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ON

CONSUMPTION:

ITS

NATURE, SYMPTOMS, AND TREATMENT.

By the same Author.

PHTHISIS AND THE STETHOSCOPE:

A CONCISE PRACTICAL GUIDE

TO THE

PHYSICAL DIAGNOSIS OF CONSUMPTION.

Foolscap 8vo., 3*s.* 6*d.*

ON

CONSUMPTION:

ITS

NATURE, SYMPTOMS, AND TREATMENT.

AN ESSAY,

TO WHICH WAS AWARDED

THE FOTHERGILLIAN GOLD MEDAL

OF

The Medical Society of London.

BY

RICHARD PAYNE COTTON, M.D.,

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, LONDON; PHYSICIAN TO THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON.

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TO

THE PRESIDENT, VICE-PRESIDENTS,
COUNCIL, AND FELLOWS

OF

THE MEDICAL SOCIETY OF LONDON,

THE AUTHOR

RESPECTFULLY DEDICATES

THE FOLLOWING PAGES.

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PREFACE TO THE SECOND EDITION.

CIRCUMSTANCES altogether beyond control have much delayed the appearance of a second edition of this work; but the delay is, perhaps, scarcely to be regretted, since it has afforded further opportunities of testing the soundness of the various points previously advocated, and of collecting additional information.

Although I have found little, if anything, to retract from the first edition, longer experience has enabled me to enlarge upon some of the subjects. The present edition, therefore, consists of the former one carefully revised, and in many parts extended; and, like it, professes to be strictly of a practical character.

46, Clarges-street, Piccadilly.

PREFACE TO THE FIRST EDITION.

In order that the reader of the following pages may not be disappointed with their contents, it is necessary to observe that they are not intended to introduce any newly discovered "cure for consumption", or to advance any speculative theory as to the origin of tubercular diseases; but, to present a practical exposition of phthisis, derived from personal observation.

It is too much the custom, in treating of medical subjects, to indulge in theoretical discussion rather than in practical deduction; and thus to lose sight of that great end—the cure of disease, without which our art is a fruitless one. Chemistry and the microscope have certainly increased, in a remarkable manner, our knowledge of morbid conditions; but there is much in phthisis, as well as in other diseases, which neither the one nor the other can unravel; and hence it is that when

either of them is made the foundation of some ingenious hypothesis, which is afterwards to serve as a guide to medical practice, its use is misdirected and its service questionable.

Nothing but a comprehensive and practical view of any diseased action will ever enable us to gain such a knowledge of its nature as will lead either to its prevention or proper treatment. And since I have a peculiarly favourable opportunity of observing a particular malady—that of consumption,—in which too many have a more or less direct and painful interest, it has seemed to me that its description, upon such a principle, might not be altogether unprofitable, and might serve in some measure to check those empirical, deceptive, and even dangerous doctrines which are now so frequently appearing in reference to that disease.

46, Clarges-street, Piccadilly.

PART I.

THE NATURE OF CONSUMPTION.

CHAPTER I.

INTRODUCTORY.

CONSUMPTION KNOWN AT A VERY EARLY PERIOD.—ITS CONSTITUTIONAL ORIGIN, AND SCROFULOUS NATURE.—STATISTICAL PROOF OF ITS PREVALENCE.

CONSUMPTION was probably one of the earliest maladies which visited the human race: it was well known to the physicians of ancient Greece and Rome; and since their days it has continued one of the most destructive weapons of the Almighty.

All diseases attended by emaciation were divided by the early fathers of medicine into three classes, which they termed respectively, Atrophy, Cachexy, and Phthisis; but it was only in the last of these that the lungs were said to be implicated; and it is no little tribute to their skill and discernment, that, in these modern days, the same terms and distinctions should be revived. Physicians of succeeding years, neglecting the teaching of their professional forefathers, were in the habit of using

the word phthisis or consumption, as a means of conveniently explaining away many chronic cases, the pathology of which was little understood; and this error still survives, to a great extent, in public opinion,—consumption being popularly made to embrace a vast number of very different diseases having nothing in common but a gradual wasting of the body. Simple emaciation is, however, nothing more than a symptom of some general affection, and is remediable or otherwise according to its cause; but is of itself very inconclusive evidence of consumption.

The term phthisis or consumption is now universally and exclusively applied to a peculiar and obscure condition of the whole system, in which, instead of the healthy nutritive material required for the growth and reparation of the body, there is produced in the blood a morbid substance, which, sooner or later, appears as *tubercle*, or *tuberculous matter*, in the pulmonary structures. This state of system is precisely identical with that known, by every one, as struma or scrofula. Phthisis and scrofula are, in fact, merely varieties in development of the same malady; the difference between them depending upon the tubercular substance being, in the one case, principally deposited in certain internal and highly vital organs; but, in the other, more generally in glandular and superficial structures, the soundness of which is far less essential to the functions of life.

Of the intimate nature of this diseased condition our knowledge is, indeed, very limited. The same remark, however, is applicable, and, perhaps with equal truth, to other affections also. In consumption, as in many other maladies, we are permitted to recognize the disease only in its effects: for example,—we can examine tubercle, and ascertain its chemical and microscopical characters, as easily as we can the lithate of soda, or diabetic sugar; but of the *causes* from which these may spring,—which are, in fact, the *diseases themselves*,—we are completely ignorant. It is evident that there must be *something* which constitutes the malady; but it would be vain to search after it;—it has no individuality;—it is a *process* which, like many others, is so subtle and far removed even from our conceptions, that it seems destined to remain for ever beyond our reach; we are allowed to do nothing more than study its laws, and, in some measure, control its actions.

Whether we regard this disease in a limited view,—as it affects the happiness of individuals and of families,—or, in a more comprehensive aspect, as it influences the progress of mankind,—its importance is equally striking, and its study equally interesting. There is no disease more afflicting, and none, perhaps, so universal. There are few if any families which have not felt its ravages; and there is not, I believe, a single favoured spot where it can be said to be unknown.

Wherever the human race has settled, there has phthisis found its way.

Few persons are aware of the mortality from this one disease. In England and Wales there were, during the year 1855, no less than 52,289 deaths from consumption. The population during the same year was estimated at 18,786,914; and the deaths, from all causes, amounted to 425,703.* One person, therefore, in every 359 fell, during that year, a victim to this disease; and the deaths from consumption amounted to nearly one-eighth of the total number of deaths. It may be stated that in England and Wales more than 143 persons die daily of consumption, being very nearly at the rate of six deaths in every hour, or one in every ten minutes.

With such facts before us, it may certainly be said that the sword and the famine are, in their effects, comparatively insignificant to consumption; and that there is no pestilence which has vanquished half so many.

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* For these statements (not hitherto published), I am indebted to the kind attention both of the Registrar-General and Dr. Farr.

CHAPTER II.

DISTINCTION BETWEEN PHTHISIS AND TUBERCLE.—THE NON-CONTAGIOUS CHARACTER OF THE DISEASE.

We have been too long accustomed to consider phthisis and tubercle as inseparable; and, indeed, to use these terms as different modes of expressing the same condition. But it is necessary, both on scientific and practical grounds, to draw a broad distinction between them, since the one may exist without the other, and even continue to do so for a long period.

At the first onset of consumption, the lungs are not necessarily tubercular. It is true that, before the pulmonary structures have become implicated, we often fail in detecting the disease, the premonitory symptoms having been too short or obscure to attract observation; in a fair number of cases, however, these are sufficiently obvious, and, probably, in none are they entirely wanting. The term *phthisis* or *consumption* is alone applicable to that peculiar morbid condition of which I have spoken in the preceding chapter, and which involves, amongst other consequences, a tubercular state of some of the internal organs; whilst *tubercle*

expresses the effect of such a condition ;—the one being related to the other in exactly the same way that saccharine matter is to diabetes, and lithate of soda to gout.

But it is not only at the beginning of consumption that this distinction is obvious and imperative ; for, during the whole course of the disease, phthisis and tubercle still hold the same relative position, as *cause* and *effect*. The truly consumptive symptoms are never dependent upon the amount or even the condition of the tubercular deposit, but upon the degree of functional disorder under which it has been produced or altered ; and of this no better proof can be given, than the fact, that cases often present themselves, in which, although the tubercle is as yet unsoftened, *consumption* is more marked, and life apparently more threatened, than in other cases, where the pulmonary structures are broken down into cavities. The one unquestionably reacts upon and aggravates the other ; yet it is, in truth, the *phthisis*, and not the tubercle, which destroys life ; the latter would, in most instances, either be expelled, or become innocuous, could we but apply a timely and effective remedy to the former.

It is essential to the proper treatment of consumption, that the disease, from first to last, be regarded as a *constitutional*, and not a *local* one ; and owing to this not having been attended to, but the pulmonary tubercles having been considered as the first cause of derangement, and the source of

all the subsequent symptoms, many practical errors have been committed, and a number of different expedients—amounting even to formidable operations, fruitlessly resorted to, for the treatment of the local or pulmonary affection.

Phthisis may be either inherited or acquired. Many persons are inclined to the belief that it may also originate in a morbid and material poison, as distinct as that of typhus or small-pox, and possessing the like power of communicability; but such a conclusion appears to me untenable, being opposed both to argument on analogy and simple experience.

In classifying diseases in reference to their origin, they would be found to arrange themselves into two divisions; namely, (1), those which arise from *poisons* introduced from without; and (2), those depending upon an unhealthy *process* springing up within.

To the former class belong primary fevers, whether continued, intermitting, remitting, or exanthematous,—all epidemic and endemic disorders,—syphilis,—and every disease capable of being extended by inoculation. In the latter class, may be placed gout, phthisis, scrofula, malignant diseases, diabetes,—besides other morbid conditions resulting from a derangement of the nutritive functions. The former class, with but few exceptions, may be propagated by means of their own morbid products; the latter have the common pro-

perty of being attended by peculiar secretions, innocuous to all individuals but those producing them. In the one, hereditary influences are almost inoperative, or are, at most, very remotely connected with their production; but, in the other, the opposite is usually the case, of which consumption affords a striking illustration. Most diseases, arising from specific poisons, are subject to a periodicity in their attacks, which is influenced by the season of the year and other obscure causes; there is also a certain and well-defined limit to their duration, so that we can predict with tolerable certainty the different stages of their career, and the time of their respective disappearance. But, in phthisis, we meet with nothing of this kind. Consumption is equally prevalent at all seasons of the year, and under all circumstances; there is no fixed limit to its duration; no rule seems to regulate its developement; and scarcely two cases are alike in their progress.

Experience might, at first sight, appear somewhat to favour the idea of phthisis being a contagious disease, as examples are sufficiently common of persons, previouly in robust health, having succumbed to its attacks, after the painful trial of tending a consumptive husband, or wife, or sister, or friend. But when it is remembered, that whatever lowers the physical powers, and depresses the spirits,—more especially if associated with a morbid mental impression, so likely in such cases to pre-

vail,—is in itself sufficient to engender phthisis, we have a satisfactory explanation of these occurrences, and might even wonder that they are not more common. I am convinced, however, that cases originating under such circumstances, are to be looked upon as exceptions, and as bearing a very small proportion to those of an opposite kind, where, in spite of a long and uninterrupted association with the disease, no ill effect has accrued; the facility with which the former are remembered and the latter disregarded, gives them an artificial importance, and helps to exaggerate the notion of their frequency. In a thousand hospital patients, subjects of phthisis, who have fallen under my notice, and to whose cases I shall have frequent occasion to refer in illustration of other points, seven had previously lost their husbands, and four their wives, from the same disease,—a small number, when we consider the great frequency of consumption, and the large number of persons whom it must have widowed; and if we take into account the privation and other evils, inseparably attached to widowhood amongst the poor, there seems a still further reason to regard the number as very trifling. And it is only from instances of this kind, where there is an absence of blood-relationship, that any such observations are of value, since in the progress of the disease amongst other family connexions, it is impossible to estimate the extent of hereditary influences.

I have spoken thus decidedly upon the subject of contagion, because it is one of vast social importance. Under a belief in its existence, nurses and other attendants upon the consumptive are liable to become depressed in spirits, and to fall the ready victims, either of the same disease, or of any other to which they may have a tendency. But the evil does not cease here. The invalid necessarily suffers, in consequence of the fears of those around him causing the exercise of a certain carefulness which unavoidably leads to the neglect of Christian kindness, and this, too, at a time when the attention of friends is often calculated to be the chief solace in his affliction.

CHAPTER III.

ORIGIN, GENERAL CHARACTERS, MINUTE STRUCTURE, AND CHEMICAL COMPOSITION OF TUBERCLE.

Tubercle or Tuberculous matter appears to originate in two ways: either (1) by an uninflammatory process of separation from the blood: or (2) by the further degradation of an imperfectly vitalized fibrin, resulting from inflammatory action. The first of these is by far the most common—in fact, the usual mode of its production, and that which happens in all the ordinary forms of consumption. The second is comparatively rare, and is to be seen in those cases where pneumonia, pleuro-pneumonia, or sometimes even bronchitis,—occurring in persons either of scrofulous habit, or of impaired health from some other cause,—become obstinate and chronic, and finally pass into a condition of disease undistinguishable both in its constitutional and local symptoms, from ordinary phthisis.

Some pathologists have advocated the necessarily inflammatory origin of tubercle; but such a view is at once negatived by the fact, that not only are the signs of pneumonia of rare occurrence during the early periods of phthisis, but on examining the

pulmonary structure which surrounds tubercle of recent formation, there is seldom any appearance of inflammation; the lung, although more or less congested, is almost invariably crepitant, and buoyant in water. It is true that, after tubercle has existed some little time, the parts immediately around it are often hard and thickened; but this is the result either of secondary inflammation, or of a process designed with a special object, to which I shall hereafter have occasion to refer.

Some writers have considered tubercle as a peculiar transformation of infiltrated blood; some, as derived from hydatids; whilst others have called it inspissated pus; but such views may be passed over as merely speculative, if, indeed, they have not been actually disproved. The majority of the medical profession are now agreed in regarding it simply as a lowly vitalized material, unfit for the construction of new tissues, and consequently as forming an extraneous substance, in whatever organ it may ultimately appear.

When first deposited, it is in a fluid or semi-fluid condition; but it speedily passes into the solid form, and appears as whitish-grey bodies, differing in number and distribution, and long known under the terms miliary tubercle, or grey granulations. These vary in size, from that of a pin's head to that of a small pea, but occasionally they are so minute as scarcely to be discernible by the naked eye, and now and then they are of a much larger

size; they are usually hard, firm, and cartilaginous-looking; but, in a few cases, I have found them soft, and easily broken between the fingers.

After a time, these bodies may contract and become tougher, or, as Rokitansky calls it, "cornify". This, however, happens only in the more favourable class of cases; they far more generally are converted into a yellow or yellowish-white, homogeneous, dull, cheesy-looking material, known by the name of *crude* tubercle. This is ultimately either transformed into calcareous matter, or it breaks up into a soft, pulpy, or sometimes flaky substance, intermixed with fluid.

The calcareous matter owes its origin either to the simple absorption of the animal matter which had existed in the tubercle, and the continuance of its earthy constituents, (in which case the resulting chalky mass bears a very small proportion to the original tuberculous one); or, it depends upon a process identical with ordinary petrifaction, in which each tuberculous molecule, as it is removed, is exactly replaced by a calcareous one, so that the chalky substance ultimately acquires the precise form of the original tubercle. The shape and size of such bodies are consequently found to differ materially in different cases; occasionally they are minutely granular, but much oftener rounded, and of the size of a pin's head or a small pea, whilst, very frequently, their form is large and irregular. I have now a specimen, in which there are several

ramifying canals, evidently arising from the tubercular mass whence it derived its shape, having surrounded some of the smaller bronchial tubes. Sometimes they are perfectly white and opaque; at others, they are grey, brown, or amber-coloured, and semitransparent. They also vary in consistence, from the hardness of stone to the softness of putty, according to the relative amount of their earthy and organic constituents. Carbonate, with a small proportion of phosphate of lime, a salt of soda, and animal matter, have constituted all the specimens I have examined; but it is very probable that their chemical characters are not always the same.

Tuberculous matter originating in an inflammatory attack, has a course somewhat different. Either the imperfect fibrinous substance which had been deposited is further degraded to one of a tuberculous character;—or the deposit is, from the first, closely allied to, if not identical with the *crude* tubercle. The stage of grey granulation is either very brief, or altogether absent; whilst calcareous transformation seldom, if ever, occurs.

The microscopical examination of tubercle has led to very different statements as to its minute structure, scarcely two observers agreeing in all respects upon its composition; all, however, have represented it as being entirely free from blood-vessels, and every other form of highly organized tissue. M. Lebert has described peculiar cells,

which he considers characteristic of tubercular formations, serving to distinguish them from every other morbid product. Gerber has divided tubercle into different grades, according to its amount of vitality; thus, he describes the unorganized or almost granular tubercle, the cytoblast tubercle, the cell tubercle, and the filimentous tubercle, one being just a step higher than the other in the scale of organization. Vogel describes tubercle as consisting of three elements, viz. amorphous stroma, granules, and cells, all of which differ in their respective proportions in individual cases. More recently, Mr. Simon has denied the existence of cells in the tubercular deposit, or, at least, thinks them unessential parts of its composition. Gruby differs from every other observer, in describing peculiar and very large cells—many times larger than pus-corpuscles, as its characteristic constituent. And several other authorities might be quoted, equally differing from each other as to its composition.

There is, I think, a ready explanation of all this disparity, in the circumstance that tubercle is not always of the same structure; it differs in different cases, according to the extent of constitutional disease, in other words, to the *degree of phthisis* under which it has been generated; and it may differ in the same case, according to the particular organs in which it is formed.

Miliary tubercle from the lungs consists of a

dense mass of imperfect cell-nuclei and ruptured cells, thickly studded with granules, through which are distributed a few oil-globules, some elongated fibres, and occasionally black matter. I have never observed pulmonary tubercle wanting in these materials, though I have examined it from a vast number of very different cases: but they are found associated in variable proportions, according to the amount of vitality in the tubercular mass,—in other words, to the *degree of phthisis* which has produced them. The lower the vitality of the tubercle, the more granular will it be; and, on the other hand, the closer it approaches to living tissues, the less imperfect will be its cell structure. It is very probable that the almost endless variety observable both in the symptoms and the course of different cases of consumption are greatly owing to such peculiarities; the tubercular deposit in some cases, perhaps, easily undergoing destructive transformation, and, in others long—and sometimes even successfully, resisting it. The cells, when they exist, are so broken and irregular, that they cannot be said to have any definite form; but when sufficiently perfect to be examined, they are seen to be of various sizes—from that of a blood-globule to that of a large pus-corpuscle, of irregular shape, and with few or no nuclei. I do not subscribe to the doctrine of specific cells; believing that there is nothing in any one of the constituents of tubercle, deserving to be regarded as characteristic of the

deposit. The fibres do not interlace, but are irregularly scattered, and appear to be derived from the surrounding tissues, rather than an essential constituent of the tubercular mass.

Tubercle from other internal organs presents the same general characters, the only difference being, —the absence of the black matter, and the cellular arrangement. Sometimes, however, no difference is discoverable in the latter respect, the cells presenting much the same appearance from whatever structure the tubercle is taken. But, very frequently, both the size and arrangement of the cells will be found to vary in particular organs: thus, I have seen them more than usually distinct, and of considerable size in tubercle found in the spleen and absorbent glands; and have noticed that they have been larger and their shape less irregular, when taken from the liver, than when they had their origin in the lungs. I do not believe, however, that they assume definite shapes in certain organs, but only that they are liable to vary according to their situation, in consequence, probably, of sometimes approaching the cellular character of the particular organ in which they may be formed.

As tubercle advances in its stages of transition, the minute structure becomes modified. The yellow or crude tubercle is composed of granular matter and an increased number of oil-globules, with which may be interspersed a few remains of

cell-growth, in the form of broken cell-walls and cytoblasts.

Softened tubercle is nothing more than an intensely granular mass, intermixed with oil-globules, and, perhaps, a few traces of altered nuclei.

The conversion of miliary into yellow tubercle, and the process of tubercular softening, essentially consist in the progressive loss even of that low degree of vitality which the morbid deposit originally possessed,—the gradual dissolution of everything which had connected it with living tissues; and it is worthy of remark, that the action is brought about precisely in the same way that many other and healthy structures become degraded, viz. by the change of albuminous into oily matters—or, as it is termed, "fatty degeneration".

The chemical analysis of tubercle has been, hitherto, signally unsuccessful in helping either to explain its nature, or to advance anything which might contribute to its prevention. The disagreement of chemists respecting its composition, surpasses even that of the microscopists upon its structure. Thénard describes the tubercular deposit as a compound of animal matter with salts of lime and soda. Güterbock has detected within it a peculiar substance which he termed *phymatin*. Scherer's analysis represents it as composed of water, animal matter, fat, and fixed salts. The general conclusion would be, that it is made up of an imperfectly-formed albuminous or other animal

substance, fatty matters, and salts—principally of lime.

It is probable that tubercle is not always of the same chemical composition; and hence, perhaps, the differences met with by different observers. What I have already expressed as the *degree of phthisis*, or, in other words, the amount of deviation from healthy function constituting the disease, may determine the *kind*, as well as the structure, of the morbid deposit; so that this may present every possible shade of departure from healthy substance,—in some cases, perhaps, closely approaching in its constituents the properly organized materials of health, but, in others, widely differing from them. And it may be partly owing to this circumstance also, that the pulmonary symptoms of phthisis present such infinite variety in different persons.

CHAPTER IV.

THE SITUATION OF TUBERCLE.

It is well known that, at least in chronic phthisis, the apices of the lungs are the chosen seat of tubercle; and, except occasionally at an advanced stage of consumption, the morbid deposit rarely extends to the bases of these organs. The limitation of tubercle to the lower lobes is very uncommon; I have met with only two or three instances of its occurrence. In the acute form of phthisis, the tubercular substance is often scattered throughout the lungs, but even then the upper lobes are usually more involved than the lower; and the same tendency may often be traced in the few cases of consumption which spring out of pneumonia, where, although the disease may have begun at the bases, it commonly spreads to, and afterwards progresses more rapidly in, the upper parts.

An opinion has long existed, that the left lung is far more frequently tubercular than the right; and with a view of testing its accuracy, I have arranged the following table, deduced from my

own observations upon a thousand patients, in different stages of the disease.

TABLE I.

Showing the Position of Tubercle in 1000 *Cases of Phthisis.*

	RIGHT LUNG.			LEFT LUNG.			BOTH LUNGS.		
	1st Stage.	2nd Stage.	3rd Stage.	1st Stage.	2nd Stage.	3rd Stage.	1st Stage.	2nd Stage.	3rd Stage.
Males.....	179	28	23	176	40	33	79	16	8
Females.....	112	27	15	146	29	31	48	6	4
Total.....	291	55	38	322	69	64	127	22	12
	384			455			161		

The left lung is here seen to have been oftener diseased than the right; but a marked difference is observable according to the stage of the malady. During the first stage, the excess is so trifling as to give it the appearance of being what might be termed *accidental*, were it not that the separate investigations of the most eminent pathologists—amongst whom I might mention the names of Louis, Andral, and Carswell—have led to the same result. I infer, therefore, that the left lung is rather more liable to become tubercular than the right; but, that the difference in this respect is so small as to render it a subject of curiosity only, and not of the slightest practical value either in the diagnosis or the treatment of consumption. The gradually increasing excess, (exhibited by the

table) on the part of the left lung, as the disease advances, points, however, to the great probability of tubercular softening and vomicæ being more prone to happen on that side.

Instead of attempting an explanation of these peculiarities in the tubercular deposit,—why it prefers the apex to the base of the lung, and appears more frequently upon one side than the other, I shall merely remark, that reasons such as those which have been generally urged, seem insufficient to account for them. Other diseases, as well as phthisis, have peculiar regions which they appear to regard as their own. The frequent growth of cancerous matter in the lower lip, and its great rarity in the upper;—the well known selection of certain joints by the gouty deposit;—the preference shown by certain cutaneous diseases for particular portions of the skin;—the rarity with which idiopathic pneumonia attacks any other part of the lungs than their bases,—are illustrations of this principle, as familiar as they are inexplicable.

The particular tissue of the pulmonary organs in which tubercle is formed, has been a subject of long, and, as it appears to me, very useless controversy; for, it might be anticipated that anything separated from the blood—which permeates everywhere, would not be limited to any one structure. The tubercular deposit is, accordingly, found both upon free surfaces and within the pulmonary texture. When slowly deposited, it has a manifest

tendency to accumulate in the areolar tissue between the air-cells; but even under such circumstances, it is far from being limited to this part, and may be found both in the interior of the air-cells, and in the smaller bronchial tubes. I have seen it in all these situations, both in uninjected and injected specimens; and I have reason to believe that it sometimes occurs within the coats of the blood-vessels themselves.* Either it is variously dispersed throughout the lung's apex, or it is accumulated in some one or more particular lobules, the exact form of which it will occasionally assume. In the more rapid and severe forms of phthisis, any part of the pulmonary structure may become its nidus; this we see well exemplified in certain cases where the universality of the morbid product has gained for it the term "tubercular infiltration".

The bronchial glands often become the seat of tubercle, not only in early but in more advanced life; indeed, in phthisical children, these organs, far more frequently than the lungs, are found in a tubercular condition. In such instances, it is perhaps difficult to determine whether the glandular affection is secondary or not to the pulmonary one; —that is to say, whether the tubercular substance is first formed in the lungs and afterwards removed, by the process of absorption, to the glands; or

* See the remarks upon Hæmoptysis.

whether it is originally deposited in the glands themselves. I believe, however, that the disease of the glandular structures is rarely the primary one, because we always find that its frequency is in direct proportion to the youthfulness of the patient, or, in other words, to that period of life during which the functions of nutrition and absorption are the most energetic. And it is somewhat confirmatory of such a view of the subject, that tubercle in these organs is less liable to soften than when it occurs in the lungs; as this gives the appearance of a special action, designed to accomplish a salutary object.

CHAPTER V.

THE CURABILITY OF CONSUMPTION.

At the very earliest period at which consumption is recognizable,—the dawn, as it were, of the disease, when there is no reason to suspect pulmonary complication, much may oftentimes be effected by properly directed remedial measures; and, numerous cases, which, if but for a short time neglected, would pass on to the more obstinate stage of tubercular deposit, may, I am convinced, be completely restored. I know that some persons are disposed to question the possibility of so early a recognition of the constitutional disorder, as will enable us to avert the impending danger; but long continued observation of phthisis in its different phases has satisfied me that this may very frequently be done.

When tubercles have been once deposited, the prospect of recovery is diminished, although modern medicine has now fully proved that it is very far from being hopeless. Under favourable circumstances, the tubercular deposit may become absorbed, and the health perfectly restored.

The possibility of absorption has been frequently questioned; but I have witnessed so many instances in which the recovery was complete, and all evidence of pulmonary disease entirely dissipated, after every general and physical symptom of tubercular deposition had been most unmistakeably manifested, that I cannot for a moment doubt its occasional occurrence,—less often, it is true, than we could desire, but still sufficiently frequent to encourage hope, and to induce a steady perseverance in those measures which are likely to promote it. We well know that scrofulous enlargements of glandular and other organs sometimes completely disappear, in consequence of their contents becoming absorbed, under the influence of a healthy reaction of the system: and we are justified in concluding that, were a similar reaction attainable in phthisis, there would be an equal chance of the like result; the difference observable in this respect, in the two forms of the disease, depending simply upon the greater impairment of health which ordinarily attends consumptive cases. The occasional removal of the animal matter of tubercle in the case of calcareous transformation, as explained in a preceding chapter, is an important fact in reference to this subject.

In another class of favourable cases the tubercle hardens and contracts, or, as Rokitansky has termed it, "cornifies". It is then comparatively, if not absolutely harmless, being, in all probability, unsus-

ceptible of further change. Numerous instances of this kind have fallen under my own observation; and it must have occurred to every medical practitioner to witness cases of complete recovery after hæmoptysis, emaciation, and other unmistakeable symptoms both of the general and pulmonary disease had abundantly presented themselves; nothing remaining but certain physical signs indicative of less perfect respiration at the lung's apices, with perhaps some falling inwards of the thoracic wall, owing to contraction of the lung-tissue within.

In some instances, even where the tubercular deposit has, probably, neither been absorbed nor become "cornified", it may nevertheless long remain latent, and unproductive of any serious inconvenience; the patient being able, under proper care and discretion, to enter with so much freedom into the duties even of an active life, that, were it not for the chance of something subsequently reviving the disease, a cure might be said to have been effected.

When, unhappily, neither of the changes just described have taken place, and the tubercular deposit passes into a more advanced stage, a cure may possibly still be effected, by means of the calcareous transformation already spoken of. In proportion to the completeness of this process, the tubercle is deprived of its destructive properties, and is either expelled by coughing, or remains impacted in the pulmonary structure, surrounded sometimes by a kind of cyst, and unproductive of

subsequent inconvenience,—just in the same way that foreign bodies are frequently known to do, in other parts of the system. If, in addition to this, the patient's health can be so restored that no fresh tubercle be deposited, this *petrifying* process may prove a completely curative one.

That this occasionally happens cannot be questioned, as chalky bodies are sometimes found in the lungs of persons who were not suspected of being phthisical, but who died from other diseases; and I have myself seen cases of perfect recovery, after they had been expectorated. Calcareous transformation is undoubtedly a salutary action, seldom occurring except in conjunction with other favourable symptoms; and although it will too often prove an unsuccessful attempt at cure, yet the evidence of its existence, as afforded by the sputa, may be always hailed as a good omen.

I have seen many cases in which it was highly probable that successive crops of tubercle had been, at various and distant periods, deposited in the lungs, and had gradually become either *cornified*, or *calcified*, or at least, quiescent; the patient's general health, after each such deposition, having been restored;—as though the pulmonary tissue had, from time to time, relieved the system of its morbid material. In this way, I believe consumption is oftentimes retarded, and sometimes ultimately overcome.

The softening of tubercle, and its subsequent ex-

pulsion, is another mode by which it has been thought consumption may be cured. I have certainly seen a few cases, in which, after the most unequivocal evidence of tubercular softening, all the active symptoms of pulmonary disease completely disappeared, and the general health was so far restored, that the patients seemed to have recovered. But, it must be confessed, that such examples are rare, and that the most successful treatment of the second stage of phthisis seldom proceeds beyond an *arrest* of the pulmonary symptoms, and a partial and temporary restoration of health. I have seen this painfully illustrated on many occasions, where, after every urgent symptom had long been absent, and the most hopeful anticipations appeared to have been realized, the patient has suddenly relapsed, and all the phthisical symptoms have reappeared, the case running on rapidly into pulmonary cavities. Where, however, the tubercle is small in amount, and the original strength of the patient capable of being permanently restored, there appears to be no reason why recovery should not sometimes occur at this stage also. But it too often happens that the softening process is delayed until the tubercular secretion is so extensive, and the general health so much reduced, that, far from proving a salutary action, it is accompanied only by an aggravation both of the constitutional and local symptoms.

Laennec—the parent of auscultation, rested his

main hope in the treatment of consumption upon the arrival of the disease at its third stage, and the contraction and ultimate healing of the pulmonary cavities. Many have followed in the track of this great authority, either from a spirit of obsequiousness, or from misinterpreting certain pathological conditions which may have fallen under their observation. The main argument advanced in support of Laennec's views, is based upon the peculiar contractions or puckerings of the lung occasionally discovered, after death, in persons who had not died of phthisis, and who were never even supposed to be consumptive ; these pathological appearances being looked upon as the cicatrices of former tuberculous cavities. But evidence of this kind, unless it can be coupled with a knowledge of the previous history of the patient, (which is seldom the case), is scarcely admissible, because it is certain that such a condition of the lung may result from other causes than phthisis. Pleurisy, pneumonia, sphacelus, or pulmonary abscess, and especially the first of these, may produce it, and after the lapse of a short time, leave nothing behind which would distinguish the effect of one from that of another. I might illustrate this by the following brief narration of the *post-mortem* examination of a gentleman who died suddenly, whilst in the enjoyment of robust health. The walls of the chest, both above and beneath the right clavicle, were observed to be considerably sunken ; and the

lung corresponding to these parts was found contracted and drawn downwards nearly two inches below the level of its fellow, whilst internally it exhibited a number of grey cartilaginous-looking lines, running in different directions, one of larger size than the rest occupying its centre; the whole presenting the appearance I have seen in many drawings of the supposed cicatrices of tuberculous cavities. Every other organ of the body was, apparently, healthy. I ascertained from the family of the deceased, that he had suffered, some years previously, so severely with pleuro-pneumonia of the right side, that his life was despaired of; and, I cannot doubt that the peculiar alteration in the lung depended upon the destruction of some of its tissue, and the subsequent contraction of its pleural investment, caused by that attack.

Although I would not deny the *possibility* of a cure in the last stage of phthisis, by the escape of the softened tubercle and the contraction and subsequent healing of the cavity, I cannot help maintaining its extreme rarity, and confessing that I have never met with an unequivocal instance of its occurrence. It is, happily, not very infrequent to find persons, even in the third stage of consumption, with their pulmonary disease so stationary, and their general health so greatly restored, as to be able, by the exercise of proper care, to pursue their former avocations, and to enjoy for a long time—perhaps for some years—a fair amount of

happiness. But such persons cannot be strictly said to be *cured* of their disease: upon close investigation, the most fortunate of them will be found to be more or less invalids, and, sooner or later, they will fall the victims of phthisis;—their pulmonary cavities, although perhaps considerably contracted and quiescent, *have not healed*, but are liable at any time to become the seat of renewed disease; whilst some neighbouring tubercle is almost certainly present, ready to develope, under any exciting cause, its fatal properties.

The phthisis of children, although in many cases severe and rapidly fatal, is, upon the whole, more frequently recovered from than that of the adult; and this from two causes:—first, from the greater power of resisting disease so conspicuous in early life; and secondly, because very often, in children, the chief portion of the diseased matter is accumulated in the bronchial glands. In these structures, although in some few cases it produces formidable symptoms, it commonly does less injury than in the lungs, and should it not be absorbed, is more disposed either to undergo calcareous transformation, or to become hardened and innocuous; and even when softening actually occurs, the resulting scrofulous abscess may, in favourable cases, be completely discharged through an opening into one of the adjacent bronchial tubes. In one or other of these ways the diseased glands are sometimes contracted, or even obliterated, and recovery gradually ensues.

CHAPTER VI.

THE IDENTITY OF CONSUMPTION AND SCROFULA.

Much ingenuity has been exercised by various authors, in attempting either to prove or to disprove the identity of phthisis and scrofula; and so long as the subject is viewed in any other light than a purely practical one, differences of opinion are likely to prevail.

The chemical and microscopical analyses of the tuberculous and scrofulous secretions are alike,—a circumstance of itself sufficient to render the identity of the processes under which the two are produced, something more than probable; but one upon which I shall not insist, believing that the same conclusion is made irresistible by evidence of a more simple kind, and less open to dispute.

First.—The two affections are so frequently intermixed in the history of families, and an acquaintance with the one so often implies a more or less practical knowledge of the other, that their dependence upon the same hereditary cause becomes almost self-evident. Many consumptive persons are descended from scrofulous ancestors, and scrofula

quite as often shows itself in the offspring of those who are phthisical; whilst in the same generation the two exhibit every possible variety in their developement,—some members of a family being, perhaps, scrofulous, whilst others are destined to become victims of phthisis.

Secondly.—The two are very often coexistent in the same individual;—a circumstance of no little weight in determining their identity, since one of the most striking characters of phthisis consists in its rare association with *other* diseases.

Thirdly.—The one is convertible into the other; many consumptive persons having been scrofulous during their childhood; and many scrofulous persons having at some earlier period shown decided symptoms of phthisis. Indeed, it would often seem to be left to the operation of some accidental circumstance, to decide which of the two is ultimately to prevail.

Fourthly.—The two affections are interchangeable, and scrofulous and phthisical symptoms may alternate with each other.

Examples variously illustrative of these points must be familiar enough to every medical practitioner. The children of a family, for instance, are sometimes observed to fall, one after another, the prey to consumption, although the parents may exhibit nothing more than some obscure traces of long-forgotten scrofulous disease. I have seen several cases, where, perhaps, a few scars upon a

mother's neck—the old cicatrices of former strumous abscesses, have been left, as it were, to explain, at some future period, the phthisical condition of her offspring. At the Consumption Hospital, it is only too common to witness the decidedly scrofulous parent seeking relief for the phthisical child; whilst it is even more common to observe the mother, herself slowly fading under the ravages of consumption, bearing in her arms the little sufferer from some form of scrofulous disease. Everyone must have noticed the capriciousness of the two affections in their developement in the same generation. I am acquainted with a family—once a large and happy one, but now reduced to the father and a daughter,—in which this has been most painfully exemplified: the mother had not long died of phthisis, before the same disease exhibited itself amongst the children, in all of whom, with one exception, it ultimately proved fatal; scrofula is now manifest in the survivor, and seems, indeed, to be the sole condition to her reprieve.

The coexistence of the two, although occasionally seen in adult life, is more frequent amongst children, numbers of whom, when suffering under scrofula, will be found, upon minute examination, to be also the subjects of latent phthisis; whilst instances are not wanting, even amongst adults, of the aggravation of phthisis by some distressing scrofulous complication. There is invariably a tendency, in cases of this nature, for the one form of disease

to keep the other in abeyance; and it is this circumstance which makes the union of the two appear to be less frequent than it really is.

The conversion of one into the other, is an occurrence which is constantly taking place during infancy and childhood; and I cannot recall to mind a single case of consumption happening before the age of ten years, which had not been preceded either by strumous glands, or some symptoms of marasmus, hydrocephalus, or other scrofulous affection.

The alternation of the two is less common in early than in more advanced life; and, although not very frequent, it shows more plainly than any other circumstance, that the two conditions are dependent upon one and the same cause, and are merely external and internal manifestations of the same disease. A remarkable example of its occurrence was lately under my notice at the Consumption Hospital, in a patient who had been under treatment for nearly three years. The softening process was going on in the lungs at the time of his admission, and the case bore a most unpromising appearance; the cervical glands, however, soon began to discharge scrofulous matter, and an abscess formed in the tibia. From this time, the pulmonary symptoms abated, the patient improved in health, and returned to his employment, which was that of a town-traveller. A few months afterwards he again applied at the hospital, without the

scrofulous symptoms, but apparently in the last stage of phthisis. After a short rest and proper care, his health again improved; he increased in weight, the scrofulous abscesses reappeared, and he resumed his occupation. This curious alternation of symptoms has again been partially repeated, and will probably continue to be so, until the health finally gives way, and the pulmonary disease gains the mastery. Cases very similar to this, but less distinctly marked, have several times presented themselves.

Such illustrations of the connexion between phthisis and scrofula, appear to me to afford more practical and convincing proofs of their identity than any reasoning whatever; because (as we shall presently have occasion to notice), not only has consumption no such relationship with any other form of disease, but it furnishes one of the best examples of the so-called antagonism of one disease to another.

