to piercing winds, which not unfrequently occasion inflammations of the chest, and are especially pernicious to those already affected with pulmonic complaints. Consumption, too, is by no means an unfrequent malady here. In short, I think the mass of evidence goes to show that the climate of Naples does not generally agree so well with consumptive invalids—more certainly if they have much inflammatory tendency,—as that of Rome.

I tarried a little while in Naples near the close of February; the weather was in general mild, though occasionally the wind blew strong and cool from the mountains or the sea. The sky was usually clear and brilliant. A fire, however, was uniformly needed in the apartment of the invalid in the morning and evening. In the early part of April, I found the atmosphere commonly mild during the day, but the evenings and mornings were oftentimes chilly. The wind was occasionally high and somewhat sharp, and the dust of the streets was at times not a little annoying. The sun's rays were very powerful; hence, even when the bleak tramontana blew, the heat, in situations sheltered from it, and exposed to the sun, was always great. A few severe showers were experienced, but generally the sky was cloud-

less. There were, indeed, but few days during either of my visits, at some period of which the invalid could not with safety have enjoyed exercise in the open air.

As Rome is characterized by its tranquillity and solemn grandeur, and its consequent sedative influence on mind and body, Naples, on the other hand, is distinguished for its noise, bustle and excitement. It is certainly the gayest, and by many is deemed the most captivating city of Italy. It comprises about four hundred and fifty thousand inhabitants, and as arts, traffic and amusements are, in a great measure, conducted without doors, the streets are always crowded and confused, and all sorts of buffoonery and grotesque sights are continually witnessed in them. The Neapolitans are as volatile and lively as the Romans are grave and stately. They are passionate, keen witted; and so exuberant are their spirits, that misery itself cannot subdue them. Hence even their hungry and houseless lazzaroni abound in fun and antic tricks—exhibiting the unnatural union of mirth with loathsome wretchedness. Life, in this motley city, seems indeed one continued comedy.

Naples, though she lacks the stupendous ruins, the variety of sculpture and paintings, and even the beautiful modern architecture of Rome, yet abounds in objects of the most intense interest and excitement. Here nature is seen in her most gaudy and voluptuous attire. The prolific soil, abounding in choice fruits and the most beautiful and luxuriant

vegetation—the bay, distinguished by its picturesque promontories, and its lofty and classic island of Capri—the city rising above it on the towering and precipitous hills, surmounted by its gloomy castle of St Elmo; its smoking volcano on one side, and its bright skies above,—it seems as though sea, and earth, and heaven were striving with each other in the contribution of their beauties to the scene. Here, too, are revived the pleasing associations of our schooldays' studies; for we are in the land of poetic fiction—in the country of the Sirens—near to the Happy Fields, Elysium, and Tartarus, and can at times almost realize the poet's dreams of heaven and hell. There are probably few spots on the face of the earth, where so many objects of sensual and moral excitement are brought together as in Naples; and it is for this reason, in addition to the objections urged against its climate, that I view it to be ordinarily an unsuitable residence in consumption, and more especially so when the disease manifests an inflammatory tendency. There is, in truth, too much noise and confusion here for invalids generally, and too much excitement is caught from its bright landscapes and mercurial inhabitants. Few, even in health, can live amid its gayety, or urge their way through its beautiful Toledo, and gaze on the odd sights there exhibited, without some little increase in the frequency of the pulse. The whole moral world in Naples seems to partake stimulation from its burning sun and volcanic fires. Hence it is that invalids, nay, even the healthy are apt to

tire, to become surfeited with such continued excitement, and to long for the sober stillness of Rome.

The consumptive invalid concluding to winter in Naples, should be careful to obtain a warm and sheltered situation, for he will discover a material difference of temperature in the different quarters of the city. The residences on the Chiaja, Chiatamone and St Lucia, though very charming situations in respect to natural scenery, and the fashionable abodes of strangers, yet, being unprotected from the sea winds, are too bleak during winter and spring for those with weak lungs. Pleasant and pretty well sheltered lodgings may be found in the Strada Foria, Largo del Castello and its immediate vicinity, and in several other situations.

Living at Naples is cheap and good, and goats', cows' and asses' milk may all be procured at moderate prices. The neighboring country abounds with the most enchanting scenery, and in objects of the most glowing interest, affording many very delightful excursions. Let me, however, caution those afflicted with pulmonic complaints not to attempt the ascent of Mount Vesuvius, unless in a *chaise à porteur* (sedan chair), since its cone is quite steep, and owing to its deep covering of loose ashes, very hard to climb, and the effort is apt to be attended with painful embarrassment in the respiratory function.

