

An inquiry how far consumption is curable : with observations on the treatment, and on the use of cod-liver oil and other remedies : with cases / by James Turnbull.

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AN INQUIRY,
HOW FAR CONSUMPTION IS
CURABLE;

WITH
OBSERVATIONS ON THE TREATMENT,
AND ON THE USE OF
COD-LIVER OIL AND OTHER REMEDIES:

With Cases.

BY
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SECOND EDITION, ENLARGED.

L O N D O N :
JOHN CHURCHILL, PRINCES STREET, SOHO.
EDINBURGH: A. AND C. BLACK. DUBLIN: HODGES AND SMITH.
LIVERPOOL: DEIGHTON AND LAUGHTON.
AND ALL BOOKSELLERS.

1850.

1870

HOW FAR CONSUMPTION IS

CHARACTERIZED

BY THE

CONSTITUTIONAL AND TREATMENT.

The author has written a series of papers on the subject of consumption, and the results of his researches are here published. The first paper is on the "Pathology of the Lung," and the second on the "Pathology of the Heart." The third paper is on the "Pathology of the Liver," and the fourth on the "Pathology of the Kidney." The fifth paper is on the "Pathology of the Brain," and the sixth on the "Pathology of the Spinal Cord." The seventh paper is on the "Pathology of the Eye," and the eighth on the "Pathology of the Ear." The ninth paper is on the "Pathology of the Nose," and the tenth on the "Pathology of the Throat." The eleventh paper is on the "Pathology of the Larynx," and the twelfth on the "Pathology of the Trachea." The thirteenth paper is on the "Pathology of the Bronchi," and the fourteenth on the "Pathology of the Pleura." The fifteenth paper is on the "Pathology of the Pericardium," and the sixteenth on the "Pathology of the Endocardium." The seventeenth paper is on the "Pathology of the Aorta," and the eighteenth on the "Pathology of the Ventricle." The nineteenth paper is on the "Pathology of the Arteries," and the twentieth on the "Pathology of the Veins." The twenty-first paper is on the "Pathology of the Capillaries," and the twenty-second on the "Pathology of the Lymphatics." The twenty-third paper is on the "Pathology of the Skin," and the twenty-fourth on the "Pathology of the Muscles." The twenty-fifth paper is on the "Pathology of the Bones," and the twenty-sixth on the "Pathology of the Joints." The twenty-seventh paper is on the "Pathology of the Nerves," and the twenty-eighth on the "Pathology of the Senses." The twenty-ninth paper is on the "Pathology of the Mind," and the thirtieth on the "Pathology of the Soul."

Wilson and Ogilvy, 57, Skinner Street, Snowhill, London.

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PREFACE

TO THE SECOND EDITION.

THIS publication originally formed a paper which was read to the "Liverpool Medical Society" on the 24th of January of the present year. The subject was deemed of so much interest, that the discussion was adjourned till the following meeting ; and the paper was afterwards published in the "London Journal of Medicine." The demand for the copies reprinted from the Journal was such as to lead me to publish the present enlarged edition, which will be found to contain several additional cases.

The Curability and Treatment of Pulmonary Consumption are undoubtedly the two most interesting and practical points of view in which the subject can be examined. The former has, considering its importance, received very little notice in many systematic works, though several valuable papers have appeared upon it in the medical periodicals of this country and the continent. It is most desirable, however, that all who are interested in this disease should be made aware, how far the early adoption of judicious means affords a

reasonable hope of recovery ; and that medical men should make themselves acquainted with the indications of treatment, furnished by an examination of the subject in reference to curability, in order that they may be stimulated and encouraged to put forth persevering and energetic efforts to save their consumptive patients.

The general introduction of a remedy, which has acquired a deservedly high reputation in the treatment of this disease, has awakened a new interest ; and I therefore embrace the opportunity to lay before the profession a connected view of the most important facts.

Diseases of the chest have always received a large share of my attention ; and I may be permitted to quote from a lecture, forming one of a course on Auscultation and the Diseases of the Lungs and Heart, delivered in 1844, the opinion I then entertained as to the curability of consumption :—" I think, then, that it is our duty, not to look upon phthisis as absolutely incurable and fatal—a view which would paralyse all treatment—but as curable in a few instances where the disease is not very extensive. We shall thus be led to search for new remedies ; and there is reason to hope, that, as medicine advances, we shall discover new means of arresting its progress in the stage of deposition." The attention I have given to the examination of the chest with the stethoscope, and the experience I have since had of the value of cod-liver oil, with other means in the treatment, have confirmed these views, and convinced me that the disease may be arrested in

a larger number of cases than I at that time thought possible, especially if the means be adopted at an early period.

I am aware that medical men receive any facts, in reference to the curability of consumption, with much judicious caution; but enough has been laid before the profession, of late years, to show that the subject is worthy of re-examination; and the following statements, which are based either upon my own clinical observations, or on facts furnished by some of the most eminent authorities, if they should fail to convince, will at least, I trust, stimulate further inquiry.

Mornington Terrace, Liverpool,

May 1850.

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AN
INQUIRY,
&c.

SECTION I.

PRELIMINARY OBSERVATIONS—IMPORTANCE OF INQUIRY.

WE find that the opinion of ancient physicians was in favour of the occasional curability of consumption. This opinion is of some value, though it was formed from observation of the symptoms only; for they were unacquainted with the mode of examining the chest with the stethoscope, which has been introduced of late years, and has assisted so much in furnishing accurate knowledge in reference to the subject we are about to examine.

Bayle, who was a great authority at the beginning of this century, considered recovery impossible; and I believe that the general impression as to the hopeless nature of the disease may be traced back to the weight which his opinion has had with medical men. Yet it is a point worthy of notice, and to which I shall

again direct attention, that an unbiassed examination of the cases he has himself published ought to have convinced him of the incorrectness of such a sweeping conclusion.

The opinion of medical men on this subject has, in some instances, been favourably influenced by their personal experience. Thus, Dr. Young had all the symptoms of consumption, in his youth, but recovered; and, in the work which he afterwards published, he expressed his belief in the possibility of recovery in a limited number of cases. The celebrated French physician, Broussais, complained several times during his life of feeling something, at the summit of the right lung, which made him believe that there were tubercles in that part. And when he died, at an advanced age, it was found that there was adhesion at the top of the right lung, and a depression, which contained a small cretaceous mass, surrounded by dense black matter. These appearances proved the correctness of the opinion he had entertained, and we shall see that they afford undoubted evidence that he had escaped from consumption in the way in which recovery most frequently occurs.

We can scarcely overestimate the importance of this inquiry, and of correct information on the subject, when we consider the very general prevalence of this disease, and the amount of mortality it occasions. In London alone it amounts to about seven thousand annually; and in England, to about sixty thousand, or about one fourth of the mortality from all causes.

Besides this, consumption selects its victims, not like some diseases, from the extremes of life—from childhood and old age—but chiefly from those who are in the pride of youth, or in the prime and vigour of life. The greatest number of individuals of both sexes, who sink under this disease, are between the ages of 25 and 35; and, next to this, between 15 and 25; the periods of life when, therefore, the greatest vigilance should be exercised in the prevention of the disease in those hereditarily predisposed.

The profession, as well as the public, have been so strongly impressed with the belief that the disease is necessarily fatal, that any one who would have maintained the opposite opinion would, until very recently, have been looked upon only in the light of a boasting pretender. Notwithstanding this, pathological investigations have shown, in the clearest manner, that recovery often does take place from this disease; and ever since the able investigations of Laennec proved that this may occur from the spontaneous efforts of nature, subsequent pathologists have been accumulating facts, proving more fully the correctness of his views and statements. Auscultation and percussion, by enabling us to separate those diseases from consumption which most nearly resemble it, and to trace the successive steps of recovery on living individuals, have completed what was required, in order to establish the point. I believe that although many medical men are acquainted with these facts, the majority are not aware of the amount of strong evidence that exists in reference to

the curability of phthisis ; but I hope to bring forward in this paper a sufficient amount of facts to prove that it admits of recovery in several ways, and that we should increase our efforts to save consumptive patients, having now, besides cod-liver oil, other means which possess an undoubted power over this destructive disease.

Nature of tubercles and constitutional state.—Pulmonary consumption is a disease characterised by the deposition in the lungs of small grey or yellowish bodies, called tubercles, but in some rare cases tubercular matter is diffused more generally through the tissue of the lungs. When first visible, these little bodies are tough whitish granulations, of the size of a pin's head or a grain of millet-seed, and hence in this, the first stage, they are called miliary tubercles. When they increase, they progressively acquire the size of a hemp-seed or a pea, and they sometimes coalesce, so as to attain the size of a walnut or an egg. In this stage they become of a soft, cheesy consistence, and are called *crude tubercles*. They act upon the lung just as a thorn or other foreign body would : they irritate the part, and excite inflammation and suppuration around them, during which the tubercular matter itself becomes soft, and is transformed into mixed tubercular and purulent matter, which opens into the air-passages and is spat up, leaving a void space or cavity, which, like other ulcers of a scrofulous nature, continues to suppurate for a long period, but, in some fortunate cases, heals, leaving a cicatrix or scar in its place.

The fatality of the disease has arisen, not from any thing peculiarly noxious or malignant in the nature of tubercle itself, as is the case with cancer, the cells of which propagate themselves, but from the number of the tubercles being so great, that the lungs are destroyed, and the strength of the unfortunate patient wasted; whilst the tendency to the formation of the tubercular bodies, not only in the lungs, but in other organs, is increased by the debility. We are encouraged, therefore, to attempt the removal of the tubercles, by the fact of their not being of a malignant nature; and I shall have occasion to show that, in the great majority of cases where recovery takes place, they go back instead of suppurating, and are either absorbed, or transformed into chalky or stony bodies.

Tubercular disease is not peculiar to the lungs, but occurs in many other organs, especially the glands, where recovery has been distinctly traced out in the same ways; and it is caused by a peculiar debilitated or cachectic state of the system, which, in the opinion of almost all medical men, is identical with the scrofulous constitution. This scrofulous or tubercular state being the cause of the formation of these bodies, it follows that its removal must constitute an important indication in the prevention as well as treatment of consumption in every stage. What, then, is this constitutional state which causes the formation of these tubercular bodies? I believe that it is a state of imperfect nutrition: a condition in which the digestive organs are unable to manufacture from the food a per-

fect kind of blood, capable of nourishing every part, without allowing some imperfectly formed particles to escape at the same time. And the lungs being the organs through which the chyle, or fluid, newly formed from the food has to pass, in order to form perfect blood, we find that tubercular particles are arrested in these organs in a far greater number of instances than in any other part.

Some are born with a much stronger predisposition to tubercular deposit than others, but the long continued operation of debilitating causes, among the chief of which may be reckoned insufficient or unwholesome food, prolonged mental depression, sedentary habits, impure air, privation of the natural stimulants, —warmth and light ; and debilitating excesses of all kinds, are sufficient to produce the disease in some of the most healthy persons, and even in many of the lower animals. Consumption is then essentially a disease of nutrition ; and all these causes act by directly or indirectly preventing perfect digestion and assimilation of the food, and its conversion into blood completely vitalized and organized. I lean strongly to the humoral pathology, and I may advert to some points of resemblance between consumption and two other diseases, chlorosis and scurvy, which also arise from perverted nutrition, and in which the blood is the part more particularly diseased. In consumption and scrofula, we have seen that there is a debilitated state of the system, and an escape of solid tubercle from the blood. In scurvy there is extreme weakness, and

escape of the fibrin and red globules into the cellular tissue. In chlorosis, a disease of young females, characterised by debility, irregular menstruation, and a variety of nervous and dyspeptic symptoms, we have a deficiency of the red globules, and an escape of the aqueous part in many cases into the cellular tissue. In each of these diseases we find it necessary to direct our attention to the nutritive functions. In scurvy, the use of vegetable acids, or succulent vegetables, has an efficacy scarcely known to medical men, who have not seen the disease among the sailors of a large sea-port; as the general use of antiscorbutic diet has almost eradicated this disease, once so formidable to our ancestors. In chlorosis we give some preparation of iron, in order that it may be absorbed by the digestive organs, and supply the deficiency in the quantity of iron necessary for the formation of the red globules of the blood. Lastly, in scrofulous diseases we now give oil, which is assimilated, and appears to have considerable power in removing the tendency to the deposit of tubercle.