When we seek to ascertain why scrofula should be developed in one generation, or in one individual, and phthisis in another, we become at once involved in difficulties which beset all such inquiries; and until we have discovered more accurately in what the tubercular diathesis essentially consists, it will be as well to avoid any attempt at explanation. Age, however, seems to have an important influence in this particular; the liability to scrofula being greatest during infancy, and decreasing gra-

dually as childhood passes into youth, and youth into manhood; whilst with phthisis, the very opposite is observable, this form of the disease being comparatively rare during the early stages of life, and becoming more conspicuous in proportion as the tendency to scrofula diminishes. Sex also contributes its influence, consumption being more frequent in female than in male children,* whilst scrofula certainly shows itself oftener in the latter.† There are doubtless many conditions of life which exert an influence in the developement of one in preference to the other; but they are too obscure either to be defined or explained.

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* See chapter IX.

† This remark is not founded upon statistical evidence, but upon general observation of scrofulous cases brought to the Consumption Hospital.

CHAPTER VII.

THE RELATION OF CONSUMPTION TO OTHER TUBERCULAR DISEASES.

In all scrofulous or tuberculous diseases, the morbid deposit is disposed to accumulate chiefly in one particular part, although it may, at the same time, be more or less scattered through other organs also; and hence arise differences in the character of the malady, according to the relative importance to the functions of life, of the structures principally affected. Thus it is that consumption is closely related to a number of diseases, known, it is true, by distinct names, and characterized by a very dissimilar train of symptoms, yet, pathologically differing from it in nothing, except in the position of the tubercular secretion. It is, indeed, of the greatest importance ever to bear in mind the common origin of all tuberculous affections, because, however dissimilar they may appear, one is often converted into another; and what may ultimately end in ordinary consumption, may have a very different beginning.

One of the most common of these diseases is that

termed *tabes mesenterica*, from the tubercular deposit being chiefly collected in the glands of the mesentery. In many phthisical cases these glands are found enlarged and more or less occupied with tubercle; but they are then generally, although perhaps not always, secondarily affected, in consequence of some tuberculous deposit upon the mucous membrane of the intestines. The true *tabes mesenterica* is principally seen in infancy and childhood, and is, perhaps, the most common form under which the scrofulous diathesis at this period of life is exhibited: it does not appear to be necessarily connected with a previous tubercular condition of any portion of the alimentary canal, but more generally arises from primary tuberculosis of the chyliferous glands. It is seldom accompanied by any urgent thoracic symptom, although nearly every other evidence of consumption sooner or later manifests itself: upon careful examination, however, the lungs are frequently found, in a more or less degree, tubercular; and, very often, there are other indications of scrofulous disease. The affection is chiefly seen amongst the members of consumptive families, frequently appearing in infants, the offspring of phthisical parents, although, like ordinary consumption, it may be acquired. Its tendency to become converted into phthisis is often very marked; a vast number of persons, who may overcome its attack in early life, falling, at some future period, a prey to consumption.

The acute, and sometimes also the chronic *hydrocephalus* of children, is a disease of the same nature, its pathological anatomy often displaying a tubercular condition of the brain or of its membranes,—usually the pia-mater. It is true that, in general character, it bears but a slight resemblance to consumption; but this is manifestly attributable to the peculiar functions and importance of the parts implicated, and the necessary predominance of cerebral symptoms. In many cases, however, there is something which leads to a suspicion that other internal organs, especially the lungs and bronchial glands, are likewise diseased; and where recovery from hydrocephalus takes place, it is not unusual to see it followed, in after life, either by some other form of scrofula, or by actual consumption.

Most of the cases of *chronic peritonitis* have a scrofulous origin, and ultimately assume many of the general characters of consumption; now and then they are secondary to some malignant or other disease, but in the majority of instances they are dependent upon an accumulation of tubercular matter about the peritoneum and intestines. This affection is more rare than either of the preceding, and differs from them in being less frequent in infancy and childhood than in middle and more advanced life. It is invariably associated with a tubercular condition of the lungs, (a valuable help to its diagnosis), and the two often advance simultaneously; but it sometimes runs a solitary course, checking, as it were, the pulmonary disease.

It would be too great a digression to enter further into a description of these particular forms of tubercular affections; and it is unnecessary that I should do more than briefly enumerate a few other morbid conditions closely allied to phthisis and often passing into it. Certain local inflammations, particularly of the eye and ear; strumous enlargement of the secreting and absorbent glands; many diseases of the osseous system, such as caries of the vertebræ, disease of the hip-joint, etc., are all intimately related to one another and to consumption; the whole of them depending upon the same constitutional cause; the one being developed in preference to the other, in consequence of particular influences, alike capricious and inexplicable.

CHAPTER VIII.

THE RELATION OF CONSUMPTION TO DISEASES OF A DIFFERENT CHARACTER.

Phthisis has often been said to be antagonistic to certain other diseases, which diseases have accordingly been looked upon as affording some protection from its attacks;—for example, it has been stated, and is generally credited, that wherever ague is prevalent, consumption is very rare; and, that sufferers from rheumatism or gout seldom, if ever, become phthisical.

We shall find, however, that consumption has no antipathy or antagonism to any other disease, beyond that which is common to every morbid condition; for, it seems to be a law—subject, of course, to occasional exceptions—that the system cannot be under the influence of two dissimilar actions at one and the same time. This principle is variously exhibited. It is evident in the immunity from, or temporary arrest of disease, which is so frequently experienced during pregnancy, and sometimes even during lactation. It is also manifested in the operation of certain medicinal agents, which, in order

to influence the disease, must first affect the system, thus substituting one kind of action for another. Many peculiarities which have been long observed in connexion with particular diseases, find, in the same principle, a ready explanation. Inoculation and vaccination, for example, are generally unsuccessful, if performed when the body is at the same time under the influence of fever, scrofula, or other general disorder. If a child labouring under measles be exposed to other contagion, it will either have no effect, or will exhibit itself only after the measles have entirely disappeared. Cutaneous affections are well known as the means by which many other and more distressing symptoms are frequently kept in abeyance. Gout has a like character, and has gained, on this account, so popular a reputation, that it is often hailed rather as a boon than otherwise. And it has frequently been remarked that, during the prevalence of epidemics, persons labouring under any dissimilar form of disease appear less liable than others to their attack.

From such illustrations—which, were it necestary, might be considerably multiplied—it is evident that, as a general rule, one disease acts (if we might so employ the term) as *prophylactic* to another: and it is simply because consumption is a chronic disorder, and so affords a long and frequent opportunity for observing its relationship with other diseases, that its special antagonism has been so much insisted upon.

Rheumatism, gout, emphysema of the lungs, organic affections of the heart, Bright's disease of the kidney, and ague, have been especially regarded as opponents to the developement or progress of phthisis. If, however, the statistics of each of these maladies were examined separately, it would probably be ascertained, that they are just as seldom associated with other diseases, as with consumption; whilst it can be shown, that their union with the latter is at least occasionally to be met with.

The following table shows the number and kind of complications met with in the thousand phthisical cases, to which I shall have so often to refer in illustration of other points.

TABLE II.

NUMBER OF CASES.	Rheumatism.	Gout.	Disease of Heart.	Diabetes.	Epilepsy.	Prolapsus Uteri.	Fistula.	CUTANEOUS DISEASES.					Bronchocele.	Emphysema.
								Herpes.	Psoriasis.	Purpura.	Strophulus.	Lichen.		
582 Males	4	2	2	2	1	...	3	1	0	1	0	1	0	3
418 Females	2	0	1	0	0	3	0	1	2	0	1	0	1	2

The rheumatism was, in every instance, of a chronic form, and occurred at different periods of the tubercular disease, which, in two cases, seemed to be somewhat checked by its presence, but in the rest, to be uninfluenced by it.—The gout was met with in two male patients, who had strong hereditary claims to it, and were much advanced in

phthisis; it seemed to aggravate their sufferings, and both cases ultimately proved fatal.—Two of the cases of diseased heart consisted of valvular obstruction, evidently of old standing,—in all probability long antecedent to the commencement of phthisis; the other case was only discovered at the *post-mortem* examination, and was due to pericarditis, which had probably happened but a short time before death: in all three instances the tubercular disease had been very chronic.—In both cases of diabetes, the saccharine condition of the urine preceded the phthisical symptoms, the latter probably being dependent upon it, and running a rapidly fatal course.—The case of epilepsy was one in which the fits had been habitual since childhood, and the phthisical disease had existed, in a latent condition, for a very long period.—The three cases of prolapsus uteri presented nothing peculiar; but diseases of this class may have been more numerous, as they were very likely not to be mentioned.—Fistula, it will be observed, was met with only three times; and although this must be taken with some reservation—(since the majority of the patients were in an early stage of phthisis, whilst fistula is more likely to occur at a later period), it still affords sufficient evidence that the common opinion regarding its frequency is incorrect. Andral met with but one instance of fistula in eight hundred consumptive patients;* and Louis has equally

* Andral's "Clinique Médicale".

failed in observing it.* The statistics of this affection might show its frequent union with phthisis; but this would far from justify the conclusion, that phthisis is often complicated with fistula, the relative frequency of the two diseases being so different; and the only inference to be drawn from it would be, either that, amongst other causes, fistula sometimes has its origin in the softened or ulcerated condition of the mucous membrane of the large intestine, which is so common an attendant upon phthisis, or, that there occasionally exists, between the lower portion of the intestinal tube and the pulmonary affection, one of those strange sympathies which so often present themselves in diseased actions. I should be disposed to regard the latter as the more correct explanation. In every case in which it was observed, the tubercular disease was singularly kept in check by it; and the propriety of the usual custom of allowing fistula, in consumptive persons, to remain uninterfered with, was well illustrated.—Skin diseases are seen to have been of unfrequent occurrence,—a point of some practical importance; for, if increased or modified cutaneous action be in any degree opposed either to the production or the advance of tuberculosis of the lungs, we have before us a large field for the remedial treatment of consumption; since, it is obviously at our command to induce artificially

* "Researches on Phthisis."

certain cutaneous eruptions; but, of this subject, more will be said in its proper place. The cutaneous affections were of a mild form, with the one exception of herpes, which showed itself, in each case, as *shingles* of a severe and tedious kind; the psoriasis was the simple variety of P. palmaris; the purpura was but little developed, and happened in a man who had been much enfeebled by syphilis and mercury; both the strophulus and lichen were of a mild description, and presented nothing remarkable. During the presence of these diseases, the phthisical symptoms seemed, in several instances, to become diminished; this was particularly obvious with respect to psoriasis, the return of which, in one case, was always hailed by the patient with no little satisfaction, as the sure precursor of a general improvement. Bronchocele was noticed only once, and then in a young female whose pulmonary disease was in a very early stage.* Emphysema was met with in an unequivocal form in five cases; and I have reason to believe that, in several others, the lungs were slightly emphysematous.

Disease of the kidneys does not appear in the above table, either because it did not exist, or, if it did exist, it was not discovered; but I have frequently seen it in conjunction with phthisis. Either

* Both Hasse and Rokitansky regard tubercle and goitre as incompatible; but I have lately seen another and well-marked instance of their union.

there has been a deposit of tubercle in some part of the kidneys,—most frequently, I think, in their cortical structure; or, these organs have been in a state of granular disease. The former of these conditions, is, of course, one of the consequences of the scrofulous diathesis; but I cannot help regarding the latter merely as an accidental complication, and as having nothing, either in its origin or career, in common with phthisis.

The antagonism of ague and consumption has been quite as warmly advocated as denied. The evidence upon this question is, indeed, of the most conflicting kind, and affords equal material for either view of the subject.

My own opinion is, that ague, like other diseases, is seldom associated with phthisis; and that it does not, either during its attack or subsequently, insure immunity from scrofulous disorders. The two conditions are, indeed, sometimes to be found together; an instance of which I have lately seen in the case of a consumptive patient from Essex, who had scarcely recovered from a severe attack of quotidian ague. And Mr. Hodges of Rochford (where ague abounds) has informed me that such occurrences are by no means uncommon; phthisis, as he expresses it, "prevailing there to nearly as great an extent as in localities where ague is not met with," . . . . "ague, especially of the tertian form, being sometimes seen during the progress of tubercular diseases."

Cancer has been thought by not a few authorities—amongst whom may be reckoned Rokitansky, to be incompatible with consumption; but such a conclusion is obviously incorrect. The two conditions present many points in opposition to each other, and certainly are seldom associated. But it has occurred to me to witness a decided case of advanced phthisis in conjunction with equally well-marked scirrhus of the pleura. An instance of cancer of the breast in a consumptive patient is recorded by Mr. Sibley, as having proved fatal in the Middlesex Hospital:* and there is at the present moment, in the Consumption Hospital, under the care of one of my colleagues, a female far advanced in phthisis, with scirrhus of the same part. Dr. Walshe also states that "tubercle and cancer *may* coexist, even in the same lung."†

Organic affections of the heart—more especially those which lead to imperfect arterialization of the blood, have long been regarded as antagonistic to phthisis. *Cyanosis*, indeed, has been thought by most pathologists—Rokitansky amongst the number, to afford a complete exemption from tubercular affections. The inaccuracy of this supposition, however, was well illustrated by a patient lately in the Consumption Hospital, under the care of my colleague, Dr. Cursham. A youth, aged 18, had from his birth exhibited, in a highly marked degree,

* Lancet, July 8th, 1854, p. 10.

† "Diseases of the Heart and Lungs," p. 376.

the peculiar condition termed cyanosis; and, for some months before his admission, had suffered from the ordinary symptoms of advanced consumption. The autopsy exhibited the following combination:—extensive tubercular cavities in both lungs, with congenital malformation of the heart; the ventricles communicating with each other by means of a large opening,—forming, in fact, but one cavity, from which sprung both the aorta and pulmonary artery, the latter being less than one-third its normal size.*

Thoracic aneurism, on the other hand, has been said to be frequently associated with phthisis; and in this opinion Dr. Stokes of Dublin evidently concurs.† My own experience, however, tends rather to the opposite conclusion; as I have witnessed, amongst the numerous cases examined at the Consumption Hospital, only one instance of their combination. Dr. Fuller has recently published statistics confirmatory of this view; from which it appears, that in "twenty-seven fatal cases of thoracic aneurism recorded at St. George's Hospital, three only exhibited traces of tubercular diseases;"‡ whilst in thirty-two cases reported in the Transactions of the Pathological Society, no mention is made of the existence of tubercle.

Emphysema has already been spoken of as an

* Trans. of Pathological Society, vol. vii, p. 85.

† "Diseases of Heart and Aorta," p. 578.

‡ Medical Times and Gazette, vol. xxxiv, p. 629.

occasional complication of phthisis. The two conditions are certainly not incompatible, although I believe that the one modifies the developement of the other. It is not improbable that the diminished quantity of blood in emphysematous lungs may lessen the chances of tubercular deposition in these organs, by circulating within them a proportionate small amount of tuberculous material. But in whatever way it be explained, it is certain that emphysema, although it may, and generally does, greatly aggravate the patient's sufferings, nevertheless tends to make the tubercular disease more chronic, and greatly to retard the fatal issue.

The skin of the face, chest, and arms of consumptive persons occasionally exhibits the coloured patches known as ephelis, but I cannot give its numerical frequency: this, however, is scarcely to be considered a disease; and the reason why it may, perhaps, be oftener seen in phthisis than in other affections, is, on account of its being particularly visible in the usually delicate skins of scrofulous persons.

In conclusion, I would repeat my belief that there is no disease which can properly be said to afford immunity from consumption. Both the constitutional and local symptoms of phthisis may coexist with any other morbid condition; but from the general law already adverted to, of the little tendency in the body to carry on, simultaneously, two dissimilar morbid actions, the complications of phthisis are few and uncertain.

CHAPTER IX.

CAUSES OF CONSUMPTION: PREDISPOSING AND EXCITING.

PREDISPOSING CAUSES.

THERE are many circumstances which influence, in different ways, the developement of consumption. Some of these act by rendering persons more liable than they would otherwise be, to its attacks; whilst others have a more direct effect in immediately producing the disease. Hence, the causes of phthisis have been divided, like those of other diseases, into two kinds, viz., *predisposing* and *exciting;* a distinction which will be found useful, and, in the majority of cases, strictly practical, although the modifications to which they are liable may sometimes render it difficult to define the operation of either, or to separate that of one from that of the other. The occurrence of both, or rather the sequence of one to the other, is, moreover, not always necessary to the production of the malady; that is to say, either of them may, under peculiar circumstances, unite in itself the action of the two. Examples of this may be seen in members of a family strongly affected with hereditary consumptive *pre-*

disposition, dying one after another, in spite of the most careful avoidance of exciting causes; and again, in certain cases where, in consequence of some febrile or inflammatory attack, which more usually would be considered an *exciting* cause, persons, previously in good health, and, so far as we could judge, very unlikely to become consumptive, suddenly fall a prey to rapid phthisis.

The predisposing causes of consumption include every circumstance and condition of life which at all favour the developement of the disease, but which are insufficient, except in a few cases and for special reasons, solely to give rise to it. Of these, age, sex, stature, constitution, temperament, hereditary transmission, occupation, climate, habits of living, and mental condition, are the chief; and bearing, as they do, a very unequal share in its production, require to be considered separately.

Influence of Age.—No period of life is exempt from phthisis; infancy, youth, manhood, and old age, are liable to its visitations; and it has even been met with in the fœtus. The tendency to it varies, however, with the age, as may be seen in the next table, derived from cases which have fallen under my own observation.

A glance at this table shows that the disease is most frequent between the ages of twenty and thirty, —more than 39 per cent. having occurred within this period: that the next age most favourable to its developement is from thirty to forty years; that the

next to this is from ten to twenty years; and that after the age of forty its frequency gradually lessens, until, as we approach the "threescore years and ten", few cases present themselves. There is a prevalent idea, but obviously an incorrect one, that after having passed the meridian of life we become exempt from consumption;—the table showing that the disease is not infrequent up to the age of sixty, and that, even after that, it is far from being unknown.

TABLE III.

Showing the Ages of 1000 *Persons in various Stages of Phthisis; namely,* 582 *Males and* 418 *Females.*

	Birth to Five.	Five to Ten.	Ten to Twenty.	Twenty to Thirty.	Thirty to Forty.	Forty to Fifty.	Fifty to Sixty.	Sixty to Seventy.
Males.....	3	15	76	228	159	81	14	6
Females.....	3	13	77	169	103	39	12	2
Total.....	6	28	153	397	262	120	26	8

It is important to observe that the greatest liability to phthisis occurs at the very time of life when causes which will be shown to predispose to it, are most energetic. At the age of from twenty to thirty, the mind has begun to exert a new and untried action upon the functions of the body; the prospects of youth have become realities; anxiety and care exercise their influence; evil habits also often originate or become confirmed; until the health fails, and the system is unable

longer to cope with the hereditary germs of disease, or resist that tendency to their production which is common to us all.

The following table, deduced from the preceding one, is added, in order to exhibit the influence of age, as modified by sex:—

TABLE IV.

Ages.	Males per cent.	Females per cent.
0 to 5	0·5	0·7
5 ,, 10	2·5	3·1
10 ,, 20	12·7	17·7
20 ,, 30	38·8	40·4
30 ,, 40	27·3	24·6
40 ,, 50	13·9	9·3
50 ,, 60	2·4	2·8
60 to 70	1·0	0·4

Thus females, up to the age of thirty, are shown to be more liable to phthisis than males of the same age; but after that time, the disease is much more frequent in the male sex. The circumstance that a very similar observation is to be found in the statistical records of the Hospital for Consumption,* furnished by my colleagues and myself, gives additional importance to this statement. Why it should be so is, perhaps, difficult to explain satisfactorily; but, possibly, a reason may be found in the circumstance that, in large towns

* Medical Report of the Hospital for Consumption, 1849.

especially, the occupations of a vast number of young females are, in early life, more sedentary, and involve greater privation than those of the majority of males of the same age.

Influence of Sex.—It has long been both a popular and professional belief that females are oftener the subjects of phthisis than males. M. Louis concurs in this idea;* but, until the publication of our Medical Report already referred to, a sufficient number of cases had never been analysed to justify any inference whatever upon the subject.† The thousand cases which fell under my own observation, consisted of—males, 582; females, 418.

TABLE V.

	Total Number of Cases.	Per Cent.
Males . . .	582	58·2
Females . .	418	41·8

It can, therefore, no longer be doubted, that, at least in and around our metropolis, consumption is more frequently to be seen in males than in females.

* "Researches on Phthisis."

† The number of consumptive patients under treatment at the Brompton Hospital, up to the year 1849, was as follows:—Males, 2,679; females, 1,679; showing a great excess on the part of the male sex.

Influence of Stature.—There appears to be some relationship between the phthisical diathesis and the growth of the body, the greater number of consumptive persons, especially those of an early age, being tall,—many of them, indeed, much exceeding the average height. I cannot give a numerical statement upon this subject, not having measured a sufficient number of patients to justify it; but I do not entertain the slightest doubt of its truth, and have several times heard it remarked by gentlemen who have been present during the attendance of the out-patients at the Brompton hospital. Very short persons are seldom the subjects of phthisis, whilst, with very tall ones, it is just the opposite; and in reference to this, the familiar expression of "outgrowing the strength", so popularly associated with the origin of the disease, is not unworthy of notice, since, like many others of the same kind, it contains within it a fundamental truth. We see in the whole theatre of life, that those organic beings which arrive the soonest at maturity, are often destined to the shortest career; and both plants and animals springing up prematurely, or excelling others of their race in growth and beauty, seem frequently designed to show us nothing more than the evanescent nature of such qualities, and that they are only too often the harbingers of early dissolution.

Influence of Constitution.—The power of resisting disease—so commonly expressed by the terms good

or strong, weak or delicate, constitution—is supposed to exercise an important influence upon the developement of phthisis; but such an opinion seems to be more conjectural than founded upon accurate observation. An infirm constitution, whether inherited or acquired, must, of course, contribute to the liability to disease generally, and, in this sense, to the production of tuberculous affections; but the one seems to have no necessary connexion with the other; a vast number of consumptive persons being, *at the onset* of their malady, far from what would commonly be designated as of delicate constitution; many of them, indeed, being robust, and even more than average specimens of good physical developement.

The delicate-looking chlorotic female is, I think, less liable to phthisis than others of her sex who are, to all appearance, stronger and more healthy. Amongst males, also, the same thing may be remarked; the fragile, timid, and backward youth, having less often within him the seeds of consumption than his apparently more vigorous associates. Such statements, however, must be taken only as general, and are open to many exceptions, consumption sparing neither the young nor old, the delicate nor robust; but they are nevertheless important, as teaching the practical lesson that, under no circumstances of apparent strength, should the ordinary causes of consumption be disregarded.

Influence of Temperament.—The peculiar con-

nexion of the mental with the physical developement, termed temperament, has been said to have a material influence in the production of tubercular diseases; but my experience upon this subject, as upon the last, is counter to general opinion. I have hitherto failed to observe, amongst consumptive patients, an excess of what might be called one particular temperament. The colour of the hair and skin,—the developement of the subcutaneous tissues,—the condition of the abdominal organs,—the state of the nervous system,—all of which are looked upon as the indices to temperament, do not appear to me to offer the slightest assistance in the diagnosis of phthisis, nor to bear any necessary relationship to the disease. Consumption does not, as is commonly supposed, show any preference for those whose gentle nature or mental endowments claim a more than usual amount of admiration: it is true that these are too often its victims; but the practical physician finds that the pleasing form and brilliant genius are not oftener its prey than are the unattractive, or the feeble in intellect; and he has to encounter murmuring and discontent, scarcely less frequently than he is called upon to admire cheerfulness and resignation.

Hereditary transmission appears to have a smaller share in producing phthisis than is generally supposed. In the thousand cases already spoken of, three hundred and sixty-seven, or rather more than one-third, were members of consumptive families;

whilst, in the remaining six hundred and thirty-three, or in somewhat less than two-thirds, the disease could not be shown to have proceeded from hereditary causes.

TABLE VI.

Showing the Influence of Hereditary Predisposition, as exhibited in 1000 *Cases of Phthisis.*

PREDISPOSED.							NOT PREDISPOSED.	
Father Consumptive.		Mother Consumptive.		Both Parents Consumptive.		Brothers or Sisters Consumptive.		
M.	F.	M.	F.	M.	F.	M. and F.	M.	F.
59	53	40	62	15	12	126	393	240
367							633	

It is certain, however, that this scarcely exhibits the full extent of hereditary taint, since it embraces only the preceding generation, (statements referring anterior to this being too vague to be depended upon); and it is well known that phthisis, like other diseases so propagated, may remain dormant, for one, two, or even more generations, and then show itself again at a remote period, when, perhaps, its original existence in a family has been long lost sight of. The table, therefore, must be considered only as an approximation to the truth, or as exhibiting the frequency with which hereditary influence can be demonstrated.

We are justified, however, in deducing from it the following interesting conclusions.—(1.) Males

more frequently derive the disease from the father than from the mother; whilst females, on the other hand, more commonly do so from the mother. (2.) The influence of a double hereditary taint must be especially fatal, since it cannot be a very common thing for both parents to be consumptive, yet a large number of patients had such an origin. (3.) Of those not predisposed, the male sex being more numerous (393, or 67·5 per cent.) than the female (240, or 57·4 per cent.), consumption is more likely to be acquired by males than females.

It is a matter of more importance than at first sight might appear, to determine whether or not any particular case of phthisis has been derived from hereditary sources; for, as a general rule, *hereditary* consumption is less controllable than *acquired* consumption; and those cases which prove the most rapidly fatal will be usually found to proceed from, or to be accompanied by, hereditary taint.

It is a disputed point whether a state of general debility, physical or mental, natural or acquired, on the part of either or both parents, is capable of producing phthisis in the offspring. My own impression, derived from much enquiry amongst consumptive patients, is, that a parent *in any way* enfeebled, may, but does not always, communicate to his descendants a low degree of vital energy, which, at some future time, may exhibit itself in the production of disease, the character of which

will depend upon the peculiar circumstances to which such descendants become exposed. They may suffer from scrofula in childhood, or from phthisis in more advanced age, mental imbecility, degeneration of tissue, malignant diseases, or, in fact, any constitutional affection dependent upon insufficient vitality, or a deficiency of that principle of life which is essential to healthy function, but which is destined to escape the scrutiny of both chemistry and the microscope.

Influence of Occupation.—Although many trades and employments are powerfully predisposing, and even exciting agents, they are seldom so *per se*, but owe their influence to certain unfavourable circumstances under which too many of them are pursued, and the violation of sanitary laws, which they too often involve. Some particular employments, such as knife-grinding, needle-making, mining, rope-making, glass-cutting, turning in metals, and others, where minute particles are constantly floating in the atmosphere and being inhaled, have long been popularly regarded as inducing phthisis; and it must be admitted, that the pulmonary irritation thence arising, is very likely to have a considerable share in the production of this disease whenever it is superadded to other conditions tending to predispose the body to its attacks. I believe, however, that this *mechanical* origin of consumption has been much overrated; and that it may be fairly questioned whether such trades

might not be carried on with impunity, if greater respect were paid to sanitary regulations.* It is the impure air—the confinement—the unnatural posture—the deficiency of light—together with the mental and physical depression to which they are subjected, which render so many of our labouring classes prone to phthisis.†

Upon these points, an instructive lesson is presented in our menageries, where, in proportion to the unnatural circumstances under which the animals are placed, and their deprivation of exercise, light, and change of atmosphere,—consumption, differing in no material respect from that of our own race, makes its appearance. I have had many opportunities of inspecting the lungs of birds which have died in zoological collections, and have found them, in several instances, tubercular.

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* In one of the largest glass factories in the metropolis, where cutting and polishing are carried on very extensively, I had the satisfaction of finding that phthisis amongst the workmen was of rare occurrence; but the reason was evident,—the workrooms were spacious, light, and well ventilated.

† The correctness of these remarks (which are unaltered from the first edition) is confirmed by some papers recently published by Dr. J. C. Hall of Sheffield (*British Medical Journal* for 1857). What is termed the "Sheffield grinder's disease" is there spoken of as having "no necessary connexion with consumption"; but is described as a chronic bronchial affection, which, in persons of the tuberculous cachexia, or otherwise predisposed to phthisis, often acts as the excitant of consumption. Dr. Hall considers that, by proper regulations, it is in a great measure preventable.

It is well known that the monkeys in the gardens of the Zoological Society are particularly subject to phthisis; and Professor Owen has found tubercle in a vast number of different animals which have died in that collection.* It has been observed also that the London cows, when kept (as until very recently was the case) in gloomy unventilated cellars, frequently fell victims of tubercular diseases.

It is lamentable, but true, that the wild beast in his captivity, leads a life which offers a contrast to his natural habits, scarcely greater than does the artizan, who labours from sunrise to sunset in his gloomy workshop, or the female domestic in her London kitchen. The forgotten responsibilities of employers make them, unwittingly perhaps, but scarcely on that account less culpably, the disseminators of disease. How many work-rooms of our metropolis remain a disgrace to every feeling of humanity! in numbers of them, even on the sunniest day, the cheering light of heaven scarcely finds an entrance, and the atmosphere, deprived, by respiration and combustion, of every vivifying principle, is hardly ever changed. Thousands of the youth of both sexes annually leave their country homes, to become the occupants of these dismal abodes, oftentimes for as much as fourteen or six-

* Mr. Ancell on Tuberculosis, p. 353. Sir J. Clarke on Consumption, p. 212.

teen hours daily; and after a few months, or, it may be, a few years service, unequalled in its moral and physical consequences even by the most rigid system of slavery, terminate their career a prey to phthisis, and, perhaps, also bequeath it to a future generation.

The so-called *improvements* of our metropolis are but too generally accomplished at the cost of health and even of life to the poorer classes, by driving them, year after year, closer and closer together, and compelling them to ply their trades, and rear their families, further away from the happy influences of sunshine and pure air,—two gifts of providence sadly monopolized, although obviously intended to be equally and freely enjoyed.

The practical truth of these remarks may, I think, be illustrated by the following table (p. 67).

Consumption is there shown to be more than five times as frequent amongst those engaged in indoor, as in out-door or more active pursuits: a result which could hardly have been anticipated, but which justifies the general conclusion, that the in-door and sedentary habits of many of our working classes, are more baneful than even the cold and atmospheric variations to which so many of the lower orders are necessarily exposed.*

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* A similar observation has been made by a continental physician. M. Lombard found in Paris, Geneva, Vienna, and Hamburg, that "there are a greater number of persons leading a sedentary life, afflicted with phthisis, than of those leading an

TABLE VII.

Showing, upon 1000 *Cases, the Relative Frequency of Consumption in Persons of Various Occupations.*

IN-DOOR PURSUITS.		OUT-DOOR PURSUITS.	
Persons of no fixed employment, but engaged in household duties	261	Labourers	51
Domestic Servants	129	Servants and Porters	28
Shop-keepers	114	Coachmen and Cabmen	16
Dressmakers, Milliners, and Needlewomen	78	Ostlers and Grooms	14
Carpenters, Cabinet-makers, Turners, & Sawyers	50	Bricklayers	10
Tailors	37	Gardeners	9
Shoemakers	31	Sailors	8
Clerks	30	Hawkers	6
Printers, Compositors, & Engravers	21	Travellers	5
Smiths & Metal-workers	14	Policemen	5
Teachers and School-keepers	16	Soldiers	4
Laundresses	13	Masons	3
Plumbers and Painters	12		
Engineers	8		
Publicans	8		
Butchers	6		
Bakers	6		
Watchmakers	4		
Musicians	3		
Total	841	Total	159

It will be observed that in-door servants, milliners, needlewomen, carpenters, tailors, shoemakers, clerks, and printers, constitute the

active life, in the proportion of 141 to 89."—Mr. Ancell on Tuberculosis, p. 501.

principal part of the first column; and it is well known that such persons, more especially in our metropolis, are compelled too generally to follow their daily labour, and to spend the greater portion of their lives, in the most ill-ventilated, gloomy, and depressing abodes anywhere to be met with. If from this list we select those whose occupations are the most sedentary, and who, perhaps, on account of the circumstances just now enumerated, claim the most commiseration, viz., dress-makers and needlewomen, tailors, shoemakers, and printers, they will be found to amount to one hundred and sixty-seven, or exactly one sixth of the total number of cases. Carpenters alone, form one-twentieth of the whole; and these, it is well known, are usually a hard-worked class, passing their time in workshops which might readily be supposed were purposely constructed for depriving them of health. Clerks also figure very conspicuously in the list, and might be brought forward as further evidence of the connexion of phthisis with sedentary occupation.

The second column of the table shows that coachmen, cabmen, grooms, etc.,—a very numerous class, living, in general, under circumstances highly prejudicial to health,—are comparatively seldom consumptive; whilst hawkers, policemen, and gardeners, all of whom must be continually exposed to what might very reasonably be looked upon as fertile sources of phthisis, even less frequently

present themselves. Out-door labourers are also far from numerous, although their habits of life are such as might be expected strongly to predispose them to consumption: it is evident that, as a class, they must greatly outnumber the needlewomen; yet they seem to become, much less frequently than these, the subjects of phthisis.

Every investigation of this nature is beset with difficulties. In proportion to the depressing effects of particular employments, artificial habits, intemperance, and other vices are acquired, all of which contribute to originate disease. It is also to be remembered that certain conditions of life, which may be highly prejudicial to some persons, may be borne by others with impunity. There seems, however, to be every reason for believing—and it is a matter upon which too much stress cannot be placed—that no occupation has any special tendency to develope phthisis, except through the agency of collateral circumstances, all of which are greatly under our control, and not a few of which might be entirely avoided.

Influence of Climate. It is popularly believed that climate has a closer connexion than almost anything, with the production of tuberculous diseases; and that consumption is even incompatible with certain geographical positions. If this supposition were but true, the duties of the physician would be more simple and effective; but, unhappily, it is founded in error. Phthisis finds a birth-

place everywhere, and may be seen, to a greater or less extent, over the entire globe.

In another portion of these pages I shall have to enter more fully upon this subject; at present, therefore, it is unnecessary to say more than that the title *English disease*, the common synonyme of consumption, is completely misapplied; since—quite independently of climate—wherever atmospheric impurities, unhealthy pursuits, immoralities, or, in fact, anything tending to lower the healthy standard of the physical powers, has an existence,—there may phthisis be met with.

Irregularities of Living. The evil and artificial habits of a large proportion of our population, more especially in large towns, exercise at every period of life, but particularly in youth, a very important influence upon the body, and are oftentimes the occasion either of arousing within it a dormant tuberculous taint, or of creating one. Vice and dissipation may, indeed, annually claim their consumptive thousands; for, however much the debauchee may consider himself secure from the visitation of phthisis, by inheriting from his ancestors a healthy constitution, he has too often to learn, that the habits he has acquired are just as capable of generating tubercle, as is the strongest hereditary taint. It would seem also, so far at least as its effects are concerned, to be of little consequence by what means he reduces his bodily vigour; for the continual disturbance of the balance

of health, is liable, in proportion to its extent, and not to its kind, to open a way to tubercular diseases.

Of all vices, however, none are so apt to lead on to consumption as the unnatural or unrestrained indulgence of the sensual passions. To this cause alone, the germs of tubercle are very frequently traceable; and I am convinced, that the many bearings of this subject upon the physical and mental energies, have a much closer and more frequent relationship to phthisical affections, than we can ever expect, from their peculiar nature, to see fully demonstrated.

Intemperance so often involves other vices, that its separate influence is difficult to estimate. In proportion as it is made the temporary antidote to unhealthy occupation, impure air, and other depressing agents, it must lend its aid towards predisposing the system to tuberculous affections; but it is worthy of remark, that the habitual drunkard—he who is always "in his cups"—is not very often the subject of phthisis; such, at least, is the result of my own observation. The reason of this is, perhaps, not difficult to discover. The drunkard suffers rather from over-stimulation and nutrition than the opposite, and thus renders himself more liable to those diseases which have been already spoken of as but seldom concurrent with phthisis. Organic affections of the heart or liver, and disorders of the nervous system, are his peculiar

punishments, and give him little occasion for rejoicing in his comparative freedom from consumption.

As confirmatory of this statement, it may be mentioned that Dr. Peters, an American physician, has recorded the result of his examinations of seventy persons who were known to have died from the excessive use of ardent spirits: in none did he find the slightest evidence of pulmonary cavities; and in only a very few cases did he meet with tubercle, and in these it was either quiescent or converted into chalky masses.* Dr. Ogston of Aberdeen has also made similar observations upon seventy-three persons, who were known to have been inveterate whiskey-drinkers, and who, from some cause or other, had perished suddenly, whilst apparently in ordinary health and activity. In these cases, he observed but one instance of pulmonary tuberculosis, and in this the tubercles were latent.†

Neglect of personal cleanliness claims a place amongst those irregularities of living which are connected with the developement, not only of phthisis, but of other diseases also. The skin is not merely a covering to the body, but one of its most important organs; regulating both heat and cold by its secretions, and cleansing the system of

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* Ancell on Tuberculosis, p. 457.

† Medico-Chir. Review, No. XXVI, p. 502.

matters either superabundant or prejudicial. It is well known that any obstruction to the cutaneous functions involves a more or less increased activity of the pulmonary ones, under which, the lungs are supplied with an undue amount of blood, leading, frequently, to local congestion; and, it is obvious, that if this be coincident with a disturbed condition of the general health and a tendency to generate tubercle, we have the very circumstances most calculated to induce pulmonary tuberculosis.

Trivial as this subject may, at first sight, appear, its importance is often practically illustrated by the effect of cold or tepid sponging upon early phthisis. When this can be borne, it often improves both the local and general symptoms, and becomes a useful auxiliary to other treatment.

Insufficient or improper food is too common an addition to other evils experienced by numbers of our working classes, and must contribute materially towards rendering so many of them the victims of phthisis. This cannot be better exhibited than in the table showing the influence of occupation; those who are proverbially the worst fed, being there seen to be the most numerous. Thus, needlewomen, tailors, and shoemakers, whose sufferings in this particular are far greater than is generally supposed, constitute more than one-seventh of the whole number of cases.*

* It is really the duty of everyone to discourage those cheap advertising establishments, where things are sold at a price

It is, nevertheless, surprising to observe how apparently innutritious, and even scanty a diet is sufficient for the well-being of the body, when the general conditions to health are united with it. We see, for example, many of our agricultural poor subsisting upon a fare greatly inferior in every respect to that of numbers of the working classes of the metropolis, yet far excelling them in health and bodily vigour. The organizing of new materials, and making them part of ourselves, depends, indeed, as much on the healthfulness and energy of the system itself, as on the kind of material it has to work upon.

Repeated inquiries of consumptive persons as to their previous mode of living, have led me to conclude that one description of food, has, in itself, no greater tendency to induce phthisis than another; and that those who, either from choice or necessity, are chiefly vegetarians, are not, on that account, more predisposed to consumption than are others who live principally upon animal food. A judicious combination of the two is unquestionably the natural, and consequently the most proper diet;

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which, to pay the seller, must starve the maker. It is recorded in Scottish ballad, that the Leith fisherwomen are in the habit of meeting any observation upon the dearness of their fish, by the observation, "but they're men's lives"; thus signifying the risk in catching them. The tickets upon the cheap garments in many of our metropolitan shops might very aptly bear the same words.

but it is astonishing how readily the digestive organs accommodate themselves to any particular kind of food, when the body is placed under the influence of healthy conditions.