CHAPTER XIX.

TREATMENT OF CONSUMPTION CONTINUED. — ISLANDS OF SICILY
AND MALTA.

Sicily.—Though there are some situations in Sicily which would afford a mild and agreeable winter climate, yet taking all circumstances into account, this island is by no means a pleasant place of abode for the invalid. The inhabitants are mostly poor and knavish; the dwellings are for the greatest part without fireplaces, damp and uncomfortable; windows not always glazed; milk, certainly out of the large cities, oftentimes hard to be procured, and many situations scarcely supply even the needful comforts of life, and the accommodations generally are quite inferior to what they are on the mainland in Italy. Travelling, too, in many parts of Sicily, can be accomplished only on mules, or in a *lettiga*,* and is attended with inconveniences and vexations which are keenly felt by those in delicate health. The *locande* or public houses on the roads, are any thing but inviting, pretending no more than to furnish accommodations for horses, and sleeping apartments for travellers, and owing to the usual vicinity or even actual contiguity of these latter to the stable, they are apt to be infected with odors of no very

* A small carriage in very common use in Sicily, hung on two strong poles, and by means of them supported on the backs of mules.

agreeable character. The beds, too, are not unusually dirty and damp, and when the nights are warm, the fleas are particularly lively. None, indeed, but the healthy and hardened traveller may anticipate comfortable nights while journeying on this island.

The winter temperature, on the coast and in the valleys, is something warmer than even in the most southern portions of Italy. Yet owing to the mountainous character of the island, it is more or less exposed, in different situations and at certain seasons, to bleak winds and sudden atmospheric vicissitudes. During the latter part of February and early part of March, the weather is liable to be rainy, cool and variable, and in the more elevated portions, not unfrequently even tempestuous.

In the beginning of spring I journeyed several days over the mountainous parts of Sicily. Much of the time the atmosphere was uncomfortably cold, and strong winds, with rain and hail were frequent. The hill tops were every where whitened with snow. But to confirm my statement, and at the same time to show that mild airs and shining skies do not alone characterize even this luxuriant and poetic isle, I will take the liberty to introduce here a few brief extracts from my note book in relation to its weather.

Thursday, March 5th.—At 1 P. M. left Palermo for Catania. Day showery, windy, cold and altogether uncomfortable. Half past four, P. M., mountains enveloped in dense, black clouds, and raining

and blowing severely. Carriage closed as far as practicable, and our cloaks are absolutely essential to our comfort. All the Sicilians we meet are closely guarded by their thick cloaks and hoods.

Friday, March 6th.—Six, A. M.—Last night rested at Villafrati. No fireplace or chimney in our wretched locanda. Night, cold and rainy, and our beds damp. This morning, the weather still remains bleak, with rain, hail, some snow, and a high wind. Yet vegetation is advanced, and the fruit trees are in rich blossom. Noon.—Raining hard, and the air continues cold. Stopped at a miserable locanda; fled from its desolate, cold, damp and foul rooms to the interior of our coach, for comfort. Many of the inhabitants wear sheep-skin trowsers, the wool outward, as a defence against the weather; and all we see without doors are securely invested in their coarse cloaks and hoods. At half past three in the afternoon, arrived at Val-lungia. Weather remains cold and blustering.

Saturday, March 7th.—Recommenced our journey at half past six in the morning. Had been raining, hailing and blowing all night long. Mountains all about us capped with snow. Ascended a long and tedious hill, and on approaching its summit found considerable snow in the road. Journeyed about twenty miles over a broken, mountainous, lonely and desolate country, to St Catarina. Here we learned, that owing to the recent and severe rains, the ford a few miles in advance, had become so high

as to be rendered impassable, at least for to-day. Weather clear, though rather windy and cool.

Sunday, March 8th.—Started on our route at six, A. M. Every night since leaving Palermo have lain in damp beds, owing to the moisture of the atmosphere from the recent abundant rains. Once only have we had the good fortune to obtain a pan of coals to temper a little the air of our lodging rooms. Morning quite pleasant, though something cool. The ground every where enamelled with the gay and beautiful flowers of spring. Forded with some difficulty the mountain torrent whose rise yesterday delayed us on our way. About half past four, stopped for the night at Leonforte. Weather pretty pleasant, though a little cloudy, yet still so cool that most of the inhabitants seen in the streets have on their cloaks and hoods.