Chemical composition of Tubercle.—Before proceeding with our inquiry as to curability, let us ascertain as briefly as possible what light has been thrown on the pathology of tubercle, and the changes it undergoes during absorption and transformation, by recent chemical and microscopical researches. As regards the blood itself, from which it is an exudation or secretion, the only change of any importance which seems to have been yet discovered, is an increase in the quantity of fibrin; but this does not seem due so much

to the tuberculous diathesis, as to the inflammation which accompanies the softening of tubercle. The proportion of blood corpuscles is generally below the standard of health; but Becquerel and Rodier* have shown that this is a change common to all chronic diseases, and much more marked in chlorosis.

Tubercle has not yet been detected in the blood by chemical analysis or microscopical examination, but this scarcely renders its presence there less probable; seeing that it differs but little in chemical composition from other animal matters, and could be present only in very minute quantity.

Analysis of tubercle itself has shown that it consists chiefly of albumen, with a little casein and fibrin, a considerable quantity of fat, and some extractive matters, probably the kreatine and kreatinine discovered by Liebig† in the muscles and urine. Dr. Madden thinks that the abundance of extractive matters shows that there is either diminution of healthy excretion, or undue activity of the decomposing forces. The former he has taken as an indication for the use of means to promote the function of the excreting organs—the skin, liver, and kidneys. Crude yellow tubercle contains only about 2 per cent. of earthy salts, and 98 per cent. of animal matter; but, when it has undergone the cretaceous transformation, the proportions are reversed, the quantity of animal matter being about 3 per

* *Récherches sur la Composition du Sang.*

† *On the Chemistry of Food.*

cent., and the remainder consisting of earthy salts, carbonate and phosphate of lime, with a little muriate of soda.

Tubercle being an exudation from the blood of a part of the liquor sanguinis, imperfectly vitalized, and therefore less highly organized than the fibrinous exudations of healthy inflammation, we naturally expect to find—what chemists have discovered in regard to its ultimate analysis—that it differs very little in composition from the proteine compounds.* These facts, it must be confessed, are almost negative, as regards any practical value.

Microscopical researches.—These have thrown more light on the pathology of tubercle; and we have thus derived some information as to its primary seat, its structure, its relations to surrounding parts, and to other deposits of a healthy or morbid character. Dr. Carswell † thought that the air-cells were the usual seat of tubercles in the lungs; and that, whenever mucous membrane formed a part of an organ, it was either the exclusive seat, or more extensively affected than any of the other tissues. There seems to be much reason to believe, that the air-cells are the common, though not the exclusive, seat of tubercular deposit. Mr. Rainey ‡ has described its appearance in the air-cells, and says that it may sometimes be seen filling only one part of a single cell. He has endeavoured to show, that the cells are not lined with mucous membrane; but the

* Bennett, Northern Journal, 1846.

† Illustrations of the Elementary Forms of Disease.

‡ Medico-Chirurg. Trans. 1845.

fact observed by Hassall, of the epithelium extending into them, appears to show that they are lined by this membrane. Different microscopical observers have shown, that it may also be deposited in the intercellular tissue between the air-vesicles ; in fact, anywhere external to the vessels ; and Dr. C. J. B. Williams thinks it probable, that it may even form within the blood-vessels themselves.

My own observations lead me to believe that it may be deposited in all these situations. We can conceive, that when the tendency to the deposition is not very strong, it may be thrown out as an excretion, and mix with the mucus in the air-vesicles ; that, in other cases, where the diathesis is stronger, it may escape from the vessels into the intercellular tissue ; and that, when it is most intense, it may not only form in these situations, but even be arrested in the minute capillaries, and thus produce the congestion so common in pulmonary consumption. I lately examined a highly scrofulous young man, in whose body tubercular matter was very abundantly deposited in various organs. One lung was almost saturated with miliary tubercles, and the fluid exudation was filled with the characteristic granules. In this case I believe that it existed in all these situations, and that the congestion of the lung which existed was produced in a great measure by the tubercular matter blocking up the vessels. I had also recently an opportunity of seeing an abundant secretion of tubercular matter in the ureter and pelvis of the kidney of a phthisical patient ; exemplifying the strong

tendency noticed by Dr. Carswell to the excretion of this matter on the surface of mucous membranes.

Microscopical examination of tubercular matter has shown that it consists of corpuscles, which are characteristic of tubercle, and of granules and minute molecules. The corpuscles have no nuclei, and are considered to be undeveloped cells, which approach more or less nearly to the exudation or plastic cells of healthy inflammatory deposits. The miliary tubercle has some appearance of cells and fibres, but the crude yellow tubercle has no appearance of organization, and, during softening, the corpuscles swell, burst, and discharge granules. Dr. Williams's view—that lymph, tubercle, and pus, are only modifications of each other—shows how nearly tubercular deposition and inflammation must approach each other; and pathologists seem now agreed that they are closely allied processes, both being modified states of nutrition. Growth, nutrition, inflammation, and scrofulous diseases, are, observes Dr. Addison, analogous phenomena.

Besides the objects already described, there are also seen in tubercles the filamentous remains of the air-cells, fat globules, which increase in quantity as the softening takes place, pus, and other exudation products of inflammation, epithelium cells; and, in cretaceous tubercles, large dark particles, and crystals of cholesterine.

Of these facts, furnished by microscopical examination, perhaps the most important, in reference to our present inquiry, is that of the tubercular corpuscles

being most nearly allied to the fully developed cells of healthy inflammatory products, from which they appear to recede, and assume more of a granular aspect, in proportion as they become yellow and cheesy, or soften. "The miliary tubercle," Dr. C. J. B. Williams observes*, "differs from fibrin, not in kind, but in degree of vitality and capacity of organization;" and this proves to us what experience had previously taught—the importance of removing the complication of inflammation or congestion of the lungs, in the prevention, as well as treatment, of phthisis.

* Principles of Medicine, p. 386.

SECTION II.

SOURCES OF EVIDENCE IN FAVOUR OF CURABILITY.

THE evidence in favour of the curability of tubercular disease of the lungs is derived from several sources. By inquiring of our patients closely into the history of previous attacks of illness affecting the chest, we occasionally find that at some period they have had many of the symptoms of consumption, and have yet recovered. This alone is the least important kind of evidence, but it becomes valuable when supported by some of the other kinds. Observation of the symptoms, in cases which come under our treatment, and get well, stands next in value. The examination of the chest with the stethoscope and by percussion, gives, when the disease has advanced a certain length, to those who are well acquainted with these modes of examining the chest, most satisfactory evidence of the condition of the lungs during, and even after, recovery. A few medical men, however, who still neglect this important source of information, think that they have a right to question any evidence derived from it. The last kind of evidence is visible and palpable, and cannot, therefore, be doubted. It is derived from examination of the lungs after death.

The evidence from all these sources may be com-

bined in a single case ; but, for this purpose, it must be watched during a series of years, and hence such cases are not very frequently recorded. As an example, I may observe that M. Pressat has related the case of a man twenty-eight years of age, who had the signs of an excavation at the summit of the right lung, for which a seton was inserted. At the end of six months he was well, and continued so for a year, when he died of epilepsy. A cavity, lined by fibro-cellular tissue, and thus healed, was found at the top of the right lung. When the evidence, from all these sources, is thus united, it may fairly be questioned if medical testimony furnishes stronger proof on any subject.

EVIDENCE FROM PATHOLOGICAL FACTS. — We will first examine the pathological facts, in reference to the curability of phthisis, as they furnish the kind of evidence which is least questionable. In doing this, I would first call attention to the circumstance, that many medical men, seeing their patients frequently die of phthisis, have become so incredulous of the possibility of recovery, that when they have seen a patient recover after having presented the usual symptoms, they have distrusted their diagnosis, and have taken the fact of recovery as a sufficient proof that the disease could not have been tubercular consumption.

Now, it is worthy of notice, that Bayle,* who I have already observed has probably swayed the opinion of

* *Recherches sur la Phthisie pulmonaire*, 1810.

medical men on this point, more than any other individual, acted precisely in this way. In his work he has published five cases of recovery from symptoms of consumption; and because they recovered, though all the symptoms were present, he has regarded them as cases not of consumption, but as simulating this disease. In two at least of these cases, 50 and 51,* the symptoms were unequivocally those of consumption; and of the first he observes, "*A l'époque où je traitais la malade, j'avoue que je la croyois atteinte de la phthisie pulmonaire.*" Why, then, it may be asked, if he believed at the time he treated the case, that it was consumption, did he change his opinion when recovery took place, and not take it as a proof of what it really was—recovery from consumption? It is evident that he did so, (and other medical men do likewise,) because he had seen many die of the disease, and because he had overlooked the pathological proofs of recovery, and had observed only that tubercles increase very generally, and cause an amount of disorganization which he regarded as irreparable; he therefore prejudged the question, instead of forming his conclusion from rigorous examination of his cases. Pathological investigations show that such is not only an illogical, but a most erroneous mode of forming an opinion; and

* I find, from Andral's edition of Laennec's work, that case 51 came under the notice of Laennec, who found some years after, from examining this patient with the stethoscope, that he must have recovered from tubercular disease. It forms the 28th case of the edition referred to.

prove also, that many persons who have never had more than a moderate amount of pectoral symptoms, must have recovered from this disease.

Laennec, in a chapter in his work, entitled, *Examen de cette question : la guérison de la phthisie est-elle possible ?* had the merit of first proving that phthisical persons may recover, by the cretaceous transformation of tubercular matter, as well as by the cicatrization of cavities. He investigated the subject very fully, and detailed ten cases, in three of which the healing of cavities was traced by the stethoscope, and recovery took place after all the worst symptoms had supervened. In seven other cases, where the patients were phthisical, but died of other diseases, he ascertained how recovery might take place by absorption of crude tubercles, and transformation into cretaceous or calcareous concretions ; or by the softening and evacuation of tubercular matter, and the lining of the cavity so formed by a false membrane of cellular fibrous or cartilaginous texture, and also the complete disappearance of the cavity by the formation of a cicatrix. These facts were confirmed by Andral ; and even Louis, who does not take by any means a favourable view of the curability of phthisis, and is more sceptical than most men as to any good effect from medical treatment, relates three cases of recovery ; one in a man, 45 years of age, who, after presenting all the usual symptoms, as well as the physical signs, and keeping his bed for six months, recovered, and returned to his occupation ; the second, in a man, 50 years of age, who had cavernous respiration and pectoriloquy ;

and the third, in a gentleman of rank, who consulted him several times, during a period of eight years, for trifling attacks of acute pulmonary catarrh, and afterwards died of a painful affection of the urinary passages. It was then discovered that he had a cavity at the summit of the right lung, and near to it two tubercles. This patient enjoyed robust health, with the exception of being subject to attacks of cold, and would probably have continued to do so, but for the other disease, of which he died.

We have already seen that tubercle may exist in the lungs in three principal states or stages, being found in the earliest stage in the form of small granulations; in size and appearance like grains of sago or millet seed; in the second stage, forming rounded masses, from the size of a pea to that of a walnut, or even larger; and, in the third stage, in the form of ulcers or cavities resulting from the suppuration of the tuberculous matter. Pathological facts show that recovery may take place in each of these stages. The evidence they furnish of its occurrence in the third stage by cicatrization is the most perfect, that of its occurrence by cretaceous transformation is the most common, and the evidence of its occurrence in the first is the least common,—a circumstance, however, which does not lead us to believe that it is really the least frequent; but, on the contrary, that all trace of the disease is removed in the earliest stage by absorption; that therefore we must not look to pathology to furnish a kind of evidence

which it is incapable of doing, but must receive the more satisfactory, but less palpable kind, furnished by the recovery of our patients after they have presented the early symptoms and signs of consumption.

Absorption and obsolescence of tubercles.—It was at one time regarded as doubtful whether tubercles could be absorbed; and Andral* noticed the wrinkled appearance they sometimes assume, as showing the possibility of their being thus removed. We often observe their removal in this way, when deposited externally in the glands; and Boudet, who has paid much attention to the changes they undergo in the lungs, has observed that they are not unfrequently absorbed partially, but rarely entirely. Setting aside, then, at present, what has been observed during the treatment of patients by cod-liver oil, and other means, we regard it as a point on which there cannot be any doubt, though the conditions which favour absorption still require further investigation. The miliary granulations, which Laennec considered the first stage of tubercle, and in which opinion he has been confirmed by Louis, are believed by Rokitansky to be, in many cases, merely a kind of fibrin. He considers that this form or stage of tubercle may undergo a kind of metamorphosis, which he calls *obsolescence*. “After the tubercle has passed through its condition of crudity, it loses its shining appearance and increases in density, becomes converted into

* Précis d'Anatomie Pathologique, tom. iii. p. 545.

a small hard lump, and then shrinks into a tough amorphous or slightly horny mass—cornification. It forms the basis of a complete destruction or death of the tubercle, and no further metamorphosis can take place.”*

Louis, also, in speaking of these bodies, says: “it would even appear, from the interesting researches of M. Papavoine, that in persons of adult, and more especially of advanced age, granulations of considerable size and cartilaginous aspect are sometimes found, containing osseous particles, as though the grey semi-transparent granulations were capable of undergoing transformation without previously passing through the tuberculous stage properly so called.”