In the early periods of life, however, the function of assimilation is adapted only to the most simple and nutritious substances; and it is owing to this circumstance being overlooked, that the physician has frequent cause for tracing back to infant life the germs of phthisis. Children who are strong and vigorous, the offspring of healthy parents, may often be reared successfully by artificial means, or, as it is termed, "by hand"; but even then there is, I believe, a greater risk of immediate scrofula, or future consumption, than if nature's laws had been strictly pursued. Nothing, however, is more productive of tubercular diseases than the artificial rearing of weak and sickly infants, or even of those who may appear strong and healthy, but whose parents are scrofulous or otherwise sickly: marasmus, hydrocephalus, phthisis, or some kindred affection, is likely to be the result; or, if the child should himself escape these, there is the prospect of a feebleness of constitution showing itself, in a subsequent generation, under some form of tuberculous disease.

But the evil of improper feeding is not limited to infancy; it is witnessed almost as frequently in childhood and youth. Amongst the rich, thoughtlessness and over-fondness, and, amongst the poor,

ignorance and credulity, render many a child the early prey to consumption, or to some form of scrofula. Pampering the appetite with substances innutritious or injurious,—over-feeding,—the use of a diet unsuited to the particular age,—all act prejudicially, and predispose the system to such diseases, by substituting lowly organized materials for those highly animalized ones essential to the construction of healthy tissues. The fanciful, and almost fashionable habit of excessive abstemiousness adopted by many young females of the middle and upper classes of society, is also highly injurious, and not unfrequently passes, by insensible degrees, into confirmed phthisis. I have seen this happen where there has been no other cause to which the disease could be attributed: dyspepsia of an obstinate form has been first established; the healthy energy of the system has gradually been lost; and consumption has unexpectedly and rapidly followed.

Inactivity is another irregularity of life which has often no inconsiderable share in developing the tubercular diathesis. Without properly regulated bodily exercise, the circulation becomes languid; the nervous system is depressed; nutrition is imperfectly performed; and the old materials of the body are replaced by new ones of defective organization. Amongst the higher classes, this is one of the most fruitful causes of delicate health; and I have seen many cases of

threatened phthisis entirely recover, from nothing else than the use of regular and moderate exercise. In the lower and working classes, it is equally productive of evil; and by referring to the table already given, upon the effect of occupation, it will be seen how the sedentary character of any particular pursuit tends to augment the number of phthisical sufferers.

Insufficient Clothing, more especially over the chest, is popularly considered an active agent in producing phthisis, particularly amongst the poor; but, strange as it may seem, such an idea is not supported by observation. We have seen that those persons who obtain their livelihood in the streets of the metropolis, such as hawkers, out-door porters, etc.—a class of persons, perhaps, worse clad than almost any other—are, nevertheless, not so frequently as might be expected, applicants at the Consumption Hospital. And I have generally observed, amongst the out-patients at that institution, that the sufferers from phthisis, so far from being persons who have been careless of themselves in this particular, are remarkable rather for their punctilious regard to protecting themselves from cold, frequently making it an occasion for boasting that they have always been the same. I would not, however, have it supposed that this subject is altogether unconnected with the origin of phthisis; because, it is evident, that in proportion as it affects the general health, and exposes the system

to the chances of inflammatory attacks upon the chest, so must it lend its aid towards producing this disease.

The restraints of dress, especially that of tight lacing in females, have been accused of leading to tubercular affections of the lungs; but here again there is a want of anything like proof of their doing so. A chest naturally healthy will often endure, with surprising impunity, the changes of form which fashion makes imperative; and when it is otherwise, the punishment for so absurd a homage to the world seldom appears in the form of consumption, but rather in some functional or organic derangement of the liver and abdominal organs, or of the heart.

Mental Influences.—The operation of the mind upon diseases of every kind is too obvious to admit of doubt; and it is a question far from being settled, whether or not any sort of malady, even those which are known to be propagated by contagion, may not sometimes arise solely from mental impressions. I firmly believe that they may; and could quote many illustrative cases.

The only instances which have appeared to me to give any sanction to a belief in the contagiousness of phthisis, have been those, where, in addition to some general cause of reduced health, the mind has been thoroughly impressed with a fear of infection. Numerous cases are within my recollection, where the closest attention which affection could

dictate, has been given, for a long series of weeks and months, to a consumptive friend or relative, without producing the slightest ill effect to the survivor, simply because the idea of danger was never entertained. On the other hand, I could mention instances where the same kindly acts which had but lately been conferred, were shortly afterwards required; a strong belief having existed in the possibility of contagion. I have even thus seen the same form of phthisis exactly imitated; which the following case will tend to illustrate. A gentleman, in whom ulceration of the trachea had been the most prominent symptom, recently died of his disease; and the nurse, who was bound to him by ties of gratitude which the thought of her own safety could not sever, is now suffering with the early symptoms of laryngeal phthisis, and has repeatedly told me, that from the time she first tended her master, she was so firmly impressed with the certainty of contracting the same disease, that she looked upon her life as hopelessly sacrificed. In such instances as this, I firmly believe that the disease does not originate by the extension of a material poison, but is conceived mentally.

A somewhat similar influence is now and then painfully exhibited in a consumptive family, where nothing but a separation of its members appears to have the power of checking the ravages of the malady. I have known cases in which nearly every child who has been retained under the pa-

rental roof, has fallen the victim of phthisis; whilst those, whom circumstances had separated from the rest, have been spared. It is probable that the change thus induced in many external conditions, may have contributed to the result; still, I believe that more has been due to the absence of that mental depression, and that trial to the feelings, which must ever be experienced in watching the fatal progress of the disease in a near relative.

Depression of spirits, when long continued and severe, may, even of itself, generate the tuberculous diathesis. How frequently can we date the commencement of phthisis from some reverse of fortune or family affliction, or from something which has deeply affected the mind! We hear of the "broken heart" of affliction; yet this is generally but a metaphor, signifying that sorrow and worldly cares may be destructive of life;—the physician knows too well, how easily these may develope a tuberculous state, and how unpromising are the cases thus originated.

Mr. Ancell is of opinion that mental agencies *alone*, may actually induce the specific change in the blood which constitutes phthisis;* whilst Louis has enumerated mental depression amongst the most potent of its predisposing causes.

It is an interesting fact in connexion with this subject, that the mortality in our lunatic asylums

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* "On Tuberculosis," p. 415.

is greatly attributable to phthisis; since it seems to afford additional evidence that peculiar mental conditions may be reckoned amongst the causes of consumption.* The circumstance, however, has been differently explained; some have thought that phthisis and insanity are closely related in their origin, so that the developement of one necessarily implies a tendency to the other. But to this opinion I cannot help demurring, having, after much inquiry, come to the conclusion that insanity is anything but a common disease in families afflicted with hereditary phthisis; which certainly would not be the case if the two affections proceeded from a common source.

Dyspepsia is so common and early an attendant upon phthisis, that it is often difficult to say whether it is to be looked upon as a cause or a symptom. I shall have occasion to speak of it as the latter, in another place, and have here only to consider how far we are justified in classing it amongst the predisposing causes.

That dyspepsia, however chronic and obstinate, does not *necessarily* lead to phthisis, we have abundant proof; yet I have seen numerous cases, where it might reasonably be looked upon as the starting

* Those who are principally engaged in the treatment of mental diseases, would do much service by ascertaining whether phthisis is a more common attendant upon one form of insanity than another;—for example, whether it is oftener seen in cases of melancholia than in those of acute mania.

point of the malady. Persons of delicate health, but whose only real disease appears to be dyspepsia, are not unfrequently seen to become consumptive, although, perhaps, neither hereditary taint nor other predisposing cause is discoverable.

I have observed that dyspepsia, possessing this unfavourable tendency, has often had a peculiar association of symptoms—not sufficient, perhaps, always to distinguish it, but, nevertheless, of some practical moment: capricious, and sometimes excessive appetite, pain at the epigastrium, flatulency, obstinate sickness, gradual emaciation, and high and hopeful spirits, have been more or less conspicuous.

Certain diseases affecting the thorax have been often regarded as predisposing causes; but this is only correct to a limited extent, and under peculiar circumstances. From the many inquiries I have made of consumptive persons, as well as from the cases I have myself been able to watch, I am led to the conviction that neither pneumonia, bronchitis, nor pleurisy, of an *acute* form,—attacking persons free from consumptive predisposition,—running an ordinary course,—and judiciously treated,—have the slightest tendency, either immediately or prospectively, to induce phthisis. I am inclined to consider them even, in some measure, opposed to its developement; that is to say, the state of system in which they are apt to arise, is of a different character to that which generates tuber-

cle; this, perhaps, is the most conspicuous with respect to pleurisy, but it is also true, generally, with the others.

Chronic pleurisy has been considered as productive of consumption, but I have never seen anything which would justify such a conclusion; and I believe it to have been formed more upon supposition, than from observation of its occurrence. With *chronic pneumonia*, however, the case is somewhat different. This disease, although it may exist for almost any length of time without producing the least tendency to phthisis, yet, under peculiar circumstances, may gradually pass into it. In such cases, it would seem to act both as the predisposing and exciting cause. It will be more convenient, however, to speak of it under the latter head, and to defer its consideration to the next chapter. *Chronic bronchitis* has, I am convinced, no tendency to develope tubercle, unless associated with a tuberculous predisposition.

Some of the diseases of childhood, particularly measles and hooping-cough, are frequently followed by tubercular affections of the lungs and other organs; but, in such cases, it will generally be found that they have acted only as *excitants*, and that the little sufferers were previously delicate, or possessed some hereditary taint. These diseases usually pass away from *healthy* children, without leaving them predisposed to phthisical affections.

Syphilis seems to have no tendency to induce consumption, except through the effect it may have, in common with other diseases, upon the general functions of health. I have not found, amongst the phthisical patients at the Hospital for Consumption, an unusual proportion of persons who had been affected with syphilis; and I have very rarely seen secondary syphilitic disease in conjunction with phthisis. It is, however, so difficult to ascertain the truth upon this subject, that any conclusion respecting it must be received with some degree of qualification; but the facts I have gathered, warrant the belief that there exists no necessary relationship between the syphilitic poison and the formation of tubercle.

A similar observation would, perhaps, apply to every other disease, with the exception of diabetes, which is well known frequently to terminate in consumption, and this even in cases where no other predisposing cause is discoverable.

The use of mercury has been sometimes accused of acting as the predisposing agent to a subsequent developement of consumption; but I have never met with a single instance where the commencement of this disease was fairly attributable to such a cause. Persons who have suffered in health from the use of this remedy, doubtless, often become phthisical; but I believe that, in these cases, it is seldom the mercury which has caused the mischief, but rather those evil

habits which, in the majority of such instances, have made its employment indispensable. The real sufferers from mercurial action are those whose diseases have been self-inflicted; for it does not appear that the proper use of this medicine in the ordinary class of inflammatory affections, is necessarily followed by injury to the health; and there is still less reason for ever attributing to it the origin of phthisis. It is, indeed, a truth which ought many times to have spared our art unjust discredit, that there is nothing in the specific action, either of mercury or of any other medicine, at all calculated either to predispose to, or excite, tubercular diseases.

The form of the chest, in its relation to the phthisical diathesis, requires to be referred to, since peculiarities in this respect have been generally classed amongst predisposing causes. I am satisfied, however, that the shape of the thorax has very little to do, primarily, with the developement of consumption; for persons with fine and well-proportioned chests are quite as often the subjects of phthisis as are those who labour under some congenital or acquired thoracic malformation. The life-guardsman, the pugilist, the blacksmith, etc., notwithstanding their fully developed chests, are, in fact, *cæteris paribus*, quite as liable to the inroads of phthisis as the mechanic or artizan. Continued observations upon phthisis, in all its multiform characters, have led me to the following

conclusion:—that the best formed chests afford no security against the onset of the disease; whilst those which are comparatively ill-developed, or even deformed, do not appear the more liable, *on that account*, to become the seat of tubercle.

We have thus seen how the predisposition to phthisis may be either inherited or acquired. There is usually a marked difference in the course of the disease, according as it owes its origin to the one cause or the other; cases arising from hereditary taint, being, for the most part, more intractable, of shorter duration, and less amenable to remedial agents, than are those in which the tuberculous diathesis has, from any cause, been acquired. The reason of this is obvious. In the one instance we cannot separate the patient from the *cause* of his disease, but, in the other, this very frequently can be accomplished. Hence, in forming the prognosis of any particular case, this point should be always taken into consideration; the answer to the question, —whether or not other members of the family have been consumptive,—enabling us, very often, to form a more correct opinion as to the probability of our treatment proving successful.

Before closing this chapter, it is necessary to observe, that some of the circumstances I have included amongst the predisposing causes of phthisis, may be thought by others more plausible than demonstrable. I am, however, far from asserting, that even the most potent of them must, *of necessity*,

lead on to consumption ; for it is evident that one person may bear with impunity, that which to another might be highly prejudicial. Every conclusion respecting the effect of a number of very different and variously combined agencies, upon anything possessed of such unbounded diversity as the human body, cannot be other than of a general character, and must ever be open to numerous exceptions. But I doubt not, that those whose opportunities of observation upon the various causes of this disease have been extensive, will readily admit the influence, although in different degrees, of the several conditions which I have thus attempted to describe.

CHAPTER X.

EXCITING CAUSES.

Any severe or long-continued consumptive predisposition may develope the disease without the supervention of an exciting cause; this we see exhibited in certain cases where either the hereditary taint, or the acquired morbid condition, is sufficient, of itself, to produce the malady. One predisposing cause, also, supervening upon another, may act the part of an excitant; thus, an hereditary tendency may be brought to light in consequence of unhealthy occupation, or mental distress, or by something which has reduced the general vigour of the system; and, to this mode of origin, a vast number of phthisical cases are manifestly due. But it often happens that something of a more active kind, but which, in the absence of pre-existing liability to the disease, would have had no such effect, has led to its developement; and it is this which constitutes what is usually understood as the *exciting cause.* Certain inflammatory conditions of the chest, catarrh, influenza, fever, pregnancy, lactation, etc., have more or less

influence in this way, and therefore require to be noticed separately.

Bronchitis.—Some persons, although strongly predisposed, will exhibit nothing to justify the least apprehension, until an apparently accidental attack of bronchitis proves the starting point of pulmonary tuberculosis. Cases of this kind, however, are not so frequent as they might appear to be, since many, which seem to have such an origin, are merely instances of severe bronchial inflammation immediately following the tubercular formation. The bronchitis to which persons of consumptive predisposition are most subject, is not generally of an acute form, but of that sub-acute and less active kind which is not immediately dangerous, but which leads to an irritable condition of the bronchial mucous membrane, rendering it peculiarly liable, upon the slightest occasion, to become the seat of renewed inflammation. And it is to repeated attacks of this description that the commencement of the local or pulmonary symptoms is frequently traceable. I have seen a vast number of cases exhibiting all the symptoms of very early phthisis, which, nevertheless, went on favourably, until bronchitis, more or less of this character, seemed at once to develope the local disease.

It occasionally happens that persons of the scrofulous diathesis are attacked with capillary bronchitis of a low character, and probably associated with pulmonary congestion, which produces ex-

treme prostration, and leads to the formation of a tubercular secretion, much of which seems to be deposited in the smaller ramifications of the bronchi, as well as in the pulmonary structure. This variety of the disease might be termed *scrofulous bronchitis*, and is, perhaps, the most unpromising under which consumption can be produced; running, almost invariably, a rapidly fatal course. I have witnessed several such cases, and have reason to believe that they constitute many of the so-called instances of "acute phthisis."

Pneumonia.—Those who possess a strong consumptive tendency are, as a general rule, infinitely less liable than others to *acute* pneumonia; and it is owing to this circumstance, as well as to the greater readiness with which such persons are affected with bronchitis, that we so seldom find pneumonia of an *acute* kind developing phthisis. That it might, at any time, do so, there cannot be a doubt; but, practically, such cases are rare.

In persons of highly scrofulous diathesis, a low form of pneumonia occasionally acts as an excitant of consumption. In such cases, the inflammatory process appears to assume, either at first or after a short period, a strumous character, and to be attended by a morbid tuberculous exudation, instead of the fibrinous one of healthy inflammation. This form of disease might be termed *scrofulous pneumonia;* and, like the strumous variety of bronchitis, it usually terminates in a variety of consumption both

severe and intractable, and is closely allied to what is often called "acute phthisis."

There is, however, another, and perhaps more common way, in which pulmonary inflammation may be productive of consumption. When pneumonia has been neglected, or, having been but imperfectly recovered from, has passed into a chronic form, and some depressing cause has supervened, it would appear as if, in some cases, its inflammatory products, instead of being absorbed, degenerated into something allied to, or identical with, tubercular matter; softening is then a very rapid process, and the patient is unexpectedly found to be in an advanced state of phthisis. What is termed "tubercular infiltration"—in which a large portion or perhaps the whole of the lung is of a grey and glistening aspect, here and there broken down into soft patches of a yellow tuberculous-looking substance—has very often this origin. In such cases the apices of the lungs are, at first, less affected than the bases, but they become more implicated as the morbid process advances, until, at length, they are sometimes more filled with tubercle than any other part.

Pleurisy, whether acute or chronic, scarcely deserves to be placed amongst exciting causes. I have watched many cases of pleuritis, without observing a tendency in any to become subsequently phthisical. Indeed, I have never seen a consumptive patient in whom it could be fairly stated that

the local developement of tubercle had been determined by an attack of pleurisy.

During childhood, a phthisical predisposition is often aroused by some inflammatory thoracic affection. Pneumonia and bronchitis are in this way particularly fatal to scrofulous children, numbers of whom are carried off by one or other of these diseases. Nothing, indeed, is more common than for measles or hooping-cough to lead, in children of the tubercular diathesis, to secondary thoracic inflammation, which, if it does not speedily terminate the life of the little patient, ends in the formation of pulmonary tubercle.

Influenza and Catarrh.—The frequency with which consumptive persons attribute the commencement of their disease to "an attack of influenza," or "a severe cold," at once points to the influence of these disorders in the developement of tubercle. Yet, I believe that neither the one nor the other, however severe or lasting, is of itself capable of originating phthisis; or that persons who have suffered from either are, on that account, more liable to become phthisical. It is only when superadded to a strong tuberculous predisposition, or when attacking persons already the subjects of latent tubercle, that their connexion with consumption is at all apparent. Under either of these circumstances, however, influenza acts most unfavourably, by developing or accelerating the tubercular disease; and many of the most intractable cases of

phthisis have appeared to me to have thus originated.* Catarrh also, when severe, and accompanied with constitutional disturbance and bronchial irritation, appears in many instances to bring into activity phthisis hitherto dormant. Their prejudicial operation is not difficult to account for. In influenza especially, but also, to a less degree, in severe catarrh, are associated the very conditions most likely to arouse or accelerate pulmonary tuberculosis:—the general health is reduced, whilst at the same time the bronchial mucous membrane becomes morbidly irritable and congested.

Fevers.—The rapid succession of phthisis to fevers, particularly those of a low or typhoid character, and complicated with pulmonary symptoms, is not unfrequently noticed. In such instances, there is probably some pre-existent tuberculous tendency; although this does not seem to be absolutely essential, as I have lately met with two cases, in which a protracted convalescence after typhus fever passed insensibly into confirmed phthisis, notwithstanding there were no previous indications of it; the low pneumonia which had existed having, as it would appear, assumed a tuberculous character, in consequence of severe and long-continued physical depression.

M. Louis several times found tubercle—appa-

* A similar effect has been observed upon nearly every visitation of this epidemic. See "Annals of Influenza", Sydenham Society's Publications.

rently of recent formation—in subjects who had died of prolonged typhoid fever.* And Dr. Copland has placed pulmonary consumption amongst the *sequelæ* of low fever.†

The exanthematous fevers of early life are very justly accused of bringing on phthisis. Their exhausting effects, even upon the healthiest children, being obvious, it is not surprising that the slightest consumptive tendency should be aroused under their influence. None, perhaps, are so fatal in their operation as measles; the pneumonia and bronchitis which it is apt to induce, being, as I have already observed, especially prone to become the groundwork of tuberculous disease. Scarlatina is also scarcely less fatal to scrofulous children, in whom it exhibits a more than usual disposition to thoracic complication. In fact, every one of the exanthemata seem frequently designed to save the youthful scrofulous sufferer from future and more painful affliction.

Pregnancy has long been known to influence both the origin and progress of many diseases. Various and conflicting, however, have been the opinions of the medical profession respecting its effect upon phthisis; but, without discussing them, I shall merely state the result of my own experience.

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* "Researches on Phthisis." Sydenham Soc., p. 504.

† "Dictionary of Medicine," vol. i, p. 1008.

In the absence of a phthisical predisposition, I believe that, however much pregnancy may try the strength and exhaust the system, it has no tendency to produce consumption. I do not remember ever having observed a case of phthisis amongst those who have had large families, except in conjunction with hereditary tendency or other equally evident predisposing cause. But in cases where there is a phthisical liability, hereditary or otherwise, there is much fear of the disease being called into activity by the process of gestation, especially if it should occur either very frequently, or at too early an age.*

As a general rule, females who are predisposed to, but not actually in consumption, are more liable than others to become mothers; and although it would be difficult—perhaps impossible, to found such a statement on statistical evidence, yet I am not the less satisfied of its general accuracy. When, however, the disease has commenced, and the lungs are already tubercular, there seems to be a diminished liability to conception, which becomes more and more evident as the malady advances, until, in the last stage, pregnancy is seldom to be met with.

Whether consumption may have begun or not,

* The examples afforded at the Consumption Hospital of *young* females rapidly becoming phthisical, after giving birth to their first or second child, are almost numberless; but in nearly all such cases, hereditary taint is discoverable.

it is seldom that any ill effects are observed *during the continuance* of gestation; but, on the contrary, if phthisical symptoms had previously threatened, their appearance is often delayed; or, if they had actually shown themselves, their progress is generally arrested, and the disease kept in abeyance. No sooner, however, is pregnancy completed than its influence may become apparent; if phthisis had been only threatened, it is liable to commence; or, if it had commenced, it is very often accelerated: so that, although consumption may, for a time, be checked by pregnancy, it is generally in the end aggravated by it.

This effect of gestation may be either immediate or remote. I have seen the disease, although previously chronic and mild, assume after the first pregnancy every character of acute phthisis, and prove rapidly fatal after an interval of but a few days. On the other hand, many females originally threatened with consumption, enjoy, under the influence of repeated pregnancies, comparatively excellent health, but become phthisical so soon as the age of child-bearing has passed away.

I do not believe, however, that the advance of consumption is positively incompatible with pregnancy, having myself seen more than one instance where the two progressed simultaneously, and even one in which phthisis apparently commenced about the middle period of gestation. There are, perhaps, few general rules open to so

many exceptions as are those relating to this subject; but I am convinced that, should additional observations be made upon a sufficiently large scale, they will only serve to confirm the statements I have advanced.

Lactation is by no means uniform in its effects; sometimes helping to retard the appearance or progress of the disease; at others, promoting or greatly aggravating it. The latter, perhaps, is the most usual, it being far from uncommon to see pulmonary consumption both commencing and running rapidly onwards during the period of suckling. If, however, it should, like pregnancy, keep the disease, for a time, in check, the ultimate result is the same; the tubercular affection progressing afterwards only with increased rapidity. But of all things, perhaps the most energetic in arousing a phthisical predisposition is, the evil practice of long-continued nursing,—one especially common amongst the poorer classes, in whom it is no very rare thing to find it carried on for a period of two years and upwards. To this cause I have frequently traced consumption; and this, not only in persons who had a previous tendency to it, but also in others who had hitherto enjoyed excellent health, and were, to all appearance, quite free from hereditary taint. I believe, therefore, that it may, in certain cases, act both as the predisposing and exciting cause.

PART II.

THE SYMPTOMS OF CONSUMPTION.

CHAPTER I.

CHRONIC PHTHISIS.—GENERAL DESCRIPTION OF ITS SEVERAL STAGES.

ALTHOUGH the course of phthisis is marked by a gradation as well defined as that of any other disease, it would be difficult to meet with its equal in the almost endless variety of symptoms which accompany its several stages: in its career, it simulates the most opposite maladies; and scarcely two cases are to be found strictly alike in their progress.

Consumption presents itself under two forms, viz. *acute* and *chronic*, both of which are subject to certain varieties; yet, in every instance, the disease is essentially the same, being only modified either by its degree of severity, or by the varied conditions with which it is associated.

I propose giving, in the first place, a general description of the ordinary or chronic form of the

disease; leaving the varieties to which it is subject for after consideration.

The symptoms may be conveniently arranged as belonging to two periods: viz. (1) that preceding the formation of pulmonary tubercles; and (2) that subsequent to their developement.

(1.) *The period preceding the formation of tubercle.* At no time is the changeable character of phthisis more apparent than at its very onset. Sometimes this, which we may term the *preliminary stage*, is so well defined, that to fail in recognizing it would be almost inexcusable; at other times, it is either too brief, or too indistinctly marked, to be detected.

Although this early period of consumption has been but little dwelt upon by medical writers, it is, I think, very often distinguishable by the presence, in a greater or less degree, of the following train of symptoms.—From some cause, for which no good reason can be assigned, there is a slow but marked diminution of bodily vigour, compelling the individual to abandon many of his accustomed pursuits: the spirits, nevertheless, are good; and not only is the idea of consumption never entertained, but any allusion to it is at once ridiculed. So general, indeed, is this hopeful condition,—this almost instinctive blindness to the real cause of distress, that in its absence, however suspicious certain symptoms appear, these may, with much probability of accuracy, be pronounced unconnected with phthisis. The complexion is usually

either pallid or sallow; the expression is that of care, united with animation; the features are somewhat sharpened; the movements of the body are hurried and anxious; the mental condition is irritable and capricious; whilst every act betrays an effort, sometimes instinctive, and at others voluntary, to conceal the presence of disease. The appetite is uncertain, and there are frequent indications of imperfect digestion, as well as a tendency to passive diarrhœa. The pulse varies in different cases, but is generally small, and easily excited. The sleep is restless, unrefreshing, and occasionally attended by perspirations. Loss of weight is of invariable occurrence; sometimes the decrease is so rapid that it will attract the attention of friends; at other times, it requires the periodical use of the weighing machine to detect it; the latter, perhaps, is the most usual, but I have met with examples of such rapid emaciation, that several pounds have been lost within a few days.

This *preliminary* stage is very uncertain in its course: in some instances it will, under proper treatment, quickly subside; in others, it will continue for a considerable period, and then disappear; but, far too often, it will resist the best efforts both of physician and patient, and pass rapidly onwards to the formation of pulmonary tubercle. Much depends upon the care which can be given to the health, and upon the exclusion of exciting causes. In the upper classes it is, consequently, more within

our control than when we are called upon to treat it in humble life.

There is considerable variety in the association of its different symptoms; some may be altogether absent, and many are also met with in other diseases; yet, when a number of them are found together, and the patient's antecedents—his occupation and habits of life—or any other circumstances, seem to be conducive to phthisis, there can, I think, be little reason for doubting their consumptive nature.

In childhood the symptoms are of the same character, but more strongly marked. There is an evident precocity of intellect, which forms a striking contrast with the bodily feebleness; the limbs are emaciated, and the abdomen tumid; the appetite is uncertain,—sometimes craving, but oftener defective; dentition is protracted, irregular, and difficult; and all the functions of nutrition are imperfectly performed. The child is peevish, irritable, and indisposed to exertion; and, in general appearance, is evidently labouring under some deeply-rooted malady, which, at no very distant time, will exhibit itself either as phthisis or some other form of tubercular disease.

(2.) *The period subsequent to the formation of tubercle.* After tubercle has been deposited, the course of phthisis may be divided into three stages; the first corresponding to its miliary and crude states; the second, to its period of softening; and the

third, to its expulsion from the lungs and the formation of pulmonary cavities. There is, however, no distinct line of separation between any of these stages; one passes imperceptibly into another; and there is no set of symptoms which can be said to characterize unequivocally any one particular period.

The first stage.—When the indications of diseased action, already described as belonging to the *preliminary* stage, become permanent, and, in spite of the strictest care, seem gradually upon the increase;—when the loss of weight becomes more and more evident; the night perspirations more frequent; the pulse somewhat quick; and the breathing oppressed;—when there is a slight cough, occasionally attended with a white mucous expectoration, perhaps a little streaked with blood; together with wandering pains about the chest, especially between the shoulders, beneath the clavicles, or at the epigastrium, there is reason to fear that the *first stage* has commenced, or, in other words, *that there is local manifestation of the general disease.*

But the transition from the preliminary period is so gradual, whilst the symptoms themselves are so variable, and bear so close a resemblance to those of many other diseases, that absolute reliance cannot be placed upon any of them singly, or even collectively, unless they are confirmed by a physical examination of the chest.

In some cases there is no pain, or if any, it is so

trifling that the patient will scarcely acknowledge it; whilst in others it is most distressing. Sometimes there is no cough, or it is so slight as to be unobserved by the invalid, or if noticed, causes less anxiety to himself than to his friends. Hæmoptysis also, which at this period is a most important sign, is sometimes altogether absent; or, if present, it may be so slight that there is difficulty in ascertaining its occurrence. Other symptoms, likewise, which are generally regarded as indicative of phthisis, are frequently wanting; but upon all these points I shall have occasion to dwell more fully in the next chapter.

The second stage, or that of tubercular softening, is usually accompanied by an aggravation of all the preceding symptoms. The loss of weight is still more manifest; the appearance more depressed; the pulse quicker; the skin more frequently covered with perspiration; the cough more troublesome; the expectoration more abundant; and hectic fever and diarrhœa have generally set in.

But at this stage, there is the same diversity in the several symptoms as in the preceding one. Some persons scarcely complain of anything, however much their appearance may indicate the extent of their disease; whilst others are intense sufferers, although their looks may hardly betray their condition. But even if every phthisical symptom, both general and local, be present, which is seldom the case, there is nothing either in their nature or

degree, to announce with certainty that softening has begun; and, without the aid of physical signs, it is impossible to do more than conjecture that such is the case.

The third stage, in which there are cavities or vomicæ in the lungs, is shown externally only by an advance of the symptoms met with in the second. The emaciation visibly increases; the pains about the chest are frequent and acute; the breathing is short and hurried; the cough harassing, and attended with copious expectoration; the pulse very weak and rapid; hectic fever is established; the whole, or a portion of the body, is yet more frequently covered with perspiration; diarrhœa increases; the ankles and feet are apt to become œdematous; and the finger nails become enlarged and incurvated:—with all this, however, the spirits often remain good; the mind continues calm; and hope is too frequently cherished even to the last. In the association of these symptoms, as in those of the preceding stages, there is great diversity; most of them occur sooner or later, but they vary so much in themselves, that it might be difficult at this period to find two cases of consumption precisely alike.

Such is an outline of the different stages of phthisis as they are ordinarily met with;—a mere sketch, however, and intended only as the introduction to a separate and more comprehensive description of the individual symptoms.

CHAPTER II.

A MORE PARTICULAR DESCRIPTION OF THE PROMINENT SYMPTOMS.

The Phthisical Aspect.—A practised eye may sometimes detect consumption, even at its commencement, by means of certain physiognomical peculiarities belonging to the disease. These, although difficult to describe, are very easily recognized. The complexion differs, but is usually either sallow or of a peculiar pearly whiteness; the cheeks are subject to irregular flushing; the features are sharpened; the eye, although bright and intelligent, is expressive of a certain amount of languor; the whole appearance betrays a mixture of anxiety and animation, telling of something wrong, and of the effort, both mental and physical, made to conceal or overcome it.

The physiognomy of diseases liable to be mistaken for phthisis, is different. In malignant affections, the countenance is depressed; the features are less prominent; the skin is of a peculiar opaque and "muddy" hue; and the eyes are dull and sunken. In anæmia, the skin is of a dead white

colour, and rarely sallow; the eye is heavy and inexpressive; the face puffy and the features rounded; and the general appearance that of depression, free from anxiety. In chronic diseases of the digestive organs, the skin is pale or yellow; the eye languid; the features sharp; and the countenance depressed. Although these opposite conditions are sometimes blended with one another, and are subject in themselves to occasional variation, they may, nevertheless, often be usefully employed as aids to diagnosis.

As consumption becomes more deeply rooted, so is the aspect of the patient changed; yet, the alteration is only one of degree; there is the same expression of care, mingled with the same attempt at animation, but the suffering being more intense, is less easily disguised; and the same look which announced the beginning of the disease, is only increased as it progresses.

But the physiognomy of phthisis is not always thus plainly marked; there is infinite variety in the degree of its developement. Patients are even to be met with, at every stage of the malady, betraying in their countenance neither suffering nor disease. Several such cases have fallen under my own observation; and although, in some of them, cavities unquestionably existed, so little was the general appearance indicative of consumption, that had it not been for the aid of auscultation, the tubercular nature of the disease might very easily

have remained undiscovered. On the other hand, I have seen persons in whose lungs tubercles had been but very recently deposited, revealing so unmistakeably by their appearance the nature of their disorder, that the second, or even the third stage had already been suspected.

Such differences as these are quite inexplicable; but they are equally common in other diseases. They are certainly not dependent either upon the extent or the condition of the tubercular deposit; neither are they always indicative of the amount of constitutional disturbance, or, as I have already termed it, the *degree of phthisis* under which the patient may be labouring. The naturally strong, indeed, will often betray by their aspect the ravages of consumption quite as plainly as the weak; and the disease which is to run a slow and lingering course, will often exhibit itself in the countenance, quite as distinctly as that which is destined to proceed more rapidly. It is therefore evident, that the aspect of the patient is not to be regarded as an unerring guide, either to the diagnosis or prognosis of phthisical disease, although, in conjunction with other symptoms, it may often prove of considerable value.

The Pulse.—During the *preliminary* stage, the circulation is generally languid, and the pulse small; but so soon as tubercles are formed, the pulse rises in frequency, and becomes somewhat sharper. If the disease be now advancing quickly,

the pulse will retain or increase its rapidity; but if the case be destined to run a more chronic and favourable course, it will, as the reaction of the system subsides, generally fall to a slight extent, without returning, however, quite to its original standard. In the first stage, it averages from 80 to 90; in the second stage, between 90 and 100; and in the third, from 100 to 110; but there is so much difference in this respect, that it is scarcely possible to assign to any one stage its own peculiar pulse.

The frequency of the pulse bears a constant proportion to the severity of the disease, and is, consequently, of the greatest possible use in prognosis. When, in the first stage, it exceeds 90 or 100, and is manifestly gaining in rapidity, the case may be looked upon as unpromising; if, as the second stage sets in, it still increases,—amounting to 110 or more, it may safely be predicted that the disease will end fatally at no very distant period; and when, in the last stage, it is habitually as high as 120 or 130, it is but too probable that life is gradually waning. On the other hand, if, after the first outbreak of the local disorder the pulse become comparatively quiet, but little exceeding its healthy standard; and if, in the more advanced stages, it should nevertheless not be materially accelerated, the prospect is considerably brighter. It will be invariably found, that those cases are the most favourable, in which the pulse is the least affected. I have had many striking illustrations of this: in

one instance, where the patient was in tolerable health, the pulse, notwithstanding the existence of a large vomica for upwards of three years, was habitually weak and languid, never exceeding 70 in the minute; and I have never seen phthisis arrested, or the patient permanently benefited, where the pulse, in spite of treatment, remained very frequent and excited.

Whenever there are any inflammatory complications—such as bronchitis, pneumonia, or pleurisy, the pulse undergoes a temporary change, according to their severity.

In estimating the pulse as an indication of phthisis, it should never be taken apart from other symptoms, since its mere acceleration is a usual consequence of many functional disorders, as well as of most inflammatory affections. But, in union with other phthisical symptoms, it may become of much practical use, being an excellent guide both to the severity of the disease, and to its probable career.

Phthisical Cough.—When the tubercular deposit is formed slowly and gradually, the lung is often but little irritated by it, and the cough is consequently trifling, or perhaps altogether absent; but, when it is formed more rapidly, the pulmonary irritation which is apt to follow, causes this symptom to be early in its appearance, and often very troublesome. The commencement and severity of the cough, is therefore, in some degree, a measure

of the rapidity and extent of the tubercular formation; but it is one which is scarcely to be trusted, since the readiness with which cough may be established, must, of course, differ very much in different individuals.

The cough of consumptive persons is of two kinds; the one simply *tubercular*,—the result of the irritative presence of a foreign substance in the lung, and possessing certain peculiarities; the other *inflammatory*,—consequent on secondary inflammation in the neighbourhood of the tubercle, and having nothing to distinguish it from that of ordinary bronchial or pulmonary attacks.

The *tubercular cough* is short, dry, "hacking", and irregular in its occurrence, frequently being quiet for hours together, but generally returning, with more or less severity, during the night, and in the morning when the patient is rising; it is readily induced by excitement, and often assumes a convulsive or paroxysmal character; sometimes it is very troublesome, but oftener slight, and occasionally so trivial that it escapes the notice of the patient himself, and is observed only by his friends. It may continue in this state for almost any length of time, disappearing, perhaps, during the summer months, but returning with the approach of winter, or after exposure to cold or atmospheric changes. At length it becomes more frequent and distressing, particularly in the morning, and is attended with more or less expectoration, until it passes into

a cough which is not distinguishable from that of bronchitis. This order is, however, not always observed; for if the tubercular substance has been rapidly deposited, or the patient has been exposed to cold, secondary bronchitis may have almost immediately supervened, and have produced the *inflammatory* cough from the very commencement. And thus it happens that the cough of early phthisis presents so many differences both in character and severity; the *tubercular* and *inflammatory* varieties alternating or intermixing with each other in every possible manner.

But it is only when a cough, which seems to be *tubercular*, is associated with other phthisical indications, that it can be looked upon as any evidence of consumption; since other coughs of a comparatively trivial nature very closely resemble it. The gastric or stomach cough; the hysterical or nervous cough; and the catarrhal cough, are of this kind; and as they are the frequent occasion of unnecessary alarm, I propose giving a short account of their individual characters.

Gastric or Stomach Cough, which may occur at any period of life, invariably proceeds from some irritation in the abdominal viscera. In children it is often brought on by over-feeding, or by intestinal worms; and, very frequently, it depends upon the irritable condition of the entire mucous membrane, produced by teething. In adults it may arise from dyspepsia, hepatic derangements, or

habitual constipation, and, indeed, from anything which deranges the digestive organs. Whatever its immediate cause may be, it has always the same character, being short, "hacking", and unattended, or nearly so, by expectoration; and, in these respects, so closely does it resemble the cough of incipient phthisis, that, very often, the two are not distinguishable, except by close attention to other symptoms. The absence of hæmoptysis,—of loss of weight,—of hereditary taint, etc.; and the predominance of abdominal derangement, with lowness of spirits, are among the first points which would lead to the suspicion of the cough being *gastric;* but should these signs be somewhat ambiguous, its progress, together with its yielding to such simple remedial measures as would fail to have any effect upon a cough of tubercular origin, will generally serve to distinguish it. In children, the mere inspection of the gums,—an inquiry into the dietetic arrangements,—or, the effect of a simple vermifuge, is all that is requisite to determine its nature.