Monday, March 9th.—Were on our way at six in the morning. The cold during the night was so great as to produce some thin ice. Morning cool, windy and cloudy, and soon after we had set out it rained hard, and some snow also fell. Our course lay among bleak and snowy mountains. During the forenoon, the weather cleared up pleasant, and the sky became very brilliant. In the afternoon, there was a severe shower, but of short duration. To-day, passed high on the side of Mount Etna, through the town of Aderno, just beneath the region of snow, and consequently experienced a considerable degree of cold. From this bleak height we descended to Paterno, seated in a charming valley. Here, though

still high above the sea, the air was comparatively soft, and all the beauties of a summer's landscape were suddenly disclosed around us. Fields of grain, the vine, the orange, the olive and fruit trees in full blossom enriched the scene, and profusions of flowers—

“With hues on hues expression cannot paint,”

embellished the earth, and exhaled their perfumes into the air. Above the whole—its head towering in bleak grandeur, and whitening with perpetual snows,—rose Etna, in its majesty and classic fame. Our quick transition from the wintry spot above, served to heighten the enchantment of this sunny vale.

Tuesday, March 10th.—Descended to Catania, on the shores of the Mediterranean, at the foot of Mount Etna. Here the weather, though cloudy and variable, was much milder than I had at any time experienced it on my journey. Vegetation was as far advanced as is ordinary in New England at the end of May, or beginning of June.

It will generally, I conceive, be unsafe for the consumptive, designing a tour through the island of Sicily, to commence it earlier than the last of March or fore part of April.

I will now finish what I have to say in relation to Sicily as an abode for the phthisical, with a cursory notice of a few of its principal towns. It is, indeed, only in its chief cities on the seacoast, that even tolerable accommodations may be expected, and

consequently it is in such alone that the invalid should think of abiding.

Palermo.—This city, in latitude 38° 12' north, is charmingly situated in the midst of a rich and handsome plain at the base of a crescent, or natural amphitheatre of lofty and barren hills. The neighboring country is eminently picturesque, and the view of the gulf, though inferior to that of Naples, is exceedingly beautiful.

Palermo contains about a hundred and fifty thousand inhabitants; it has a lively and interesting appearance, and is esteemed to be one of the most regular built cities in Europe. It is ornamented with a beautiful quay, called the Marina, affording a particularly pleasant ride or walk, for the enjoyment of the sea air. The Upper Marina terrace, and adjoining public gardens, are, in like manner, very charming and healthful promenades for the invalid.

The sky here, with the exception of a short period during the last of winter and beginning of spring, when considerable rain falls, is ordinarily unobscured and brilliant, and the sun's rays are at times so ardent, as to remind us, in no small degree, of our near approach to the shores of Africa. Owing, however, in part, to the lofty hills in its immediate vicinity, Palermo is exposed to sudden atmospheric vicissitudes, and to occasional chilling winds, during winter and spring. The sirocco, too, or southeast blast, coming from the burning sands of Lybia, is particularly hot, oppressive and paralyzing both to the mental and bodily energies.

Palermo, having regard to climate alone, certainly enjoys some advantages over Naples as a winter's abode for the consumptive. Still, as a place of residence, it is obnoxious to many objections. The streets are extremely crowded, confused, noisy—many of them dirty, and overrun with squalid and half naked beggars, whose piteous yells, and incessant supplications for charity are exceedingly annoying to the stranger. The houses are mostly without fireplaces, and comfortable winter's lodgings for an invalid are not readily procured.

There are two public houses in this city, the Hotel de France and the Prince of Wales, the latter kept by an English woman, which afford very tolerable accommodations.

Catania.—The site of this town is on the shores of the Mediterranean, and at the foot of Mount Etna, in $37^{\circ} 28'$ north latitude. The streets are wide, straight, paved with broad flat stones of lava, and the city generally is neat, well built, and is esteemed one of the most pleasant on the island; nevertheless, owing to the abundance of black lava, of which the buildings, and almost every thing else is constructed, its general aspect is dark and sombre.