Chalky and calcareous transformation of tubercles.

—I have now to draw attention to the transformation of crude tubercles into cretaceous bodies, which is the mode of recovery of which pathology furnishes the most frequent proofs.

M. Rogée, in an able paper on the Curability of Phthisis, in the *Archives Générales de Médecine* for 1839, has proved in the clearest manner that the *chalky* as well as the *calcareous concretions*, resembling small stones, which are so often found in the lungs, are the result of the transformation of tubercles. There are many facts which prove this; the situation of these concretions, generally at the summit of the lung, sometimes in the midst of a group of tubercles, and often in a cavity from which the greater part of the

* British and Foreign Medico-Chirurgical Review, vol. i. 1848.

tubercular matter has been evacuated. Tubercles are also sometimes found evidently undergoing this transformation, presenting the appearance of having become smaller, and being more opaque and whiter than other deposits in the same or in the other lung. If further proof were wanted, it might be found in the fact that crude tubercle, when dried, assumes a chalky appearance similar to that of these concretions. I had last summer an opportunity of seeing tubercular matter in great quantity in every stage of transformation, in a woman who died in the Liverpool Infirmary of tubercular peritonitis. The abdominal cavity contained a very large quantity of a matter like mortar, and the mesenteric glands exhibited almost every form of tubercular disease, some being in the state of crude, cheesy tubercle, and others undergoing transformation. The liver was also fatty in this case; a fact tending to show that the fatty degeneration of the liver, which so often occurs in pulmonary consumption, cannot be ascribed to the function of respiration being interfered with, but that it bears a relation to tubercular disease generally, and is most frequently found in pulmonary consumption, only because the lungs are the organs in which tubercles are oftenest deposited in abundance.

When crude tubercle undergoes the cretaceous transformation, the animal matter must be removed by the vessels absorbing it; but the quantity of earthy matter is so much greater than what is contained in crude tubercle, that there must be a secretion of earthy salts at the same time, and this sometimes appears to take

place into empty cavities also. Dr. Hughes Bennett considers the tendency of tubercular matter to disintegrate as highly favourable to absorption, if fresh deposits could be prevented; and Rokitansky observes, in reference to cretification, that it occurs as a secondary change, never attacking tubercle in its original form, but confining itself to the dissolving and dissolved blastema. It is easy to conceive that, when the corpuscles of tubercle have broken down into the granular state, they must be more within the absorbent power of the vessels; but the fact of the yellow crude tubercle being sometimes observed undergoing cretaceous change without softening, would seem to show that it is at least not necessary that it should undergo such a degree of disintegration as that which immediately precedes the evacuation of tubercular matter. It is worthy, however, of remark, that transformation commences, as softening has usually been observed to do, at the centre of tubercles; and Dr. Valleix* has observed that we sometimes find a tubercle having a hard calcareous concretion at the centre, round this cretaceous matter, and at the circumference a layer of tubercular matter. Boudet affirms, that transformation may take place in all the phases of their evolution; in the state of crudity, or of softening, when in the form of grey granulations, or of yellow tubercles.†

* De la Curabilité de la Phthisie pulmonaire, *Archives Générales de Médecine*, 1841.

† Recherches sur les transformations des tubercles, *Comptes Rendus*, 1843.

The softening of tubercle, Dr. Williams thinks, is promoted either by a deficient supply of blood, which does not maintain its imperfect vitality, or by an undue flow or accumulation of it exalting chemical affinities in a material which has no vital power of resistance.

Healing of cavities.—Such are some of the chief facts relating to the curability of consumption, by absorption and transformation of tubercle; but pathological researches furnish us with further evidence of the possibility of recovery in a more advanced stage, in the discovery of cicatrices produced by the healing of cavities at the summit of the lungs. Rogée has described four kinds,—those with persistence of the cavity; those in which the cavity contains some chalky or calcareous matter; those cicatrices which are fibro-cartilaginous; and those of cellular structure. There is usually some depression, or puckering, of the summit of the lung, where these cicatrices are discovered, and the surrounding pulmonary tissue is often of a dark colour, and indurated. These appearances may be regarded as some evidence of the former extent of the disease. Dr. Carswell has observed, that there may remain only a small globular oval, or even linear portion of fibrous, or fibro-cartilaginous tissue, in a portion of the lung, where, from the extensive puckering around it, there must formerly have existed an excavation of considerable extent. The healing of cavities has been observed in every stage; and it would seem that the disease may be arrested, or at least become

quiescent, even after it has produced great disorganization of the lungs, of which we have a remarkable example in a case related by Dr. Kingston.*

These two modes of recovery, by cretaceous transformation, and by the healing of cavities, are both not unfrequently met with together in the lungs of the same individual; and I may remark that in a patient of mine, who died at the age of 45, of cancerous disease of the stomach and liver, I found a few cretaceous tubercles, the size of small peas, at the top of the right lung, and also the puckered appearance resulting from the healing of a cavity.

There are few medical men, who are in the habit of observing the *post-mortem* appearances in the lungs, who have not had opportunities of seeing cretaceous tubercles, and even the less frequent appearance of cicatrices and puckerings at the summit of these organs. The facts, indeed, are so palpable, that they have never been disputed; but they have been looked upon rather as rare and curious examples of what nature can do where art has failed, than as important practical facts, which should lead us to observe carefully the favourable circumstances under which the changes are brought about, with the view of arriving at a more successful method of treatment. Thus Sir J. Clark, after quoting Dr. Carswell's remark, that pathological anatomy has perhaps never afforded more conclusive evidence, in proof of the curability of a disease, than it has in that of

* Medico-Chirurg. Trans., vol. xx. 1837.

tubercular phthisis; and also his clear description of the modes in which it is accomplished, says—"In recording these proofs, of the curability of pulmonary tubercles, I think it right to remark that I do not attach much importance to them, further than that they afford encouragement to persevere in our endeavours to correct the tuberculous diathesis, seeing that nature can remedy the disease, when it is not very extensive."

Frequency of pathological proofs of recovery.—These appearances are not, however, by any means rare; indeed, they are very common. Rogée found that, of one hundred aged persons who died at the Salpêtrière, there were fifty-one of this number who had concretions and other traces of tubercular disease of the lungs. In five of the cases he also found the cicatrices of the cavities which had healed; and he states that in the course of a single year he had been able to collect ten or twelve incontrovertible examples of the same kind. "J'insiste sur ce fait de fréquence, car c'est là que gît, à mes yeux, le point capital, le côté nouveau de la question. Les médecins instruits d'aujourd'hui ne nient guère qu'on ait vu *quelquefois* la phthisie guérir; mais pour eux cela tient du miracle tant c'est rare: ils n'osent jamais l'espérer. Puisse-je avoir réussi à convaincre que la guérison est assez commune quand la maladie n'est pas fort avancée, et qu'on a droit de la chercher avec espoir."* In 197 subjects,

* Essai sur la Curabilité de la Phthisie Pulmonaire, etc. *Archives Générales de Médecine*, 1839.

Boudet found ten with cavities completely healed ; and within one year he also collected fourteen cases of recovery from phthisis.

Dr. Hughes Bennett* also found in seventy-three bodies which he examined, that there were concretions and puckerings in twenty-eight. He also ascertained that these traces of the removal of tubercles are most common in elderly persons ; for, in twenty-eight cases, he found puckerings and concretions in only three individuals of the age of eighteen, in six between that age and forty, and in nineteen after that epoch of life. Dr. Stokes, when he published his work, was strongly in favour of the view, that patients sometimes recovered from phthisis ; and he laid down the favourable indications, which he considered to justify the medical man in attempting what he called the curative treatment. Dr. Williams has also argued in support of the curability of phthisis, and has stated that he found phthisical lesions in the lungs of half the adults beyond the age of forty that he had examined, and that nature resists the progress, and limits and circumscribes the extent of the disease. I shall also have occasion to allude to the valuable facts of a much stronger nature, which he has since published, in reference to the efficacy of cod-liver oil.

Answer to some objections.—These pathological ob-

* Frequent and Spontaneous Cure of Pulmonary Consumption : *Edinburgh Medical and Surgical Journal*, 1845.

servations are, as Louis has remarked, "assuredly of immense importance," and they form a body of facts which do not admit of being controverted. But it may be said that the disease had in such cases been of only limited extent, and had not presented the ordinary symptoms, but been latent. There can be no doubt at all that the chance of recovery must be greatest where the disease (due regard being paid to its duration) is least extensive; yet I believe that, in cases where pathological proofs have been obtained, it has seldom been so limited that the individual had not at some period perceived some of the symptoms of consumption. A sufficient number of cases has also been recorded to prove, that, in cases of recovery, the disease has not always been of limited extent. As an example, I might refer to a case published by Professor Bennett, in the "Monthly Journal of Medical Science,"* since the first edition of this work appeared. The patient was a man who at the age of 22 laboured under all the symptoms of deep decline, but recovered, and died at the age of 50 of an affection of the brain. The apex of both lungs contained cretaceous tubercles, and were puckered, and the cicatrix, or scar, at the summit of the right lung, was from a quarter to three fourths of an inch in breadth, and three inches in length.

Those who are unwilling to admit the possibility of perfect recovery from consumption, urge another objection, on the ground that it is a chronic disease of long

* On the Treatment of Phthisis Pulmonalis. March, 1850.

duration. Though this must be received as a reason for doubting the completeness of recovery in individual cases, and shows to those who have made some progress to recovery the necessity of care in avoiding the causes which might induce relapse, yet it is almost a negative objection, being equally applicable to other diseases which are apt to return, and it is overturned by the weight of positive proof furnished from the pathological and other sources. In, however, maintaining that recovery may thus be perfect, we at the same time admit that, while most diseases have a disposition to return, in constitutional diseases like consumption we have not only the local but also the constitutional tendency to a return; and we not unfrequently observe appearances in the lungs which show that the patient was progressing towards recovery, until a second crop of tubercles was deposited.

The long duration of consumption in many instances is, however, when rightly viewed, one of its most encouraging features; since it gives a corresponding period of time to treat the disease. Tubercular consumption is, in all cases, essentially the same disease; but, in respect to intensity and duration, it is convenient to divide it into three varieties. In every individual, suffering from this disease, there are two forces at work,—the destructive force of the disease on the one hand, and the vital power of the individual (*vis medicatrix naturæ*), which tends to repress and overcome the other. In some happily rare cases, the intensity of the disease is such, that it carries all before it like a torrent,

overwhelming the opposing vital power in so short a period as three weeks or a month. These are cases of acute or "galloping" consumption. In other cases, there is more vital or conservative force; but yet it is insufficient to subdue the intensity of the disease; and the patient sinks gradually and steadily under its depressing influence. Some of these cases derive much benefit from the means of treatment we now possess; and are remediable when art assists nature at an early stage. There is still, however, a wide field for improvement in the treatment of this the most numerous class. The third class forms the very chronic cases where the disease lasts for one, two, three, or more years. In the first, the intensity of the disease is greatest; in this it is weakest, and the vital resisting force is proportionally strong. The two forces are occasionally nearly balanced; and when means are used to strengthen the vital power, the patient gets better, and sometimes almost, and sometimes altogether, recovers. Thus we see the warmth of summer, or the invigorating influence of change of air, chase away the disease, till the cold of winter or some debilitating influence again depresses the vital power, and places the disease in the ascendant. In this class of cases we have surely the greatest encouragement to persevere in the use of means to strengthen the vital force opposed to the disease; above all, when we consider that this force unaided suffices in a few instances to save the patient.