The *nervous cough* is likewise unrestricted to age or sex. Sometimes it is met with in persons who have associated with others suffering from cough—simply as the result of imitation,—in which case, its character will depend upon that of the cough which has given rise to it; this is particularly observable in females and young children, but I have also seen it in medical men and others, who have been attend-

ing upon the sick, and have even known it spread through an entire family. The purely nervous or hysterical cough, arising from nervous irritability, is pretty uniform in its character, being short, irregular, easily excited, more or less spasmodic and dry,—or, at most, attended with only a slight mucous secretion. It is not limited to the female sex, but is often seen in youths, especially at, or about the period of puberty. The general debility and loss of health with which it is sometimes associated, are the frequent occasion of anxiety. But the previous history of the case,—the long unaltered character of the cough itself,—the excess of symptoms manifestly of nervous origin,—the usually anæmic aspect and timid mien of the patient, added to a careful physical examination of the chest,—will scarcely ever fail to indicate, at once, its real nature.

Catarrhal Cough makes its appearance as the attendant of, or sequel to, ordinary catarrh, and proceeds from an irritable, or slightly inflammatory state of the upper part of the bronchial mucous membrane. At first it is short and dry, but is soon accompanied by mucous expectoration. In most persons it runs but a short course, and is little cared for; but in others, it becomes more lasting and troublesome, and is kept up or renewed by the least imprudence or exposure to cold. In some such cases the spirits become depressed, the health gradually declines, the patient loses in

weight, and nothing but a careful examination of the chest will show that he is not consumptive. It is, however, in its first or dry stage, that this cough is most liable to be mistaken for a symptom of phthisis; but the presence, or antecedence of catarrh, or feverishness,—the absence of a phthisical history, added to physical examination of the thorax,—are generally sufficient to establish its more simple character. But as consumptive persons are very liable to catarrh, and to be affected with this kind of cough, it should never be disregarded when conjoined with the least phthisical indication, because, under such circumstances, it may, if at all severe or of long continuance, become, as already observed, the exciting cause of tubercular deposition.

It is unnecessary to say anything of the more acute coughs, such as are met with in pneumonia, bronchitis, and pleurisy, as their association with the distinctive symptoms of these diseases renders it scarcely possible that either of them should ever be mistaken for that of phthisis.

Expectoration. The phthisical cough is at first what is termed "dry;" but, after a time, which varies very much in different cases, it is attended with a whitish tenacious kind of expectoration, much resembling the unboiled white of an egg, streaked occasionally, with grey or black lines. This secretion is, at first, most abundant in the morning, and may, for a long time, be limited to

this period of the day ; but, at length, it is expectorated with every return of the cough, intermixed, occasionally, with a few streaks or specks of blood. The latter appearance, although not altogether indicative of phthisis, is nevertheless a most suspicious sign, being found, in the majority of cases, associated with pulmonary tubercles; and, however little it may be thought of by the patient, claims the serious attention of the physician.

After a short but uncertain interval, the expectoration changes to a white or yellowish-coloured mucus, which is either tenacious or frothy, but without any very distinctive characters. As the disease advances, this kind of expectoration usually increases, and is occasionally intermixed with numerous soft, opaque particles, bearing some resemblance to rice after it has been boiled, and thence called "boiled rice" sputa; or, instead of this, the whole of the expectoration presents a streaky appearance, having a number of white and yellow lines running through it. The precise period in the disease at which this "boiled rice", or streaky character presents itself, is not easy to determine ; but from the concomitant symptoms, it seems to indicate the conversion of the first into the second stage, or the commencement of tubercular softening.

When the second stage is fully established, and is advancing, a still further alteration takes place in the appearance of the expectoration. It is then composed of a number of flocculent globular masses,

which either float or sink in water, according to the quantity of air with which they are intermixed; occasionally they are streaked with blood; and they not uncommonly possess a peculiar sickening odour, which, when highly developed, resembles that of a newly-plastered room. This odour is very characteristic of phthisis, and I have never met with an approach to it in any other disease: its cause is not very evident; but it is probably owing to the presence of calcareous matter, since, when most marked, chalky particles are often visible.

In the third stage, these globular masses are much less distinct, and become gradually replaced by a muco-purulent, yellowish, greenish, or leaden-coloured secretion, which is sometimes frothy, but oftener so viscid that it coheres like bird-lime; occasionally it is diffused through a watery fluid, which has often a brownish tinge derived from the admixture of a small quantity of blood; and, not unfrequently, it has an offensive and putrid odour. But at this period the expectoration is less peculiar than in the earlier stages, and is often undistinguishable from that of chronic bronchitis. The quantity expectorated, both in this and the preceding stages, varies in different cases, and greatly depends upon the existence or otherwise of secondary inflammation. It is seldom, however, excessive before the third stage has commenced; after which it may either remain inconsiderable, or may amount to a pint, or even more, daily.

Calcareous matter, either in a soft and pulpy, or a hard and gritty state, may be found mixed with the sputa at any stage of phthisis; but it is at the commencement, and during the progress of the second stage that it mostly occurs. At whatever period, however, it is observed, it may always be considered a favourable symptom, showing that there is, at least, an attempt at chalky transformation.

Were the appearances of phthisical expectoration, which I have been describing, invariably present, they would materially contribute to our means of diagnosis; but it often happens that they are either absent, or so feebly marked, that it becomes impossible to distinguish the secretion from that of ordinary bronchitis. It is also to be observed, that when the tubercular substance is quiescent, and the cough chiefly due to secondary bronchial inflammation, the sputa may present nothing peculiar, even though the patient be in an advanced stage of phthisis; and, that even when the expectoration is undoubtedly phthisical, it may often fail to indicate the precise *stage* of the disease, in consequence of proceeding from a part of the lung less advanced than some other in tubercular transition. It is, therefore, evident, that although the appearance of the expectoration may be often turned to useful account, absolute dependence is rarely to be placed upon it.

The expectoration of the catarrhal cough varies in different cases, but it never assumes either the

"boiled rice" appearance, or the woolly globular form met with in phthisis. The slight mucous secretion, however, which now and then accompanies both the gastric and nervous coughs, might be easily mistaken for that of early phthisis, were other symptoms not properly attended to, and the stethoscope carefully employed.

The value of a microscopical examination of the sputa has been variously estimated, some observers having regarded it as an important aid to diagnosis, whilst others have altogether rejected it. Dr. Andrew Clark, who has very carefully studied this subject, is of opinion that "tubercular changes in the pulmonary organs are often indicated by the structural characters of the expectoration, at a time when such changes cannot be determined by physical signs, and only suspected from general symptoms." He has, indeed, sufficiently demonstrated* that not only tubercular matter, but lung-tissue, —or the peculiar elastic fibres of the lung substance, are often discoverable in the sputum of consumptive persons, either separately or intermixed with the mucous or pus-globules, epithelium, granular, and oily matter—in fact, the ordinary constituents of inflammatory bronchial secretion.†

I had not, until recently, paid much attention to

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* Trans. of Pathological Soc., vol. vi, p. 74.

† For a description of these fibres, see Kölliker's "Histology", vol. ii, p. 173, Sydenham Society. And for some excellent drawings of their appearance in phthisical expectoration, see "Hints on Consumption", 3rd edition, by Dr. J. C. Hall.

this subject; but I am now able to bear testimony both to the accuracy and interest of Dr. Clark's investigations. The microscope may, I believe, be sometimes advantageously brought into use; but considerable practice is essential in order to ensure accuracy in diagnosis. Upon this matter, indeed, "a little knowledge" may be "a great evil"; since many substances likely to find their way into the expectoration may be mistaken both for tubercle and lung-tissue. Muscular or vegetable fibre derived from the patient's food, for example, bears very frequently so close a resemblance to the elastic pulmonary tissue, that by an unpractised microscopist the one may be readily mistaken for the other; and the minute structure of tubercle, spoken of in a former chapter, may easily be imitated by many other matters foreign to the expectoration.

When, in addition to these circumstances, it is remembered that, although both tubercle and lung-tissue may exist in the sputum, yet, from being either widely scattered, or small in quantity, they may escape detection, the value of microscopical examination is materially diminished. My own experience has led me to the conclusion that in diagnosis it is neither judicious nor safe to trust to it alone, either as positive or negative evidence; but that in practised hands, it may sometimes,—but principally in cases sufficiently advanced to exhibit the *curled elastic fibres* of the lung-tissue—or, in

other words, the commencing destruction of the pulmonary parenchyma,—be usefully employed, where the physical and general evidence of consumption are either obscure or contradictory.

Hæmoptysis, of itself, is very inconclusive evidence of phthisis, as it also occurs in several other diseases; but when added to other phthisical symptoms, it becomes one of the most valuable aids to diagnosis.

The following table exhibits its frequency in the thousand cases already referred to, together with the sex of the patients, and the particular stage at which it was supposed to have taken place.

TABLE VIII.

	HÆMOPTYSIS.			NO HÆMOPTYSIS.
	1st Stage.	2nd Stage.	3rd Stage.	All stages.
Males . . .	239	46	41	260
Females . .	154	38	18	204
Total . .	393	84	59	464
	536 (53·6 per cent.)			(46·4 pr. cent.)

It appears, therefore, that, without respect either to sex, or to the precise period at which it might have occurred, hæmoptysis was observed in the proportion of 53·6 per cent., or in rather more than one-half the patients; but, when it is remembered that many who had not expectorated blood at the time of observation, may have done so subse-

quently, and when due allowance is made for the forgetfulness of patients, we must regard this number as somewhat below the truth, and may suppose that not much less than two-thirds of all consumptive persons become, at one period or other, the subjects of hæmoptysis.

In comparing its relative frequency in the two sexes, it will be found to have taken place in 50·2 per cent., or as nearly as possible one-half of the females; and in 56·0 per cent., or more than one-half, of the males;—a numerical excess which might have been looked for rather in the opposite direction. The difference, however, is so slight, that the influence of sex in the production of hæmoptysis must be very inconsiderable, and may, perhaps, be altogether disregarded. The following table illustrates this particular.

TABLE IX.

	Total Number of Cases.	Hæmoptysis.	Per Cent.
Males . . .	582	326	56·0
Females . .	418	210	50·2

It would be a difficult and almost impracticable task, to determine at what stage of tubercle hæmoptysis is most likely to occur; for, trusting, as we are obliged to do, to the accounts given by the patients themselves, it is impossible to tell, with

any degree of certainty, the exact state of the disease at the time of its appearance; and whenever it happens in the latter stages, we cannot say whether it proceeds from the neighbourhood of the softening tubercle, and is dependent upon it, or whether it arises from a fresh portion of the lung becoming tubercular. It is, perhaps, sufficient for every practical purpose, to know that this symptom may occur at any period of the disease. The large number of cases, however, in which it was ascertained to have taken place during the first stage, would lead to the belief that, although the breaking up of the tubercular matter may sometimes give rise to it, it more commonly results from some peculiar condition of the lung connected with the early stage of the tubercular deposit. The great relief which frequently follows the expectoration of a moderate quantity of blood,—the alleviation of the oppression and dyspnœa often preceding it,—and the improvement which in many instances subsequently manifests itself, both in the physical signs and general symptoms of the pulmonary disease, would justify the conclusion, that, in a vast number of instances, this condition is nothing else than local congestion in the immediate vicinity of the tubercular deposit; and that the hæmoptysis is intended as a salutary process, whereby the lungs may be relieved of blood rendered especially harmful in consequence of being highly charged with the elements of tubercle. It

might seem an objection to the idea of this action being designed as a salutary one, that hæmoptysis is often dangerous and even fatal; but, in this respect, it is only similar to many other processes intended by nature to act beneficially, but which, from some accidental causes, may be carried beyond the requirements of the case, and become, of themselves, prejudicial.

The cases in which hæmoptysis occurs, usually prove the most favourable, and the most chronic; but this, of course, applies only to those in which the loss of blood is moderate, and the patient able to bear it. When the hæmorrhage is excessive, or when it happens in weak or timid persons, it is usually a very serious, and sometimes even a fatal symptom.

I have occasionally noticed severe hæmoptysis at so early a period of phthisis, that the most careful examination of the chest has entirely failed in affording the least evidence of the lungs being otherwise than healthy; whilst the flow of blood has been so copious as to forbid any other conclusion than that of its having proceeded from a ruptured vessel. And although it would be difficult to demonstrate such a condition, and to establish it as a pathological fact, it is not improbable that this may have happened in consequence of tubercular matter being deposited within one of the blood-vessels.

Both the quantity and the appearance of the

blood expectorated by phthisical persons differ considerably. Sometimes it amounts to nothing more than a slight streakiness or speckledness of the sputa; sometimes it is more abundant and intimately intermixed with bronchial secretion; and, very frequently, it escapes from the mouth as pure blood, even to the extent of one, two, or more pints. It has, however, no peculiarity sufficient to distinguish it from the hæmoptysis of other diseases: if there be any circumstance tending to give it a phthisical character, it is when red streaks are blended with the mucous secretion, and not merely seen upon its surface; and when it flows into the mouth in a pure form, without cough or effort on the part of the patient. I have never met with the latter form of hæmoptysis except in tubercular cases.

It is necessary to say a few words upon the other diseases in which hæmoptysis may occur, and which, on this account, might be mistaken for phthisis.

Streaky hæmoptysis may happen at any period of chronic bronchitis, as well as in inflammatory and congestive attacks of the mucous membrane about the fauces; and, in either case, is to be distinguished from that of phthisis by no other means than a careful examination of the chest, and attention to the patient's history. Blood, in a somewhat larger quantity, either pure or intermixed with mucous or salivary secretion, may proceed from the throat or gums; but in such cases, the

absence of other suspicious symptoms, together with an examination of the mouth, will scarcely allow its real source to be mistaken. Hæmoptysis may occur at any stage of acute bronchitis; but it is not very common, and is seldom seen, except in plethoric patients. It is also met with in simple plethora; in which case, it is compatible with the most robust health, and even, in many instances, essential to its preservation. It is sometimes vicarious to certain natural or diseased secretions: thus, it may take place in females whose uterine functions are irregular; and it will occasionally be found alternating with the bleeding of hæmorrhoids, or even of varicose veins. Expectoration of blood is likewise a symptom of obstructive diseases of the heart; in which cases, it is not so often pure as intermixed with bronchial secretion.

It is manifest, therefore, that the entire value of hæmoptysis depends upon its association with other symptoms. It should, consequently, never be considered apart, but ought carefully to be compared with attendant indications; and if these should present at all a phthisical character, there will be little chance of error in pronouncing its tubercular origin.

Dyspnœa.—Shortness of breath, particularly during unusual exertion, may present itself as one of the earliest symptoms of phthisis, and long continue to be the chief source of discomfort to the patient. But there is much uncertainty in its occurrence,

persons being met with, even in the last stage of the disease, in whom it has neither been frequent nor urgent, whilst there are some whom it has never troubled. It may, occur, however, at any stage of consumption, and from causes very opposite in their nature.

In many instances there is difficulty of breathing simply in consequence of mechanical obstruction produced by the tubercular deposit. The lungs, however, exhibit in so remarkable a manner that compensative power observable in nearly every organ of the body—of readily accommodating themselves to the presence of foreign substances, provided these be slowly deposited, that dyspnœa of this character is chiefly noticed at the commencement of the pulmonary disease, and upon the occasion of any rapid or extensive addition of fresh tubercle. The sudden accession of this symptom becomes, therefore, in some cases, a guide to the first onset of the tubercular disease, as well as, at a subsequent period, an indication of its increase.

It often happens, however, that the dyspnœa of phthisis bears no proportion either to the amount or rapidity of the developement of tubercle, but proceeds from secondary bronchitis, pneumonia, or pleurisy. This may be observed at any stage of the primary disease, but never more frequently than after softening has taken place; at which time, the sudden accession of difficult respiration is often attributable either to bronchial or pleuritic inflammation.

Dyspnœa may likewise arise in consequence of obstruction in the bronchial tubes, either from an excessive amount of secretion, or a want of power on the part of the patient to expectorate sufficiently. Sometimes it is dependent upon associated emphysema. In some instances it is of a purely nervous character, and connected with hysteria; and, in not a few cases, it is the result of general debility.

It is evident, therefore, that dyspnœa may be a most formidable, or a comparatively unimportant symptom, according to the particular conditions upon which it may depend. But as there is nothing in the character of phthisical dyspnœa which serves to distinguish it from that of asthma, obstructive diseases of the air-passages, or even simple hysteria, it has no separate value as a diagnostic sign.

Pain plays a most capricious part in phthisis, and bears no necessary relationship either to the state of the lungs or to the stage of the disease; frequently being severe at a time when there is but little pulmonary tubercle, and, on the other hand, very often absent when the lungs are extensively tubercular. In some cases it is scarcely felt during the whole course of the malady; in others it is an early and very troublesome symptom; and, in many instances, it disappears and returns almost indefinitely: it would be difficult, perhaps, to find two cases strictly alike in these particulars. Most frequently it is referred to the regions between the scapulæ, and

above and beneath the clavicles, or to the shoulders; but it may occur in any part of the chest, however remote from the situation of the tubercle, and is often complained of solely at the epigastrium. Sometimes it is deep-seated; at others the skin and superficial parts are chiefly affected, and there is such morbid sensibility of the cutaneous surface, that even the most gentle percussion is productive of distress. Thus it is evident, that although pain is very often felt in the parts actually diseased, it is in many instances of a *reflex* nature.

The character of the pain is quite as variable as its situation; most commonly it is spoken of as being heavy, dragging, or gnawing; occasionally it is rather an uneasiness than an actual pain; but, in some cases, it is acute and tearing. These different qualities serve, in some measure, as guides to the pathological state of the lungs. When the pain is heavy and dragging, it is probably due to pulmonary congestion; when distant from the seat of the tubercle, or when the cutaneous surface is principally involved, it is likely to be either a reflex action, or to be nervous or hysterical; but when acute and lancinating, there is greater reason for attributing it to pleuritic inflammation. It often happens that pain is experienced only during unusual exertion, and is not felt when the patient is at rest; but, on the other hand, persons are frequently to be met with, even in the latter stages of consumption, so little inconvenienced in this way, that

they are able to follow laborious occupations. It may, indeed, be said of pain, in its relationship to phthisis, that there is nothing certain about it except its variableness.

The many and anomalous pains experienced about the chest in the course of other diseases, are a frequent source both of anxiety to the patient and embarrassment to the physician, in consequence of their close resemblance, in many important particulars, to those which are often met with in phthisical cases. Rheumatic pain of the thoracic muscles is the most likely of any to lead to difficulty, more especially when it spreads, as it occasionally does, to the adjoining pleural membrane; for, the diminished mobility of the thoracic walls, and the weakness of respiration in the part affected, together with the general debility and loss of health, which, under such circumstances, are often experienced, form a group of symptoms which may be readily mistaken for those of phthisis. I have lately seen this remarkably illustrated in the case of a gentleman who, in consequence of daily sponging the chest with cold water during the winter months, became affected with severe rheumatism of the pectoral muscles, which created the greatest alarm both to himself and his friends; until the cause of the annoyance being suspected, recovery speedily followed its discontinuance. There must be few practitioners who have not seen cases of a somewhat similar kind; and it is not improbable that

some of the much-vaunted "*cures of consumption*" have been of this class. They are only distinguishable from those of phthisis by close attention to the general history of the disease, and by a minute physical examination of the chest. In all doubtful cases, it is well to remember, that rheumatism and phthisis not being often combined, a more than usual value may be placed upon any symptoms positively referrible to either.

The changeable and shifting thoracic pains arising from dyspepsia, are also liable to be mistaken for phthisical symptoms. The aspect, however, of the patient,—the recurrence of the pain at certain intervals, determined by the time of taking food,—the presence of pyrosis, abdominal flatulency, or other dyspeptic indications, will generally serve to distinguish the one from the other.

The pain attending hepatic disorders may likewise lead to ungrounded alarm. It differs, however, from that of tubercular lungs, in being invariably of a heavy, dragging kind, and more felt in the region of the liver, or in the right shoulder and arm, than in the upper parts of the chest. The symptoms attending it are also tolerably characteristic: the complexion is usually sallow; the abdominal functions are irregular; the biliary secretion is either deficient or disordered; and the hepatic region distended, or tender upon pressure,—conditions certainly possible, but by no means common in phthisical cases.

Nervous pain about the chest is more easily distinguished, in consequence of its almost constant association with some hysterical or anæmic symptoms. Nevertheless, it may become the source of much anxiety, particularly when combined, as is often the case, with a cough of the same character, depression of spirits, and general failure of health. But the patient's aspect,—the general prevalence of symptoms obviously nervous,—the absence of emaciation,—the ready admission on the part of the sufferer of almost any amount of pain which may be suggested,—and the firm belief in the existence of some real disease,—are circumstances so unlike those met with in consumption, that a correct diagnosis is seldom difficult.

Loss of weight may be looked upon as one of the most valuable guides both to the diagnosis and progress of phthisis: it was noticed in every one of the thousand cases to which I have already referred, and I have never seen an exception to its occurrence.

For a long time I sought to ascertain whether there existed what might be termed a *phthisical weight;* that is to say, whether by the weight alone, in its relation to age and height, any person might be pronounced consumptive. This was done by comparing the height, weight, and age, of a number of consumptive persons, both with those in health, and those suffering with other chronic diseases; but the result showed that no value could possibly

attach to such an observation. Many healthy individuals were found to weigh less than others, of the same height and age, who were in an advanced stage of phthisis; whilst in those under the influence of other diseases, every possible variety in weight was discovered. It may, I think, be concluded that health is compatible with a great diversity of weight; and that neither consumption, nor any other disease, has any standard of weight peculiar to itself.

Loss of weight is one of the earliest symptoms of phthisis, and sometimes precedes every other. The decrease, however, varies considerably, both in rapidity and degree. I have known persons at the commencement of phthisis lose at the rate of nearly a pound daily; but, in many cases, it will require some weeks, or even months, for any great reduction to take place; and sometimes the loss is not particularly evident until the disease is much advanced.

The diminution being almost always proportionate to the severity of the malady, is a useful guide to prognosis. Whenever, at a very early period, the decrease is sufficiently marked and sudden to attract the notice of the patient or his friends, there is much reason to fear that the disease will be but slightly amenable to treatment, and will run a rapid course; but, when the loss of weight is so trifling and gradual as scarcely to be recognizable, except by the periodical use of the scales, the prospect is much less unfavourable, even should many of the other symp-

toms remain unchecked. There is, in fact, nothing which indicates so accurately both the existence and progress of consumption, as this decrease of weight. And although I have met with one or two exceptions in persons who were taking cod-liver oil (to which reference will be subsequently made), it seems to be a general rule, that an *increase* of weight, as the effect of treatment, both proclaims its success and measures its extent.

It should be remembered, however, that loss of weight is not of itself a proof of consumption, since many sufferers from other chronic diseases,—of which dyspepsia, malignant affections of the stomach, and diabetes, are prominent examples,—may become emaciated to the utmost degree without showing the slightest tendency to phthisis. It is only when it happens without assignable cause that it becomes a suspicious symptom; and only when associated with cough, hæmoptysis, or some additional evidence of consumption, that it can be safely pronounced to be a phthisical one.

Perspiration sometimes attends the very commencement of phthisis, and is the first circumstance to create alarm; at other times, it is little, if at all complained of throughout the whole course of the malady. So uncertain, indeed, are both its occurrence and its severity, that it would perhaps be difficult to find two consumptive cases strictly alike in these particulars.

At an early stage of the disease, it is often quite

unconnected with febrile paroxysm; but, at a later period, it is more generally due either to inflammatory or hectic fever. The perspiration of phthisis, however, having precisely the same effect upon the patient, from whatever source it proceeds, may, for practical purposes, be treated of as a separate and independent symptom.

The time of its occurrence is variable. In mild cases it is scarcely troublesome except during the first hours of the morning; but in those of a more severe character, not only does it extend through the greater part of the night, but is also apt to return during the day, should the patient either fall asleep or become in any way excited. Sometimes the perspiration is limited to one particular limb, or to one portion, or even one side of the body; but, quite as frequently, the whole cutaneous surface is equally involved. Sudamina are often visible, particularly about the chest and abdomen; but they are not essential even to the most profuse perspiration.

This symptom, when excessive, invariably harasses the patient, increases the emaciation, and rapidly hurries on both the general and pulmonary disease. No other symptom, indeed, is more depressing in its character, or more certainly prejudicial in its consequences: the most promising appearances speedily vanish with its continuance; and a case previously doing well, quickly retrogrades under its influence. Being at once indicative of the severity

of the disease, and of little physical resistance on the part of the patient, it becomes a most valuable aid to prognosis. When cases are about to advance rapidly, the perspiration begins at an early period, and is but little influenced by treatment; but in those destined to run a favourable and chronic course, it is seldom very conspicuous, and never excessive.

The state of the skin, together with that of the pulse and of the weight, will be found, as a general rule, the most certain guides of any as to the issue of consumption.

In estimating the value of this symptom as a means of diagnosis, it is necessary to bear in mind that persons simply out of health and suffering from exhaustion, frequently experience irregular and even profuse perspiration; and, consequently, that it is only when conjoined with other less equivocal evidence of consumption, that it can be relied on as an indication of this disease.

Diarrhœa.—Consumptive persons are particularly prone to casual diarrhœa, in consequence probably of the same irritability of the mucous surface which so often exhibits itself in the form of dyspepsia. Such attacks, however, are for the most part easily subdued; and it is only when, in the latter stages of the disease, tubercular matter has been deposited in the intestines, and has produced some lesion of the abdominal mucous membrane, that phthisical diarrhœa is apt to assume a very prominent or obstinate character.

From whatever cause, however, and at whatever stage, diarrhœa may arise, its persistence is invariably productive of injury to the patient, and constitutes one of the most unfavourable symptoms in the whole course of phthisis; nothing more easily reduces the strength, and hurries on the disease; and, in advanced cases, nothing so often leads to a fatal termination. The absence of it is consequently one of the most encouraging circumstances we can meet with; whilst the time of its commencement, and its subsequent progress, become useful auxiliaries to the prognosis.

The evacuations consist either of the natural excretions, intermixed with serum; or, of serum only, slightly tinged with bile. Occasionally these are united with flaky-looking matters, resulting from imperfect digestion; and, very often, there is an admixture of blood, either in streaks or in larger quantities. We are, however, unable to judge from the character of the evacuations, of the actual state of the intestinal mucous surface,—whether this is simply congested or inflamed, or whether it is the seat of tuberculous ulceration. A long-continued and serous diarrhœa, attended with occasional discharge of blood, would justify a belief in the existence of ulceration, which, in the majority of cases, might be found correct: but I have met with these symptoms in phthisical cases which presented after death no visible breach of the mucous membrane; and, on the other hand, I have found considerable

destruction of the surface of the intestines in cases where diarrhœa had never been a very troublesome complication.

The diarrhœa of advanced phthisis is commonly attended with abdominal pain and tenderness on pressure, and with dyspepsia; the pulse is often accelerated; and there is some febrile irritability. Such symptoms, however, are not invariably present, the diarrhœa being sometimes of quite a passive character. One peculiarity of phthisical diarrhœa consists in the readiness with which it is renewed by the most trifling circumstance; slight excitement, or fatigue, or a small quantity of undigested food finding its way into the small intestines, may be sufficient to immediately produce it. In advanced cases, this is particularly observed, and often proves the forerunner of dissolution.

The tongue, in severe cases, generally indicates the irritable condition of the mucous membrane lower down; either its edges are red, and a brown or yellow fur covers its centre, or else its whole upper surface is red and glazed, ultimately, perhaps, becoming aphthous and fissured. The interior of the mouth is often painfully ulcerated, and also covered with aphthæ. Happily, these conditions do not always prevail, nor, when they exist, do they always keep pace with the pathological changes going on in the intestines; but they are too often the occasion of most intense suffering; agonizing and shortening the patient's last hours,

by rendering deglutition impossible, and death from want of proper nourishment inevitable. In cases of this severity, there are almost always extensive ulcerations of the rectum and colon.

Hectic Fever presents, like other phthisical symptoms, much variety both as to the time of its commencement, and in its career. Although it may properly be said to belong to the last two stages, yet in a few cases, where the patient's strength is soon exhausted, and the disease from the beginning wears a severe aspect, it sets in at a much earlier period, previous, indeed, to suppuration,—which is, therefore, not essential to its production. It is, however, after softening has begun, and the pulmonary tissue has given way, that it is more common and of greater intensity.

Hectic fever is, at first, strictly an *intermittent*, leaving the patient, for a certain period of each day, free from febrile paroxysm; but, as the case advances, it becomes more of a *remittent*, scarcely allowing an entire cessation of feverish excitement; until, towards the close of the disease, it may be almost termed a *continued* fever, still, however, retaining a tendency to occasional increase. At its onset, the paroxysm begins late in the afternoon, or in the evening, and consists of chilliness, followed by a feverish state of the whole system, quickness of pulse, burning heat of skin, especially of the hands and feet, and flushing of the face; all of which remain three or four hours, though sometimes

more, sometimes less, and are then succeeded and removed by perspiration. These symptoms are sometimes, at their commencement, so slight as scarcely to attract attention; at others, so severe as to completely exhaust the strength, and bring the case to a rapid issue; but, however mild at first, they invariably increase with the advance of the pulmonary disease.

After the fever has existed some little time, the chilliness becomes less marked; the stage of reaction is prolonged; another paroxysm occurs earlier in the afternoon; whilst a variable amount of feverish disturbance is liable to come on at other times of the day, particularly after meals or unusual mental agitation. The perspirations soon appear as the chief feature in the febrile attack, commencing earlier than before, and becoming at length so profuse as to acquire the title *colliquative*. The strength now visibly declines; the pulse is small and quick, amounting often to 140 or even 160 in the minute; the eyes are sunken and glassy-looking; the features sharpened; the countenance is anxious; emaciation rapidly advances; and the patient sinks from exhaustion.

Such is the usual course of a fever which almost invariably appears towards the middle or the latter stage of consumption, and which is, in the majority of instances, the forerunner of dissolution. There is much uniformity in the sequence of its different symptoms, but its duration is subject to great un-

certainty; it may continue for many months, or terminate fatally after only a few days.

When hectic fever has become fully established, the patient is seldom free from diarrhœa, perspirations, or profuse expectoration, which seem to exhibit towards each other a certain degree of antagonism. In proportion to the increase of one, the others have a tendency to diminish; and as one becomes checked by treatment, another too often makes its appearance. The issue of nearly every fatal case of phthisis is immediately attributable to the exhausting effect of one or other of these three symptoms; hence it becomes a matter of practical value to ascertain their comparative influence upon the patient.

Diarrhœa is the most rapidly destructive; perspirations the next; and expectoration the least so. A person who would readily sink under excessive diarrhœa, and who would suffer severely from the continuance of perspirations, may yet expectorate profusely for a very long time, with comparatively little ill effect: and it is singular to observe, how generally the mere exchange of one of these three symptoms for another, is at once apparent either in the amelioration or aggravation of the whole disease. There are, of course, many circumstances which may change this relative influence upon the progress of the case; but it will, I am convinced, be found generally correct, and a useful auxiliary to our means of prognosis.

Œdema of the legs or ankles is occasionally seen during the early stage of phthisis, but principally in those who are anæmic, or suffering from languid circulation; to some extent it is unpropitious, as denoting such general debility and want of tone as will probably offer but little resistance to the progress of the tubercular affection. During the last stage the same symptom is occasionally observed, and although not usually troublesome, it is a most unfavourable one, and indicative of failing vitality; I have never seen it, except under the most unpromising circumstances.

Delirium.—However rapidly the body may decay under the ravages of phthisis, the mind is usually unaffected; the thoughts are calm and hopeful; and it is rare to witness, except perhaps, in some few cases, during the last hours of life, any of the wild fancies of delirium. Even when it does exist, it is generally of a low and mild character, and far more distressing to others than to the patient himself: to the latter, indeed, it seems sometimes to be rather a boon than otherwise, serving to blunt that sensibility to mental and bodily suffering which too often attends the last moments of the victims of consumption.

Acute or inflammatory delirium, however, occasionally presents itself during the progress of phthisical cases, as the effect of the cerebral or meningeal complication, which I next proceed to describe.

Meningitis may happen at any stage of phthisis,

and is associated with tubercles in or upon some of the membranes of the brain, but chiefly the pia-mater. In some cases, the inflammatory symptoms are secondary to a tubercular deposit which has been gradually forming in the cerebral meninges; in other instances, the tubercle is the effect (instead of the cause) of meningeal inflammation happening in a person of consumptive predisposition. Such a relationship, however, between the tubercular formation and the inflammatory process, can be nothing more than conjectural; but there is every reason for regarding it as correct, when we observe how differently the attack commences in different cases, and compare it with what is known to happen in other organs. Some patients, for example, may have suffered, perhaps for a considerable time previously, with constant headache and general torpidity of system, which has led to the suspicion of something morbid about the brain; whilst others, previously free from cerebral complication, may be suddenly and unexpectedly seized with acute meningitis, which is found, after death, to be associated with recently formed tubercle;—an order of symptoms, in both cases, strikingly analogous to that which is observed in connexion with the pulmonary organs.

Headache—often very acute, flushing of the face, febrile excitement, intolerance of light, sickness, constipation, extreme mental irritability, and a gradual failure of the intellectual powers—pass-

ing into delirium, paralysis, and coma,—are the ordinary symptoms of tubercular meningitis. Occasionally the inflammatory indications partake of the character of cerebritis; the acute symptoms being less evident, and the functions of the brain much earlier affected.

The mental phenomena attending this complication are subject to remarkable variety. I have lately seen a case which began with acute meningeal inflammation, and ended in permanent idiocy; in some instances there is paralysis, but the mind remains unimpaired; in others there is acute mania of a marked suicidal character.

It is questionable whether the tubercular variety of meningitis has any peculiarity which will serve to distinguish it from the ordinary or simple form of meningeal inflammation. The cases I have witnessed certainly presented nothing which tended to characterize them, the diagnosis entirely depending upon a knowledge that the patients were already in a more or less advanced stage of consumption.

The disease, after a course of uncertain duration, is almost sure to terminate fatally. Some persons rapidly sink under the acuteness of its earlier symptoms, whilst others resist these, and ultimately die paralytic or comatose: many cases end within five or six days; whilst others continue three or four weeks, or even longer. The severity of the attack, and the previous condition of the patient, are the only guides to its probable duration. It appears to

be more common in France than in this country. M. Louis, in his "Researches on Phthisis", has fully described several cases; and whilst attending his practice at the Hospital Beaujon, I had several opportunities of seeing the disease; but in England, with a larger field of observation, I have met with comparatively few cases.

Cerebritis is even less common than meningitis. A few well-marked cases have, however, fallen under my own observation, in all of which there was a great similarity in general symptoms. Instead of the active febrile disturbance, already described as characterizing meningeal inflammation, the functions of the brain are primarily deranged. At first there is a sense of weight in the head, accompanied by impaired vision, and noise or tingling in the ears. The pulse soon becomes slow and laboured; the breathing short and difficult; there is numbness on one side of the body, often associated with irregular or partial muscular contractions; and the general sensibility is visibly diminished. In the course of a few days these symptoms increase, and finally give place to those of compression. General muscular relaxation, or paralysis, ensues, and finally the patient dies comatose.

In all such cases, tubercular matter is discoverable within the cerebral substance. It generally occurs in masses, sometimes of considerable size, and seldom in the miliary form.

Softening of the brain is sometimes met with

during the last stage of phthisis, particularly in persons advanced in years. I have known several cases in which an alteration of the patient's manner, —a loss of memory,—or slight mental alienation, —has been suddenly followed by paralysis, coma, and death; the *post-mortem* examination revealing nothing but cerebral ramollissement of the ordinary kind, and apparently unconnected with any developement of tubercular matter.

Bronchitis is the most frequent of all complications of phthisis; scarcely a case running through even the first stage, without presenting it in a greater or less degree. The capillary is the most common form of the disease; but a more general inflammation, affecting the larger bronchial tubes, not unfrequently occurs; and the two varieties are sometimes united.

Capillary bronchitis may be either *local* or *general*, and its symptoms vary in severity according as it approaches the one or the other. When local, or limited to the neighbourhood of the tubercular deposit, it may often remain undiscovered, except by physical examination; but when more extensive, and spreading to other parts of the lungs, it commonly produces febrile irritation, and aggravates materially the pulmonary symptoms. Under the latter circumstances it not unfrequently so masks the phthisical disease, that the tubercular complication is very liable to be overlooked; and it sometimes requires no little diagnostic tact to

determine whether the attack, in any particular case, is idiopathic or otherwise; indeed, it is frequently necessary to wait for the decline of the bronchial inflammation before venturing a decided opinion.

The tendency to capillary bronchitis obviously increases with the advance of the pulmonary disease; the smaller bronchi, particularly after the process of tubercular softening, becoming more and more susceptible to inflammatory action.

Bronchitis of the larger tubes may also be either *local* or *general*, but among phthisical patients, it is much less common than the capillary form of the disease. The local variety, indeed, is not often met with; and when the more general one occurs, it seems to be rather an accidental complication of phthisis than a disease depending upon it.

Except by the aid of physical signs, this form of bronchitis is undistinguishable from the *capillary;* but the diagnosis, in every case, is highly important, since the latter, affecting as it does the more delicate parts of the lung, and those portions of the pulmonary structure already the seat of the tubercular deposit, is by far the most prejudicial in its consequences.

Any form of bronchial inflammation is, however, in proportion to its extent, highly injurious. When limited to the neighbourhood of the tubercular deposit, it promotes its further degeneration, and, at the same time, encourages a fresh formation of

the morbid substance, by bringing to the very spot the most disposed to receive it, an unusual quantity of tuberculous blood; and when more general in its character, and extending to other parts of the lungs, it adds materially to the patient's troubles, reduces his strength, and affords him a less chance of successfully combating the original malady.

Pneumonia, I am disposed to think, is a much less common attendant upon chronic phthisis than is generally supposed. In the thousand cases already referred to, the general symptoms, as well as the physical signs of true pneumonia, were very seldom observed. It is true that the circumstance of their having been *out*-patients, may, in some measure, account for this; since an attack of pneumonia would, in a considerable number of instances, disqualify the sufferers for hospital attendance; yet such an explanation is not altogether satisfactory, since other acute complications were not unfrequently met with. But even under circumstances more favourable for detecting pneumonia, I have found it singularly infrequent.

What has been termed "intercurrent" pneumonia unquestionably occurs in some cases; but even then, it is usually both limited in extent and moderate in degree, often, indeed, not deserving to be regarded as true inflammation; seldom does it reach the bases of the lungs, and most commonly it is wanting both in the general and local indications, as well as in the consequences of real pneumonia.