Catania has about fifty thousand inhabitants, and placed at the fertile base, or in the *first region* of Etna, the country about is very pleasant; displaying handsome gardens, vineyards, hedges of aloes, rich fields of grain, and abounding also in choice fruits, as the citron, orange, olive, date-bearing palm, peach, &c. There, too, good society, and

the various accommodations of life may be enjoyed. But the proximity of this city to the mountain, renders its climate uncertain, and subject to clouds and cold winds. The warm air coming from the Mediterranean, saturated with moisture, in its passage over the snow-capt Etna, parts rapidly with its caloric, and consequently deposits its moisture in the form of clouds. This process may often be seen taking place on the mountain in a bright morning when the wind blows from the sea. Thus at first a little speck of mist is perchance discovered settling on its summit ; this quickly augments in density, and gradually extends itself till, not unfrequently, the whole mountain is involved in clouds : hence it is, that sudden vicissitudes of weather, rains and currents of wind, especially in the spring season, are so apt to be experienced. Though, therefore, the climate is quite salubrious for those in health, it is an unfitting winter's residence for the consumptive, and I deem it unsafe for such individuals to visit this city prior to the latter end of April.

Syracuse.—In latitude $37^{\circ} 2'$ north. This ancient capital of Sicily, once so famed for its power and opulence, and for the lofty virtue or degraded vice of its citizens, now presents but a melancholy instance of the devastation of man, and the unconquerable power of time. Scattered ruins—many of them unintelligible,—are the only memorials of its former grandeur ; and, instead of the twelve hundred thousand inhabitants once contained within its walls, hardly fifteen thousand remain, and these

mostly poor and sickly, and the malaria from the neighboring marshes, called forth by the powerful influence of a burning sun, which is said—I know not with what truth,—never to have been obscured for a whole day together, threatens to diminish still more this miserable remnant of a once mighty people.

Modern Syracuse is included within the island of Ortigia, and is remarkable for the number of gates and drawbridges which must be passed on entering it. Its streets are narrow, dirty and uninteresting, and its buildings generally poor. It enjoys but little trade, though possessing a good and easily accessible harbor.

The sun in Syracuse is very hot, the sky usually clear and brilliant, and consumptive invalids generally, having regard to climate alone; might dwell here very safely and comfortably from the first of November to the beginning of April, and enjoy exercise in the open air with fewer interruptions from bad weather than in most other situations in the south of Europe. For some cases of phthisis, however, the clear skies and bright sun would, perhaps, be productive of too great excitement. I found this city the hottest which I visited while in Sicily. But then it is so dull and beggarly a town, that I apprehend few invalids would be willing to submit to the inconveniences and sacrifice of enjoyment which must necessarily be associated with a residence in it. It has, however, a very charmingly situated and spacious hotel—Albergo del Sole,—in which

good apartments and all needful comforts may be obtained; though, owing to its want of due support, it is questionable whether its invaluable accommodations will be long afforded to the stranger.

Messina.—This town contains between seventy and eighty thousand inhabitants. It is situated in the Sicilian strait, in 38° 10' north latitude, has an excellent harbor, and an extensive and handsome quay. It is built partly on the declivity of a hill, and partly on a plain, and its environs display a varied and beautiful scenery of mountains and of woods. The town is indeed backed, and in a measure shut in by lofty hills, finely wooded, and more or less highly cultivated. There is a very pleasant walk along the Marina, and drive to the Faro; and many interesting and romantic promenades, always of important consideration to the invalid, may be found in the vicinity. The streets of this city are well paved, some of them broad and airy; the population thrifty, civil, and comparatively neat; and the necessities and even luxuries of life may be procured here at a moderate expense. American vessels frequently arrive at this port, and the Messinians are courteous and kind to our countrymen. The English language is also considerably spoken.

Messina, its neighborhood being free from extensive marshes, is probably as healthful a spot as any in Sicily. The temperature, however, is something cooler, and high winds are perhaps rather more prevalent than in Palermo or Syracuse. But though the climate, abstractly viewed, may render it a little

less propitious as a winter abode for those with pulmonary affections, yet all circumstances taken into the account, it is a more inviting residence than either of these latter cities. The consumptive invalid may tarry here from the middle of October to the middle of April, after which latter period the temperature is likely to be too warm for his safety. Early in the spring, for a short time, the weather is liable to be damp and rainy.

The dwellings here, as throughout Sicily, are, with the exception of a few modern ones, generally constructed without fireplaces; hence open vessels of coals are often employed in the apartments, which must of course greatly deteriorate the purity of the air. Usually, however, with some little exertion a room may be procured with a fireplace, which indeed, or a stove, is absolutely essential both to the comfort and safety of the invalid. The Britannia is a pleasantly situated and commodious hotel, and its master is obliging, and speaks the English language.