Consumption is a disease the *diagnosis* of which is more difficult than that of most others; and, though

stethoscopic examination has assisted pathological investigations, more especially in demonstrating the occurrence of recovery by the healing of cavities, yet we know that, in the earliest stage, when we have reason to suppose that tubercles admit most readily of being removed, neither the symptoms nor the stethoscopic signs furnish us always with undoubted evidence of their existence; and hence some doubt must often hang over the precise nature of such cases. There is reason therefore to believe, that much evidence of the curability of consumption, which we would possess, were it not for the difficulty of diagnosis in the earliest period, is in this way entirely lost. The number of cases in which cretaceous transformation of tubercles has been found, so far exceeds those in which cicatrices have been discovered, that this is proved not to be a mere speculative assumption; and we can scarcely therefore avoid the conclusion, that many, who have suffered to a moderate extent from cough and other pulmonary symptoms, have really recovered from the early symptoms of consumption.

SYMPTOMS OF CONSUMPTION. — This disease often commences very insidiously, and is permitted to advance very far, before the case is brought under the observation of the physician; a circumstance much to be regretted, as it interferes more than almost any other with the success of our treatment.

Cough is one of the earliest symptoms; and though frequently attributed to cold, it will usually be found

to have come on slowly, without appreciable cause. It is at first so slight that it attracts little notice, occurring in the morning, or being induced by any unusual exertion or excitement. It is a dry cough at the commencement, but by degrees a small quantity of transparent mucus is brought up in the morning. Some oppression at the chest is often experienced; pain may also be brought on; and the breathing easily hurried by any active exercise. The pale or faded complexion of the patient, and the languor and disinclination for active mental or bodily exertion, warn the individual or his friends, that his general health is deranged, and that he is suffering from something more than an ordinary cold. He now begins to lose flesh, and has often a feeling of chilliness, especially in the evening. The palms of the hands, and soles of the feet, are dry and burning; during the night there is a feverish state; this, together with the cough, interferes seriously with sound repose; and when, towards morning, the patient falls into a sound sleep, perspiration breaks out, more or less profusely. The second stage is characterised by an increase and change in the appearance of the expectoration, which gradually loses its clearness, and becomes mixed with opaque yellowish matter. Streaks, or spots of blood, if they have not been previously observed, are now frequently seen. Fever, quickness of pulse, loss of flesh and appetite, and languor and debility, now rapidly increase. The abundance of purulent expectoration, during this period, arises from the tubercular

abscesses opening into the air tubes, and it consists of greyish-yellow purulent sputa, which are rounded; and some sink in water, while others float at various depths. In the third stage, the severity of the symptoms continues to increase, but the expectoration sometimes diminishes, and the sputa form flat patches without any bubbles of air. Other symptoms—diarrhœa, swelling of the ankles, and aphthous state of the mouth—also appear, and mark the advance of the disease.

There are a few points, in reference to the most important of these symptoms, which require further notice in their bearing upon diagnosis. The symptoms furnished directly by the condition of the lungs themselves in phthisis, are, cough, expectoration of different kinds of sputa, shortness of breath, pain, and hæmoptysis, or spitting of blood.

Cough is a symptom which may arise from almost any disease of the lungs, and even from derangement in the function of some distant organ. It is one of the most constant symptoms of consumption; we can scarcely conceive its absence, in any case, during the whole course of its progress; and it is, as we have already seen, at first dry and irritating, or hacking; but becomes loose, and accompanied with purulent expectoration, in the second and third stages. The presence of cough alone does not, however, teach us much, as its value, as a symptom, is entirely dependent upon its combination with others.

Expectoration is at first either absent or scanty,

consisting of stringy saliva ; and when in the advanced stages it presents some characteristic appearances, the other symptoms have usually cleared away all doubt as to the true nature of the case.

Dyspnœa, or shortness of breath, is another symptom, which may be produced in a much greater degree than it usually occurs in consumption, by other diseases—such as bronchitis, asthma, and disease of the heart ; and we find it also in chlorosis, which is merely an altered state of the blood. The value, then, of dyspnœa, can be judged of only by combining it with other symptoms ; but, as it is rarely absent altogether, the amount of it affords some information as to the extent of injury the lung may have sustained.

Pain in the chest, though often present during the second and third stages, may be absent during the first, and even during the whole course of the disease ; but frequently recurring pain in the side, or at the upper part of the chest, or pain in one shoulder like rheumatism, are symptoms of some value ; and are thus easily distinguished from the feeling of soreness felt at the centre of the chest, in common cold or bronchitis.

The symptoms we have noticed derive their value and signification entirely from their combination with other symptoms, and with physical signs. It is otherwise, however, with *hæmoptysis*, which is alone a more certain symptom of the presence of tubercles in the lungs than any other. It derives its importance from several circumstances. It occurs at some period of the disease

in two-thirds of all cases. Louis found it in this proportion in his; and in those at the Hospital for Consumption it had been present in 63 per cent. It occurs, too, most frequently, not in the advanced stages, as we might have expected, but in the proportion of three cases in the first, to one in the advanced; and it may, therefore, serve to warn the patient of his danger while there is yet time to use the proper means. Andral has stated, that only a fifth of those who spit blood are free from tubercles; and if we also separate those cases where it has arisen from an injury, those in which it has been produced by disease of the heart, and those in females where it has been caused by suppressed menstruation, we may take it as the most certain symptom, and as indicating, with the highest degree of probability, the presence of tubercular disease. Yet, in connexion with what has been said in reference to curability, more especially by cretaceous transformation, it may be remarked, that we not unfrequently see patients recover, and enjoy a fair share of health, after having had cough and spitting of blood.*

We have seen, however, that hæmoptysis may be absent, and so may nearly all of the other symptoms; but we have the means of correcting this deficiency by physical examination, which will sometimes enable us to detect an advanced period of the disease, in cases where we might otherwise, from the appearance of the

* Louis (P. C. A., M.D.), *Researches on Phthisis*, p. 169.

patient, and the absence of well-marked symptoms, have overlooked the true nature of the case.

PHYSICAL SIGNS.—It would be foreign to my present inquiry to describe each of the signs, and their mode of combination and succession ; and I therefore confine myself to an examination of the subject in reference to curability, and chiefly to the signs of the first stage, as I consider that the evidence afforded by those of the second and third stages is of so positive a nature, that it cannot be doubted by any who have acquired a practical knowledge of the subject. There are very few medical men who do not now make use of the stethoscope ; but some, even of these, still question the accuracy of the information it is capable of affording,—a fact which can arise only from their not having learnt and practised the use of it sufficiently to be able to depend upon the knowledge it furnishes.

Physical examination has, in fact, furnished the counterpart of some of the proofs of the curability of consumption, derived from pathology, more especially in regard to the healing of cavities ; and it often enables us to discover tubercular disease long before it could be detected by symptoms alone. In these cases it gives us a kind of positive information, as to the extent and stage, which symptoms are incapable of doing. We must not, however, suppose that this occurs invariably, for, in some instances, symptoms furnish earlier indications, especially where a limited number of tubercles are separated by healthy pulmonary

tissue. The information which it affords, in such cases, is still, however, of a very valuable nature; for, if some symptoms of tubercular disease are present, it enables us to affirm that it either does not exist, or, if present, is so only to a limited extent; and that it must therefore be in its earliest stage when means may be used with the best chance of success.

The discovery of tubercular disease by physical examination, is based upon the fact that tubercles are first deposited at the upper part of the lungs; and that other diseases, unless consequent upon this, rarely reach the summit of the lungs. A slight depression at the upper part of one side of the chest is sometimes an early sign; but it usually occurs only in an advanced period. Dulness over one clavicle, or a portion of it, or below it, is observed in a degree proportioned to the extent of the disease; and if it is well marked on one side, and if the other portions of the same lung are healthy, and there is no emphysema on the other side, we may regard it as one of the surest signs of tubercular disease, especially if it corresponds with alterations of the respiratory murmur. The chief of these alterations are feebleness, harshness, bronchial character, jerking respiration, and prolonged expiration. The recovery of a patient who had, along with cough and other phthisical symptoms, presented distinct dulness below one clavicle; and any, or several, of these signs, well marked, would convince me of recovery from tubercular disease. When these signs have once been present, in a well-marked form, they are seldom com-

pletely removed; and therefore their persistence in a slighter degree some years after a patient had recovered from symptoms of consumption, would render it probable that the deposit had not been completely removed by absorption or elimination, and that cretaceous concretions might exist.

Another variety of signs is derived from the voice and cough, increased loudness of which generally coincides with dulness, and indicates the presence of tubercular disease, when heard at the summit of the chest, and especially when the respiration also is altered. There is yet another variety of signs of the early stage, dependent upon the presence of fluid or secretion in the air tubes and tissue of the lung, around the tubercles.

These are the rales—sonorous, sibilant, crepitating, dry crackling; and the sub-crepitant, which indicates the softening of tubercular matter. The three first are not produced so much directly by the tubercles themselves, as by the inflammation of the air-tubes and tissue of the lungs, which they excite around them. Simple bronchitis, or pneumonia, affect the lower parts of the lungs, and almost never attack the summits first, except when tubercles are deposited there; and therefore the occurrence of sonorous and sibilant or crepitating rales towards the summit of one lung, while they are absent at the lower part posteriorly, indicates with a great degree of certainty the existence of tubercles. I have seen several cases, in which the signs of bronchitis (sibilant and mucous rhonchi, with a scarcely appreciable amount of dulness), were thus confined to the

summit of one lung, and where recovery took place. Such cases, I think, I have been justified in regarding as recoveries from the early stage of phthisis. The creaking and crumpling sounds which are, I believe, often produced on the pleural surface, and the dry crackling rale, are less important signs, as they are not always present. The sub-crepitant rale, at the termination of the first and beginning of the second stage, when distinctly perceived at the upper part of the chest, is itself sufficient to denote the nature of the disease; and of the cavernous rale and respiration of the third stage I may say that they afford a kind of evidence inferior in value only to pathological proof.

The surest indications of tubercular disease receding, are afforded by these rales disappearing, while the sound on percussion becomes clearer. The respiration becomes dry, but retains more or less of a harsh or bronchial sound, or is interrupted, and the expiration prolonged. The loudness of the voice generally continues greater than on the sound side, and the cough has sometimes a peculiar tubular character.

The number of diseases which are liable to be confounded with consumption has diminished since auscultation and percussion have been generally adopted. The symptoms of chronic pleurisy sometimes closely resemble those of phthisis; but, when the chest is examined with the stethoscope, all difficulty at once disappears. When cough from common cold occurs along with a deranged state of the general health, such as is present in chlorosis, it may sometimes be doubtful

if the state of the patient be dependent upon the early stage of tubercles ; but physical examination, and close attention to the distinctive characters of the two diseases, will almost always enable us to distinguish them without much difficulty. Chronic bronchitis and chronic inflammation of the lungs have been considered the diseases most apt to be confounded with phthisis. I have rarely met with cases of chronic bronchitis, where I had any difficulty in making the diagnosis ; but such do occur ; and Louis mentions a case where there was dilatation of the air-tubes, and in which it was scarcely possible that the diagnosis could be made with certainty. I think that, if due attention be paid to the different parts of the lungs affected in the two diseases, and to the characteristic symptoms of each, difficulty will seldom be experienced except when there is a complication of the two diseases.

Much of the difficulty has, I believe, arisen from cases, which had been regarded as consumption, being afterwards considered as chronic bronchitis, simply because the patients got better by change of air and other means. Perfect recovery from old-standing chronic bronchitis is, however, I believe, by no means common—perhaps not more so than from phthisis ; so that the presumptive evidence in favour of the disease being simply bronchial, amounts to almost nothing. Chronic pneumonia and phthisis are the two diseases which approach most nearly in their symptoms and essential characters ; both being capable of producing cavities in the lungs. The chief distinction between

them consists in the one affecting the base, and the other the summit of the lung; and in the physical signs of the one being in the former situation, and those of the other in the latter.

The evidence which has now been adduced in favour of the curability of consumption has been collected irrespective of any method of treatment, as it appeared desirable to establish the point on independent ground; and also because, although recovery has undoubtedly in most instances been greatly promoted by the assistance of art, yet we know that in a few cases it has been effected by a spontaneous effort of nature: a fact which shows how inexcusable it would be to neglect curative treatment.

EVIDENCE FROM STATISTICAL PROOFS.—If the facts and arguments I have now advanced from the history and symptoms of cases, from physical signs, and from pathological observation, have failed to convince any one, or have appeared wanting in sufficient foundation, I would now refer, in confirmation of my views, to the valuable statistical proofs furnished by the Report of the Hospital for Consumption; and this is a most convincing kind of evidence, as it is carefully drawn up from actual observation of patients who have recovered, and has, like the preceding, been collected irrespective of any particular mode of treatment.