Such a statement will, I am prepared to expect, be received with some surprise; tubercle and pneumonia having so long been regarded as intimate associates. It is not, however, only in the wards of the Consumption Hospital that the evidence of pneumonia is so deficient;* genuine pulmonary hepatization, as well as other consequences of pneumonia being certainly uncommon amongst the *post-mortem* appearances of fatal cases.† The lungs, it is true, are often found in a state of induration or softening; but such changes are far more generally the result of the filling up of the pulmonary substance either with tubercular matter or some lowly organized material closely allied to it, and of the breaking down of such deposit, than consequences of pneumonia. Frequently also, owing to the pressure of neighbouring tubercle, the lung-tissue is found in a state of condensation; and

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* Fine crepitation is occasionally met with; but being usually unassociated with rust-coloured expectoration, as well as other physical and general signs of pulmonary inflammation, it is fairly attributable either to congestion of the lung, or to fine capillary bronchitis. The correctness of such a conclusion has frequently been proved by *post-mortem* appearances.

† One of the Resident Clinical Assistants assured me, that, during six months attendance in the wards of the Consumption Hospital he had not seen pneumonia half-a-dozen times; and that he regarded a really hepatized lung as quite an exceptional occurrence. And Mr. Edwards, the Resident Medical Officer, has frequently remarked to me how rarely he meets with either the symptoms or the effects of true pneumonia.

often enough there is a considerable amount of pulmonary congestion; but neither of such changes claims to be considered as evidence of pneumonia.

I am far, however, from denying the occasional occurrence of pneumonia at any stage of phthisis. I only contend for its comparative rarity. It is certainly less uncommon during the later than the earlier stage of the pulmonary disease. In some few cases, where, towards the close of the malady, the tubercular deposit is less limited in situation, and extends to the bases of the lungs, pneumonia is likely to supervene, and to hurry on the symptoms to their fatal termination. But even under such circumstances the inflammation is, oftener than not, of a low and passive kind, constituting what has been termed *congestive* rather than active pneumonia.

The symptoms of tubercular pneumonia vary considerably. In some instances there are the ordinary evidences of pulmonary inflammation—consisting of heavy and dragging pain, fever, cough, and rust-coloured sputa; in others, few if any of these are observable, and the physical signs are almost the sole indications of the disease. The extent of the attack, the stage of the tubercular disease, and the condition of the patient, evidently determine such differences.

In *acute* phthisis, secondary pneumonia is more likely to occur, in consequence of the more extensive and rapid developement of the tubercular de-

posit. In many cases, indeed, it assumes a severe form, and is the chief cause of the characteristic and fatal qualities of this variety of consumption.

Pleurisy is more common than pneumonia during the progress of phthisis, but very much less so than bronchitis. During the first stage it is rarely severe, or attended with serous effusion, but is of limited extent and very liable to escape detection. A few sharp pains in the upper regions of the chest, or a slight pleural friction-murmur, are usually the only indications of its existence. In many cases it seems to be a salutary process, in order to thicken the pleura, or to make the lung adherent to the thoracic parietes, and thus to prevent, at a subsequent period, the escape of bronchial and tuberculous secretions into the pleural cavity. And were it not for this protection, fatal effusion would be a far more common attendant than it is upon the latter stages of consumption.

When softening has taken place, there is an increased tendency to pleuritic inflammation, and many of its acute symptoms are occasionally manifested. But the attack, more frequently, is of a mild character, and is still disposed to assume the form of what is termed *dry* pleurisy, rather than to end in effusion.

As the third stage advances, local as well as general pleurisy becomes a frequent complication, and often, by the severity of its symptoms, adds to the distress of the patient and aggravates the ori-

ginal disease. Serous effusion is now more liable to ensue, and in many cases, to an alarming and even fatal extent. Sometimes, in consequence of old pleural adhesions, the effusion is limited to a portion of the chest, and becoming subsequently purulent, forms one of the varieties of empyema.

An effusion of a *passive* kind, the result of low serous inflammation, but unattended with any manifest symptoms, often takes place during the last few hours of life; this, however, is not peculiar to phthisis, but is also met with in other chronic disorders.

The thickening of the pleura, so often found after death in phthisical cases, is probably not always the result of inflammation, but brought about by fibrinous deposition. I have, for example, many times observed the pleural membrane several lines in thickness, in persons, who, during life, had never suffered particularly from pleurisy; the covering of the lung evidently having been strengthened in order to avoid its rupture.

Pneumothorax, which may be called one of the *accidents* of phthisis, sometimes complicates the latter stages, in consequence either of a rupture of the pleura by the softening of tubercle in its immediate neighbourhood, or the bursting of a vomica into the pleural cavity, and would still oftener happen, were it not for the provision made against it either by the thickening of the pulmonary textures or of the pleura itself, to which I have already

referred, or by the adhesion of the tuberculous lung to the thoracic parietes.

Although the pleura may thus become perforated when the patient is perfectly tranquil, or even asleep, the occurrence is oftener due to a violent fit of coughing or vomiting. It may generally be known by the *sudden* accession of pain and dyspnœa, together with great oppression, anxiety of countenance, and rapidity of pulse, quickly followed by more or less acute pleurisy.

The severity of the symptoms, however, as well as the period of their duration, are subject to considerable variety, being dependent both upon the particular condition of the perforated lung, and upon the stage of disease to which the other lung may have reached. It is well known that the pulmonary functions essential to life may be carried on for a surprisingly long time by one lung, provided this is not materially diseased; hence, in forming an opinion in a case of pneumothorax, it is not enough that the affected side only be considered.

If, at the time of perforation, pleural adhesions should exist in the vicinity of the opening, the air or fluid may find its way into only a small portion of the chest, in which case the symptoms will be less severe: in one or two cases, indeed, of this kind, which have occurred in my own practice, so little developed were either the general or physical signs of pneumothorax, that its existence was rather a

matter of conjecture than demonstration, and was not at all certain until the *post-mortem* examination. It oftener happens, however, that the air occupies a considerable portion of the pleural cavity, and diminishing the bulk of the lung, proportionately increases the patient's distress. In some few cases the whole lung is compressed against the wall of the thorax, and thus rendered quite inaccessible to air.

After a short time, the air in the thoracic cavity becomes mixed either with serous fluid from the pleura, or with mucous and purulent secretion from the bronchi or ruptured cavity, and *hydro-pneumothorax* is produced; but this can only be detected by physical examination of the chest, its general symptoms differing in no characteristic particular from those of simple pneumothorax. The whole of the air may even ultimately disappear, and nothing but fluid remain in the side of the chest.

Perforation of the pleura in phthisical cases is, perhaps, in every instance a fatal symptom.* It may prove so almost immediately, one case having, to my knowledge, ended fatally in little more than half-an-hour; or, the patient may die in a few hours; or, he may rally and live many days or weeks, or even months: I have myself seen the disease continue upwards of six months, and instances

* The only exception of which I am aware, is that of a case recorded by Dr. Hughes, in Guy's Hospital Reports, vol. 8, Part I, p. 20.

are recorded of a considerably longer duration. But it more generally happens that the system, already greatly exhausted by long-continued disease, speedily gives way under its first effect.

A low inflammatory condition of the pharynx is not an unfrequent attendant upon phthisis, and sometimes appears among its earliest symptoms. It usually commences at its posterior wall, and has a tendency to spread, not only over the whole pharynx, but also into the larynx, laying, in many cases, the foundation of what is termed *laryngeal* phthisis.

The mucous membrane presents, at first, a number of dark or vivid red patches or streaks, which gradually coalesce; a yellowish tenacious mucus soon appears upon its surface; the tonsils become enlarged, and the uvula is elongated. If the mucous follicles upon and behind the tonsils be now carefully examined, they are often seen to contain a yellowish-white substance, apparently of a scrofulous nature, which, becoming expelled, frequently leaves behind it small ulcerations. These ulcerations sometimes spread and involve a considerable portion of the pharynx, especially at its posterior part. The epiglottis, meanwhile, frequently becomes red and congested; the laryngeal mucous membrane participates in the attack; and the general symptoms of laryngeal inflammation—of which more will be said elsewhere, make their appearance. In many instances, the diseased action

remains limited to the pharynx; but in those cases where it extends to the larynx, it sometimes altogether leaves the pharyngeal membrane.

Dyspepsia is, perhaps, of all complications, the most distressing. Usually beginning at an early period, and being always liable to recur, few consumptive persons are entirely free from it; and in a great number, it forms the chief source of complaint. It constitutes, moreover, the greatest obstacle we have to encounter in the treatment of phthisical cases; for, so long as the stomach is unfitted for the digestion of the particular diet suited to the consumptive invalid, there can be but little hope either of restoring the health, or of arresting the formation of tubercle.

The dyspepsia of phthisis is sometimes only functional; but, more frequently, it is associated with, and probably depends upon, some organic change in the stomach itself. The investigations of M. Louis have shown that in phthisical persons the stomach is sometimes enormously distended; that its mucous membrane is often either reddened, soft, attenuated, or destroyed; and that, in some instances, it is thickened and mammillated. These different conditions are neither so constant in, nor so exclusively related to, tubercular affections, as to point to a necessary connexion between them; but the subject is an interesting one, and may possibly lead, at some future period, to more correct ideas than we have at present of the primary cause of tuberculous diseases.

Although phthisical dyspepsia is not always alike, there are certain peculiarities about it which may serve in some measure to distinguish it from that which is either idiopathic, or dependent upon some other condition; or, at least, to give it extra importance, when associated with other symptoms having at all a consumptive aspect. Nausea and sickness are particularly common, the latter being easily induced by coughing; so frequently, indeed, is this the case, that some practitioners have considered one peculiarity of the consumptive cough to consist in a tendency to end in vomiting; but whatever may be the diagnostic value of this circumstance, it is clearly referable rather to the dyspepsia than to the cough. Pain and tenderness at the epigastrium, pyrosis, a remarkable craving for food, flatulency, and a subsequent tendency to diarrhœa, ordinarily coexist.

The actual condition of the stomach is undiscoverable either by the kind or degree of dyspepsia, and must always remain unknown previous to *post-mortem* examination. When the mucous membrane is softened or ulcerated, there is usually a feeling of pain or soreness upon pressure; yet, this is as likely to be experienced when the stomach is simply irritable; the nausea or sickness also, may be equally distressing, whether there be structural change or not; and we can only judge of the *probable* state of the organ, from the length of time the dyspepsia has continued,—its long duration arguing strongly in favour of structural disease.

It will be found, as a general rule, that those cases in which dyspepsia has been the most prominently marked, suffer earlier and more severely than others from subsequent diarrhœa; showing the tendency to an extension of diseased action lower down the alimentary canal.

Incurvation of the finger nails has long been reckoned amongst the symptoms of consumption. There is no definite period for its commencement, but it is seldom particularly marked before the second stage. The first indication of it consists of a slight tumefaction, of a dark and congested appearance, around the root of the nail; soon, the nail itself is observed to become of a more or less livid colour, and to grow unusually fast. After a progress often so gradual that it escapes the patient's notice, but at other times of marked rapidity, the whole nail seems to undergo hypertrophy; it is broader and altogether larger than before, and so rounded, as to form, in many instances, almost a semicircle; whilst it shows also, in some cases, a disposition to curve over the extremity of the finger.

Concurrently with this change, the fingers gradually assume a congested appearance, and are unusually cold; their extremities frequently enlarge, and ultimately assume the peculiar form which has been appropriately termed "clubbed".

These appearances are subject to infinite variety. In some patients, even in the third stage, they are scarcely, if at all, discernible; whilst in others they

are highly marked long before cavities have formed. The nails also may be much incurvated, and the fingers little clubbed; and *vice versa*. They are more common in the male sex, and amongst the lower classes, than in females, and the higher orders; and are almost always accompanied by an increased growth of the hair.

Sometimes, but not always, the nails of the feet participate in the alteration; but I am unable to state the proportion of cases in which they do so.

In other chronic diseases attended with emaciation, as well as in certain organic affections of the heart, the nails sometimes become curved; but I have never seen them changed to the same degree, or in precisely the same manner as in phthisis; the *extreme* lividity, coldness, rounding, and rapid growth, which have been described, are, I think, characteristics of consumption: the fingers also, so far as I have observed, although sometimes congested and enlarged, do not absolutely become *clubbed* except in consumptive cases. The whole phenomenon is difficult to explain, appearing to consist of one of those strange sympathetic actions which are exhibited in so many different ways in almost every disease; and of which another instance may be seen in the symptom next to be described.

A brick-red or blue streak upon the gums, opposite the lower, and sometimes also the upper incisor teeth, was first noticed as a phthisical symptom by

M. Frédericq,* whose statements have been, in a great measure, confirmed by the recent observations of my friend and colleague, Dr. Theophilus Thompson. M. Frédericq believes that, although a similar appearance is common to the latter periods of *all* chronic maladies, the coloured line is *invariably* present as one of the earliest signs of phthisis; the red denoting an inflammatory, and the blue a less active kind of tubercular disease; the deepness of the colour, moreover, bearing a direct proportion to the rapidity with which the particular case is destined to proceed. He also observes, that "arrested cases continue to have the blue mark, but paler than before; and when the disease recommences its march, the mark becomes plainer." Dr. Thompson states that "it exists in a very large proportion of cases, but the most so in the male sex"; that "whenever any patient has exhibited it clearly defined, whatever may have been the prominent complaint, a careful examination of the chest has led to the detection of phthisical disease"; and that "the absence of such a streak may incline to a favourable interpretation of suspicious indications"; the condition itself denoting "a tubercular taint in the constitution".†

Although this appearance of the gums is often present in phthisis, even at an early period, it is, I am convinced, *very far* from being universally so;

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* Rév. Med. Chir., vol. vii. † Lancet, vol. ii, 1851.

and, consequently, its absence is no negation of a tuberculous diathesis. And when we consider the delicacy of the appearance itself, and the possibility of its being caused by other agents—such as iodine and mercury, or even by the local irritation of accumulated tartar,—I think it must be looked upon rather as one of the *curiosities* of phthisis than as a symptom of much importance: yet it is just one of those things which may sometimes be available when the detection of the disease depends, as it often must do, more upon the multiplication of suspicious signs than upon the existence of any which are either very obvious or unequivocal.

CHAPTER III.

THE DIFFERENT FORMS OF CONSUMPTION.—ACUTE PHTHISIS. CHRONIC PHTHISIS: FLORID AND LANGUID. LARYNGEAL PHTHISIS.

THE Protean character of phthisis has gained for it a number of different appellations, which might fairly be supposed to represent a real difference in its nature; but whatever variety the disease may assume, it is essentially the same, having the like regular succession of stages, and presenting, although under modified conditions, the same characteristic symptoms. For practical purposes, however, it is divisible into the *acute* and *chronic* forms; the first of which is of pretty uniform character, but the second presents certain differences which admit of a subdivision into two varieties,—viz., the *florid* and the *languid*.

Acute phthisis is happily a rare disease. We often hear of what is termed "rapid", or "galloping" consumption, but these cases hardly come under the true meaning of the term *acute*, most of them being the sudden and unexpected termination of a disease which may have existed for months or even

years;—chronic phthisis not unfrequently going on, even to the last stage, unsuspected or unheeded, and ultimately terminating with such suddenness as to give the disease every appearance of an acute attack.

The really acute form of phthisis commences suddenly and proceeds rapidly, and assumes every other character of an acute disease. Shivering, succeeded by intense fever, quickness of pulse, anxiety of countenance, severe thoracic pains, dyspnœa, and cough, are its earliest symptoms. These rapidly increase, and are soon followed by those of depression, with hectic fever, profuse perspiration, or diarrhœa, under which the patient rapidly sinks from exhaustion.

It would be useless to attempt a detailed account of the onset and progress of this formidable variety of consumption, since it presents so many differences both in severity and duration, that perhaps scarcely two cases could be found strictly alike. The diagnosis is often very difficult; sometimes the disease resembles, and may be easily mistaken for, very acute and rapid pneumonia or bronchitis; at others, it is scarcely if at all distinguishable from typhus fever with severe pulmonary complication. In the majority of cases,—probably in nearly all, it proves fatal. In one which fell under my own observation, it did so in less than five weeks from its commencement; and in another case, in about six weeks; but M. Louis relates instances of a still more rapid progress, viz., within thirty days.

In seeking for the cause of this remarkable and fatal disease, we find the whole subject involved in obscurity. It is impossible to explain why phthisis should in one case take a rapid, and in another a chronic course. A highly developed strumous diathesis is probably essential to its production, but is not alone sufficient to give rise to it, since many persons affected with hereditary scrofula to a marked degree suffer from consumption in its most chronic form. The few cases I have witnessed presented no visible peculiarity which would lead to the anticipation of so sudden an issue; they were all young persons, of either sex, and differed from each other in what is ordinarily understood by the word *temperament;* but, in every instance, there was a strong hereditary predisposition to the disease, and other members of the family were unmistakeably scrofulous.

The pathology of acute phthisis is probably not always alike. In some cases, it would seem that an extensive tuberculous secretion, or perhaps *infiltration*, is the first thing to occur, producing fever of a low typhoid character, together with severe secondary bronchitis or pneumonia; in other cases these circumstances are, more probably, reversed,—an attack of pulmonary or bronchial inflammation happening in a person of scrofulous predisposition, and taking the form already spoken of as the scrofulous variety of these diseases, causing the almost immediate formation of very lowly organized tu-

bercle, in which the softening process rapidly advances. The formation of tubercular matter to an unusual extent, and its almost simultaneous degeneration, seem to constitute the peculiar features of acute consumption.

Chronic phthisis, although, in every instance, essentially the same malady, has an evident tendency to assume, in different cases, both at its onset and throughout its career, certain peculiarities which may be conveniently explained by subdividing the disease into two varieties; viz., the *florid*, and the *languid*.

There are many persons to whose physical state, whether in health or disease, the term *florid* might be applied. They may be recognized by having, to a greater or less degree, some of the following characteristics:—sharp features, lively expression of countenance, vivacity of manner, acuteness of intellect, considerable nervous susceptibility, slimness of form, and a tendency to active diseases. There are other persons to whose physical condition we may equally apply the term *languid*. These are known by having rounded features, sedateness of manner, moderate intellectual endowment, a tendency to corpulence, and liability to anæmic, dyspeptic, and other chronic diseases. It must, however, be borne in mind, that there is no line of demarcation between these types of physical character; and that the two may even, in some particulars, be blended in the same individual. But,

with such a general view before us, the course of phthisis becomes more explicable; for, just in proportion to the predominance of one or other of these characters in consumptive patients, shall we find the disease assuming the *florid* or the *languid* form.

Florid phthisis comes on more briskly than the other; the preliminary stage, although shorter, is more likely to be observed; the pulse is quicker and sharper; the features assume, if I may use the expression, a bright languor, which is very characteristic; the perspirations are earlier and more severe; the cough begins sooner and is more spasmodic; hæmoptysis is more likely to be copious; and the mind is more active and hopeful. Hectic fever is very likely to supervene even before tubercular softening begins; and, at length, either diarrhœa or profuse perspirations bring the patient, often very unexpectedly, to the close of his career. To this variety it is impossible to fix a correct average duration; it may run its course within three or four months, but from six to nine months is probably its more usual period. The difficulty—I might say impossibility—of determining exactly the beginning of the malady, makes any statistical record upon this point of little value; I am convinced, however, that it is more frequent, and of shorter duration, in the male than in the female sex, and is mostly seen at the period of life between youth and manhood.

Languid phthisis presents many points in direct

opposition to the preceding. The preliminary stage is longer, and being less clearly marked, is more likely to be overlooked; the pulse is always slower and not so apt to become excited; the perspirations occur less early, and are less severe; the cough is later in appearing; hæmoptysis is less frequent and not so abundant; and the mind is liable to occasional despondency. Dyspeptic symptoms, and passive diarrhœa are especially troublesome; but hectic fever seldom begins before the last stage, and may even be delayed until shortly before death. It is equally difficult to ascertain the average duration of this variety, on account of its almost unlimited range; it may terminate almost as quickly as the florid kind, but more usually it lasts a much longer time. From a few cases in which its beginning was distinctly ascertained—too few, however, to give the statement much weight—I found its average duration to be from twelve to eighteen months. The relative frequency of the florid and the languid forms is very difficult to determine; but I should place it somewhere in the proportion of two to five. The languid variety may be said to be much the least distressing to the sufferer, and by far the most amenable to treatment.

It would be easy to multiply distinctions between florid and languid phthisis, and to extend this subject to a much greater length; but enough, perhaps, has been said for every practical purpose. It must not be expected that the distinctive characters

of either will be always very clearly marked, or that cases will not present themselves in which neither the one nor the other variety can be said to predominate. The division, however, is a useful one, serving, in many instances, as a means of forming a sounder opinion both as to the course and issue of the disease.

The phthisis of children presents some few differences from that of adults, although its main characters are essentially the same. The tubercular matter in early life being chiefly seated in the bronchial glands, not only is there, as already stated, a less probability of its softening, but even when this process really occurs, the danger is often considerably diminished in consequence of the readiness with which the morbid substance may afterwards escape through one of the bronchial tubes to which the diseased glands so frequently become attached. Owing to these circumstances, as well as to the remarkable reparative powers of the system during childhood, many cases of infantile phthisis are less severe and more disposed to a favourable termination than if the same amount of disease had occurred in an adult. In consequence, also, of the frequency with which the manifestation of some other form of scrofula serves to keep in check the consumptive symptoms, the course of the disease is usually more chronic than at a later period of life. There are, indeed, but few cases of phthisis in infancy and childhood, where there does

not occur, at the same time, other evidence of the tuberculous diathesis, such as scrofula externally, or as tabes mesenterica, or hydrocephalus internally; and it is often impossible to predict with any degree of certainty, whether consumption or one of these kindred affections will ultimately gain the ascendancy.

In spite, however, of these, to some extent favourable, conditions, infantile phthisis is often severe and rapidly fatal, assuming in some cases a near approach to the acute form; this is particularly common where there is a strong hereditary predisposition to scrofula, and some of the most intractable cases I have ever witnessed have occurred in infants born at a time when the mother was herself consumptive.

In a few, and happily, rare cases, the very position of the tubercle, sometimes so favourable, tends only to aggravate the disease. The proximity of the bronchial glands to the trachea and œsophagus causes their compression, and produces dyspnœa, suffocation, or inability to swallow; whilst the vicinity of some of the large vessels may be destructive to life, one case being on record in which the pulmonary artery was ruptured by the bursting of a tuberculous bronchial gland.*

Laryngeal phthisis, although often looked upon as a distinct form of consumption, differs in nothing

* Traité Pratique des Maladies des Enfans, par M. Berton.

from ordinary and chronic phthisis, except that the larynx, and sometimes also the trachea, being implicated in the disease, the whole symptoms become aggravated, and the general aspect of the case is rendered less promising, in consequence of the suffering and distress which are thus superadded.

The origin of this complication is not always the same: sometimes it is due to the extension of what I have already spoken of as tubercular pharyngitis; in which case, there may or may not be a subsequent deposit of tubercle; but, much more frequently it is the direct consequence of tuberculous matter forming in the larynx. Perhaps, in every case of its occurrence, the lungs are found to be likewise tubercular, and this has led to a belief that the tracheal or laryngeal inflammation is owing to the contact of the tuberculous expectoration which has escaped from the lungs: but, were this really the case, *laryngeal* phthisis would be far more frequent than it is; and we should scarcely see it commence, as it often does, when the pulmonary symptoms are but very slightly developed. There cannot be a doubt that the morbid secretion of tuberculous lungs must greatly irritate any inflamed surface over which it passes; and that, to this very circumstance, much of the difficulty in treating many cases of phthisical laryngitis may be due; but we have no proof of its being able, in itself, to originate inflammatory action upon a healthy mucous membrane.

M. Louis, never having met with tubercle within either the larynx or trachea, regards the lesions which they present in connexion with phthisis as invariably the result of ordinary inflammation; but having myself seen it, I cannot concur in this opinion. Tubercular matter would probably remain but a short time upon such a structure as the larynx, which may account for its having escaped the notice of so accurate an observer as M. Louis.

The laryngeal symptoms begin at an uncertain period of the pulmonary disease,—sometimes during its first stage, but quite as often later,—and consist merely of a tickling cough, hoarseness, tenderness or pain about the larynx, and occasional uneasiness in swallowing; but, from this time, the local disease is subject to every possible variety; it may go on for weeks or months with scarcely any alteration, or it may increase in all its symptoms, and add so much to the patient's distress, as to end fatally within a very limited period. When the laryngeal affection advances rapidly, the lungs, in many cases, enjoy a respite, the morbid action appearing to be transferred from one part to the other; but very often it is otherwise, additional tubercle with destruction of tissue going on simultaneously in both organs.

Laryngitis is certainly one of the most formidable complications of phthisis; it generally baffles every effort to remove it, and, when arrived at an advanced stage, may be productive of sufferings which

admit of but slight relief. Nothing can be greater than the distress which it sometimes occasions; the voice is often lost, and the act of swallowing rendered so painful that death ensues from actual starvation. It is infrequent during very early and very advanced life; the age of from twenty to thirty being the common period of its occurrence. It is also much oftener seen in the male than in the female sex.

The pathological changes in the diseased structures determine, in a great measure, the amount of distress experienced by the sufferer. The mucous membrane may be thickened, softened, or ulcerated; but it is impossible to tell its precise condition during the patient's lifetime. Ulceration exists in almost every case where the symptoms have been severe and long-continued; and it may involve not only the mucous membrane, but extend also to the cartilages of the larynx or trachea.

Chronic laryngitis, arising from other causes than phthisis, is comparatively rare. Simple inflammation of a subacute or chronic form, ending in loss of voice, irritable cough, and uneasiness about the throat, now and then follows exposure to cold, and is also met with in persons who habituate themselves to an undue exercise of the voice. Malignant disease sometimes appears in the upper part of the respiratory passages; and syphilis is well known to be productive of structural changes in the same region. It is, however, generally easy to

distinguish these diseases from *laryngeal phthisis*, not only on account of the very different aspect which their history and symptoms present, but also from the circumstance that the tubercular affection is invariably accompanied by a similar condition of the pulmonary organs. Owing, however, to the greater prominence of the laryngeal symptoms, the pulmonary affection is oftentimes liable to be overlooked; but I have never met with a case where, upon careful examination, more or less thoracic tuberculosis was not discoverable.

CHAPTER IV.

PHYSICAL SIGNS.

The general symptoms of early phthisis are usually of themselves insufficient to declare, at least with any certainty, the nature of the disease; and even at a later period, however unequivocal they may be, they are incapable of accurately pointing out the precise stage at which the disease has arrived. Under no circumstances, therefore, can a physical examination of the chest be deemed unnecessary; and a diagnosis should never be attempted without its assistance.

First Stage.—A small amount of tubercle may exist in the lung, without immediately effecting any sensible alteration, either in the symmetry or respiratory movement of the thoracic walls. After a time, however,—which is determined by the increase or otherwise of the tubercular deposit, and its effect upon the neighbouring pulmonary tissue,—the form of the chest becomes changed, and its action impaired. There is sometimes, at first, a slight bulging of the infra-clavicular region of the affected side, in consequence of the tubercle either

being sufficient in quantity to distend the pulmonary cells, or of its having become surrounded by a temporary hypertrophy or emphysema of a portion of the lung. This, however, even when it occurs, is only temporary, the thoracic parietes over the morbid deposit invariably falling more or less inwards as the disease advances, owing either to atrophy of the air-cells, or to contraction of the pulmonary tissue from secondary inflammation.

But the regions about the clavicles are not the only parts to exhibit the effect of pulmonary tuberculosis. The whole contour of the chest soon becomes altered; the shoulders are gradually drawn forward, and the back is rounded, causing the patient to lose slightly, but permanently in height.

The change of respiratory movement bears a direct proportion to that of the thoracic walls, and commences simultaneously with it. Until there is some slight depression, however, the alteration is so small, and, as it appears to me, so irregular and uncertain, as scarcely to claim any great attention. But no sooner have the parietes of the chest over the diseased parts fallen the least degree inwards, than the action of the thoracic walls is sensibly altered: there is less expansion of one side than of the other, especially during forced breathing, the *swelling* movement so characteristic of health being no longer observed. This becomes more and more marked as the case advances, until at length the antero-posterior diameter of the upper part of

the chest is almost incapable of enlargement, and every effort at deep inspiration is attended with a peculiar forced elevation of the shoulders at once indicative of the pulmonary obstruction.

For a very accurate estimation of these changes in the respiratory movement, the chest-measurer is a useful instrument; but I cannot help thinking that the practised eye and the properly applied hand are capable of affording every information worthy of influencing the diagnosis.

There is usually, at the same time, more or less deviation from the healthy sonorousness of the chest, accompanied by a feeling of resistance to the percussion stroke very different to the natural elasticity of the healthy thorax. This however varies very much in different cases. I am satisfied, moreover, not only that a small amount of tubercle sometimes exists in the lung without producing any sensible change in the percussion note, but that the tubercular deposit may be present, even in considerable quantity, provided it be rather widely scattered, without at first effecting any appreciable deviation from the natural sound of the chest. Such a condition, however, is exceptional, and only transitory; probably depending upon a temporary hypertrophy of some of the surrounding air cells. No importance should be attached to *slight* differences of sound, unless corroborated by other signs, since they are not only met with in other diseases, but also occur now and then in healthy persons.

The respiration is, at the same time, morbidly affected; and in many cases this is evident, even before there is any manifest alteration in the form or movement of the thoracic parietes. Either it is louder than natural, or it is weak, harsh, jerking, or even bronchial; or, there is a change in the relative duration of the two respiratory murmurs.

An increased loudness is occasionally met with; but it is only temporary, disappearing as the tubercle becomes more abundant, or the lung begins to contract. Weakness of respiration is a more common and more lasting condition; and the same may be said of harshness, both of which are often combined. Jerking breathing is limited to the inspiration, and is a very frequent attendant upon the first stage, especially at its commencement. Prolongation of the expiratory murmur is, perhaps, one of the earliest and most common alterations, and very easy of recognition. Bronchial respiration, on the other hand, is scarcely ever the first deviation from health, but is a sequel to one of the preceding, and indicative of a somewhat advanced period of tubercular formation.

None of these changes from healthy breathing are, however, of themselves evidence of phthisis, as they prove nothing more than functional derangement of the lung, which, it is obvious, may depend upon a great variety of causes; it is only when they are strictly limited to the upper part of the chest, especially on one side, and are confirmed by

other symptoms, that they can be looked upon as indications of the lungs being tubercular.

After the first stage has existed some little time, a few minute, sharp sounds, or dry crackling rhonchi, as they are termed, may be heard with the inspiration; and, as they never happen from any other cause than tubercle, are at once characteristic of consumption. These rhonchi are, fortunately, so peculiar, that they require to be heard but once, to be ever afterwards remembered.

At this period bronchophony, as well as vocal fremitus, may be discovered upon the diseased side; but as both of these are likewise present, to a greater or less degree, in nearly every healthy chest, they are less important than many other signs. If they be equally strong beneath both clavicles, the left lung is *probably* diseased; if in excess on the left side, it is *certainly* so; but a greater amount of either upon the right side may be a natural condition.

The sounds of the heart, also, may be of some use in diagnosis, as they cannot be heard upon the right side unless there is either some pulmonary consolidation, or the organ itself is under functional or organic derangement; but it is obvious that this is a sign which is scarcely available, except in examining the *right* side of the chest.

A murmur in the subclavian artery is an occasional attendant upon the early stages of pulmonary tuberculosis; but as it also arises from other causes,

it needs the confirmation of additional evidence. In a few cases, where the apex of the left lung is diseased, a murmur is audible in the pulmonary artery; but here again, other signs must be looked for, since the same thing may happen under very different pathological conditions.

With the exception, indeed, of the *dry crackling rhonchus*, there is nothing in any of the preceding signs which may not be met with in other diseases; no dependence, therefore, should be placed upon them singly; but one should be used to confirm or confute the other, and the whole should be weighed with the general symptoms.

A sound is occasionally heard at this stage, which some persons may be disposed to term a stethoscopic refinement. I allude to the *pulmonary crumpling*, first described by M. Fournet, who compared it to the folding up of tissue paper. Its existence has been doubted by many auscultators, but I have several times heard it at the apices of tuberculous lungs, and have found it, in conjunction with other phthisical indications, a useful aid to diagnosis.

The second stage is at once announced by the conversion of the *dry* into the *humid crackling*,—a rhonchus so peculiar as to declare, without the slightest chance of error, the condition of the lungs.

Every other physical sign, however, of this stage, consists of nothing more than a greater developement of those which have been already described as existing in the preceding one. But even here,

there is so much variation in different cases, that they are not to be depended upon; nothing, in fact, but the *humid crackling* rhonchus or *click* can be regarded as conclusive evidence that softening has commenced.

The percussion sound often assumes, about this time, the hard, dull, and resisting character so well termed *wooden*. This quality, however, is not indicative of any particular stage, sometimes occurring at an earlier, sometimes at a later period. But depending as it does upon the thickening and contraction of secondary pleuritic deposit, it belongs rather to the middle and latter, than to the earlier stage of the tubercular affection.

The third stage. With the advance of the pulmonary disease, both the form and movement of the thoracic wall over the tubercular deposit undergo certain and peculiar changes. In many cases, the depression beneath the clavicle gradually increases; in others it remains stationary; whilst, in a few instances, it becomes less evident. Very generally the thoracic movement is still more diminished; but in some few cases the expansive power of the lung is greater than during the earlier stages, and actually increases as the vomicæ become larger. This remarkable circumstance is obviously owing to the destructive process having freed the lung from some of its contractions and costal adhesions, and thus increased the space for the admission of air.

When the cavities are small, the percussion sound is dull; but as they increase, it becomes variously altered, according to the size of the vomicæ, their proximity to the walls of the chest, and the condensation, or otherwise, of the surrounding portion of lung. Sometimes the sound will continue dull and *wooden*, although the cavities may be considerable; at others, it becomes, beyond a certain point, much less so, and ultimately morbidly resonant, until its amphoric character, or the *bruit de pot fêlé*, announces a large and superficial vomica.

The sound of the respiration, also, has varieties dependent upon the size of the cavities. When these are small, the respiratory sound is bronchial, or very slightly cavernous; but when the vomicæ are of some size, the breathing, if heard at all, is hollow or *cavernous;* and, when they are very large, it is often *amphoric.*

Precisely the same gradations are perceptible in ausculting the voice. As cavities are forming, the *bronchophony* of the solid lung of the earlier stages, passes imperceptibly into *pectoriloquy;* and this again into the *amphoric voice*, as the vomicæ become very large. The sound of the cough is similarly modified; if the vomicæ be small, it may be only *bronchial;* if they are of moderate size, it is *cavernous;* and when they are of great extent, it is *amphoric.*

The rhonchus of cavities differs also with their size, and may be either *cavernulous* or *cavernous.*

The former of these is only an exaggeration of the humid click, and is liquid, bubbling, and *metallic*. The cavernous rhonchus has many varieties, depending upon the amount and consistence of the secretion, and its intermixture with air: sometimes it is plashing, and seems as if the contents of the vomica were in a state of ebullition; sometimes it is metallic and *clicking;* sometimes it is like the agitation of a thick viscid substance; but however variable it may be, it is easily recognized by its *liquid* and *metallic* character.

The physical signs of a cavity always depend upon its contents; when there is but little secretion, cavernous respiration may alone be heard; when there is more, cavernous rhonchi may be associated with it; and when the mucous or purulent fluid is very abundant, nothing but the rhonchi may be distinguishable.

Cavities, even of considerable size, occasionally escape detection; or they require repeated examination in order to be diagnosed with certainty. This is owing sometimes to their contents preventing the free admission of air; sometimes to the presence of the sibilant and sonorous rhonchi of an associated bronchitis masking all other signs; and sometimes, in old persons especially, to the complication of emphysema.

In addition to the more *immediate* signs of tubercular disease of the lungs, we have others scarcely less valuable, arising out of the inflammatory pro-

cess which is apt to supervene. Thus, a pleural friction murmur, or fine crepitation at the apex of either lung, shows the existence of local pleurisy or pneumonia, which, in all probability, depends upon the irritation of tubercle. Subcrepitant rhonchus, also, when limited to the ordinary seat of tubercular matter, being indicative of a local capillary bronchitis, is equally and frequently a phthisical sign, and one which is very seldom deceptive. It is obvious, however, that all of these require corroborative evidence.

From the very beginning of tuberculosis of the lungs, there is no distinct line of separation between any of its physical signs; one passes insensibly into another; and although we are in the habit of speaking of different *stages*, these must not be regarded as *steps* in the disease, but merely as divisions for conveniently expressing its regular progression.

It is unnecessary that I should enter upon the physical signs of certain complications of phthisis, since they differ in no essential respect from those attending the same diseases when idiopathic. We may expect to find frequently associated with the tubercular affection, more or less indication of general secondary bronchitis, and sometimes of pleurisy, or pneumonia; and these, especially the first of them, will occasionally so mask the original disease as to render it difficult to determine,—until their urgent symptoms have considerably abated,—whether or not the lungs are really tubercular.

Pneumothorax. The physical evidences of this condition, as a general rule, are sufficiently well marked. Bulging of the intercostal spaces; tympanitic resonance on percussion; and, either weakness or deficiency of respiratory sound, or else amphoric breathing, are more or less observed; *metallic tinkling* may also exist, but it is very uncertain, and when it does, it is seldom quite at the commencement. The amphoric character of the breathing may be noticed from the very first, or it may become gradually developed; but in some cases it never exists, the respiratory murmur being, throughout, simply weak, or sometimes even absent,—differences depending upon the kind of opening formed into the pleural cavity.

In some instances, however, owing to the escape of air being limited by pleural adhesions, the signs of pneumothorax are but imperfectly developed. I have seen more than one case, indeed, where both the physical signs and the general symptoms were so little marked, that until the *post-mortem* examination, the pathological condition was anything but certain.

Hydro-pneumothorax may be recognized by dulness of sound at the base of the chest, and morbid resonance above; the line of union of the two changing with the posture of the patient. Where the dulness exists, the respiratory murmurs are absent; but above this point the breathing is of the same character as in simple pneumothorax.

Metallic tinkling is often, but not invariably, heard; and the plashing of the fluid is sometimes distinctly audible, both to the patient and the auscultator, by gently agitating the thorax.

It remains only that I should say a few words upon the physical signs of *laryngeal* phthisis.

When the larynx or the trachea is inflamed, the sound produced by air passing through it is modified according to the deficiency or increase of the local secretion; either it is harsh, dry, and whistling, or it is accompanied by mucous rhonchi. Except in determining these points, the stethoscope, I believe, affords no information, and fails to indicate, with any degree of certainty, the pathological condition of the part. But we have the less reason to regret this imperfection in the physical signs of this form of the disease, since its general symptoms are always very clearly marked.

The state of the larynx is sometimes an impediment to a proper examination of the thorax, either by obstructing the entrance of air into the chest, or by causing so harsh and loud a sound in its passage, that the more feeble respiratory murmur lower down becomes inaudible; but under such circumstances, it usually happens that the general symptoms either of the pulmonary or the laryngeal disease, are sufficiently evident to render a minute physical examination of the chest the less necessary.

PART III.

THE TREATMENT OF CONSUMPTION.

CHAPTER I.

PREVENTIVE TREATMENT.

Having, in the preceding parts, endeavoured to show the many circumstances calculated to give rise to phthisis, as well as the different aspects which the disease assumes, it now remains that I should give them their practical application.