MALTA.—This island is situated between Africa and Sicily. Its capital, La Valetta, is in 35° 54' north latitude. Here the invalid may feel secure of good accommodations, and as the island is the property of the British government, the English language is very commonly spoken, and pleasant English society may always be enjoyed. Living, however, is rather more expensive than in Sicily or Italy.

Malta is exposed to the unobstructed influence of

the winds from the Mediterranean, which frequently blow very strong, and in winter and the early part of spring, the air is oftentimes uncomfortably cool. I found the weather here, in the month of March, more or less cool and windy, with considerable rain. The heat of the sun, too, is often very intense, its rays being reflected from a white limestone soil, and few trees existing to afford shelter, or to refresh the air by their evaporation. A further objection has been brought against this island as a residence in consumption, on account of the great quantity of limestone dust raised from its surface in dry weather, creating irritation of the lungs. Still phthisis is not a frequent disease in Malta. According to the statement of Dr Hennen, among the English troops stationed here, consumption, on an average of eight years, occurred in proportion to other maladies only as 1 to $93\frac{1}{2}$ —and including all pulmonic complaints whatever, the proportion to others was 1 to 14.

CONCLUSION.

THERE are many other places beside those to which attention has been called, where the sufferers from the malady under notice have been more or less in the practice of resorting. Madeira, at one period, owing especially to the favorable accounts given of it by Sir John Pringle, and some other eminent English physicians, enjoyed a good deal of

fame in complaints of the lungs. It is now, however, well known that consumption is quite common among the natives of this island, and that there is, indeed, some vice about its climate, rendering it actually prejudicial to the phthisical.

The West Indies, also, form a not unusual winter's abode in consumption. The heat, however, of intertropical countries, is generally too great for the disease when it has become fully manifest, and in a more particular manner, if advanced in its progress.*

Yet in the strongly predisposed, and perhaps, too, where the menacing signs are just beginning to discover themselves, a residence during the winter on some one of the smaller of these islands, may not be devoid of utility. Santa Cruz is very commonly and I think judiciously selected. Its extent being quite limited, its atmosphere is more immediately under the equalising and refreshing influence of the ocean. Indeed, in regard to the character of its climate, one will exist under like circumstances as when on shipboard in a corresponding latitude.

I have been informed by an intelligent friend, that Fahrenheit's thermometer, during a winter which he spent on this island, ranged from 76 to 84 ; he never having witnessed the mercury below the former or above the latter number. The most com-

* "The mean annual temperature of the West Indies, at the level of the sea, is 79, 80 and 81 degrees ; and during the winter months, in some places about 3, and in others only 2 deg. lower. The extreme annual range is 20 degrees, and the mean daily range about 6 degrees."—*Copeland's Med. Dict. Art. Climate.*

mon temperature was about half way between these two points. The sea air was agreeable and refreshing, and showers were very frequent though of short duration. The winds were not high, but usually just sufficient to be grateful to the sensations. There was no whole day during which the weather precluded exercise in the open air. The sun's rays were, of course, very hot. No fires, as might be supposed, are ever needed here, and the dwellings being more or less open, both day and night, a mild, fresh air from the ocean will be constantly inhaled. The purity of the water on this island—rain-water being alone employed;—cannot always be depended upon. Milk, too, is scarce and expensive. Fish, however, are choice and plenty, and the subacid fruits—as is well known,—luscious and abundant, forming a very grateful and wholesome diet when no unnatural irritability of the bowels exists.

It will not be prudent for the invalid to arrive in New England—supposing this to be his residence,—from the warm latitude of the West Indies, prior to the middle of June. His most judicious course will be to take passage in the spring, first for some southern port in the United States, and then, as the season progresses, gradually to advance north.

I fancy it will be thought that I have given no very flattering account of the foreign climates to which consumptive subjects are in the habit of repairing; but utility alone being the intent of the present work, my aim has been—omitting the common, and too often misguiding panegyrics on the soft airs, and

azure skies, and mellow sunbeams of southern Europe,—to represent facts, so far at least as I have been enabled to ascertain them, as they really exist, feeling well assured that the invalid had better know the truth, the whole truth, beforehand, and so prepare himself for the worst, than be forced to learn it by painful, and perchance dangerous experience.