Dr. Young, many years ago, estimated that only one in a thousand recovered when consumption was left to itself, and one in one hundred when treated. This

estimate was far below what is correct ; and Dr. Walsh has shown, that complete restoration to health, not only as regarded symptoms, but also local evidence of active disease, was effected in 4·26 per cent. of his cases. The Report, to which I have alluded, gives the results not merely in consumption generally, but even in each stage, and proves a point of great importance, and one which we had anticipated,—that the most favourable results have been obtained in the first stage. Of 187 cases in this stage, it appears that seventy-five, or nearly one-half, were much relieved. In eighteen cases, or more than ten per cent., the disease was arrested ; and the term arrest is defined as implying that all, or nearly all, the symptoms of the disease had disappeared, the patients feeling themselves well, and being able to pursue their ordinary occupations. The report also states, that in some of these, the evidence of local mischief had greatly diminished, and in a few had disappeared ; such patients being, in fact, scarcely in a worse position than they were before the attack. Of fifty-three cases in the second stage, the disease was arrested in two. Of 295 cases in the third stage, it was arrested in ten cases. The Report observes :—“ Viewing these results collectively, without reference to age or sex, we find that benefit is conferred in 36 per cent. of the cases, material relief in nearly 25 per cent. ; in nearly 6 per cent. the disease is arrested ; and here it should be borne in mind, that the delay which occurs in the admission of patients, in consequence of the want of accommodation for the numbers

who apply, allows the disease to advance, and thus renders the treatment more difficult and less successful than it would otherwise have been. Still, under such unfavourable circumstances, it is satisfactory to find that in nearly 6 per cent. of the cases of this disease, considered by many to be beyond the reach of treatment, a result has been obtained, which a desire not to speak too confidently alone forbids to designate as cure.”* When I speak of treatment, I shall have occasion to show that still more favourable results were obtained in those cases where cod-liver oil was used ; but the facts advanced in the preceding inquiry, and the statistical proofs now adduced, justify me in stating, that a close examination of this disease proves that it is not, as has been generally believed, utterly hopeless and incurable—a view which would paralyse all our efforts at treatment. Whilst, therefore, “we must pause ere we in future pass the terrible sentence of no hope on the consumptive invalid,”† it becomes also our duty to redouble our efforts to save such patients.

* First Medical Report of the Hospital for Consumption, 1849.

† Williams (C. J. B., M.D.), Cod-liver Oil in Consumption.—
London Journal of Medicine, January 1849.

SECTION III.

ANTAGONISTIC DISEASES.

THE investigation of the favourable circumstances under which spontaneous recovery takes place, has scarcely received the attention it deserves. I can, in this place, only briefly allude to the subject, and I would observe that change of climate is undoubtedly one of the favourable circumstances. It acts as a powerful tonic, and gives a healthy stimulus to all the functions, and especially the nutritive ; and I believe that it often acts as much in this way as by the mildness of the climate which is usually chosen, preventing irritation of the lungs. I entertain no doubt that change of climate prolongs, and even saves, some lives. I was consulted, about two years ago, by a gentleman who had all the symptoms of phthisis,—pain in the chest, cough, emaciation, spitting of blood, and night sweats. He had not, however, any decided physical signs ; and therefore the evidence of the disease being tubercular was not perfectly complete. This patient took a voyage to America, and came back perfectly well. Dr. Leeper has related, in his report on tubercle in the Dublin Quarterly Journal,* the case

* Vol. iv. 1847.

of a clergyman, who was obliged to leave England on account of cough, spitting of blood, shortness of breath, and night sweats. When he came to Malta, where he resided for eighteen months, he had all the signs of tubercular deposit at the upper part of the right lung. His health was restored by his residence there, and the dulness and other signs of tubercular disease underwent so much diminution that Dr. Leeper thought it not improbable that cretaceous transformation had taken place. On returning to this country, the gentleman was able to resume the duties of his calling.

There are also a few facts in reference to antagonistic diseases which bear upon the point under consideration, and to which I must allude before entering upon the treatment.

Emphysema of the lungs, which is the most common cause of asthma, is a disease which undoubtedly tends to prevent the development of tubercles, and a moderate degree of it must therefore favour recovery from consumption. I have seen some cases which have convinced me of this; and the researches of Rokitansky and Hasse confirm what I have observed.

A gentleman, aged 38, who was of rather weak constitution, and had suffered slightly for a considerable time from cough and shortness of breath, became much worse in the end of September, 1847, and soon after consulted me, with the usual symptoms of consumption. He had very troublesome cough, with mucopurulent expectoration. He had become very thin and weak, and had also profuse perspirations at night; and

to these symptoms was afterwards added hæmoptysis. There was increased clearness of sound on percussion ; but this affecting the summit of the lungs chiefly, rendered it difficult to ascertain, by physical examination, to what extent tubercles might be deposited, though the symptoms left no doubt as to their presence. He had persistent pain in the left side of the chest, rather low down, and just below the level of the left nipple ; where there were, while the spitting of blood lasted, a few bubbles of mucous rhonchus, indicating that this was the seat of the disease. Having observed the antagonistic effect of emphysema in other cases, I ventured, notwithstanding the apparently hopeless character of the symptoms, to hold out some prospect of recovery. The spitting of blood was stopped by means of turpentine ; and counter-irritation, by croton-oil liniment, and the use of sedatives, with expectorants, relieved the cough and difficulty of breathing, so that he was enabled to go to the country for change of air, and to take tonics. He returned in December, much improved ; and though he has seldom been long free from cough altogether, yet he has enjoyed a fair share of health, considering that he has emphysema of the lungs along with tubercles. He had some return of hæmoptysis at the beginning of this winter, after which he took cod-liver oil with much benefit.

In this case I have no doubt that emphysema was a chief cause of preventing, and still continues to repress, the progress of the tubercular disease. I had also in the two following cases, where the patients died of another

disease—inflammation of the lungs—an opportunity of observing the power of the same cause in retarding the advance of tubercular disease.

A seaman, aged 40, of muscular frame, was admitted under my care into the Northern Hospital, in a very advanced stage of inflammation of the lungs. It was ascertained that the acute attack was of recent occurrence, but that he had suffered from cough, more or less, for two years. He died the same evening ; and, on examination, it was found that both lungs were emphysematous. The upper part of the left lung was highly so, and it was also very much puckered from an old cicatrix. Within this part a cavity was found, which was completely lined with a false membrane, and in progress of healing. Around this, and in other parts of the lungs, there were tubercles, which seemed to have been deposited at different times, as some of them were small miliary tubercles, and others larger and hard, as if undergoing cretaceous transformation. The right lung was inflamed throughout ; and, at the lower part, it was in a state of purulent infiltration, and at the summit, in a state of red hepatization. There were some tubercles in this lung also, and at the apex a cavity lined with false membrane. The disease was evidently not in a progressive state in this case ; this being proved by the dryness and hardness of the tubercles, one of which was as large as a nut, and by the lining of the cavities by a well-organized membrane. Nature was, therefore, evidently making an effort to repair the ravages of the disease ; and we have

seen that this coincided with a great amount of emphysema.

A man, aged 26, was admitted into the Infirmary last September, in a similarly advanced stage of pneumonia. On examination, it was found that there was intense bronchitis and lobular pneumonia affecting both lungs. There were tubercles in both lungs, and much emphysema. At the apex of the left, a cavity of considerable size was found, lined by a fine membrane, like that of the bronchial tubes, and there were two others, lined with a thick white membrane of a soft texture. The tubercular disease was evidently making but slow progress in this case also. (See also Laennec, *Emphysema*, Obs. viii.)

Hasse observes, that "those much in the habit of examining the dead body cannot but be struck with two circumstances: first, the almost invariable existence of emphysema in lungs which bear the characteristic marks of recovery from phthisis; and, secondly, the proportional rareness of tubercular deposits in emphysematous lungs. This would seem to show, that dilatation of the air-cells constitutes one of the conditions under which the cure of phthisis is possible; and, again, that it forms an obstacle to the development and progress of tubercle."* Rokitansky thinks that emphysema hinders the formation of tubercle, by inducing a state of venosity of the blood, in which it is

* Hasse (C. E., M.D.) *Anatomical Description of the Diseases of the Organs of Circulation and Respiration*. Translated by W. E. Swaine, M.D. Sydenham Society. 1846. p. 313.

imperfectly arterialized, and wanting in fibrin. To the same cause he attributes the rare occurrence of tubercle in those cases of disease of the heart and arteries which prevent the proper arterialization of the blood. His observations on the connexion of tubercle with other morbid states are of the deepest interest; and, if his explanation of the effect of emphysema and disease of the heart, in repressing the deposition of tubercle, were correct, we should see an object which we might seek directly to attain in treating tubercular diseases. I am, however, disposed to think that emphysema may have merely a local effect in preventing the formation of tubercle; for the quantity of blood circulating in the capillaries of an emphysematous portion of lung is much diminished, and hence we find that pneumonia is less apt to attack such parts. We have already alluded to Dr. C. J. B. Williams's opinion, that an undue flow or accumulation of blood, from congestion or inflammation, will hasten the maturation of tubercles, by exalting chemical affinities; while, on the other hand, they manifest little disposition to change, so long as they are kept free from superfluous moisture. In this way, emphysema may prevent their progress, by lessening the quantity of blood in the capillaries; and it is also worthy of observation, as supporting this view, that in some cases of phthisis, where the function of one lung has been arrested by perforation, the progress of the disease has (where the patient has recovered from the immediate effects of the accident) been for a considerable time arrested. Of this, some examples

have been given by Dr. Stokes. If Rokitansky's view of the venosity of the blood retarding the advance of tubercles were correct, we should find the progress of the disease equally repressed in both lungs; but I believe that this occurs chiefly in that lung the function of which is arrested; and indeed, if this were the true explanation, then tubercular deposition in the lungs, by impeding respiration, and thus causing a more venous state of the blood, should tend to arrest its own development.

The arrest of the development of tubercular disease of the lungs during pregnancy is an important fact; and though it has been disputed, I believe there are few medical men who have not had opportunities of observing it. About two years ago, I had under my care a young female, advanced towards the fourth month of pregnancy, in whom one lung was destroyed to nearly half its extent by cavities. She had obstinate diarrhoea, and was reduced to the last stage of emaciation and debility. Yet, as soon as she was made aware of being pregnant, it had such a cheering effect upon her, that she speedily began to recover, believing that all her illness arose from that cause; and thus the disease was arrested for a time. Rokitansky's mode of accounting for the antagonistic effect of pregnancy in consumption, by referring it to the venosity of the blood, induced by the enlargement of the abdomen interfering with respiration, is too mechanical an explanation, and not at all satisfactory, as it is by no means proved that the blood is imperfectly

arterialized during pregnancy. The demand for an increased supply of blood for the uterus and its contents, is a much more important change, through which we may endeavour to explain the arrest of the tubercular disease. It is a fact, that the blood, instead of becoming more venous, contains an augmented proportion of fibrin; and the growth of the foetus seems not only to require this, but, by attracting it to itself from the lungs, to arrest the morbid process of nutrition in these organs.

There are some other diseases which are believed to be antagonistic to phthisis. Thus, consumption is not common in situations where ague prevails. Rokitansky also thinks that bronchocele and rachitis prevent tubercular disease of the lungs.

SECTION IV.

TREATMENT.

Motives for attempting curative treatment.—When we consider the early and vigorous period of life when consumption most frequently occurs, and when we also observe that it has nothing of the malignant character of some diseases; but that, on the other hand, nature only sinks, as it were, under her own efforts to free herself of the disease, every one must feel most unwilling to abandon the unfortunate sufferers as incurable; and it is surely our duty, after what has been proved in reference to curability, to use every effort to save our patients, even though we know that we cannot as yet be successful in a large proportion of cases. It is not, therefore, surprising that the ingenuity of medical men should have been almost constantly exerted in the search of new remedies, which have from time to time acquired a temporary reputation. I believe that some, even of those which are now almost laid aside, have owed their reputation to their power of alleviating some of the distressing symptoms; and, if so, we can scarcely doubt that they may have assisted materially in the cure of a disease, from which recovery has sometimes occurred by an effort of nature. It has been asked, can a remedy arrest consumption,—that is, do

part of the cure, and yet not be capable of doing the whole? I would reply to this, that a remedy, or rather a plan of treatment, may prevent the further formation of tubercle, and that then, the conservative power, the "*vis medicatrix naturæ*," is placed in a favourable position to repair the injury done to the lung, and will do so in some cases, provided it be of moderate extent. Cod-liver oil, which has gradually and steadily risen into so much esteem, is, I believe, capable, under judicious management, of doing this; and therefore it is not a mere fashionable remedy of the day, as some would insinuate, but will, if not *indiscriminately* used, and *exclusively* trusted to, maintain the reputation it has attained.