The well-known adage, claiming for *prevention* a higher place than *cure*, is nowhere better illustrated than in consumption, as it is much easier to avoid, or to keep this disease at bay, than to check or cure it in its progress. I propose, therefore, making a few observations upon what may be termed its *preventive* treatment.

The inheritance of health will not ensure its preservation. At no period of life is this more obvious than in infancy, when it often appears to be quite as easy to avoid as to engender the seeds of early

scrofula or future phthisis. It would, however, be foreign to the object of the present work, to enter minutely into the domestic or medical management of infant life; a few remarks touching its importance, rather than detailing its rules, are all that I shall venture to offer.

In every particular should a child be made *one of nature*, not of art; and just in proportion as the latter is approached, is the risk incurred of inducing scrofula. Judicious feeding, especially as regards the adjustment of particular food to the particular age; ample and regular exercise in the open air; and, though last not least, the avoidance of *habitual* dosing with domestic medicines, seem the three main points upon which rest either the future health or disease of numbers of our race. I am sure that I have seen instances of a disregard to these simple conditions originating the scrofulous diathesis in children who, to all appearance, had inherited, and probably might otherwise have enjoyed, the most robust health.

I cannot forbear making one observation upon what is popularly styled the "physicking system". The *habitual* use of medicines, even of the most simple kind, is apt to disorder the stomach and so impair the appetite, that a proper kind of food is disrelished, whilst the pampering, which too often results, only aggravates the evil. It is owing to this circumstance that *homœopathy*—one of the worst species of deceit ever practised upon those

who lack the discernment to detect it—has gained the hearts of so many English mothers. One is tempted in such cases rather to smile at, than to condemn the imposture, on account of the benefit it so innocently affords, in allowing nature to bring up many healthy children in her own way, by limiting the effect of the dosing system to the *parental imagination.*

As childhood passes onwards, every possible means should be employed to promote the healthy developement of the body. Parents are too apt to allow mental cultivation to interfere with bodily strength; and, in the fleeting attractions of the one, to neglect the more permanent advantages of the other. To this source, I am convinced, may be attributed numerous cases of tuberculous disease. The first few years of childhood should be principally devoted to the establishment of the health; for, however pleasing mental precocity may be, it too generally leads only to disappointment and disease.

With increase of years, comes increased necessity for watchfulness. The irregularities of life, together with the many temptations of youth, are ever ready to impair and exhaust the physical powers, and to pave the way to scrofulous disease. Into these subjects, however, I need not enter: I would merely point them out as possible causes of consumption, even in the most healthy individuals. The physician sees too often how easily the follies

of youth may undo that which it has taken years to perfect; and it is not too much to say that consumption, in many cases, may be invited or avoided, according as the evil habits incident to youth are either practised or shunned.

Everyone in more mature life has it also greatly within his own control, whether he will himself enjoy and bequeath to his descendants a freedom from tuberculous diseases; or, whether he will yield himself a sacrifice to a careless or more culpable disregard of causes which, he might have known, were at least likely to be their forerunners. He who is thrown by his own choice, or by the caprice of fortune, amongst a multitude of circumstances fruitful in phthisis, may nevertheless do very much towards diminishing his liability to its attack. The artizan, for example, may daily seek a temporary respite for body and mind, and employ it to their renovation: and everyone whose lot is cast in populous and unhealthy districts, and who is constrained to pass his hours in places where every sanitary law is disregarded, may yet successfully counteract such baneful influences, by a steady perseverance in habits of cleanliness, temperance, and morality, and by never allowing dissipation to become the temporary but deceptive antidote to care. There is, in fact, no position in life, whether rich or poor, which might not be deprived of one half its productiveness of disease, by a proper respect to sanitary and moral laws.

I have ventured upon the preceding remarks merely with a view of expressing my conviction that whilst no one, whatever be his age or condition of life, can be declared secure against the possible inroad of consumption; so, there is no one who has it not greatly within his own control, materially to lessen the chances of its invasion.

It happens, however, in far too many cases that the *preventive* treatment of phthisis is not so simple a thing; either an early acquired delicacy of constitution, or an inherited predisposition to the disease, rendering its application far more complicated and uncertain. I shall therefore, as briefly as possible, consider the subject in this view.

Infants born of scrofulous or otherwise unhealthy parents, as well as those who from some cause—not hereditary—possess a feeble constitution, are always liable to the early appearance of some form of tubercular disease; and, although they may seem to be gradually outgrowing such a tendency, the chance of future phthisis should never be lost sight of in the rules for rearing them. The point first in importance relates to the nursing. Whenever the mother is unable to accomplish this, a substitute should at once be provided; and even when the parent, although competent to the office, is yet of delicate health, or possessed of a marked hereditary predisposition to phthisis, it is better for her offspring, as well as herself, that her duties should be transferred to another.

Delicate infants, indeed, should never be reared upon artificial food; for, even if its ill-effects are not immediately apparent, they are always liable to a subsequent appearance, and, I am convinced, they not unfrequently exhibit themselves, in later life, in the form of consumption. Judicious exposure to fresh air is, at the same time, most essential, and by far the best tonic the infant can have; greater harm is likely to arise in delicate children from long in-door confinement, than from habituating them, at an early age, to moderate atmospheric changes. It is not necessary that I should say more upon this subject, or that I should enter upon other points naturally connected with it. The general management of every case must be regulated by its own peculiar circumstances; I am only anxious to express my belief that, by the exercise of proper care, especially in the two particulars I have mentioned, numerous infants, apparently doomed to become the victims of tuberculous diseases, may receive the foundation of excellent health.

In childhood and early youth, the same care is necessary. The diet should be *moderate*, simple, and nutritious, and consist of *a full amount of animal food.* Regular exercise should be made imperative; and, where it is possible, the residence should be fixed in some healthy district, far removed from the depressing influences of a town; whilst the cultivation of the mind should neither be com-

menced too early, nor be pursued too rigorously. The consequence of a disregard to these matters is often painfully exhibited in weakly children, who have been injudiciously sent to the schools of our metropolis.

The proper protection of the body from the influence of cold is never more essential than at this time, although, like other precautional measures, it is very apt to be overdone; a multitude of coverings, such as hare-skins, leathers, etc., being not only unnecessary, but positively hurtful, by keeping the surface of the chest constantly moist with condensed perspiration. Flannel, which may be thinner in summer than in winter, habitually worn next the skin, will answer every purpose, and form the best "chest protector" that can be employed. The daily practice of sponging the body, or even the chest only, with cold water, is a very good one, and tends to diminish susceptibility to bronchial inflammation; but, in many cases, it cannot be borne, the vigour of the system being insufficient to bring about that healthy reaction which is essential to its efficacy and sometimes even to its harmlessness.

At this, as well as at a more advanced age, it is well to avoid the frequent use of medicines, and to depend, as much as possible, upon general measures. But when, in spite of these, the system continues feeble and relaxed, much good may be effected by medical treatment. Steel, either alone, or in con-

junction with some vegetable bitter, is frequently efficacious; the old vinum ferri, the ammonio-citrate of iron, and the citrate of quinine and iron, are excellent remedies; but the syrupus ferri iodidi, or, indeed, any other form of steel, may be given with advantage. Cod-liver oil is often eminently successful, either alone or in conjunction with iron or some other tonic, and the more so in proportion to the preponderance of scrofulous indications. Where the oil disagrees with the stomach, glycerine may be substituted, although with a much diminished chance of benefiting the patient. The choice of medicines, however, must be entirely ruled by the circumstances of each individual case.

The age of puberty in those who have been previously delicate, is one both for anxiety and hope; as, by this period, the health is either so far established that the important changes which are beginning tend only to confirm it, or else the new era of life is so ill adapted to the physical condition, that disease, hitherto kept in abeyance, makes its appearance. It will be seen, on referring back to the table upon the influence of age, how greatly the frequency of phthisis increases about this period.

The choice of occupation now becomes a subject of importance; but after what has been already said upon this as a predisposing cause, the general principles which should regulate it must be self-evident. Everything having a tendency to lower

the physical or mental energy should be studiously avoided. Neither a sedentary nor a too active pursuit should be selected; something intermediate, in which, whilst the mind is occupied, the bodily health is cared for, will prove the best preventive to phthisical disease. Perfect idleness, unless, indeed, circumstances should absolutely demand it, will generally rather increase than diminish the danger. Large towns should never be chosen as places of residence; many of the healthy fall beneath their depressing influences, and experience shows but too plainly how fatal they become to numbers who might probably have attained an average age under the happier circumstances of a country life.

In addition to such general principles as are obviously applicable to every age, nothing, in the adult, is more effective in counteracting a tendency to phthisis than occasional change of air and scene; and when worldly position renders this practicable, it should always be enjoined. Travelling on the Continent, where new objects constantly open to the view, and tend to dispel the gloomy thoughts which result from, and aggravate defective health, should be especially recommended. A few weeks' sojourn in any climate where the heat is tempered by sea-breezes,—or a sea voyage to some temperate region, at a season of the year when it can be enjoyed, may be of much service to those with whose tastes it may accord. Others, how-

ever, who are less disposed, or less able to ramble, need not on that account be sufferers, since our own land will afford every advantage that can be gained by change of air.

It would be both tedious and unnecessary to extend this subject. No rules can be laid down as universally applicable, each particular case requiring its own proper treatment. Enough, however, has been adduced to make it evident, that it is oftentimes within our own power to avoid tuberculous diseases; and that even should consumption threaten, very much may be done, not only to ward it off, but even, in many cases, to escape it entirely.

CHAPTER II.

TREATMENT OF PHTHISIS BEFORE TUBERCLE IS DEPOSITED.

It is at this very early period,—the preliminary stage or *dawn*, as it may be termed, of phthisis,—that the success of proper treatment is the most frequent and conspicuous. And although the imperfect manner in which this stage is sometimes exhibited, as well as the shortness of its duration, may often prevent the timely application of remedial measures, there is, nevertheless, in a considerable number of cases, some opportunity of trying their efficacy.

During infancy, nothing is more important than judicious feeding; but since the management of this, as well as of other points, should differ in nothing from that already alluded to in the preceding chapter, it is unnecessary to say more upon this head. Good nursing, change of air, and such attention to the general health as common prudence would suggest, are the chief means of counteracting this very early stage of phthisical disease.

In childhood, much good may be effected by

strict attention to diet, and proper out-door exercise. An abundance of animal food is almost indispensable. Many children of highly scrofulous habit, have seemed to me to derive great advantage from a strict adherence to the following exclusive diet:—bread and new milk morning and evening, and meat with bread and some well-cooked vegetable for the dinner meal. Change of air, particularly to the sea side, is often attended with marked benefit. But nothing is more necessary than to check, in every possible way, that morbidly rapid mental developement, which, in many of these cases, is so conspicuous and so injurious.

Steel and cod-liver oil are at this age especially useful; nothing, I believe, surpasses the union of the vinum ferri with the oil, or the alternation of the one and the other; the iodide of iron, and the citrate of quinine and iron, however, are almost equally serviceable, and the same, perhaps, may be said of nearly every preparation of iron. Wherever the cod-liver oil disagrees, glycerine may be worth a trial; and being a good solvent of the iodide of iron, the two may be administered together. Any tendency to bronchial irritation should be relieved by the application of stimulating liniments to the chest. The bowels should be regulated by mild aperients; anything approaching to active purgatives ought, however, to be carefully avoided, as likely to induce a local irritation, which might lead to scrofulous deposit in the intestines.

The glandular enlargements, more particularly about the neck, which often complicate these cases, should be but little interfered with locally, especially when there are threatenings of tuberculous deposit elsewhere. I have seen the disappearance of strumous cervical glands in children rapidly followed by scrofulous disease in more important organs; and on the other hand, I have known the supervention of some glandular affection at once check the progress of tubercular disease in other parts. In a vast number of cases, enlargement of the absorbent glands is not really scrofulous, but secondary to some irritation of the mucous membrane, arising from defective health. Under such circumstances, the ordinary local treatment with iodine, etc., is very useful; but whenever it is dependent upon a strumous diathesis, general, rather than local measures are, I am convinced, both safer and more salutary.

As the mind reaches maturity, it constitutes a new and most important channel for treatment, and one which will be found oftentimes more effective than any other. I have seen greater advantage derived at this early stage of the disease, from change of thought, occupation, and external circumstances, than from any other measures; and it is owing quite as much to the comparative facility with which this kind of treatment can be pursued by the upper classes, as to differences in their mode of life, that the disease is in general less intractable amongst the rich than amongst the poor.

The temporary suspension, therefore, of the pursuit under which, whether as a consequence or not, the disease originated, should at once be advised, together with complete change of air and mental relaxation. If sailing be an enjoyment, a sea voyage will be beneficial; but equal advantage is offered by a temporary residence upon the coast, it matters not where, so that the situation be not hot and relaxing. When an inland position is more convenient, it may frequently be resorted to with equal prospect of benefit; but, whichever be selected, regular exercise in the open air, together with such occupations as divert the mind, will be found indispensable to its success. When circumstances favour it, nothing is better than travelling upon the continent, or, a short continental residence; but the invalid, under such circumstances, should be led to consider himself not as banished from, or unfit to live in his own country, but only as seeking health by sojourning in another. Wherever such advantages as these are denied by worldly position, the best must be made of the circumstances which present themselves, by periodical relaxation, daily exercise, and regularity of living; and it is astonishing how much may often be effected simply by these means.

However great may be the benefit thus afforded, it is likely to be increased, and rendered more enduring, by direct medical treatment: and much as the physician may have to regret, at a later stage

of the disease, the feebleness of the agents given for his use, he has now the privilege of frequently seeing their employment followed by the happiest results. The tonics and mineral acids, especially quinine, cinchona, calumba, iron, iodine, and the nitro-hydrochloric acid, judiciously combined, are often of signal benefit. Cod-liver oil, also, alone, or in conjunction with any of the preceding, deserves a high position in the list of remedies. Where there is marked debility, steel and quinine have seemed to me to be of most use; but where emaciation is the more prominent symptom, the oil has appeared most effective; their union, however, is always worth a trial. The iodide of iron, either in the simple form of the syrupus ferri iodidi, or dissolved in glycerine, is also an excellent medicine.

The diet should be plain and nutritious, and consist, in a great measure, of animal food. Wine or beer, in moderate quantity, should be included in the diet list; and I have seen conscientious scruples upon this matter overcome, on many occasions, with marked advantage.

The *preliminary stage* of phthisis, thus treated, will, in not a few cases, entirely disappear. Some persons may be disposed to consider such an event as presumptive evidence of the malady never having been of a tuberculous nature; but I have so frequently watched a number of patients, having symptoms of a similar character—some into perfect

health, and others into confirmed pulmonary tuberculosis,—that I am quite as satisfied of the curability of this stage of the disease, as of the facility with which it may oftentimes be detected.

CHAPTER III.

TREATMENT OF PHTHISIS AFTER TUBERCLE HAS BEEN DEPOSITED.

The First Stage.—Although it is during the *preliminary* stage that general and medical treatment are of most avail, yet even when this has passed by, and the lungs are decidedly implicated, all hope need not vanish. It has already been stated that the tubercular deposit may, in some cases, be entirely absorbed; that, in others, it may become "cornified" and harmless; whilst in some, it may so long remain quiescent, that but for a knowledge of the lungs still remaining tubercular, and of care being still necessary, the disease might fairly be considered as cured. In numerous instances also, where the result, unhappily, is not so favourable, material relief may nevertheless be afforded, and the fatal termination of the disease postponed. It must, however, be acknowledged, that the chances of recovery are, at this period, considerably lessened; and that by far too many cases rapidly advance, in spite of the best-directed measures.

The general principles of treatment to be pur-

sued in infancy, and during the early years of life, differ in no respect from those which have been already noticed as applicable to the *preliminary* stage;—and whatever else may be necessary, in consideration of the more advanced state of the disease, being the same at the earlier as at the later periods of life (allowance being made for difference in age and physical ability), the treatment of this stage of phthisis in the adult may at once be proceeded with.

One of the first and most important objects, is to remove the patient from such scenes and associations as may have contributed to his disease: change of air and mental recreation, therefore, should be immediately advised, and under their influence, the effect of other measures will be surprisingly enhanced. But it now becomes more necessary than before, that these should be regulated by the season of the year, and the state of the invalid. When the patient's strength and inclination admit of travelling, either in England or on the Continent, this may still be had recourse to. To those who delight in the sea, nothing is better during the hot summer months than a sea voyage; but this should never be sanctioned when there is reason to fear that every pleasure may be marred by that most distressing of all troubles—sea-sickness, which, contrary to popular opinion, *has no specific action* upon the disease, and only tends to produce debility. More generally,

however, at this stage of the malady, both the disposition and ability of the patient are better suited for a merely temporary change of residence. During the summer, and when the physical strength is yet tolerably good, and the cough but trifling, Ramsgate or Margate, or some of those places on the eastern coast which are cooled by the refreshing breezes from the North Sea, are desirable places of resort; the southern or south-western shore being too relaxing. But when the patient is unable to breathe a moderately bracing air without fatigue or increase of cough, the latter are preferable; and Folkstone, Dovor, St. Leonard's, Weymouth, etc., or the north coast of the Isle of Wight, may be selected. A bracing but not bleak air is, however, at this time, by far the best whenever it can be borne. I have seldom found Brighton suited to phthisical cases, at this or any stage of the local disease; being, according to the particular season of the year, either too relaxing or too bleak.

In the colder months, the choice of residence is more limited: some moderately sheltered place upon the southern coast, or in some inland district, is now preferable; but when the strength is yet tolerably good, and the cough not very troublesome, the usual resorts of consumptive invalids, such as Hastings, Ventnor, and Torquay, should be avoided; for, besides the too great mildness of such places for those who may still be able to bear a more bracing locality, the daily sight of others

more advanced in the same disease, very often tells sadly upon the spirits.

Although thus recommending the sea-coast, there are, I am convinced, so many inland parts of England quite as salutary, that the choice between the one and the other may be left entirely to the patient. There are some persons to whom the coast soon becomes wearisome, whilst there are others to whom it affords a never ending source of healthful amusement; and it is upon considerations of this kind that the selection should rest. The sea air has been thought to possess a specific action upon tubercular diseases; but of this I think there is no evidence, whilst there are circumstances which seem to render it doubtful. Many patients, for example, in the first stage of phthisis, benefit far more by some active and rustic pursuit in the open country, than by the best selected sea-side residence. The great advantage attached to the sea-air, appears to me to consist in the bracing climate, and the thorough and salutary change of every condition of life which generally accompany it.

The question of seeking a foreign *residence* now becomes a grave one, since, if entertained at all, it should be during this stage; for when the disease is more advanced, it will generally be found not only unavailing, but positively injurious. I am, however, firmly impressed with the belief that, even at this period, no advantage is to be obtained from the much-vaunted foreign climates, which

cannot equally be found in our own native land. This subject, however, is of so much importance, and involves so many points the discussion of which would here be irrelevant, that I shall reserve it for special consideration.

I have spoken thus early of change of air and scene, believing that it is amongst the most useful remedial agents at this and every other stage of phthisis, and, whenever attainable, should be the one first adopted. In too many instances, it is, unhappily, beyond the reach of the consumptive patient. But even when it is so, much good may still be effected by judicious regulations with respect to residence and occupation:—the close and unhealthy home may be exchanged or improved;—the employment which has been hitherto so baneful, may be made less so by attention to sanitary laws;—and there is no one, however poor, who may not be benefited, to a greater or less degree, by attention to the same principles, which would be pursued, only to a fuller extent, by his more wealthy fellow-sufferer.

Fresh air and exercise form equally important parts of treatment. It was formerly the custom when persons had a cough, and were considered phthisical, to confine them to the house, or even to one room, and, by carefully closed windows and sundry other arrangements, to avoid the slightest change of temperature; but this pernicious practice has happily been rendered obsolete by the advance

of improved therapeutics. Whenever the strength will permit, daily out-door exercise should be strictly enjoined. Should walking be too fatiguing, driving in a close or open carriage, according to the season of the year, may be substituted; but proper days and occasions must be selected, and nothing should be done which would induce exhaustion, or occasion cough. If the temperature be low, or if the change of atmosphere should excite coughing, a respirator may be worn; but it is well not to have recourse to this, unless exercise in the open air is otherwise impracticable. I cannot but think that the *constant* habit of using respirators of any kind is quite as injurious, by making patients the more susceptible to atmospheric changes which they cannot always avoid, as their employment is frequently serviceable during the colder seasons of the year, and upon occasions of unusual exposure. Every case, however, must be ruled by its own particular circumstances: I am far from advocating the indiscriminate use of out-door exercise, and am anxious only to express my conviction that, under proper regulations, it constitutes one of the most essential parts of treatment.

The diet is another important subject, and one very often misunderstood. From a fear of increasing the cough or exciting fever, many patients are scrupulously interdicted every kind of nourishing diet, and are fed upon what are usually, and very significantly called "slops". In this way they be-

come more feeble, the tubercular deposit increases, the softening process is accelerated, and, when too late, the error becomes apparent. Unless there should exist some inflammatory complication, or urgent dyspepsia, everyone at this stage of phthisis needs support, and should live generously, taking a full amount of animal food, as well as ale, or porter, or wine. Such a system of diet, far from aggravating the cough, generally lessens it; and although it may at first induce some slight feverishness and discomfort, these will commonly subside under its continuance. Should the alcoholic stimulants be too exciting, they may be given in small quantities, or diluted; but there are few cases in which this is necessary, and the heat or "flushing", which they may at first occasion, is productive of no harm, whilst the benefit consequent upon their judicious employment is oftentimes very decided. Unnitrogenized food, such as arrowroot, sago, and the like, given occasionally, are of much service in allaying the cough, and, as it were, respiting the stomach from heavier duties.

The chest should be properly protected with flannel, but other coverings, more especially leather, and "warm plasters", are not to be commended, on account of their keeping the skin moist and clammy, besides often preventing the proper application of counter-irritants. Cold or tepid sponging of the chest may be sometimes employed with advantage, indeed, in many cases, I have seen it signally

beneficial; but it cannot be used indiscriminately, requiring to be regulated according to the cough, and physical strength of the patient.

Having included in the preceding remarks all that need be said upon *general* measures, we have now to consider to what extent the disease and its many complications are under the control of medicinal agents. There are three different objects with which these may be employed.

(1.) To restore the health and vigour of the body.

(2.) To relieve the different symptoms as they arise.

(3.) To check the further progress of the local or pulmonary disease.

(1.) The first of these is to be attempted by tonics and stimulants, amongst which, the animal oils, the different preparations of iron, the mineral acids, and vegetable bitters, are the chief. Of the animal oils, none deserves so much confidence as the now popular one obtained from the cod's liver, which is certainly more useful in this and every stage of phthisis than anything else, taken singly. Of the preparations of iron, it matters little which is selected; but the union of iron with iodine in the form of the syrupus ferri iodidi, seems peculiarly adapted to tubercular affections. Any of the vegetable bitters may be given with advantage, especially in conjunction with one of the mineral acids, or with ammonia; but I have usually seen the

most benefit result from quinine and cinchona. Various combinations of these substances are also of much service: the citrate of iron and quinine; or, quassia or calumba united with some of the salts of iron; or, cod-liver oil with iron, or with a vegetable tonic, will be found more or less adapted to different cases. Glycerine has been highly spoken of; but I have generally been disappointed in its effects. To the comparative merits of these different agents, however, I proposed evoting a subsequent chapter.

(2.) The second object—that of *attending to symptoms as they arise*—is to be met with appropriate medicines; but as none of these possess any really *specific* action, the choice must be left to the practitioner.

For the *cough* there are the various combinations of ipecacuanha or squill, conium or hyoscyamus, with tragacanth, spermaceti, or linseed; and, except when the symptoms are inflammatory, these will generally suffice: when there is bronchitic complication, the addition of small doses of antimony may be necessary, but in the purely *tubercular cough*, this, as well as everything of a depressing kind, should be carefully avoided. When the cough is very irritable, or of a spasmodic character, either chloric æther or the diluted hydrocyanic acid may be added with advantage. Nothing, however, so readily relieves the distressing cough which is often met with in phthisical cases, as morphia or some of

the preparations of opium, which are usually borne very well, even when taken in considerable doses. Counter-irritation of the chest by means of stimulating liniments,—of which none answers better than that made of croton oil,—is often serviceable; and many cases are relieved by an occasional small blister. Inhalation is sometimes beneficial, and may be performed by means of any of the numerous inhaling-vessels constructed for the purpose, or, equally well, by a common funnel inverted over a basin. The mere vapour of hot water is often sufficient, but the addition of a sedative may contribute to its efficacy: from ten to thirty grains of the extract, or from one to three drachms of the tincture, of conium or hyoscyamus; or from five to fifteen drops of dilute hydrocyanic acid; or a handful of dried hops may be used for this purpose. In some cases, chloroform may be inhaled with advantage; but it requires much caution, as phthisical persons are not of that class who may be expected always to bear it with impunity. I have never seen the least injury result from these inhalations, but am free to admit that, in the majority of cases, they have done so little good, that the patients have generally been unwilling to continue them for any length of time. The subject of inhalation, however, will be treated of at greater length in a future chapter.

The *thoracic pains* in phthisis are often difficult to remove. When arising from local congestion or

inflammation, a few leeches below the clavicle, a small blister, or some stimulating liniment, may be employed with success; the choice between these depending upon the patient's strength, or other particular circumstances. When they are of a reflex character, or obviously of nervous origin, either anodyne liniments, or moderate local counter-irritation, are more likely to be serviceable; dry cupping, also, sometimes succeeds, when other means have failed; and opium or belladonna plasters, temporarily applied to the seat of pain, are often useful.

Dyspnœa is a no less troublesome symptom to combat. When arising from pulmonary oppression, owing to the accumulation of tubercle, it may be relieved by local counter-irritation, or by dry cupping; when depending upon secondary inflammation, it can be successfully attacked only by such general and local measures as are likely to remove its cause; when associated with nervous or hysterical symptoms, antispasmodics, especially opium and the different varieties of æther, are likely to be effective; when dependent upon cough with excessive secretion, opiates and expectorants are more or less serviceable; and lastly, when attributable to debility or extreme exhaustion, general stimulants are obviously indicated.

Hæmoptysis.—A moderate degree of hæmoptysis, in persons able to bear it, being, as already observed, far from prejudicial, generally needs nothing

more than precautional measures to prevent its increase. When so small in amount that it exhibits itself only as a streaky discoloration of the sputa, the patient should be kept quiet; but there is no occasion for any departure from the treatment which is being pursued. And even when the blood is discharged separately, but in small quantity, tranquillity is still the chief remedy to be employed, more decided means being seldom required.

When the expectoration of blood is greater, or when it tends in the least to weaken the patient, further interference becomes necessary, and the previous remedies should be exchanged for some of the astringents usually employed to arrest hæmorrhage. Of these, sulphuric acid with alum, and small doses of sulphate of magnesia, gallic acid, and acetate of lead, in union with a small quantity either of opium or morphia, are the best; turpentine also is sometimes very effective; but antimony and digitalis, although, perhaps, successfully prescribed by many practitioners, are, I am satisfied, but ill suited to the majority of consumptive patients. I have several times seen considerable benefit result from a lump of alum being held repeatedly in the mouth, and allowed gradually to dissolve. Meanwhile, other steps become necessary, in proportion to the degree of the hæmorrhage; such as perfect quietude both of body and mind,—the discontinuance of everything hot or stimulating,

—and the use of the coolest beverages which can be made, or, when it can be had, of ice itself. If there be the least evidence of exhaustion, wine, brandy, ammonia, or æther, may be necessary; but their quantity should be nicely proportioned to the necessity of the case,—enough to prevent the patient sinking, yet insufficient to cause excitement. The propriety of bleeding is a point often difficult to decide. When there is a disposition to plethora, with a strong pulse, a slight abstraction of blood from the arm may be serviceable; but it should not be resorted to unless other means fail. Severe hæmoptysis, occurring so rapidly as to endanger life before the usual styptics can have time to take effect, may sometimes require immediate but moderate venesection. But bleeding should never be employed upon ordinary occasions, nor without bearing in mind that phthisical persons can more easily lose blood than remake it. Practically, it will very rarely indeed be found necessary.

The *perspirations* at this, as at every other period, require treatment in proportion to their severity. Repeated doses of the diluted sulphuric, nitric, or phosphoric acid, in conjunction with quinine or cinchona, will generally check them; and the acetic acid with some light bitter infusion is scarcely less successful. Gallic or tannic acid, but especially the former, kino, or catechu, or some of the metallic astringents, such as alum, sulphate of iron or of copper, acetate of lead, or oxide of zinc, may be

advantageously given at bed-time.* Sponging the chest with cold or tepid vinegar and water, or with a decoction of oak-bark or infusion of galls, or with a weak solution of gallic acid or sulphate of zinc, or Goulard lotion made tepid, is frequently useful; but the skin should be thoroughly dried afterwards, without unnecessary rubbing, much friction being liable subsequently to increase the cutaneous secretion.

Wakefulness, which is often particularly distressing, and frequently associated with excessive perspiration, may be relieved by sedatives or narcotics, either by themselves, or in conjunction with other remedies, according to special circumstances.

Dyspepsia.—Immediately on its becoming apparent that the digestive organs are too feeble for the nourishing and stimulating food necessary for the tubercular affection, it is useless to persevere with it, and the whole attention must be directed to the dyspeptic symptoms. The diet should be changed to one of a more simple kind, yet retaining as much animal food—reduced if necessary to a fluid form

* The oxide of zinc was first used in phthisis by Dr. Roberts (Trans. of Coll. of Phys., vol. iv); but to Robert Dickson, M.D., is the credit due for having first discovered its efficacy in the treatment of phthisical perspirations. It may be given in doses of from three to six grains every night, in combination with some sedative extract. After a few trials, it sometimes loses its effect; but this may be regained after a temporary omission. Both the sulphate and acetate of zinc act in the same manner, though less efficiently, than the oxide.

—as can be borne, together with various light farinaceous substances, unfermented bread, etc.; the diet table, in fact, should be that of the ordinary dyspeptic. At the same time may be given some of the medicinal agents used in simple dyspepsia, such as tonics, with ammonia, soda, hydrocyanic acid, nitrate of bismuth, creasote, or one of the mineral acids; and to these may sometimes be added the cod-liver oil, which, strange as it may seem, is often easily retained when other things less disagreeable are rejected. For the irritable form of indigestion which sometimes attends the early stage, the oil by itself, or in conjunction with creasote, is oftentimes an invaluable remedy. Counter-irritation to the epigastrium by means of stimulating liniments, or the application of a few leeches, or a blister, are also occasionally useful. It is impossible, however, to anticipate the effect of any of these remedies, or to assign any particular reason for the use of one rather than another. Almost every case of phthisical dyspepsia presents a separate study; and many will perplex the most experienced practitioner.

The inflammatory complications of phthisis demand a separate treatment, which must be guided by their extent, the state of the patient, and the stage of the primary disease.

Tubercular Meningitis of an acute form, and happening in a person not much advanced in consumption, may require venesection; but cupping,

or the application of leeches, usually answers every purpose for which depletion can be required. If the patient be already in a weak condition, or if tubercular softening in the lungs has taken place, however acute the meningeal symptoms may appear, nothing beyond *local* bleeding should be resorted to, and even that, not to any great extent, or without carefully watching its effects. In a still more advanced stage of phthisis, the use even of leeches is seldom called for; and, in the majority of cases, would be absolutely hurtful. It is impossible, however, to lay down any exact rule regarding the abstraction of blood in meningeal complication: few cases require it to any extent; many may be benefited by it when moderate; but, to the greater number, it would be injurious: the condition of the patient, the severity of the attack, and the recollection that bleeding is ill-adapted to the tubercular diathesis, are the points which must decide its employment. The hair should be removed, and the head kept cool by evaporating lotions; mild purgatives should be given, as well as saline medicines,—sometimes with antimony, according to the severity of the symptoms and the strength of the patient. After the acute symptoms have somewhat subsided, more particularly if there be low delirium or a tendency to coma, a blister may be applied to the neck, or mustard cataplasms to the lower extremities. Meanwhile, the patient should not be too much reduced by change of diet,

but the strength kept up by frequent nourishment; and, in this respect especially, it is necessary to make a distinction between the treatment of *idiopathic* and *tubercular* meningitis; in many cases, indeed, wine and other stimulants are indispensable. The propriety of giving mercury is a point upon which much difference of opinion might be naturally expected: when the attack occurs at an early stage of phthisis, is sudden in its commencement, and very acute, I think it may be moderately employed; but when the meningeal inflammation is of a less active kind, and the patient already enfeebled by the primary malady, its use would be unjustifiable, and almost certainly injurious.

Such measures as these afford the best—indeed, the only chance of relieving tubercular meningitis; but as the removal of the morbid deposit, which either causes or follows it, is scarcely to be expected, we shall find them, too frequently, unavailing.

The treatment of *cerebritis* differs in no material respect from that of meningitis. The earlier appearance of exhaustion and cerebral oppression, however, generally affords less opportunity and less necessity for any very active interference; moderate local depletion, counter-irritation, and supporting the patient's strength, constitute the chief, and, indeed, the only means, of meeting this most formidable complication.

Bronchitis requires treatment in proportion to its

severity. When the larger tubes are affected, and the attack is rather general than local, blisters, mustard poultices, or other counter-irritants, are generally necessary, together with salines and expectorants adapted to the symptoms of the particular case. *Capillary* bronchitis also, when general or extending to other parts of the lung, and especially when producing feverishness and dyspnœa, with increase of cough, requires similar and sometimes even more active treatment: salines, with or without antimony—according to the amount of inflammatory action, should take the place of other medicines; a blister should be applied to the sternum; and the diet should be somewhat less stimulating; general bleeding, however, in this, as well as in bronchitis of the larger tubes, is seldom, if ever, necessary, and even cupping ought not to be resorted to, unless the symptoms are urgent, and the patient well able to endure it.

Capillary bronchitis, when limited to the neighbourhood of the diseased portion of lung, needs no departure from the treatment which is being pursued, except, perhaps, in the use of more active counter-irritants, or the application of a small blister beneath the clavicle; in some cases, a few leeches may be applied, with advantage, over the diseased portion of lung; or, when the loss even of a small quantity of blood is not desirable, dry cupping may be productive of relief.

In the treatment of any form of tubercular bron-

chitis, due regard should be had to the peculiar circumstances under which it occurs; and it should be borne in mind that the active remedies, imperative in the idiopathic form of the disease, might here be highly injurious.

Pneumonia requires to be treated upon precisely similar principles. When only the apex of the lung is attacked, a somewhat less stimulating diet, saline medicines, a few leeches beneath the clavicle, or dry cupping between the shoulders, will usually be sufficient; but when the inflammation is more severe, involving the base of the lung and giving rise to many of the symptoms of the idiopathic form of pneumonia, more active measures are at once called for, although these must be duly proportioned to the strength of the patient. Cupping, or the free use of leeches, may now become necessary, as well as small doses of antimony; but, as a general rule, mercury should not be employed.

For the pneumonia which supervenes upon the last stage of phthisis, active interference is generally injudicious; the declining functions of life prohibiting the use of treatment the least depressing: mild counter-irritation may afford relief; but the idea of *inflammation* must generally be lost sight of, and attention solely directed to the alleviation of symptoms.

Pleurisy, likewise, must be treated in proportion to its extent and severity. A friction murmur about the lung's apex, attended with local pains

or increase of cough, will generally subside under a blister or some irritating application beneath the clavicle. The more severe kind of pleurisy which sometimes presents itself, especially in the advanced stages, will also generally yield to simple measures: dry cupping, or, at most, a few leeches, followed by a small blister, with the temporary reduction of everything stimulating, will generally succeed in checking it. For the pleuritic effusion of the last stage, nothing more can be done than for the pneumonia of the same period; stimulating and opiate liniments may afford some relief, and the strength may be kept up by food and proper stimulants.

(3.) The third object of treatment—that of *checking the further progress of the pulmonary disease*—may be frequently carried out, with considerable success, by means of counter-irritants applied over the upper regions of the chest. It cannot, of course, be expected that any local treatment will certainly *prevent* the further formation of the tubercular deposit; but by relieving the diseased lung of local congestion, capillary bronchitis, or secondary inflammation of any kind, the tendency to further tuberculosis may, at the least, be diminished; whilst the injurious influences of such inflammation may be checked.

We have already noticed, not only that cutaneous diseases are seldom associated with phthisis, but that the union of the two, in the few cases

where it does occur, very often mitigates the consumptive symptoms. The external use, therefore, of stimulating agents—which, in fact, produce, artificially, disease of the skin,—seems to be suggested by nature herself.

Setons, issues, blisters, escharotics, and irritating liniments, have had their respective advocates; but although either of them may efficiently fulfil the object for which it is employed, the choice between them seems to me to be anything but unimportant. The seton is scarcely to be recommended, and the use even of issues is, in my opinion, questionable, since equal benefit may be attained by more simple means; and after either of them has been established, its discontinuance, although perhaps absolutely necessary on account of the increasing debility of the patient, may of itself be productive of harm, owing to the cessation of the cutaneous discharge.

The action of blisters being more easily controlled, limited and repeated vesication is an excellent mode of counter-irritation; but large and open blisters are undesirable, as they only distress and weaken the patient, without being more effective than smaller ones. Blisters, however, are less adapted to those cases where the tubercular deposit is in a state of quiescence, than to those where there is morbid inflammatory action going on around it.

In the generality of cases nothing answers the

purpose of counter-irritation so well as caustic and stimulating liniments; the eruption thus produced being easily regulated according to its effects. It is surprising, moreover, in how short a time this kind of eruptive irritation ceases to be troublesome; few persons are under the necessity of discontinuing it, whilst the majority cheerfully accustom themselves to its existence, finding how materially it relieves many of their most urgent thoracic symptoms. In the whole treatment of phthisis, nothing, I believe, surpasses in importance the proper employment of such applications; but their full value is scarcely apparent until they have been persevered with for weeks or even months together. Of the caustic agents, iodine is probably the best; it may be used in strong spirituous solution, either alone or combined with iodide of potassium,* and applied as frequently as the state of the skin will permit. It is difficult to say whether the iodine acts *specifically*, or whether the benefit is wholly due to the common principle of counter-irritation; I must confess that I have employed it principally on account of its manageableness, with a hope, perhaps, but certainly not a *conviction*, of its *specific* action. Of stimulating applications, it scarcely matters which is selected, so long as regard is had to the patient's convenience. Tartar emetic ointment, however, might almost be discarded,

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* ℞ Iodinii, potassii iodidi, sing. ℥j; spirit. rect. ℥ij. Solve.

both from its unpleasant greasiness, and the soreness and annoyance of the pustules it occasions. Strong liniments of cantharides, turpentine, cajuput, ammonia, or croton oil, are far preferable; the latter is the most certain in its operation, and might, I think, supersede every other. It may be mixed with soap liniment, in the proportion of from half a drachm to a drachm to the fluid ounce, and gently rubbed in at night until it produces a papular eruption; it may then be discontinued, and afterwards reapplied as the eruption begins to fade away; and, by employing it in this manner, a papular *disease of the skin* can be kept up as long as may be thought desirable. It should be used with a glove or a piece of flannel, that the hand may not be made sore; its action becomes now and then apparent at a part remote from that where it was originally applied, the head and face, for example, becoming swelled and inflamed; but from this, no permanent harm can ensue, and in no other way is the liniment productive of the slightest ill effect, nor has it the least tendency to cause diarrhœa.