In the treatment of consumption many medical men have limited themselves to two objects,—the prevention of the disease, and the palliating of severe and distressing symptoms. I am fully sensible of the great importance of prevention; but I wish now to examine the indications for curative treatment to which we are naturally led by the previous inquiry. I have shown that there are certain objects which we may endeavour, with a fair prospect of success, to attain, and that, as Nature unaided does the work in a few instances, it becomes the physician to inquire how he may render the assistance of art. "*Homo naturæ minister et interpres tantum facit et intelligit quantum de naturæ ordine re vel mente observaverit, nec amplius scit aut potest.*" It has been too common for medical men, after having discovered the nature of a case, to fix their attention on

an inevitably fatal termination, and to follow a certain routine practice, without ever proposing to themselves any curative object. Many are too sceptical to be readily brought to believe in the curability; but I may hope, that the facts already adduced, as well as those which follow, will at least cause them to examine the subject anew. As long as consumption is regarded as absolutely incurable, it cannot be hoped that there will be persevering and close observation of the effects of treatment; for it is not to be supposed that those who do not see a reasonable prospect of arresting the progress of a disease, will exert their talents and energies in the accomplishment of such an object.

General indications and treatment of constitutional state.—We have seen that consumption is not merely a disease of the lungs, but a constitutional state also, in which there is debility and impaired digestion and assimilation, so that the blood, which nourishes every part, contains some imperfectly-formed particles, which escape into the tissue of the lungs. We have, therefore, in treating the disease, not merely to remove the local state, but also to prevent the formation of tubercle in the blood, as well as inflammatory and congestive states, of the power of which, in determining its separation in any particular organ, such as the lungs, we have the strongest proofs. A complete examination of these points would embrace the means of prevention, as well as of curative treatment; and as this would carry me beyond the limits of my present inquiry, I must confine myself to the notice of a few leading indications,

equally important in the curative as well as preventive management of the disease.

Without entering further than we have already done, into the condition of the blood and of the capillary vessels, which determines the exudation or secretion of tubercular matter, we may remark, that there cannot be any doubt that debilitating causes,—such as innutritious food, deficient exercise, and impure air,—have a powerful influence in producing this disease. The researches which have been made in the present day in chemistry and physiology have tended more and more to prove the connexion between deranged assimilation and many diseases; and in struma, Dr. Prout has observed that all the assimilating processes are at fault, but chiefly those which take place between the duodenum and the circulating system, and by which the chyle is converted into blood. It is also well worthy of notice, that tubercles may be produced in some of the lower animals by confining them in damp places, and feeding them on unwholesome food. This was done with rabbits by Drs. Baron and Jenner,* and by Dr. Carswell; and it is a fact of some importance, as well in reference to the curability of tubercular diseases by absorption, as in showing the power of good alimentation, that the tubercular disease has been removed by feeding them afterwards on more nutritious food. In some kinds of insects, too, it has been found that a tubercular deposit may be produced by feeding them

* Baron on Tubercular Diseases.

on bad food, and repeatedly plunging them in cold water. The same influences operate on man ; for Dr. Baly* has shown, that mental depression and confinement cause a remarkable increase in the mortality among the inmates of prisons, and that this is chiefly produced by consumption and scrofula. Such facts show us the importance of hygienic means of treatment ; and, viewed in connexion with the power of cod-liver oil in promoting the assimilation of the food, they prove to us forcibly the necessity of bringing the digestive organs into as healthy a state as possible, in order to effect the most perfect assimilation of light nutritious articles of diet.

Hygienic means.—The most important hygienic means have reference to diet, clothing, exercise, change of air and climate, regulation of the secretions, and avoidance of the causes of the disease ; some of which have been already noticed.

There is no disease the hereditary nature of which is more clearly proved than that of consumption ; and therefore Sir James Clark has very judiciously recommended that where this predisposition exists in a high degree, the preventive treatment should be carried out from infancy.

As consumption is a disease of nutrition, attention to *diet* is a matter of the very first importance. Milk is a kind of aliment formed by nature herself. It may therefore be regarded as a type or pattern for all other

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* Medico-Chirurgical Transactions, vol. xxviii, 1845.

kinds of nutriment; it has received the unanimous approbation of physicians in all ages: and a close examination of the ingredients it contains gives us still stronger reasons for regarding it as one of the best kinds of aliment in this disease. It contains the curd, which is an albuminous principle easily digested and assimilated, so as to be capable of supplying the place of the worn-out tissues; and as it already approaches very nearly in composition and physical properties to the albumen of the blood, there is reason to believe that it may be assimilated with less chance of the formation of imperfectly organized or tubercular particles. It contains also sugar of milk, which constitutes the fuel required for respiration and the maintenance of animal heat; and the butter, or oily part, is believed to serve a similar purpose, and is now regarded as an important alimentary article. No well constructed system of diet will be found wanting in some article belonging to each of these, the three most important classes—the albuminous, the oleaginous, and the saccharine or amylaceous; and it is one great object of cookery to make a wholesome and palatable combination of them.

Some consumptive patients cannot, however, take milk; but the difficulty may often be obviated by giving it new, or by slight boiling. In one young gentleman I attended with this disease, there was great irritability of the stomach, and frequent vomiting. He had been unable to take milk, but, by combining it with lime-water, he was not only enabled to take it, but derived

great relief from the sickness and other dyspeptic symptoms.

Eggs, and asses' milk, are good articles of diet for the consumptive invalid: the former consists of albumen combined with a small quantity of oily matter; and the latter has long been celebrated as an unstimulating kind of diet in this disease: but though it contains more sugar of milk than cows' milk, the proportion of butter and curd is smaller, and therefore it is less nutritive. Dr. Young, who recovered from symptoms of consumption, has observed, "I was myself strictly confined to milk, buttermilk, eggs, and vegetables, with a little very weak broth, especially fish-broth, which was little more than water in disguise; and I adhered very rigidly to the directions for two years."

Milk and eggs, then, with such farinaceous articles as bread and rice, are the most suitable kinds of diet, as our great objects are to insure perfect assimilation of the food taken, and to support the patient's strength by such as are nutritious and yet not stimulating. Soup, which contains the kreatine and other soluble parts of animal food, may also be allowed, and in most cases a portion of animal food suitable to the state of the system, and to the power and condition of the digestive organs. Wine and fermented liquors will rarely form any part of a curative plan of treatment, but they constitute a great solace to the patient in the advanced stage. In connexion with the use now made of fish oil, I might observe, that various kinds of animal

fat, especially goats' and venison fat, were anciently used as articles of diet in this disease.

The importance of warm *clothing*, and of maintaining an active state of the circulation on the surface and in the extremities, is so obvious, that I should not stop to notice the subject, were I not aware that there are some, whom nature has not favoured with robust constitutions, who yet think to make themselves robust by injudicious exposure. We know well, however, that nothing favours the deposit of tubercles in the lungs, or their growth, more than a state of congestion even short of inflammation. The importance of attention to this point is therefore too obvious to require further comment.

Cheerful mental occupation, and *exercise* in the open air, when the condition of the patient, and the state of the weather and season of the year, are such as to admit of it, are important auxiliary means. Exercise in the open air not only promotes the digestive, but all the functions of the economy, and especially those of secretion; and its value in the treatment has been made strikingly apparent by some facts, in the recent Report of the Hospital for Consumption, which prove that this disease is much more prevalent among those who follow sedentary and in-door occupations, than among those employed in out-door pursuits. A writer in the Dublin Quarterly Journal has remarked that consumptive patients, taking cod-liver oil, bear exposure better than they would do without it; and in confirmation of this I may observe that, when I

have made some of my patients in the Infirmary out-patients, they have frequently improved much more rapidly, apparently from being more in the open air.

I do not know any tonic which is so certainly useful, as the excitement of *change of air* and travelling, when adopted with due regard to the state of the patient, and other circumstances. There can be no doubt, too, that a more complete change, so as to escape the severity of our winter, has saved the lives of some patients.

Another important indication, which must not be overlooked, is the regulation of the *secretions*; and the chief are those of the lungs themselves, the liver, skin, and kidneys. We have seen that the digestive organs are the inlet by which imperfectly elaborated particles obtain access to the blood, and these are the excreting organs, by the healthy activity of which they should be expelled. The lungs ventilate and purify the blood, by removing carbonic acid and water in the form of vapour. We may perhaps lessen the labour to be done by these enfeebled organs, by giving the less stimulating kinds of food, and by exciting the activity of other organs; and the patient should avoid checking their secretions by sudden exposure to a cold or damp atmosphere. The skin, liver, and kidneys, remove not only fluid, but also solid particles. It appears by no means improbable that a want of healthy activity on the part of these organs may be almost as much a cause of tubercular diseases, as imperfect assimilation; for we know that there are cases

of phthisis and scrofula, where indigestion is by no means a prominent symptom; whilst on the other hand we see no tendency to tubercular or other formations in cases of dyspepsia, where imperfectly assimilated particles must be absorbed in considerable quantity. In such persons, however, the secreting or purifying organs are active; they seize upon such intruding particles, decompose and expel them. Their activity constitutes a chief part of that conservative power to which I have already alluded, and to the deficiency of which in consumption we may perhaps correctly attribute the formation of tubercles.

We see, then, the importance of always keeping in view the regulation of the secretions. We will be assisted in this object by adopting means for the improvement of the general health; and there are some others which will be subsequently noticed. In reference to those of the liver and bowels, I would remark that we must be careful in using the mildest aperients, so as to avoid any irritation, which might induce the deposit of tubercles in the intestinal follicles; and a few grains of grey powder, with rhubarb and calcined magnesia, will often be found one of the best alterative aperients.

I need scarcely advert to the avoiding of the causes of consumption, were it not to observe that inflammation and tubercular deposition are allied processes, and that the effect of local irritation, in producing pulmonary consumption, is exemplified in the frequency of the disease in persons whose occupations cause them to

inhale silicious or metallic particles. I have no doubt, too, that the fact, noticed by Phillips, of consumption being most prevalent in towns, and scrofula less so, while the reverse occurs in the country, arises, not, as he supposes, from any difference between these diseases, but, in a great measure, from the inhalation of particles of dust and smoke determining the deposition of tubercular matter in the lungs instead of the external parts. In all our efforts to cause the absorption of tubercles, it must, therefore, be a matter of primary importance to prevent irritation, and to remove inflammation or congestion of the lungs by the usual means—local depletion, and counter-irritation more especially. We have seen that the action of all the depurating organs which purify the blood by removing from it the products of the worn-out tissues, should be promoted by appropriate means; and, with the view of fulfilling this object in reference to the skin, and of preventing catarrhal irritation at the earliest period, I believe that there is no means so effectual as washing the whole surface with tepid or cold salt and water, followed by friction, which excites the depurating function of the skin, fortifies it against the impression of cold, and acts as a general tonic.

Indication in reference to state of the blood.—The condition of the blood, as ascertained by Andral, and subsequently by Becquerel and Rodier, furnishes another important indication in the treatment of phthisis, and one which has been found practically useful. In the earliest stage, and perhaps in some cases also before

the formation of tubercles, the proportion of globules is below the healthy standard: as the disease progresses the quantity falls; and in one case Andral found the proportion as low as 72 parts in 1000 of blood. This corresponds with the paleness of the complexion which almost always accompanies phthisis in a greater or less degree, except when the patient is flushed temporarily by hectic fever, and it is caused by the deficiency of this important part of the blood. In this respect, consumption resembles chlorosis, and in this diminution of the red globules we have, in the one disease as well as in the other, an indication for the employment of chalybeate tonics, which tend more than any other means to restore this deficiency, by directly introducing iron into the blood. I may here observe that, though we have this diminution of the red globules, we are seldom able to discover a loud continuous murmur in the veins of the neck, which is so common a sign in chlorosis. This difference I account for, from there being in chlorosis not simply a diminution of the red globules, but also an increase of the aqueous part of the blood. The veins are thus kept in a state of tension, which is favourable to the production of the venous murmur. In consumption, on the other hand, especially when the disease is in an active state, there is a diminution not merely of the globules, but of the whole quantity of blood in the system, which, with the relaxed state of the tissues arising from loss of flesh, prevents the degree of venous tension necessary for the full development of this murmur. When, however, the tubercular disease has

become quiescent, or has receded, I have sometimes observed the occurrence of a continuous murmur in cases where it had at first been absent ; and this I have considered a favourable sign.

REMEDIES WHICH PROMOTE CHANGES IN TUBERCULAR MATTER.—In the preceding part of the paper we have endeavoured to show that there are three ways in which recovery from consumption may take place: first, by the shrivelling of miliary tubercles ; secondly, by the transformation of crude yellow tubercles into cretaceous or calcareous concretions ; thirdly, by the healing of cavities. We have still, fourthly, to show that the results of treatment seem to prove that tubercles may be removed by absorption. We have already seen that we cannot have the same ocular and palpable proof of this, which we have of cretaceous transformation, and the healing of cavities ; and the evidence of the absorption of tubercles must be collected from finding at one period the physical signs, and from observing, at a subsequent period, when recovery has taken place, that such signs have been more or less completely removed. The facts I have still to adduce will, I trust, tend to remove any doubt on this point.

The remedies which I think have most claim to our attention as agents capable of promoting changes in tubercular matter, are *mercury*, *iodine*, the *alkalis*, and *cod-liver oil*. In using any of these, we must not neglect the indications furnished by the constitutional state. Above all, we should soothe irritation by seda-

tives, remove congestion or inflammation by the milder antiphlogistic means, and promote the secretion from the bronchial mucous membrane, when needful, by appropriate expectorants.

Mercury.—As *mercury* is unquestionably the most powerful remedy we possess for promoting absorption of the serous and fibrinous exudations of acute inflammation, we would naturally expect that it should have some power in causing absorption of tuberculous deposits; but it would seem, that, in proportion as they recede from, and lose the characters of, plastic organizable fibrin, they are less under the sorbefacient influence of this remedy; and in ordinary cases of consumption, not distinctly produced by acute inflammation, mercury, though occasionally useful as an alterative, to promote the biliary and other secretions, is injurious when given so as to act upon the constitution, producing a debilitating effect, and hastening the softening of tubercles. In cases of chronic pneumonia, which hold an intermediate place between pneumonia and phthisis, I have employed the remedy in the latter way; and, if we had reason to believe that miliary tubercles existed in an early stage, I think we might be justified in using this remedy, with the view of promoting the mode of transformation described by Rokitansky. The local application of mercury is a powerful means of causing absorption of indurated swellings—as, for example, of the joints; and, as we are now able in many cases to arrest the constitutional disease in consumption, it becomes us to use every

means suitable to assist in the removal of the local disease also ; and none appears likely to be of more service than mercurial inunction. Dr. C. J. B. Williams says, that he has successfully treated several cases, in which the signs and symptoms left him in no doubt as to the existence of tuberculous peritonitis, by ointment of iodide of mercury to the abdomen, together with iodide of potassium internally. When mercury is used in this local manner, its beneficial effects may be obtained without any of its injurious consequences : the external application of mercurial ointments has a decidedly good effect in many external scrofulous affections. I have, therefore, ordered the iodide of mercury ointment to be rubbed in below the clavicles in several cases, where there was tubercular consolidation of the lungs : and I may refer to the case of Murray as a very successful one, where this treatment was adopted, and where it is not improbable that it assisted materially in causing absorption of the tubercular deposit.

Iodine.—The preparations of *iodine* have some resemblance to mercury in their effects. Unlike this remedy, however, they are not of any service in acute disease, but are more useful in causing absorption of tubercular deposits, especially in glandular structures. Iodide of potassium is the form in which it has usually been given, and in combination with a bitter infusion, or with compound decoction of sarsaparilla it has often been found a very useful alterative and tonic in phthisis. The syrup of the iodide of iron is the preparation I have most frequently used, as it combines the absorbent pro-

perties of iodine with the tonic power of iron, and thus fulfils the indication in reference to the diminution of the globules of the blood. I regard it as one of the best tonics we can use in the early stage of the disease, and I think that I have seen the early symptoms of phthisis arrested by it in a few cases. It was, during last summer, the chief means of restoring to health a young gentleman, for whom I prescribed it, and who, in addition to cough, and loss of flesh and strength, presented the signs of incipient tubercular deposit at the summit of the left lung—very slight dulness, with some sibilant rhonchus. I also prescribed it with very good effect in the case of a lady about thirty years of age, who came from some distance in the country to consult me, in July, 1847. She had become thin, and very liable to colds, and had some mucous expectoration. She had also had an attack of spitting of blood three years previous. Some consolidation at the upper part of the right lung was indicated by slight but distinct dulness on percussion close to the sternum, and increased loudness of the cough and voice in the same spot; but there were no mucous or other rhonchi. She wished to remove to the South of England; but as the disease did not seem in an active state, I recommended hygienic means of treatment, to improve the general health. I also ordered syrup of the iodide of iron, with tincture of hyoscyamus in infusion of calumba, and inunction of iodide of lead ointment below the right clavicle. When I again saw her, five or six weeks after, I

found her improved in health; and the signs of consolidation appeared, both to her ordinary medical man and myself, to have diminished considerably. She has since then enjoyed pretty good health, and has had two children, but during last pregnancy there was some return of hæmoptysis. After this she took cod-liver oil for a considerable time, with benefit. The iodide of lead ointment I have used in other cases besides this, with the view of causing absorption of tubercular deposits in the lungs, on the same principle on which we use it in scrofulous glandular swellings. I think it better suited to produce such an effect than the application of a concentrated tincture of iodine, which is a powerful counter-irritant, and, as such, has been found "remarkably beneficial" at the Hospital for Consumption. But we know that when inflammation is excited, absorption must be prevented, and therefore an unirritating ointment, such as that of iodide of lead, must be better adapted for this purpose.

Alkalis.—Before the introduction of iodine, the *alkalis* were regarded as remedies of considerable absorbent power. Liquor potassæ is a powerful alterative medicine, and it has sometimes been found to cause absorption of an enlarged gland even after iodine has failed. Dr. Campbell recommended it very strongly in phthisis; and Sir J. Clark has observed, that the alkalis increase the urinary, and appear to promote the bilious secretion, and to render that of the mucous membranes more fluid: in whatever way they operate, they are

certainly beneficial in many tuberculous affections.* Their power of promoting absorption of the lymph and other exudation products of inflammation of the lungs or pleura, especially when combined with iodine, is a fact of acknowledged practical value. Dr. Golding Bird† has communicated some most interesting and useful information as to the action of alkaline remedies: he calls them depurating or chemical diuretics, and has shown that, unlike most diuretics, they increase not only the fluid, but also the solid parts of the urine. This they do by a chemical action on the exhausted and worn-out tissues; and he thinks that parts of low vitality—such as tubercle, will be most readily acted on by these chemical agents. It is also worthy of notice, that the caustic alkalis are the most powerful solvents of tubercle; and it is therefore reasonable to suppose that they will retain a portion of that power, when circulating with the blood in the capillaries. The liquor potassæ may be conveniently exhibited in decoction of sarsaparilla along with iodide of potassium, in which form we combine the action of the alkali with that of iodine—two of the agents most powerful in causing absorption.

Cod-liver oil.—It has already been observed that, in former times, different kinds of animal fat were used in the treatment of consumption; but the special value of the oil from different kinds of cod fish, in all scrofu-

* Treatise on Pulmonary Consumption.

† Lectures on the Influence of Researches in Organic Chemistry on Therapeutics.

lous diseases, has become known only of late years. It is true, that the oil was prescribed in Manchester by Dr. Percival in 1771, but it was then known only as a remedy for chronic rheumatism. In Germany, it appears, from De Jongh's treatise, to have been used in the treatment of scrofulous diseases towards 1820, and about ten years after this it was recommended in consumption. Dr. Hughes Bennett* has the merit of having brought it before the notice of the profession in this country in 1841; but it has come into general use only during the last three years, and the consumption of it continues to increase. The slowness with which a remedy of so much acknowledged value has become known, has no doubt been owing to the circumstance of the disgusting brown oil having been originally recommended in preference to the pure pale and almost tasteless article† now prepared for medicinal

* Treatise on *Oleum Jecoris Aselli*, 1841.

† It is probably not a matter of material importance from which species of the cod genus the oil is obtained, though it may be desirable to give a preference to that from the common cod. The livers of all the species appear to yield an oil; and the Bergen oil used in Germany is obtained, not from the common cod, but chiefly from the dorse, the coal fish, and the pollack, each belonging to the cod genus. It is well known that with sulphuric acid, the oil from the common cod produces a beautiful purple or violet colour, which becomes red; and I have ascertained that the oils from other species of the genus give different shades of the same colours. Dr. Pereira has shown that the coloration is dependent upon the action of the acid on the biliary constituents; and that therefore it is a test which distinguishes

use. Of the three kinds—the pale, the light brown, and the brown, it was thought in Germany that the darkest coloured was the most useful, and this opinion was supported by Dr. Bennett, and appears still to be maintained by De Jongh. It is now, however, sufficiently well ascertained that the brown has no superiority over the pale oil; and it has at least the insurmountable disadvantage,—that many patients cannot take it at all. I have seen the best effects speedily produced by the purest and most tasteless specimens of pale oil. Dr. Williams used the pale oil prepared according to Donovan's method; and in the Report of the Hospital for Consumption it is stated, that “different qualities of oil have been tried without exhibiting any marked difference in the remedial effects; but the offensiveness of some of the darker kinds

liver oil from that obtained from other parts of the same or other animals.

A genuine and superior quality of oil is made in this town during the season from the livers of the common cod; and having frequently prescribed this oil, as well as witnessed the process of manufacture, I may state that the livers are heated to a temperature of about 130° in a large copper pan, the bottom of which is double, with a space between the plates, through which a current of steam is made to pass, and raises the temperature to the point required. The livers are reduced in about three hours to a uniform pulp, and the pale oil is separated by filtration.

I have also used at the Infirmary a very fine quality of Newfoundland oil, of a pale greenish yellow colour, and almost devoid of taste and smell.

A few trials made with almond oil do not lead me to think that vegetable oils have the same efficacy as cod-liver oil.

renders their general use impracticable." I consider it, therefore, a matter of much importance that a genuine oil, perfectly free from rancid taste or smell, should be obtained, in order that the patient may take it without any feeling of disgust, or disorder of the stomach.

The power of this remedy in controlling the progress of consumption, and even of completely arresting its progress in not a few, has now been fully established. Since I became aware of its value, I have regarded it as the most important remedy we possess, and have allowed it to supersede, in a great measure, some which I formerly used; while there are others which I now employ chiefly as auxiliary means to promote its beneficial operation. I have not only prescribed it in many cases of consumption and scrofula, in private practice, but have also admitted into my wards cases of consumption (a class frequently excluded from hospitals as incurable,) more freely than I was in the habit of doing; and I have therefore had an opportunity of treating a large number of such cases in the Infirmary.

Effects of Cod-liver Oil.—Cod-liver oil has been called a tonic remedy, and such it undoubtedly is, inasmuch as it improves the strength, as well as the nutrition of the patient; but in many cases it acts as a sedative also in relieving the cough; and it differs from other tonics, and indeed from most other remedies we are in the habit of giving in this disease, in one important respect, that we may use it with ad-

vantage in every stage, sometimes even in the most advanced; and that there are few symptoms which entirely prevent its employment, or may not be overcome by the use of other remedies, so as to enable the patient to take it with more or less benefit. Its ordinary effects are these:—the appetite in general speedily improves; the cough abates; the expectoration becomes less abundant, and less purulent in appearance; the hectic fever diminishes; the skin becomes cooler; the pulse descends towards the natural standard; and the perspirations are arrested. The patient at the same time improves in colour, and gains flesh and strength. Nothing is more remarkable than the change which we sometimes observe in the appearance under the use of this remedy; and it is produced not merely by an increase of fat, but by an improvement in the quality of the blood, and an increase of the muscular and other tissues. An augmentation of weight corresponds, therefore, generally, but not invariably, with an improvement in the condition of the patient. We must not, however, omit to state, that these favourable appearances are not always permanent,—some of the former symptoms may reappear, and the patient may relapse; but even in such circumstances, and in cases where the lungs are extensively disorganized, the progress of the disease is retarded in a greater degree than it could be by any other means.