It was formerly the practice to treat this stage of phthisis upon a principle entirely different to that which I have been advocating; and, with an utter disregard to the constitutional origin of the disease, to combat the symptoms alone by what were termed "heroic measures". To check the frequency of the pulse, bleeding and sedatives were resorted to; to diminish feverishness and "*cure*"

the cough, antimony and other depressing medicines were administered; and, with the view of causing the absorption of tubercle, emetics were prescribed. But when we consider the nature of the tubercular disease, it is evident how fraught with danger such practices must be. Could it be accomplished, it would be far better to add than to abstract blood; the pulse is more easily reduced by invigorating the system than by lowering it; and wine, judiciously given, will lessen its frequency better than digitalis would do; whilst emetics, by exhausting the patient, must tend rather to aggravate the disease than otherwise. I should hesitate, however, in thus summarily condemning this kind of practice,—which is still, to some extent, carried on,—were I not convinced, (not from any theory upon these matters, but from repeated experience,) of their inefficacy; and had I not abundant proof that whatever benefit is derivable from medical treatment, may be found in the proper application of those general principles which I have attempted to describe.

Of other less refined but once popular measures for "*curing*" phthisis, it is necessary to give but a brief notice, since it must be obvious that none of them can have had any specific action, and that whatever service they may have effected must have been due to certain collateral circumstances under which they were pursued. Sleeping in cow-houses, —immersion in mud-baths,—snail-eating, and such

like luxuries, may now be ranked with things gone by, although they have had their day, and one quite as prosperous as that of many other follies. The country air in the neighbourhood of a cow-shed, and the rustic life to which it led, must have been to many a new source of health; the mud-baths would divert the mind, and, if they themselves did no harm, the novel and hopeful conditions which they involved would certainly do good; and country snails must have been a far more wholesome diet, and eaten, moreover, under circumstances more favourable to health, than much of that which poverty or even luxury supplies. Inasmuch therefore as such changes were great, and must have induced new thoughts and conditions of life, the good they may oftentimes have effected is easily accounted for. But in the present day, when miracles in medicine have ceased to be credited, except by the unenlightened, equal benefit is sought, and quite as often obtained, by other and more rational means.

Treatment of the Second Stage. The general principles which should regulate the treatment of consumption before tubercular softening has begun, are applicable to this period also; they require only to be slightly modified to suit the more advanced condition of the disease.

Change of air and scene, exercise and recreation, are as necessary as before; but the increased debility of the patient places certain limits to their

employment. Travelling is seldom practicable, and, even if it were, would be attended with too much risk to receive the sanction of the physician; neither should the patient be advised to seek at all a foreign abode, since the benefits it might possibly confer are equally to be found in our own land, unalloyed by absence from home and friends, at a time when the prospect of recovery is lessened, and personal comfort forms an essential part of treatment.*

In the summer months, the patient should reside in some temperate locality, if possible, in the midland or southern parts of England, or upon any part of the sea-coast which is neither hot nor relaxing. During the winter, refuge should be sought in some of the more sheltered districts on the south coast, where the habit of taking daily exercise may be the most safely continued. When advantages like these are unattainable, such rules should be enjoined as are calculated, so far as possible, to imitate them. An open and healthy residence should be selected; the mind should be directed towards suitable and pleasing pursuits; and in-door confinement resorted to only upon occasions of absolute necessity.

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* An exception may, perhaps, be made as regards yachting, which, in peculiar cases, is of service even at this stage of consumption. But it is obvious that such a mode of *travelling* differs from every other; those who can indulge in it may enjoy the comforts of England at almost any distance from its shores.

The diet should still be simple, but as nourishing and abundant as the patient can digest; as a general rule, whatever is fancied may be safely indulged in. Wine, or porter, or ale should always be taken: some inflammatory complication may occasionally prohibit their use; but as part of a *system* of dieting, they should never be neglected.

The chest should be well, but not too much protected, a number of wrappers being oppressive and unnecessary; and a respirator may be worn whenever the external air is too cold or damp to permit of out-door exercise without it.

As regards the use of medicines, nothing new is necessary except for any fresh symptom which may arise. Cod-liver oil, steel, and other tonics are still to be employed. The cough is to be met in the same manner as before, by different combinations of demulcents and expectorants, with sedatives or opiates.

Restlessness is to be overcome by morphia or some mild form of narcotic. Hæmoptysis requires no fresh principle of treatment; and the same may be said of every other symptom. In meeting the various complications of this stage, it is only necessary to bear in mind the increasing debility of the patient, and that any depression, mental or bodily, is likely to advance still further the softening process.

Diarrhœa often begins at this time to assume a troublesome aspect. When it resists the more

simple astringents,—such as the mistura cretæ, etc.,—full doses of catechu or kino with opium, or the decoction of hæmatoxylum with lime water, or the sulphate of copper, or sometimes even the acetate of lead with some narcotic, may prove successful. There is nothing, however, to guide us in the selection of these remedies, and one will often be effective after others have failed: the most active diarrhœa will frequently yield to the simplest treatment; whilst a much less degree of relaxation will occasionally require powerful astringents.*

Dr. Theophilus Thompson has lately drawn attention† to the use of the nitrate of bismuth in the diarrhœa of phthisis, and I am able to confirm the correctness of his observations; he recommends it in doses of five grains added to powdered acacia, every four or five hours. I have frequently tried the sulphuric acid, and have found it, in a few instances, successful; this, however, was only in early cases, where the intestines, probably, had not undergone ulceration; for the advanced stages of phthisis it does little if any good, and sometimes even aggravates the symptom. The very circumstance that phthisical diarrhœa frequently comes on at the time when sulphuric acid is being taken to check perspiration or hæmoptysis, shows that

* I have found the following mixture more generally useful than any other: ℞ Liq. calcis ℥iii; decocti. hæmatoxyli ℥v; liq. opii sed. ♏xxv. M. Capt. coch. ij magna quartis horis.

† Med.-Chir. Trans., vol. xxxi.

however useful it may be in some of the simple forms of diarrhœa, we have little to expect from it in consumptive cases. A suppository of solid opium, or an enema of laudanum with a sufficiently small quantity of decoctum amyli to be retained in the bowel, often proves efficacious in restraining the excessive discharges at this and at a later stage.

When the bowels are so irritable that the least food taken into the stomach causes immediate diarrhœa, nothing is so serviceable as small and frequently repeated doses of solid opium, or the use of opium suppositories.

In addition to the employment of astringent remedies, the diet should be changed. There is no particular description of food, however, which can be said to be specially adapted to tubercular diarrhœa; many persons bear a fluid better than a solid form of nourishment, whilst others are more benefited by the moderate use of solids. Strong beef-tea, arrowroot, sago, tapioca, etc., are well suited to a large number of cases; but the diet, in most instances, is a subject for experiment; and it is one in which the resources of the physician are often greatly taxed. Lime water and milk, mixed in about equal proportions, form an excellent drink, which is often very useful in the advanced stage of phthisical diarrhœa.

Hectic fever, whether at this or at a later stage, requires to be treated unlike any other febrile

complication. The most nourishing, and sometimes even stimulating food becomes necessary, and tonic remedies are more than ever called for; a lowering system, whether of diet or medicine, only increases the exhaustion and feverishness. The cod-liver oil may still be continued, in union perhaps with quinine or cinchona, or one of these may be temporarily substituted for it:* I am satisfied, however, that the oil has not the slightest tendency to aggravate the paroxysm of fever, and is better not omitted unless for some other reason. The old mist. ferri co. has gained some celebrity for its influence upon hectic symptoms, and in some cases of advanced phthisis it seems to be serviceable; but, on the whole, it has no great claim upon our attention. It is unnecessary to say anything about the treatment of the hectic perspirations, since it should differ in nothing from that of the same symptom when proceeding from any other cause; and this subject has already been discussed. The great difficulty in the management of hectic fever, lies in relieving the exhaustion and irritability of the system under which it originates, without producing that degree of excitement which would tend only to aggravate it. Every case, therefore, is a matter for separate study; and it is

* The following is an excellent medicine: ℞ Liq. ammon. acet. ʒiij; mist. quinæ ʒv. M. Capt. coch. ij magna quartis horis. By *mist. quinæ* is meant any of the ordinary solutions of quina in a mineral acid.

impossible to form any rule of universal application. In spite, however, of the most judicious practice, little more can be done for this fever than to mitigate its severity; its purely secondary character rendering it generally very difficult to combat, and nearly always impossible to remove.

Counter-irritation of the chest should be persevered with even more energetically than in the previous stage; and, in not a few cases, it helps to check the morbid process.

Treatment of the third stage. The principles of treatment already adopted should still remain unchanged; but the increasing debility of the patient does not admit of their being carried out in precisely the same manner.

The shores of England should on no account be left for those of a foreign land; for, however flattering may be the aspect of the case, nothing but harm and disappointment could result from such an experiment. The patient should seek, in some healthy retreat, and in the society of his friends, that improvement in health and capability for moderate enjoyment which ought now to form, at most, the summit of his hopes; for however much he may deceive himself, or be deceived by those who lack the courage to do otherwise than "prophesy smooth things", he will ever be, at best, an invalid. The choice of a summer residence is not very important, but it should be of as bracing a kind as can be borne; whilst the winter months should, if possible,

be spent in some one of our sheltered towns upon the south coast, of which, Hastings, Ventnor, and Torquay are the most popular, and perhaps the best. The question, however, of winter residence for the consumptive invalid, will be more fully considered in a subsequent chapter. When advantages such as these are not within reach, it is perhaps better that the colder months of the year should be passed near to, or even within a town ; for, the many evils of such a situation are in a great degree counteracted by its milder and more equable temperature ; the suburbs of London, and especially Brompton, have been, on this account, for many years, justly favoured places of resort. Confinement to the house, although of course sometimes necessary, should be avoided as much as possible ; out-door exercise and amusement, used with discretion and duly proportioned to the capability of the patient, still continuing essential elements in combating the disease.

The diet should be, more than ever, generous and nourishing, and, with such limitation as ordinary prudence will point out, may be left entirely to the patient's choice. Wine or brandy diluted, ale, or porter, should be taken daily, unless some inflammatory complication demand its temporary omission.

The general principles of medical treatment should be the same as in the earlier stages ; allowance being made for the increased debility of the

patient requiring, if possible, remedies of a still more tonic and supporting kind; and although there is at this time less reason than before to anticipate any lasting benefit from their employment, we have at least the satisfaction of knowing that they are able, in many cases, to afford relief, and, in not a few, to prolong existence and to render life far more capable of being enjoyed. Cod-liver oil, steel, and other tonics, but especially the former, oftentimes increase the weight and strength, and seem to give almost a new life to the sufferer; whilst other remedies, adapted to special symptoms, are still capable of at least relieving their severity, if not of actually arresting them. Counter-irritation of the chest, by means of stimulating liniments, is also extremely useful, although perhaps it cannot be borne to the same extent as at an earlier stage; and even if it fail in checking the onward progress of the pulmonary disease, it may, nevertheless, relieve the thoracic pains, the cough, or the dyspnœa, which are apt, at this time, to be particularly distressing.

There are but one or two symptoms which can be said to belong particularly to this stage. The *œdema*, which now and then supervenes, is open only to palliative measures, and even these are feeble and oftentimes unsuccessful. Rest in the horizontal position, tepid, spirituous, or Goulard lotions, and light bandages, are the only things required, or even admissible; and by their use relief is frequently afforded.

For the *delirium* which attends the last hours of the sufferer very little indeed can be done. Occasionally it seems to be connected with the exhibition of opiates given for the relief of some particular symptom; in which case, small doses of morphia, together with ammonia, wine, or other stimulants, may be of service. But when there is no reason to believe that it is due to such a cause, but rather to the declining functions of the brain, opium, in a small quantity, may be taken with advantage; and even if it should fail in the object sought, it may, in some degree, tranquillize the sufferer, and render the closing scene less painful both to himself and those around him. But, at this solemn period, neither opium nor any other narcotic should be given to an extent that might interfere with that mental life which, in bidding adieu to this world, sometimes presents a brilliancy which, however transient, is sometimes usefully employed by the dying, and thankfully remembered by the living.

CHAPTER IV.

TREATMENT OF ACUTE, AND LARYNGEAL PHTHISIS.

THE preceding observations upon the treatment of phthisis are applicable to every chronic case, whether it assume the *florid* or the *languid* type; but very different measures are required in the acute form of the disease.

Acute Phthisis.—The question of depletion in this disease is a very delicate one, and open to much variety of opinion. When active pneumonia or bronchitis constitutes the chief feature in its early symptoms, and when, at the same time, the patient's strength is considerable, moderate abstraction of blood, either by cupping or leeches, may be desirable. But whenever it is manifest that the inflammatory complication is more of a secondary character; or, when the physical powers are but small, the slightest loss of blood is evidently contra-indicated. In the majority of these cases, there is more to be apprehended from early exhaustion of the system, than from excessive action. As the acuteness of the first symptoms passes away, blisters, or a milder form of counter-irritation, are

likely to prove useful. When the attack sets in with great severity, antimony, in small and repeated doses, may be useful; but mercury should never, in my opinion, be resorted to:—in the few cases, indeed, which have fallen under my own observation, neither of these remedies was indicated, and their use would certainly have been rather prejudicial than otherwise. Generally speaking, perhaps, but little can be done by any medicinal agents, beyond relieving the urgency of the cough and feverish disturbance by simple expectorants and salines, and keeping up the strength by ammonia or other diffusible stimulants. The diet should not be much reduced, but carefully adapted to the particular requirements of the patient; wine or brandy being freely given so soon as there is the slightest appearance of exhaustion.

But it would be impossible to lay down any precise rule for the treatment of acute consumption, since it must be entirely governed by the peculiarities of each case. To subdue inflammatory action without inducing physical exhaustion, in persons who can seldom endure even the least active treatment, is the general principle upon which it must be based, and at once exhibits the difficulty which has to be encountered.

Laryngeal phthisis being nothing more than a complication of the ordinary form of chronic consumption, requires precisely the same treatment as the latter disease, with the employment of some few additional remedies devoted to the larynx.

When the voice becomes hoarse, or when from other symptoms there is reason to suspect that the laryngeal mucous membrane is implicated, local applications to the upper part of the respiratory passages should immediately be tried, since, at this early period, there is, at least, some hope of checking this most distressing complication. Such applications may be made externally or internally. Externally, a strong tincture of iodine, or the compound iodine ointment, or the croton oil liniment, or small and frequently repeated blisters, or, indeed, any form of counter-irritation, may be usefully employed, and may sometimes check the local symptoms in a most decided manner. The use of applications *internally*, involves a practice upon which there is much difference of opinion, both as regards its practicability and success,—I allude, of course, to what has been called *topical medication* of the upper part of the respiratory passages.

In the former edition of this work I spoke, in very favourable terms, of the local use of the nitrate of silver by means of a piece of sponge introduced into the laryngeal opening. More recent and increased experience, however, has induced me somewhat to modify such an opinion. Of the *possibility* of introducing the sponge—not perhaps to the distance which some of its advocates maintain, but certainly to an extent sufficient to ensure the free application of the solution to the interior of the

larynx, I do not entertain the slightest doubt; although I am equally convinced that the operation is neither so certainly nor so constantly successful as is generally imagined, the opening into the larynx being, in many persons, far too sensitive to admit of its performance.

For some time past I have preferred freely brushing the pharynx and neighbouring parts with a solution of the crystals of nitrate of silver, in the proportion of twenty or thirty grains to an ounce of distilled water. By this means—owing possibly to continuity of mucous membrane, but possibly also to some of the solution, after a few applications and under the diminished sensibility of the glottis, finding its way into the diseased larynx—considerable benefit is sometimes effected, without producing the distress and alarm which frequently attend the introduction of the probang.

As a general rule, in cases at all advanced, as well as in others where there is much general or local sensibility, the brush is by far the best instrument; it is also preferable where there is a tendency to hæmoptysis, the cough and spasm which frequently attend the passage of the probang having more than once appeared to me to produce this symptom. Indeed, I believe the probang to be inapplicable, both when there is reason to think that the laryngeal structures are extensively ulcerated, and when the general symptoms of the patient are indicative of advanced phthisis. The early stage of the laryn-

geal disease, and when the lungs are not much affected, nor the strength much reduced, present the only opportunities for its employment; and it may fairly be questioned, whether the brush might not, in nearly every case, become its substitute.

When the pharynx has been relaxed, I have applied a solution of tannic acid in glycerine, in the proportion of five grains to the drachm; and I have also used the iodide of iron in a similar manner. Where, however, local applications are beneficial, the nitrate of silver generally answers the best.

Although such applications are sometimes useful in at least relieving the local symptoms, and checking the progress of the laryngeal disease, it must nevertheless be admitted, that, far too frequently, they are unsuccessful, and only disappoint both the physician and the patient.

Inhalations seem to have very little influence upon the laryngeal affection. I have tried them in various forms, both with a curative and palliative view, but hitherto with but trifling success. The vapour of hot water sometimes soothes the irritable cough, and the addition of conium, hyoscyamus, hops, or hydrocyanic acid, occasionally affords still further relief; but I have generally found, after a short time, a decided unwillingness on the part of patients to persevere with their employment,—a very conclusive testimony of their trifling utility. In two or three instances, however, I have found the inhalation of the fumes of iodine serviceable; and, in early cases, perhaps, it is worth a trial.

The internal use of medicinal agents has nothing more than an indirect influence upon tubercular laryngitis, every remedy having hitherto failed in exerting a specific local action over the progress of the disease. The tinct. benz. co., or the balsam of tolu or of copaiba, added to a mucilaginous cough mixture, soothes the irritated parts, and relieves the cough. But in other respects, no departure is necessary from the ordinary medical treatment which would be pursued in simple phthisis uncomplicated with laryngeal disease.

CHAPTER V.

A MORE PARTICULAR DESCRIPTION OF THE CHIEF AGENTS EMPLOYED IN THE TREATMENT OF CONSUMPTION.

Change of Air and Climate. In the remarks already made upon this subject, I have expressed the following opinions:—

1st. That change of air and scene is one of the most important elements both in the prevention and treatment of consumption; and, in an early stage of the disease, when the strength will permit, may, as a general rule, be sought in the spot most agreeable to the taste of the patient.

2nd. That after tubercular softening has commenced, and, for still stronger reasons, after cavities have formed, the patient should not leave his native shore.

3rd. That it is *unnecessary*, at any stage of consumption, to seek a foreign residence, as England offers advantages equal to, and in some respects greater than, any other country.

But since these opinions are much at variance with popular doctrine, it is necessary that I should

explain the grounds upon which they have been formed.

In the first place, climate exerts no talismanic action upon the tuberculous diathesis, for wherever the predisposing and exciting causes of phthisis come into operation, there will the disease be found. There is, I am persuaded, no favoured spot in which consumption is altogether unknown. Phthisis is a disease inseparable from the present state of humanity. Troubles, privations, numerous sources of unhealthiness over which we have but little control, the evil habits of civilized life which creep on imperceptibly, together with the vices of society and of individuals, have, unhappily, no geographical limit, but are everywhere exercising their influence, although of course in different degrees, both in originating and arousing tuberculous diseases.

In cold, temperate, and hot climates, consumption is to be met with. Dr. Wilson, of New Brunswick, in reply to some questions which I sent him, states, that "nine-tenths of the adult aborigines of North America die of phthisis," and that "the malady is very common amongst European settlers."

It has been affirmed, but, I think, upon insufficient evidence, that tuberculous disease is almost unknown in Iceland. It is very probable that the more natural habits of the people there, as in some other places, are opposed to its frequent developement; but the perfect immunity of

any of our race from the visitation of phthisis, is so inconsistent with our knowledge of the nature and common causes of the disease, that it cannot be admitted unless upon the accumulated statements of *many* competent observers. I have endeavoured to collect trustworthy information respecting the existence of consumption in other high latitudes, but hitherto without success,—the statements which have been made being either so contradictory, or else so vague and solitary, as to render them undeserving of confidence.

In temperate climates, of which the shores of the Mediterranean, Italy, the south of France, Spain, and Portugal, are good illustrations—more especially as they are the far-famed resorts of consumptive sufferers—phthisis is still observed. Dr. Burgess says,* "there is no part of France where phthisis is so prevalent amongst the native population, as at Montpellier and Marseilles, in the latter especially, where the ravages of this disease amongst the youth of both sexes are very great." Dr. Journée's tables upon phthisis in Italy show that the same is the case there; and I am informed by a physician, who has long practised in that country, that the great prevalence of consumption is generally acknowledged by the Italian practitioners. The very circumstance that Rome possesses an *Hospital for Consumption*, is, at once, an

* Lancet, July 6th, 1850.

evidence of the frequency of the disease in that climate.

Dr. Meryon observes, in some remarks upon the climate of Nice:—"Had I leisure, I would collect facts to prove that there are more natives (not strangers, but inhabitants born and bred in the place) who die of consumption in Nice, than in any town in England of the same amount of population."* My colleague, Dr. Pollock, also states, from his own personal experience, that "in no country is phthisis so rapidly fatal" as in Nice, Genoa, Florence, and Naples; and that he has several times seen patients in whom tubercle had been long quiescent, "carried off within a few weeks of their arrival at Nice."†

That Madeira itself—the "*city of refuge*" of our phthisical countrymen—forms no exception to the general law, the following remarks of the late Dr. Mason fully prove:—"Consumption and scrofula are frequent there, and few places will be found where the system is more liable to disorder; whilst, I suspect that the average duration of life is inferior to that of our own country."‡ Dr. Bowie also, a lamented friend who has ceased from among us, thus wrote to me but a short time before he proved in himself the inability of the Madeira climate to check the progress of consumption:—

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* Quoted in Lancet, July 1850. † Medical Gazette, vol. xlvi.

‡ "Climate and Meteorology of Madeira."

"phthisis is frequently met with amongst the natives of Madeira, who are, generally speaking, a highly scrofulous community."

Within the tropics the case is similar. Mr. Martin—whose long and useful residence in India has contributed so much to our knowledge of tropical diseases—informs me that in the East Indies both the natives and European residents are often affected with phthisis. The late Dr. Musgrave, and Dr. Nicholson, of Antigua, kindly sent me the following statements in reply to some questions I submitted to them upon this subject:—"In the West Indian Islands many of the native blacks, who possess a delicacy of constitution, are frequent victims of consumption; whilst the mixed race, the offspring of the latter with the whites, supply the largest number of cases of tubercular phthisis. . . . Almost all the deaths at the Orphan Asylum, in Antigua, have arisen from this disease."

I have also had precisely similar testimony from Jamaica, and other of the West India islands; one gentlemen, indeed, who has long practised in Jamaica, assured me that consumption is even more common and fatal there than in England.

Information upon this subject is very difficult to obtain; and although I might add to that which has been quoted, I prefer not doing so, being less satisfied of its truthfulness. Enough, however, has been stated, to show the ubiquity of phthisis; and that it is vain and useless for consumptive

persons to seek in a foreign clime anything opposed to the existence of their malady.

The benefits which many phthisical invalids unquestionably obtain by a residence abroad, depends, not upon any specific and magical effect of climate, but upon a totally different cause. It becomes, therefore, of the first importance to ascertain what this cause really is, and whether it may not equally exist in our own country.

Whatever advantage a foreign climate may effect in the *early stage* of consumption, is clearly attributable to the change of scene, and the recreation which accompanies it; for, precisely the same effects may be seen to accrue, whenever similar conditions obtain in our own land. Every physician, for example, must have had repeated proof that a tour in Wales, or to the lakes of Cumberland, or a sojourn upon the sea coast, is quite as efficacious in incipient phthisis, provided it be equally in accordance with the taste of the patient, as a visit to any more distant spot. So long, indeed, as the inclination, the capability, and the habits of the invalid are properly suited, it would appear to be of little moment at this period of his disease, where he may choose to renovate his health.

The usefulness of any climate in the *advanced stages* of consumption entirely depends upon the extent to which that ever necessary tonic—exercise in a pure atmosphere—can be safely practised. In a climate either cold or variable, however well

able the patient may be to take exercise, he cannot do so for fear of increasing the cough; and, on the other hand, in an atmosphere hot and relaxing, he is equally disqualified for exertion, from the fatigue and exhaustion which are likely to ensue. A *mild* and *equable climate*, therefore, neither too hot nor too cold, but so much approaching uniformity, that the balance of the cutaneous and pulmonary functions being pretty evenly preserved, exercise may be enjoyed with safety, is the one best adapted to the latter stages of phthisis. That this exists, to some extent, in certain districts upon the Continent, and in some still more distant parts of the world, no one will deny; and numbers of persons have undoubtedly benefited under its influence: but I cannot withhold the expression of my belief that it is to be found quite as easily, or even more so, in our own native land; associated, moreover, with many circumstances essential to the well-being of the consumptive sufferer, which are elsewhere unattainable.

Before I had taken pains to enquire into the climate of the popular foreign resting-places of our phthisical countrymen, I had come to the conclusion that there must be great misconception upon the subject, and that the superiority adjudged to the chosen spots of Italy, the south of France, etc., over places of a similar kind in England, rested more upon the feeble basis of hope, than the solidity of experience. I had known so many

sufferers return from such localities with their expectations disappointed, and their disease increased; and I had heard of so many others who, having discovered their error when too late to avoid its consequences, had died in a distant and unsympathizing land, that such a conclusion became irresistible. But the statements which I am now about to detail have so convinced me of the absurdity—nay, even cruelty—of banishing persons advanced in consumption, at the very moment when home with its happy associations must be dearer than ever to their thoughts, that I consider it a duty, in every possible way, to condemn the practice.*

The troubles of the phthisical invalid, on a pilgrimage of health to some distant spot, commence

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* In reference to this subject, I cannot refrain from quoting the following passages from a letter received, since the appearance of the former edition, from Mr. Wiblin of Southampton: "I see many such cases as Mr. H....'s at our different hotels and on board the R.M.S.P. Company's steamers, when I pay my quarantine visit on their arrival from the West Indies. I see a greater number of such cases on board the Brazilian steamers which call at Madeira. What a shameful and disgraceful line of practice it is for London physicians to send patients away to Madeira in the last stage of the disease! I am constantly seeing patients who have been sent out, and return here and die in a day or two; or perhaps die a day or two before landing. The 'Magdalena' arrived here on the 17th, and two patients died during the voyage; two others landed, one is since dead."

too frequently from the very moment of leaving England: various unforeseen difficulties await him; his strength is often severely tried, and gives way long before he has reached his destination.* I have nowhere met with greater diurnal changes of temperature, and with more uncertain weather, than in those parts of the continent which lie on the route to the *promised land* beyond. Those who are disposed to think otherwise, have probably only taken pleasure-trips, at a season of the year when all is pleasant everywhere; they have not journeyed during the autumnal months, at which season, it must be remembered, the consumptive patient in

* A gentleman, already in the second stage of phthisis, was lately advised, by a distinguished London physician, to pass the winter in the south of France. Full of hope, he commenced his journey, but soon beginning to feel misgivings as to his ability to reach the spot which he had fondly expected was to drive away his disease, he thought it prudent to return to Paris, and place himself under the care of M. Louis. The commencement of cold weather, together with the want of personal comfort, and the mental anxiety which the absence from home occasioned, rapidly advanced his malady; and, in despair, he proceeded to Boulogne, and placed himself in one of the English steamers. He reached the London Docks too ill even to collect his baggage, and hurried to his former apartments. I was requested to see him, and found that he had a large vomica in each lung, and was sinking: in less than twelve hours from my first visit, he had ceased to live. I hesitate not in expressing my belief that, had he been kept in England, he might long have continued to enjoy, although as an invalid, the society of his family. I fear that a record of similar cases might make a volume as large as it would be gloomy.

search of a winter residence abroad is required to leave his home.

We will suppose, however, that all these difficulties have been overcome; or, that they have been but little felt, in consequence of strong mental fortitude, or abundant means to counteract them; and that the spot is reached where the invalid had fondly anticipated he would lose the ailments which had so long beset him, or that he would, at least, find them gradually diminish.

Dr. Burgess, who is practically acquainted with most of the foreign places of resort for consumptive persons, thus speaks of two which have perhaps enjoyed the greatest share of popularity:— "I really know of no place more unfavourable for patients suffering with organic diseases of the lungs, than the far-famed and much-frequented depôts of consumption, Aix and Montpellier":* and the same physician has personally assured me, that other towns in the south of France, especially Rochelle, Bordeaux, Pau, and Marseilles, are, on account of their great variations of temperature, equally unsuited to pulmonary diseases. The whole of Provence is designated by Dr. Burgess as "the land of dust"; and it is evident that this ingredient alone would render it an unfit residence for anyone afflicted with pulmonary symptoms.

M. Valery, in his account of Nice, says, that "*it*

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* Lancet, May and July 1850.

hastens the end of persons attacked by pulmonary consumption"; and Dr. Burgess mentions the same place as " the last to which a foreigner labouring under tubercular phthisis should resort", on account of the prevalence of cold winds, and the " remarkable variation of temperature between day and night,—the sun and the shade".* It is stated, also, by the same authority, that in the whole of this district, " the air is sharp and biting, especially in the spring ; and the frequent recurrence of the noxious winds, the *bise* and the *marin*,—one cold and cutting, the other damp,—irritates weak lungs, and excites coughing".

In advancing further into Italy, the consumptive patient will only find a repetition, if not an aggravation, of the same unfavourable conditions. Dr. Pollock, after an experience of several years, states: " the winter of Italy is *wintry*, and the traveller may shiver with cold there, and curse the poetical fiction which has led him to expect a climate almost tropical".† In his description of Lombardy, Dr. Burgess writes:—" a locality equally injurious to persons suffering from consumption could not be found in any part of the United Kingdom, or of central Europe".‡ Genoa and Florence are spoken of by the same author, as particularly unsuited to

* Lancet, July 1850.

† Medical Gazette, vol. xlvii.

‡ " Climate of Italy"; to which I would particularly refer the reader for more ample information.

phthisical patients; the one being liable to "sudden gusts of wind, and violent transitions of temperature"; the other to "extreme cold in winter, and prevalence of northerly winds": and in these opinions M. Carrière perfectly coincides. The climate of Naples, and even of Rome itself, appears to be scarcely less unfavourable; the former having, according to the same authority, a prevailing hot sun, in conjunction with a piercing wind; and the latter a no less uncertain, and at the same time an universally depressing condition of atmosphere. Dr. Pollock, after a residence of several years at Rome, thus speaks of both these circumstances:— "The prevalent wind is the Sirocco, bearing on its wings often, if not always, evidence of its passage over the sandy plains of Africa, and, nearer at hand, of the malarious district to the south and west of the city. . . . Under its influence, the appetite ceases, the tissues are relaxed, the spirits flag, and energy is felt to be a difficulty".* So universal, indeed, is this effect, which must be obviously unsuited for every stage of phthisis, that Dr. Pollock "could not recall a single instance in which it did not occur, in those who spent any time in Rome".

Dr. Burgess, in his remarks upon Malta,—another home for banished consumption,—says: "I do not remember ever to have felt the sensation of cold so acutely in England, as I have done in Malta during

* Medical Gazette, vol. xlvi.

a dry north-westerly or north-easterly wind". In the Naval Hospital of this island, during the year 1842, 30 per cent. of the deaths are registered as from phthisis. The peculiar situation of Valetta, at once exhibits its unfitness for consumptive patients. Dr. Holt Yates, who has particularly attended to the subject of foreign residence in the treatment of phthisis, informs me, that its construction is such as to expose the invalid who seeks out-door exercise, to sudden transitions from the heat of a burning sun, to strong currents of cold air.

Madeira itself,—that magic spot which is thought to "cure" so many of our countrymen, but which is destined much more frequently to be their final resting-place,*—is thus described by the late Dr. Mason:—"Madeira is no more to be relied on than any other place for certainty of fine weather, and it has equally its annual variations of temperature".†

With such evidence, given by men of ability, after long residence in the particular localities they have described, the folly of persons labouring under advanced phthisis migrating to the south of France, Italy, etc., must be evident.

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* "They bore her to that healthful isle,
Whose rocks of terraced verdure rise
And catch the Morn's celestial smile,
Responsive to the greeting skies;
And vainly prophesied the island-breeze
Would freshen her white cheek, and waft away disease."
R. MONTGOMERY'S "Christian Life."

† "Climate and Meteorology of Madeira."

But it would be vain for me to assert that the health may not be benefited by a winter residence in some of these districts, since, however fatal it may have proved to many, others who have made the experiment, have returned with their strength renovated, and their tubercular disease, for a time at least, arrested. I would only state, as my firm belief, that the same effect might, in such cases, equally have been gained, *could the patients have been induced to think so*, by the judicious selection of some place in the southern parts of England. There are some with minds so constituted, that to them, the monotony of an English country town, for the whole winter, would be intolerable, whilst the gaiety and novelty of a foreign residence would compensate for nearly every deprivation; and it may be right to indulge the tastes of such patients, if it can be done with safety: but the great mass of invalids, more especially females, may, I am convinced, find themselves, at every season of the year, equally well, and far happier, in their own country.

It would be too long a task to enter upon the comparative merits of the various places upon the south coast of England, which have gained popularity as winter residences for the consumptive invalid. As a general rule, they should not be resorted to during the first stage of the disease, since, at this period, a moderately bracing air, whenever it can be borne, is far preferable. But after softening has set in, or cavities have formed,

such spots afford the best, perhaps the only chance of the patient enjoying that amount of fresh air and exercise, without which the prospect of improvement is materially lessened. Hastings, Ventnor, and Torquay, have each their peculiar advantages, which have been ably explained by their own physicians;* but I think it matters so little which is selected, that the choice may be left to the patient's taste and convenience. There are other places, also, which are probably little inferior to these, although custom has not yet favoured them so highly: Sidmouth,† Bournemouth, Southampton, and some of the other sheltered towns upon the same coast, may perhaps vie with either of the other three, when carefully conducted meteorological observations shall have made us more familiar with their respective claims. It must not be expected that any of these are unexceptionable. There is not one where, during the winter months, the patient can enjoy uninterrupted out-door exercise; but I am satisfied that they offer as many advantages as any places upon the Continent, whilst they possess the charm—so dear to every Englishman—of not altogether depriving him of familiar faces and home comforts.

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* "The Climate of Hastings", by Dr. Mackness. "The Undercliff of the Isle of Wight", by Dr. Martin. "On Pulmonary Consumption", by Dr. Madden.

† "See "Tables on the Climate of Sidmouth", by Dr. Cullen.

An opinion has prevailed that the East Indian climate is suited to consumptive persons: nothing, however, is more erroneous. Some of the most rapid and intractable cases of phthisis I have ever met with, have had their commencement in India. Mr. Martin informs me, that phthisical persons, arriving in the East Indies, are generally carried off with great rapidity,—often within five or six weeks of their landing. I have received, indeed, a similar account of the rapidly fatal progress of the disease from several other Indian practitioners: one gentleman assured me that, in order to see phthisis in all its formidableness, it was necessary to visit India.

The West Indies, on the contrary, appear to offer, *under certain conditions*, some advantages to consumptive sufferers. The late Dr. Musgrave, of Antigua, kindly supplied me with the particulars of cases of very early phthisis, and I am practically acquainted with others, in which an escape from an English winter, by a temporary visit to some of the West India islands, was attended with benefit. I cannot do better than quote Dr. Musgrave's words: —"I am decidedly in favour of the good effects of this climate, *in the first stage* of the disease; but, when softening or excavation has actually taken place, the case is completely altered; *patients should then be sent to some of the milder localities of their own country.*" Dr. Nicholson, of Antigua, who is able to speak from the experience of nearly a quarter of

a century, thus expresses himself upon this point: "The consumptive individual, who expects to derive benefit from the West Indies, must not wait until the disease has advanced into the second stage, but must have sufficient strength to enjoy active exercise in the open air; for, in those who have reached the latter stages, the high temperature only encourages the fatal progress." My own feeling, however, upon this subject, would lead me in no case to *advise* that climate for consumptive patients, believing firmly that those whom it would benefit, might gain equal good at a less risk, and with much greater comfort, nearer home. But it is perhaps worthy of being remembered that the West Indies may be resorted to, in the early stage of the disease, not only with safety, but with a prospect of benefit, should the experiment meet the inclination and the convenience of the patient.

Egypt has gained some notoriety as a residence for phthisical invalids; and, for the early stage of the disease, it may not be undeserving of its reputation. I have known two or three patients, whose health was sufficiently good to enable them to undergo the troubles and privations inseparable from such an undertaking, return from a sojourn in Upper Egypt considerably improved both as to their general and local symptoms; but, on the other hand, I have met with cases where the experiment was not merely unsuccessful, but actually prejudicial. Professor Griesinger has fully demonstrated

the inability of the Egyptian climate to check the developement of tubercle, having, in 363 dissections at Cairo, met with 62 cases of tubercular deposit, being in the proportion of 17 per cent. He believes, however, that the climate is suited to the consumptive; but "the disease", he says, "should be *in an early stage*, and without abdominal complication. The patients should arrive in October in Alexandria; should go to Cairo in November, and there remain, or go to Upper Egypt or Nubia. In March, or at the beginning of April, they should leave Egypt."*

An interesting paper, published by Mr. Nourse,† contains a precisely similar opinion, and very similar counsel. The disease, he says, must not have "gone beyond the *preliminary* or the first stage"; and the patient must be able "to bear a little fatigue, and to disregard a few discomforts".

With the exception of these papers, to which I would refer for more ample information, I am acquainted with no recorded testimony to the influence of the Egyptian climate upon consumptive patients. My own convictions would lead me, in no case, to *advise* the experiment; and only to sanction it at a very early period of the disease, and under other peculiarly favourable conditions.

Algiers has, of late, attracted some attention as

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* Archiv für Phys. Heilkunde, 1853.

† Lancet, vol. i, p. 67, 1854.

a residence for the phthisical sufferer. The testimony in its favour, however, is slight and unsatisfactory. There is not, I believe, any authentic *published* evidence of its effects; and its notoriety rests wholly upon that most inconclusive of all evidence—popular report. I have no doubt that the reputed mildness and cheering influence of the climate may be well suited to many cases of *early and quiescent* phthisis; but such cases, I maintain, are as likely to be benefited by a residence less distant and much more suited both to the habits and necessities of the English invalid. To banish a person labouring under *advanced* phthisis to Algiers, would be, in my opinion, nothing less than cruel.

The physician is often consulted, in these days of emigration, respecting the propriety of persons leaving England, who are either phthisical, or strongly predisposed to become so. In deciding this question, everything must depend upon the condition of the individual, and the place of his destination. Before it receives our sanction, we should, I think, clearly ascertain that the pulmonary disease has not passed the first stage, and that the patient's general health is still tolerably good.

The climate of Australia has been much praised, especially for its supposed influence upon thoracic diseases. It would seem, however, to be but ill suited for most consumptive persons. In a well written and apparently impartial paper, published by W. J. Sterland, Esq., in one of the medical

journals,* the subject is fully, and, so far as I am aware, for the first time, discussed. The author is of opinion that, under certain rules, chiefly having reference to guarding against the sudden and extreme changes of temperature which he states to be the characteristics of the Australian climate, "consumption *in its incipient stage*" is likely to be benefited. He mentions, however, that in Australia "the disease is very frequent, and often fearfully rapid in its course"; that the "excessive heat is extremely depressing", destroying all energy, and producing utter exhaustion; and that he has frequently known a variation of the thermometer "from 10° to 30° in from two to five minutes". If these circumstances, therefore, be taken in connexion with each other, it must be obvious that only very early and rather exceptional cases of phthisis are likely to be benefited by emigration to Australia.

Of New Zealand, in its influence upon disease, little is known. From scattered sources of information, I am led to believe that, however fine its climate, the same remarks apply to it as to Australia. It may perhaps be said of both these colonies, that, whenever the phthisical emigrant appears to be sufficiently strong to combat the difficulties, and to enter upon the new and active duties which await him, he may be allowed, although in but few instances perhaps encouraged,

* Association Med. Journal, vol. i, p. 671.

to make the experiment. The emigration of phthisical persons, indeed, must ever be regarded as an experiment, and one which the physician must well consider before he should recommend. And there is not, I believe, any other colony than the two already mentioned where it can ever be advantageously or even safely tried.

Cod-liver Oil.—Whether we regard this medicine as a means of arresting, or simply of palliating consumption, it undoubtedly ranks higher than any other with which we are acquainted. Some prejudice, however, against its employment still exists, based upon a belief that its good effects are not lasting; and that it fattens, without permanently improving the health, or adding to the strength. It certainly does so in a number of cases; but, on the other hand, the examples of its success are so numerous and unquestionable, that we have, I think, only to bear in mind the character of the disease we are dealing with, and how utterly powerless against it are the majority of medicinal agents, to be forced to the admission that the use of cod-liver oil was the commencement of a new and most important era in the treatment of consumption. So highly do I esteem this medicine in phthisical cases, that I venture to declare my conviction that, where it has not been administered, all has not been done that might and should have been.

We have, in this medicine, a remarkable illustra-

tion of the advantage of *experiment* in the application of remedies, even in direct opposition to theoretical views, since no one could have anticipated that a substance possessing only in a very small degree any active ingredient, could have such a decided effect upon the most obstinate morbid condition with which we are acquainted. The very composition of the oil would afford, indeed, to many persons, *à priori* reasons against its employment; as we have already seen that the softening or further degeneration of tubercle essentially consists in its conversion into fatty matter, which might be expected rather to be promoted than otherwise, by the introduction into the system of so large a quantity of oil. Experience, however, tells us that, during the process of softening, cod-liver oil is particularly useful;—an interesting point in relation to pathology, as corroborative of the original statement of Dr. Quain, that fatty degeneration of animal tissues is not a simple error of nutrition, but a *physical* change in the part itself, depending upon diminished vitality.

There are several kinds of cod-liver oil, each differing from the other in purity, colour, and flavour; but none should be employed which is not clear, and, as nearly as possible, tasteless. The pale oils are usually preferred; but many of the light brown varieties, when they agree with the stomach, are very efficacious. The dark-coloured and impure oils, however, although they were at

first thought superior to the others, are unfit for use, as they cannot be taken for a sufficient length of time without producing disgust and destroying the appetite, which is very seldom the case with the purer varieties.

The great object, on first giving it, should be to avoid nausea; and this is in general easily accomplished, by commencing with a small quantity. A teaspoonful twice daily is sufficient to begin with, and this may be increased, according to circumstances, until it reaches as much as from one to two tablespoonsful at each dose; by proceeding gradually in this way, the stomach becomes the sooner reconciled to its use, and the more likely to endure its continuance. Many persons recommend it to be taken in much larger doses; but I have usually found that these disorder the function of digestion, and impair the appetite; whilst every good which the remedy can effect seems to result equally from the quantity I have named. It is seldom that the oil causes sickness, and, if once the dislike to its oiliness and flavour be overcome, it rather improves than otherwise both the appetite and the digestion: indeed, in many instances, it will remain upon the stomach at a time when nearly every kind of food is rejected. It may be given at any time in the day, the inclination of the patient being in this respect the best guide. Sometimes it is most easily taken the last thing at night, and in many cases I have known it agree

very well just before or after meals. The vehicle with which to administer it may be left to the taste of the patient; but, after many experiments upon this point, I have found that nothing is better than new milk or some home-made wine, of which orange and ginger are the best; bitter ale, or infusion of orange peel, also answers very well; but there is scarcely anything with which it may not be given. In the few cases where it really disagrees with the stomach, there are several ways in which this may be counteracted; and if one should fail, another may succeed. Some of the light vegetable tonics, especially gentian, calumba, and cascarilla, either with soda or hydrocyanic acid, or else with one of the mineral acids, and especially the nitro-hydrochloric, are then oftentimes very useful mediums. Quinine also sometimes reconciles the stomach to its presence. I have known a pinch of common salt, taken immediately after the oil, produce an equally good result; and a little lemon-juice, administered in the same manner, is sometimes not less efficacious. The unpleasant odour, as well as the oiliness, may be completely disguised by making it into an emulsion by means of mucilage or liquor potassæ; but such a combination, although perhaps now and then necessary on account of the sickness which is otherwise occasioned, is, I have reason to think, far less beneficial than the pure oil.

Cod-liver oil is equally applicable to every period

of phthisis—at its commencement, as in its final stage,—and is never contraindicated, except perhaps when there is active hæmoptysis or diarrhœa, when, as a matter of precaution, and to afford scope for other remedies, it is just as well to suspend its use. It has been thought sometimes to produce diarrhœa, but this, I believe, is never the case unless the oil is impure, or has become rancid; and I have many times proved its harmlessness with respect to hæmoptysis, by continuing it in union with appropriate styptics, when this symptom has occurred; the result being, to all appearance, quite as successful as if it had been omitted. Pulmonary congestion has been said to follow its use, but I have never seen any grounds for such a conclusion. The perspirations are never increased by it; and the more severe the cough, the greater is the reason for giving it, since, in addition to other qualities, it often proves an excellent cough medicine.

Many persons cannot take the oil except in a separate form; but I am convinced that its value is much augmented when it can be combined with some preparation of iron, or with one of the vegetable tonics. For this purpose, nothing is better than the syrupus ferri iodidi, the vinum ferri, and the ferri ammonio-citras; or cinchona, quina, cascarilla, or calumba. When the appetite is defective, or there are dyspeptic symptoms, the latter class of remedies is the most useful; steel being better adapted to cases of simple debility coupled with anæmia.

It is often a good plan to vary the mode of administering the oil. When it has been taken alone, or in conjunction with some other medicine, for a length of time, and is beginning either to lose some of its good effects, or to disagree with the stomach, a tonic may be given in the early part of the day, and a full dose of the oil a few hours subsequently; or the oil may be temporarily discontinued, and its place supplied by one of the medicines just now alluded to. Changes of this kind often, as it were, renew the efficacy of the remedy, and in many instances seem even to increase it.

To ensure the full effect of cod-liver oil, a long trial is essential; and much of the disappointment it has occasioned is probably owing to this condition not having been attended to. It should certainly not be abandoned under, at least, five or six weeks; and, as a general rule, the longer it is employed, the greater is the chance of its success. I have several patients who have been taking it for years, and who could not be induced to discontinue it.

With a view of illustrating the influence of this remedy in consumption, I subjoin a table of a hundred cases in which I employed it upon the out-patients of the Brompton Hospital; and as these are selected from many others, upon no other grounds than the completeness of their histories, they may be regarded as a fair expression of its effects.

TABLE X.

Showing the Action of Cod-liver Oil upon ONE HUNDRED CASES *of Consumption in Different Stages.*

(The asterisks denote that that particular effect was observed in the case opposite to which they are placed.)

No.	Sex.	Age.	Stage of Disease.	Time under Treatment.	General Effect.			Effect upon Weight.			Average increase of weight per week (about).	REMARKS.
					Great improvemt.	Moderate improvemt.	No improvemt.	Gain.	Loss.	Neither.		
1	F.	18	2	4 mon.	*			1 stone			1 lb.	
2	M.	32	1	2 mon.			*			*		Died.
3	F.	40	3	5 mon.		*		3 lbs.			2 oz.	Ceased attendance.
4	F.	23	2	4 mon.	*			7 lbs.			7 oz.	
5	M.	17	1	6 wks.	*			4 lbs.			10 oz.	Resumed work; health greatly improved.
6	M.	38	1	4 mon.		*		2 lbs.			2 oz.	
7	M.	29	1	3 mon.		*			2 lbs.			
8	M.	49	1	7 wks.		*				*		
9	M.	7	1	7 wks.	*			5 lbs.			10 oz.	Health restored.
10	M.	36	2	2 mon.		*		2 lbs.				
11	M.	40	2	5 mon.	*			17 lbs.			13 oz.	Disease arrested; health improved.
12	M.	41	1, 2, 3	3 mon.			*		15 lbs.			Died.
13	M.	27	3	16 mon.	*			3 stone			1 oz.	Able to resume work.
14	F.	23	2	7 mon.		*				*		

No.	Sex.	Age.	Stage of Disease.	Time under Treatment.	General Effect.			Effect upon weight.			Average increase of weight per week (about).	REMARKS.
					Great improvemt.	Moderate improvemt.	No improvemt.	Gain.	Loss.	Neither.		
15	M.	26	1	3 mon.	*			2 lbs.			3 oz.	Health restored.
16	M.	30	3	3 mon.			*		13 lbs.			Disease increasing when last seen.
17	M.	42	3	2 mon.		*				*		
18	F.	28	1, 2, 3	5 mon.			*		5 lbs.			Ditto.
19	F.	43	1	3 mon.		*		4 lbs.			5 oz.	Health improved.
20	M.	18	1	8 mon.		*		4 lbs.			2 oz.	Resumed work.
21	F.	23	3	9 mon.	*			2 stone			1 oz.	Resumed work; health greatly improved.
22	F.	27	3	9 wks.			*			*		
23	M.	31	1	3 mon.			*		2 lbs.			
24	M.	47	1	4 mon.	*			4 lbs.			4 oz.	Disease arrested.
25	F.	29	1	7 mon.			*		4 lbs.			
26	M.	21	3	6 mon.			*			*		Died; at first gained 7 lbs. and improved in health.
27	M.	25	1	6 mon.			*		5 lbs.			
28	M.	17	1	10 mon.			*					Died; at first improved, and gained 10 lbs. in 4 mon.
29	M.	32	1	6 mon.			*		9 lbs.			
30	M.	22	3	14 mon.		*			4 lbs.			Dis. arrest., health improv.

31	M.	38	2, 3	4 mon.			*		3 lbs.			Died.
32	F.	28	3	21 mon.	*			2 stone			5 oz.	Resumed occupation; health improved.
33	M.	17	3	10 mon.	*			3 lbs.			1 oz.	Health much improved; discontinued attendance.
34	M.	38	3	2 mon.			*					Died.
35	F.	25	1	3 mon.	*			7 lbs.			9 oz.	
36	F.	57	1	3 mon.		*				*		
37	M.	40	1	6 mon.	*			12 lbs.			8 oz.	Disease arrested; calls himself well.
38	F.	15	3	16 mon.			*		6 lbs.			Died.
39	M.	33	1	2 mon.	*			8 lbs.			1 lb.	Disease arrested.
40	F.	20	1	5 mon.			*			*		
41	M.	29	1	8 mon.	*			2 lbs.			1 oz.	Disease arrested; calls himself well.
42	M.	14	3	2 mon.			*					Died.
43	M.	43	1	2 mon.		*				*		
44	M.	32	3	3 mon.						*		
45	M.	33	1	4 mon.		*		6 lbs.			6 oz.	
46	F.	44	1, 2, 3	4 mon.			*		7 lbs.			Died.
47	M.	25	1	3 mon.		*				*		Resumed work; health tolerably good.
48	F.	27	2	3 mon.			*					
49	F.	40	1	7 mon.	*			7 lbs.			4 oz.	Health apparently restored.
50	M.	29	1	9 mon.		*		6 lbs.			3 oz.	
51	M.	18	1	4 mon.	*			12 lbs.			12 oz.	

No.	Sex.	Age.	Stage of Disease.	Time under Treatment.	General Effect.			Effect upon Weight.			Average increase of weight per week (about).	REMARKS.
					Great improvemt.	Moderate improvemt.	No improvemt.	Gain.	Loss.	Neither.		
52	M.	30	1, 2, 3	5 wks.			*	8 lbs.			12 oz.	Disease advancing rapidly when last seen; reported to have died.
53	F.	19	2	7 mon.		*		2 lbs.			1 oz.	Health improved; pulmonary disease checked.
54	M.	43	1	3 mon.			*			*		
55	M.	17	1, 2, 3	2 mon.			*		6 lbs.			Died; improved at first, and gained slightly in weight.
56	M.	44	1	1 mon.			*		2 lbs.			
57	F.	19	1	3½ yrs.	*			2 stone			variable.	Gained in weight at first, but soon ceased to do so; disease quite arrested, and health restored; still takes the oil.
58	M.	18	1	4 mon.		*				*		Resumed work.
59	M.	23	1	3 mon.			*		7 lbs.			Disease advancing.
60	M.	28	1	3 mon.		*				*		Resumed work; health greatly improved.
61	M.	28	1	3 mon.	*			3 lbs.			4 oz.	
62	F.	32	1	2 mon.		*		5 lbs.			10 oz.	

63	M.	22	1	3 mon.			*		4 lbs.			
64	M.	19	1	4 mon.			*		4 lbs.			Disease advancing.
65	F.	49	2	7 mon.	*			6 lbs.			3 oz.	Disease arrested; health much improved.
66	M.	21	1	7 mon.	*			7 lbs.			4 oz.	Disease arrested.
67	M.	20	2	4 mon.			*		4 lbs.			
68	M.	19	1	2 mon.	*			2 stone			$3\frac{1}{2}$ lbs.	Health quite restored.
69	F.	40	1	1 mon.			*			*		
70	M.	43	2	11 mon.			*		11 lbs.			Died; at first improved, and gained considerably in weight.
71	F.	28	1	2 mon.			*		2 lbs.			
72	M.	24	1	4 mon.	*			3 lbs.			3 oz.	
73	F.	34	3	3 mon.		*		4 lbs.			5 oz.	Resumed occupation.
74	M.	25	1	2 mon.			*		6 lbs.			
75	M.	11	1	2 mon.	*			7 lbs.			14 oz.	Health restored.
76	M.	25	1	4 mon.		*		2 lbs.			2 oz.	
77	M.	48	3	2 mon.			*		2 lbs.			
78	F.	30	1	6 mon.	*			3 lbs.			2 oz.	
79	F.	58	2	3 mon.	*			1 stone			1 lb. 5 oz.	Health improved; able to do light work.
80	M.	32	1	3 mon.	*			7 lbs.			9 oz.	
81	M.	28	1	6 mon.			*		2 lbs.			At first improved; and gained 5 lbs. in 5 weeks; ceased attendance.
82	M.	26	1	6 wks.		*		2 lbs.			5 oz.	

No.	Sex.	Age.	Stage of Disease.	Time under Treatment.	General Effect.			Effect upon Weight.			Average increase of weight per week (about).	REMARKS.
					Great improvemt.	Moderate improvemt.	No improvemt.	Gain.	Loss.	Neither.		
83	F.	30	1	4 mon.		*				*		Disease arrested.
84	M.	39	1	3 mon.		*				*		
85	F.	11	2	3 mon.		*		1 lb.				
86	M.	24	1	6 wks.	*			1 lb.			3 oz.	Disease arrested.
87	M.	23	1	4 mon.	*			5 lbs.			5 oz.	
88	M.	20	1	2 mon.			*		4 lbs.			Disease advanced rapidly.
89	F.	27	3	4 mon.			*			*		Disease stationary.
90	M.	24	3	2 mon.			*		4 lbs.			
91	F.	24	2	2 mon.			*			*		At first increased in weight; ceased attendance.
92	M.	18	3	3 mon.			*		6 lbs.			
93	M.	49	2	3 mon.	*			4 lbs.			5 oz.	Disease arrested; health improved.
94	M.	38	1	3 mon.		*		2 lbs.			$2\frac{1}{2}$ oz.	Resumed work.
95	M.	26	1	4 mon.			*		9 lbs.			
96	M.	40	2	3 mon.			*		6 lbs.			Disease advancing.
97	F.	30	1	6 mon.			*		3 lbs.			Disease advancing.
98	F.	28	1	3 mon.	*			4 lbs.			5 oz.	Disease arrested; health apparently good.
99	M.	30	2	3 mon.			*		3 lbs.			Disease advancing.
100	M.	35	1, 2, 3	10 mon.			*	8 lbs.			3 oz.	Died.
TOTAL					31	26	43					

From this table the following particulars may be gathered:—Thirty-one patients were *greatly improved;* twenty-one of these were in the first stage; six in the second stage; and four in the third stage. Of those in the first stage, five entirely regained their health, and, were it not for the chance of a relapse, might be fairly said to have been cured; nine resumed work, enjoying a complete arrest of their disease; and seven failed to report themselves finally at the hospital. Of the six in the second stage, three had their pulmonary disease checked, and gained sufficient strength to resume their several pursuits; whilst the remaining three ceased hospital attendance before their cases were completely noted. Of the four in the last stage, three were able to return to their employment, and one, although unfit for exertion, seemed to enjoy tolerable health.

Twenty-six patients were *moderately improved.* Of these, eighteen were in the first stage, four in the second stage, and four in the third stage. Of those in the first stage, seven gained in strength, and were able to return, with more or less success, to their occupations; whilst eleven discontinued their attendance without finally reporting themselves. Of the four who were in the second stage, one had the pulmonary disease arrested, and the general health considerably improved; and three enjoyed a respite from some of their most troublesome symptoms, and were supposed to have re-

sumed work. Of the four in whom the disease was still more advanced, two improved sufficiently to attend to their domestic duties; and the other two were also supposed to have done so, but were lost sight of.

In forty-three cases, however, *no improvement* was observed; or the benefit some of them might have derived was inconsiderable and transient. These were also in various stages of the disease. Eleven were known to have died; many were obviously becoming worse when last observed; and several ceased attending the hospital.

In comparing the effect upon the weight with that upon the general health, it will be seen that, although there was in no case any *great* improvement without an increase in the weight, there were several instances of *moderate* improvement where the weight remained stationary, and two under the same head in which it was actually diminished. It will be also observed that the degree of improvement was not always in proportion to the increase of weight; several who had gained the most, not being the most improved. Two remarkable cases will be seen in which the weight was augmented,—one to the extent of three ounces, and the other to that of twelve ounces, weekly, although at the same time the tubercular disease was advancing: in one of these death took place suddenly; the other was lost sight of, but was supposed to have ended fatally.

It is difficult to tell upon what the beneficial action of the oil depends. Some persons have attributed it to the iodine or bromine which it invariably contains; others have considered its efficacy principally due to its chemical composition, and that, as a simple hydrocarbon, it adds to the fatty constituents of the body; whilst many have attempted to account for its effects upon physiological principles. Such explanations, however, are not altogether satisfactory. The truth is, that we know very little of the *modus operandi* of any medicinal substance; and there is no reason why that of cod-liver oil should form an exception. I am content to regard it as a highly animalized substance, having certain ultimate elements so arranged in organic compounds, that these are readily taken into the system at a time when the digestive organs refuse to be reconciled to many other dietetic and medicinal agents; its effect in checking the tubercular formation being, in a great measure, an indirect one, and dependent upon the influence it exerts on the general health. That it has, however, at the same time, some special action upon the tubercular diathesis, cannot, I think, be questioned; although it is difficult to understand in what manner, and under what conditions, such an action is exerted. Cod-liver oil, in fact, has the singular quality of combining the properties both of *food* and *physic;* its nutritive power is evinced in its tendency to fatten the body, whilst its tonic action is manifested

in its strengthening the muscular system, and invigorating the spirits.

The external use of cod-liver oil has been variously spoken of by different writers. Dr. Simpson, of Edinburgh, has drawn attention* to the remarkable circumstance, that the workers at the large woollen manufactories in Scotland are singularly free from consumption; and this he has attributed to the free and constant application, to the cutaneous surface, of the immense quantity of oil used in the construction of woollen fabrics. The subject is one of great interest; but, it appears to me that, even admitting the comparative immunity of the wool-workers from phthisis, it is not impossible that other circumstances may have a very considerable share in such a result. Certain it is, that inunction, performed under conditions which might fairly be regarded as far more favourable than any which could possibly be attained in wool factories, is too generally unsuccessful. I have tried it in many cases, but with very little advantage. In a few instances, the patients gained in weight, and otherwise improved in health; but, the experiments having been performed in the hospital wards, it was impossible to disregard the concurrent effect of improved diet, rest, and freedom from anxiety, and to refuse to each of these its due share in the result; and I must confess my belief, that the

* Edinburgh Monthly Journal, 1853.

chief benefit was rather attributable to the latter circumstances than to the inunction.

The rubbing in of the oil, however much disguised, is a most unpleasant operation, and not unfrequently produces nausea and loss of appetite. The subsequent odour, particularly in persons with active cutaneous functions, is most disagreeable, and is apt to render the patient loathsome to himself as well as to others. So numerous, indeed, are the objections, and, as it appears to me, so equivocal the advantages attending the outward use of the cod-liver oil, that for some time past I have employed it chiefly in deference to the wishes of those patients who have placed faith in it, and in a few cases also, as an experiment, where it could not be taken internally. I believe it may occasionally act as an auxiliary to other treatment; but that, in itself, it is at best a feeble and uncertain agent.

I have occasionally employed the cod-liver as well as other oils as a medium for the outward application of iodine, but have found it less agreeable, and not more efficacious than glycerine.

Other Animal and Vegetable Oils.—With a view of ascertaining the value of substances bearing more or less analogy to cod-liver oil, I have made repeated trials of train oil, the oil of the spermaceti whale, and neat's foot oil; as well as of linseed, almond, olive, and cocoa-nut oils.

The common *train oil*, after being disguised by

some aromatic essence, such as cinnamon or peppermint—in order that the patient's imagination might have no share in the result—was given to fifty cases in different stages, and notes were carefully preserved. Except in ten instances, it was not continued longer than a month; for, within this period, its inferiority to the cod-liver oil became too manifest to justify further experiment. In these ten cases it was taken—and for a considerable time—with good effect, especially in those which had reached the third stage: there was in each an increase of weight; the cough was lessened; some of the most urgent symptoms were relieved; and the health improved. Upon the whole, however, the benefit appeared less than might have been expected from the cod-liver oil.

The *spermaceti oil* was tried in the same number of cases, but with less satisfactory results. In four or five instances the health improved; the weight slightly augmented; and the cough diminished: but in none was the advantage of this remedy either so conspicuous or long continued as that of even the train oil; and, upon the whole, the effect was so little encouraging, as to lead to its early discontinuance.

Neat's-foot oil was given to twenty patients, and persevered with for a longer period than either of the preceding; but with a very similar result. Some gained slightly in weight, and expressed themselves as having received benefit; but the

majority appeared so little, if at all improved by its employment, that this oil, like the others, ultimately gave place to its more trustworthy competitor.

From these observations it may, I think, be concluded, that other animal oils possess the same qualities as those of the cod-liver oil, although in a less degree; and that the nearest approach to the latter is found in the common whale or train oil, which, in case of necessity, might, to some extent, become its substitute. It may be thought that the trial afforded them was of insufficient duration; but I became so soon convinced of their comparative inferiority, as to feel it would be wrong to sacrifice to further experiment the most fitting opportunity for making some impression upon the course of the tubercular disease.

The *linseed*, *almond*, and *olive oils* may be included under one head. They were given respectively in about thirty cases, in all of which there was either no improvement whatever, or it was so slight as to render it difficult to determine whether or not the oil deserved any of the credit. The cough, however, was generally diminished by their influence, but neither the patient's appetite nor strength was materially increased; whilst the olive oil occasionally produced diarrhœa, and a disinclination for food. It was singular, indeed, to observe the rapid improvement which often followed their exchange for the oleum aselli. In

one instance, after the linseed oil had been taken for nearly a month with no success, the cod-liver oil completely restored the patient's strength and added to his weight one stone and one pound within six weeks: and in another instance, after having prescribed the linseed oil, apparently with signal success, the health being improved and the weight greatly increased, and whilst imagining that at last my expectations had been realized, I discovered that the hospital supply having become exhausted, the patient, dissatisfied with his improvement, had been taking, of his own accord, the oleum aselli. I had also many similar illustrations in reference both to the almond and olive oils.

Cocoa-nut oil certainly appeared to be more efficacious than any of the other vegetable oils. In two or three cases in which it was prescribed the patient's weight increased, and the general health decidedly improved; in others, however, it seemed to have little, if any effect. After repeated trials, the conclusion became irresistible, that, like the other oils, it would bear no comparison with the oleum aselli.

Glycerine. This substance has been used with varied results in the treatment of consumption. By some medical practitioners it has been so much extolled as to be put into competition with cod-liver oil; whilst in the hands of others it has signally failed. With a view of fairly testing its

effects, I prescribed it, at the Consumption Hospital, for twenty-three of the in-patients in various stages of the disease, and have published a tabular statement of the results.* In only five instances did it seem to be of service, and even in these the improvement was but moderate, and might have been equally due to other causes—such as better diet, etc.; and two of the patients afterwards progressed at a greatly increased rate under cod-liver oil. In the remaining seventeen cases there was either no appreciable improvement, or the patients became worse; whilst in nine of them more or less benefit became rapidly apparent, when the glycerine was exchanged for cod-liver oil. I necessarily arrive, therefore, at the following conclusions:—

1. That glycerine has generally but little influence upon phthisical cases.

2. That, as a remedial agent in consumption, it will bear no comparison with cod-liver oil.

When, however, cod-liver or any other oil cannot be taken, glycerine may be worth a trial, since it has been stated, and I believe with truth, to have proved useful in some forms of scrofulous disease, especially amongst children. Being an excellent solvent of iodide of iron, it may be tried in conjunction with this remedy: I have known such a combination of much service, particularly in young

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* Medical Times and Gazette, vol. xiv, p. 641, 1857.

persons, and in early stages of the disease; although I believe that the iodide might claim the chief part of the credit.

Iodine.—The *iodide of potassium* has long been employed in phthisical cases, and, according to the accounts which have been published, with variable results. I have myself tried it in all kinds of combinations; in every stage of the disease; and under a great variety of circumstances; but hitherto without particular success. I believe that it exerts no specific action upon the tubercular deposit.

I have also tried iodine in an uncombined state, pretty extensively, but with no better success. It was given in frequently repeated doses varying from the $\frac{1}{16}$ to the $\frac{1}{4}$ of a grain, in union with the oleum cetacei; but with such uncertain and equivocal results, that I have nearly abandoned its employment. In many instances it diminished the patient's appetite; in none did it afford any obvious benefit; and there was nothing in its action to encourage the slightest belief in that specific influence which iodine has been thought to possess upon tuberculous diseases.

The *iodide of iron* was introduced as a remedy for phthisis by M. Dupasquier, of Lyons, and, although perhaps a little too much eulogized by him, is unquestionably an excellent remedy in many cases. Its advantages are most conspicuous before softening takes place, but it may be usefully employed at any subsequent period. I carefully

observed its effects in twenty cases of incipient phthisis; in six, the disease seemed to be arrested and the health greatly improved; in five, there was a manifest change for the better; but in the rest, it appeared to be inactive. Of the six who received the most benefit, the weight of two remained stationary, but in the others it increased,—in one case two pounds per month for four successive months, and in the others, to not quite double that amount. I have always given it either dissolved in glycerine, or in the form of the syrupus ferri iodidi. The former, where it agrees with the stomach, is an agreeable way of taking it. From two to four grains dissolved in a drachm of glycerine, or from half a drachm to a drachm of the syrup, may be taken twice or three times a day for weeks together without producing the least inconvenience. In a few instances I have been obliged to abandon it in consequence of the nausea and loss of appetite it occasioned; but this seldom happened unless it had been taken in too large a quantity. Where there is dyspepsia, it may be combined with quassia, or with calumba; but in ordinary cases, nothing surpasses its union with the cod-liver oil, a combination of which I have already spoken, and which seems to enhance the power of each of its constituents.

Severe hæmoptysis and diarrhœa are perhaps the only symptoms which forbid the employment of the iodide of iron; the perspirations seem to be rather checked by it than otherwise; and the cough need not be considered an impediment to its use.

Iron.—Much of the advantage attached to the last preparation is undoubtedly attributable to the iron it contains, as the various medicinal preparations of this metal are frequently of much service in phthisical cases, more especially when the patient is anæmic, and the disease in an early stage. It may be given alone, but in a usual way it is better to combine it with cod-liver oil. It matters little which of its numerous forms is selected for this purpose. The old muriated tinct. of iron,* and the phosphate of iron, are excellent preparations. Steel wine and the oil, mixed in equal proportions, appears to me one of the most useful combinations in every form of tubercular disease, and is particularly well suited to young patients. When there is dyspepsia, or much irritability of the stomach, some of the lighter preparations of iron may be preferable; and of these none are better than the ferri ammonio-citras, and the citrate of quinine and iron; these likewise may be given, according to special circumstances, either separately, or in conjunction with the oleum aselli.

In advanced cases, steel often improves the appetite, and has a manifest tendency to check profuse discharges; in this way diminishing the perspirations, and lessening the disposition to diarrhœa and excessive expectoration.

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* I have seen more good from the following iron mixture than from any other. ℞ Tinct. ferri sesquichloridi ʒiss; acidi hydrochlorici dil. ʒiss; aquæ m. pip. ℥viii. M. Capeat partem sextam bis die.

Vegetable Tonics.—Although there are no medicines of this class which can be said to exert any specific influence upon tubercular disorders, there are several which may be regarded as valuable adjuvants to other treatment. Quinine and cinchona are frequently very useful in improving the appetite, increasing the strength, and diminishing the tendency to excessive perspiration. The lighter vegetable infusions, particularly those of gentian, cascarilla, and calumba, in union with soda or hydrocyanic acid, or sometimes with one of the mineral acids—especially the nitro-hydrochloric, often allay the dyspeptic irritability which forms so troublesome a symptom in many cases of consumption; thus preparing the way for a diet suitable to the phthisical disease, and for remedies of a more direct and active description. Quassia and calumba form useful vehicles for the preparations of steel; whilst the addition of either of these, or of some other of their class, to cod-liver oil, frequently reconciles the stomach to this medicine, when it cannot be taken separately without producing nausea and impairing the appetite.

Liquor potassæ claims a passing notice in consequence of its former celebrity as an absorbent in tubercular diseases; but after having given it a fair trial in every stage of consumption, and under every possible variety of circumstances, I have failed in discovering any particular advantage from its use. In union with a vegetable tonic, it may,

in proper cases, improve the appetite and relieve dyspepsia; but it does not exert the least influence, except in this indirect manner, upon the tubercular disease.

Naphtha.—This substance also demands a few observations for the very same reason as the last; although the eulogiums it has received far surpass those ever bestowed upon the liquor potassæ. I have prescribed it with the greatest care in upwards of fifty cases, at different stages of consumption. In many of these it aggravated the cough and produced more or less dyspnœa, with a distressing feeling of constriction across the chest, without effecting the slightest amelioration of the tubercular symptoms. In two instances only was any benefit observed; these patients—both of them considerably advanced in the disease—improved in health, increased in weight, and expressed themselves as much relieved. But in these cases, the general treatment pursued at the time of the naphtha being taken, might fairly claim a large share of the credit; both patients having been put upon an improved system of diet, and one of them having been sent into the country. Notwithstanding an early prejudice in favour of this medicine, I am compelled, after a fair trial of its effects, to pronounce it of little or no value in the treatment of phthisis.*

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* This opinion is shared by all my colleagues at the Con-

Inhalations have been used at various times either with a *curative* or *palliative* object. When the real nature of consumption was less understood, and the disease considered rather as a local than a general one, it was naturally anticipated that inhalation would become an important part of treatment, being the only means by which anything can be applied directly to the pulmonary mucous membrane. Chlorine gas, the vapours of iodine and of tar, and some other substances, have consequently been used at different times, and have not wanted advocates to maintain that, by their agency, phthisis may be completely cured.

More recent, and perhaps more careful experiments, appear, however, to have established as a truth that inhalations possess no *curative* influence upon consumption; and that, under the most favourable circumstances, they are able to do nothing more than mitigate some of the pulmonary symptoms.

I have employed chlorine and iodine in numerous cases, but without observing any particular effect upon either the general or local disease. Iodine, as I have already observed, is occasionally useful when the larynx is affected; but to pulmonary tuberculosis, it seems to be of little if any service. Chlorine also, so far as I have observed,

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sumption Hospital. See Medical Report of the Hospital for Consumption for 1849, p. 38.

is equally inefficient. The former of these sometimes produces headache, with dyspnœa and pulmonary irritation; and the latter, unless much diluted, has frequently the same effect. Chlorine, however, is serviceable in removing the fœtor which sometimes attends phthisical expectoration, particularly in the latter stages of the disease, and which is so annoying both to the patient and attendants. It may be inhaled by pouring hot water upon chloride of lime placed in a basin, over which is inverted an earthenware funnel. Creasote also may be usefully employed in the same way, as an antiseptic inhalation.

When the cough is irritable or spasmodic, the use of chloroform is sometimes beneficial: in the early stage of phthisis, I have several times employed it successfully; but it is inapplicable when the disease is far advanced, or the patient in a feeble condition. Hydrocyanic acid inhaled with the vapour of hot water, or the extract or tincture of conium or of hyoscyamus, used in the same way, is also occasionally productive of relief. Opium in a state of vapour sometimes lessens the cough and dyspnœa; but it requires so much care in its employment, as well as the use of a special apparatus,—which its effects so inadequately repay,—that it may, I think, be discarded from the list of medicated inhalations. Boiling water poured upon a handful of hops, or upon two or three poppy heads, forms a simple inhalation, and one which

will sometimes soothe the cough and induce sleep. The mere steam of hot water is oftentimes of some use: indeed, I have often doubted, when inhalation has been successfully employed, whether this simple agent has not had the chief share in the result.

Upon the whole, I think inhalations have little claim to our confidence, even as palliatives. In laryngeal phthisis, they sometimes afford relief, by diminishing the cough and the distressing tenderness of the larynx which so commonly attend this painful complication; but, even here, I have oftener been disappointed than not, in their effects. They have, however, this obvious advantage, that, when properly used, they can do no harm; and in a disease like phthisis, where the alleviation of symptoms constitutes so important a part of treatment, it is well to bear in mind the possibility of their success, however limited it may be.

CHAPTER VI.

THE DOMESTIC TREATMENT OF CONSUMPTION.

THERE are few diseases in which the resources of the physician are so severely taxed as in phthisis; and there are none, perhaps, in which the judicious regulation of the habits and associations of the patient are so important. I propose, therefore, making a few observations upon what may be termed the domestic management of the consumptive.

It will be apparent, from the remarks made in preceding chapters, that the treatment of phthisis essentially consists in so building up the general health as to enable it to battle with the malady; and that it is not by physic alone that this can be effected.

Amongst the ever necessary allies of medicine proper, *fresh air*, in-doors as well as out, is the most conspicuous. From the very commencement of phthisis, the rooms occupied by the patient should be carefully and regularly ventilated. At no period of the disease are perpetually closed doors and windows necessary, or even safe. In the early stages, a well aired bedroom is not a mere luxury, but a

requisite; and whenever, in more advanced conditions of the malady, in-door confinement may be necessary, a daily change of apartment should always be enjoined. From the moment that a consumptive patient is confined to one room, from which fresh air is studiously excluded, all hope of improvement is at an end. It was formerly the practice to "shut up", as it was called, "for the winter", the consumptive sufferer, and thus to deprive him of one of his main chances of combating the disease. Were I to be asked from what single circumstance in the general treatment of phthisis I had seen the greatest good accrue, I should be tempted to decide in favour of the liberation of such patients from their ill-advised incarceration.

Exercise, whenever it is really practicable, is a no less important part of treatment. It must, of course, be duly proportioned to the capability of the patient, and never be carried to such an extent as to induce fatigue. It is astonishing how much exercise many consumptive persons will not only endure, but actually enjoy. I have seen much benefit, in the early stage, from shooting and other equally active exercises; and, whenever such pursuits can be borne, they may safely be indulged in. Horse exercise, also, is often very beneficial, and may be advised in every case where it affords pleasure.

Whenever the strength is insufficient, or the disease too far advanced for such active pursuits,

walking should be daily practised; and when even this cannot be borne, carriage exercise should, if possible, be substituted. It matters little, indeed, which is selected, provided that the patient's strength, together with the proper conditions of weather, be duly taken into account. I am not advocating the indiscriminate exposure of patients to an atmosphere unsuited either to their strength or to particular symptoms under which they may be labouring; I am merely contending for the utility of judiciously regulated out-door exercise.

The *mental condition* of the consumptive is a scarcely less important matter. Upon no other disease does the mind exercise so decided an influence. Happily, as a general rule, phthisical patients are hopeful; and this hopefulness should be fostered in every possible manner. I would not be thought an advocate for concealing from a dying patient the reality of his state; but I hold it to be not merely unwise, but unjustifiable, in the earlier stages of the disease, to crush that sanguine aspect with which the patient may regard his case, and which is doubtless implanted in him for a useful purpose.

The *home* of the phthisical invalid should be happy and cheerful. Too much seclusion and too much excitement should equally be avoided. Suitable amusements, and abundant mental recreation should studiously be sought after; and everything gloomy and discouraging, as far as possible,

shunned. Such particulars, may, to some, appear but secondary and trivial; but by the practical physician their importance can scarcely be over-estimated.

Having already stated the general principles which should regulate the *diet*, I need only remark, that, in the absence of inflammatory complications, it should be of the most nourishing description. As a general rule porter, ale, or wine, should enter into the daily diet list of the consumptive patient,—not as matters of luxury, but as necessaries. A full amount of animal food, in all cases, but especially in young persons, should be advised; and everything, when the digestive organs permit of it, should be given, calculated to repair and improve the wasting tissues.

The physician is often consulted as to the propriety of healthy persons sleeping with consumptive ones. My own idea is, that under no circumstances should it be permitted: not, however, that I entertain any belief in the contagiousness of the disease;—but, whether a person be labouring under hectic or rheumatic fever,—whether he be the subject of consumption or of any other constitutional disease,—the secretions of the body must be too much disordered to render it judicious for a healthy individual to be, for any length of time, exposed to their influences. It is true we know but little of the working of such agents; but, that they may so reduce the standard of health as to

render a system, previously healthy, liable to diseases of their own or some other character, is a conclusion not merely reasonable, but very often demonstrable.

It would be easy to extend a chapter devoted to a subject so interesting and comprehensive as the domestic treatment of consumption; but, enough has already been stated for every practical purpose, and to enter further into detail would only be tedious and unprofitable. For a disease so varied in all its aspects, it is impossible to prescribe any law of universal application; but, if the nature of the malady be understood, and the right principles of treating it pursued, there will be no difficulty in applying to each case its own appropriate rules.

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