The local disease undergoes a corresponding change, and, with the diminution of expectoration, we gradually lose the sub-crepitant and other moist rales produced

by the presence of softened tubercular and purulent matter in the air-tubes and tissue of the lungs, and dry-blowing or cavernous respiration occupies their place, while the sound on percussion becomes clearer. The Report of the Hospital for Consumption states that, in some of the cases, there was a decided and progressive diminution in the local mischief; and from what has been observed by Dr. Williams, and also from what occurred in some of the cases I have to relate, there cannot be any doubt that, under the influence of this remedy, absorption of tubercular matter takes place to some extent.

In making these favourable statements, however, I would also observe, that we sometimes meet with cases where it is of scarcely any service at all. In some, where from the limited extent of the disease, and the comparatively healthy appearance of the patient, I had expected the most favourable effects, I have been disappointed; but on the other hand, in several, of delicate appearance and unhealthy constitution, its beneficial action has been most marked and unexpected. I have at present under my care a girl of scrofulous constitution, pale, and having opacity of both corneæ from scrofulous inflammation of the eyes in childhood. She had extensive tubercular disease at the summit of the right lung, and splashing sound in a large cavity. Hectic fever also ran very high. In this case the improvement has been most remarkable.

We have seen that consumption is a constitutional disease of scrofulous nature, and it is in scrofulous

diseases that cod-liver oil has been found most useful. In glandular diseases, and in caries of the bones, the good effects of the remedy are as evident as in consumption. I have at present under my care a lady with caries of the trochanter major of the thigh-bone, where more benefit has been derived from cod-liver oil taken with syrup of the iodide of iron, than from any of the numerous remedies she had previously tried. In such diseases the good effects of the remedy are visible, and strongly support the conclusions to which we are led, in cases of consumption, by observation of the symptoms, and by examination of the chest. The results also, in these diseases, throw some light on the unexpected effects of this remedy in those highly scrofulous cases of phthisis which have hitherto been the least amenable to treatment.

Mode of administering the oil.—In giving cod-liver oil, we should begin with a tea or dessert spoonful, and gradually increase the quantity to an ounce, or an ounce and a half, or even two ounces, thrice a day. It may be taken in various ways. I have generally given it in milk, or peppermint water, or on the surface of a little diluted wine; but it may be taken in any pleasant innocuous vehicle. Dr. Williams recommends that it should be taken in orange wine, or compound infusion of orange, with a little tincture and syrup of orange. In some cases I have combined a little oil of anise-seeds with it, in order to remove the peculiar flavour. I have also found that, in some cases, it agreed well, when taken along with syrup of

iodide of iron, which at the same time fulfilled another object. Dr. Williams has recommended that the oil should be taken one or two hours after meals, thinking that this would favour its operation in the way he conceives it to act. It is not, however, necessary that it should be given in this way, for I have seen cases where it created an appetite when taken before a meal; but, as its passage out of the stomach is favoured by taking it two hours after a meal, it is desirable that this time should be generally selected.

It is evident, that when a considerable amount of local disease exists, any plan of treatment must, in order to give even a chance of ultimate success, be long persevered in, and assisted by the judicious use of other means, some of which have been already pointed out, and others remain still to be noticed. "Although it will frequently check phthisis for a time, and nourish the exhausted frame, great attention to the future progress of the case, and a careful management of the various symptoms and conditions presented, will be necessary, before the crude tubercles become cretaceous and encysted, and the ulcerations in the lungs completely cicatrised."* Patients sometimes feel such a change in their condition that they think themselves well, long before there is a corresponding and decided change in the local mischief, and neglect the use of means, and expose themselves to causes which bring on relapses, during which the

* Bennett (J. Hughes, M.D.) Treatment of Phthisis Pulmonalis. Monthly Journal of Medical Science. March 1850.

disease makes rapid and irreparable advances. Of this, we have an example in Case III., which should warn those who wish to give themselves a chance of perfect recovery. Unless, therefore, we are thus careful, not only in removing prominent symptoms, and in bringing the digestive organs into a healthy state, so that the oil may be assimilated, but also in persevering with it, and avoiding everything which might interfere with its operation, we may fail in deriving from the remedy the benefit which it is capable of producing under judicious management.

States in which cod-liver oil may be injurious.—

There are some states in which the oil may prove injurious, rather than beneficial, and in which it becomes necessary to omit its use for a time. Hectic fever does not prevent its employment; but when there is any continued febrile action dependent upon inflammation, this must first be removed by saline and antimonial medicines, and by leeches and counter-irritation. Should inflammation occur during its administration, the remedy must also be laid aside for a time, and these means adopted. The increase in the quantity and quality of the blood, which occurs under the use of this remedy, has appeared to me to cause, in some instances, a tendency to spitting of blood; and where this happens, it must be counteracted by astringents, and the extensive application of such rubefacient liniments as that made by acetic acid and turpentine, or the acetum cantharidis, diluted with acetic acid, or spirit of camphor. Acetate of lead with opium may

be given ; or, if the spitting of blood is considerable, the oil must for a time be omitted altogether, and sulphuric acid may be prescribed in infusion of roses, with or without quinine.

We sometimes meet with cases where there is great irritability of the stomach and vomiting of the food. It is obvious that in these the oil could not be taken until the tone of the stomach is improved. I have already stated that I found lime-water of great use in an aggravated case of this kind, and I have also found prussic acid, creasote, and naphtha, of service in these cases. In some I have found the latter remedy very useful,—removing nausea, improving the appetite, and even enabling patients to take the oil, who had previously been quite unable to bear it. There is no symptom which has appeared to me to interfere with the employment of cod-liver oil more than severe diarrhœa. When it is slight it may usually be overcome by the ordinary opiate astringents ; but, when severe, it shows that the tubercular affection has extended to the intestinal follicles ; and this almost entirely precludes any chance of recovery, more especially since cod-liver oil almost always increases the diarrhœa, though it has rarely any such tendency where the bowels are healthy. If, in an advanced stage, we find, after giving the remedy a fair trial, that no good results, it will be better to use palliative means, some of which have yet to be noticed.

In the cases which I have to detail, many of the preceding observations, as well as some other facts, will

be illustrated ; but before leaving the subject of cod-liver oil, I would direct attention to the results obtained from the employment of this remedy by some of the eminent writers already referred to.

In Dr. Bennett's work we are furnished with three cases, fully detailed, of decided consumption, where recovery took place under the use of this remedy. In the appendix to the last edition, he says :—" I have succeeded, in several cases, in ascertaining that the caverns have completely healed up, every symptom and physical sign indicating their presence has disappeared, and there has remained only slight dulness on percussion, and increased vocal resonance, as a proof of the puckering and induration of the pulmonary parenchyma attendant on the cicatrix." In proof of this statement, he relates two other cases. The most favourable account that has yet been given of the efficacy of cod-liver oil is that published in the *London Journal of Medicine*, by Dr. C. J. B. Williams. He has given a full account of eleven cases in the third stage, the results of which may be stated as follows. In one case, a cavity seemed to have healed completely ; in five, all the symptoms were removed, and recovery took place, but dry cavities remained in the lungs ; in one, it seemed probable that the restoration was even more complete ; in one case, that of a child, recovery took place, but the existence of phthisis was somewhat doubtful ; in one, the advance of the disease was stayed ; in one, the patient recovered so far as to marry, but relapsed ; and in one, after temporary recovery the patient died.

From the Report of the Hospital for Consumption, it appears that this remedy has been productive of more good in the treatment of phthisis than any agent yet employed ; and the results furnished by a table of 542 cases in which it was given, are highly interesting. The collective results in all the stages show, that in 63 per cent. the symptoms improved ; in 18 per cent. the disease was arrested ; and in 19 per cent. only, it went on unchecked. The report observes, that when it is recollected that of the whole number treated at the Hospital, the disease was arrested in only 5 per cent., the value of this remedy, under which the disease was arrested in 18 per cent., must be considered very great. Dr. Williams speaks most favourably of the oil in the second and third stages, observing that, though not less satisfactory in the first than in these, it is slower in its action. This report, however, establishes the fact which we might naturally expect—that the greatest number of cases are arrested in the first stage. In nearly 18 per cent. of the males, and in 28 of the females, in the first stage, the disease was arrested ; that is, in 293 cases of both sexes, it was arrested in 23 per cent. It was arrested in 14 per cent. of the cases of both sexes in the second and third stages.

What I have seen in my own practice confirms these statements, and as my inquiry is entirely of a practical nature, I shall not stop to examine how cod-liver oil produces these remarkable effects,—whether it is by the iodine, the bromine, or the biliary matter it contains, none of which views seem at all probable, when

we consider the small quantities of these matters present ; or whether it is by attracting albumen round it, or, by furnishing, according to Liebig's theory, carbonaceous fuel for respiration, and thus protecting the tissues from the action of the atmospheric oxygen. On these points we have theoretical speculation, but no tangible evidence ; and as we cannot explain the action of quinine in ague, so we must, for the present, rest satisfied with the fact, that cod-liver oil is the most efficacious remedy we yet possess in correcting tuberculous malassimilation.

TREATMENT OF COUGH AND OTHER SYMPTOMS.

Having pointed out the means to be used for the purpose of improving the constitutional state, and those which have the greatest power over the local affection, it remains now to show how we are to deal with some prominent symptoms, and with inflammatory complications, which occur in the progress of the disease. Tubercle, being a foreign body in the lung, excites inflammation, sometimes in the tissue of the lung itself, very often in the pleura, and always more or less in the mucous membrane of the air-passages. The cough is, in the earliest period, caused, sometimes by irritation merely, and then it will be relieved most effectually by sedatives alone, of which morphia, prussic acid, hyoscyamus, and conium, are the most useful. At a later period the cough becomes a still more prominent symptom, and when accompanied with some viscid

secretion, it is partly dependent on bronchial inflammation, and then an expectorant—such as squill, or ipecacuan, combined with one of these sedatives, will be found of service. In any plan of treatment the cough must receive attention, and, if it prevent sleep, five grains of the compound soap-pill may be given at bedtime, or a quarter or half a grain of morphia ; and I often find it necessary to give the latter to patients taking cod-liver oil. When the expectoration becomes very abundant, especially in an advanced stage, it may sometimes be controlled by small doses of the balsams, by creosote, or by naphtha, or by inhaling these. In repressing the bronchial secretion, however, we must proceed with caution, as it may induce tightness of the chest, dyspnœa, and even hæmoptysis. Having already noticed the necessity of intermitting the use of cod-liver oil, where attacks of pleurisy or pneumonia, characterized by pain and febrile symptoms, come on, I need not revert to the treatment of these complications, further than to state that they require the milder antiphlogistic means, such as the application of a few leeches, extensive counter-irritation, by croton-oil liniment, rubefacient applications, or blisters. When dyspnœa is a painful symptom in the advanced stages, I have found it much relieved by a mixture with sulphuric ether, oxymel of squill, and compound tincture of camphor.

SECTION V.

CASES.

CASE I.—FIRST STAGE—TREATMENT BY BLISTERS, COD-LIVER OIL, IODIDE OF IRON, AND INUNCTION OF IODIDE OF LEAD OINTMENT—ABSORPTION OF TUBERCULAR DEPOSIT, AND RECOVERY—REMARKS.

Thomas Daly, aged 18, a sailor, was admitted into the Infirmary under my care, on the 1st of October, 1849. He had suffered from cough three months previous, but recovered until seventeen days before admission, when he was seized with cough and pain in the left side of the chest. He was pale, emaciated, and weak. His breath was very short, and he had some trifling expectoration, but had never been attacked with spitting of blood. The sound, on percussion of both clavicles, seemed less clear than natural, and below the left clavicle it was decidedly dull. Close to the sternum, and an inch and a half below the clavicle, it had somewhat of the sound elicited from the trachea. In the same spot the respiration was blowing, and I was at first disposed to think that there might be a cavity; but the absence of gurgling, and of purulent expectoration, showed that it was caused by tubercular deposit near one of the large bronchial tubes. There were no rhonchi on either side of the chest; but below the left clavicle the respiration was harsh or bronchial, and the resonance of the voice and cough very loud. Blisters were applied to remove the pain in the left side; and he took an ounce of cod-liver oil thrice a day. He improved rapidly;

and on the 22nd, he had got fatter and stronger, though he was pale, and still had cough. Some dry crackling, with pleuritic rubbing, was now heard below the left clavicle. For this a blister was applied. On the 29th, these signs could no longer be heard, but respiration was interrupted in the same situation. It was observed, however, that the dulness and bronchial character of the respiration had somewhat lessened. He was now ordered to rub in the iodide of lead ointment upon the upper part of the chest. On the 8th November, he had become quite fat, and much stronger, but was still pale. A continuous murmur was audible in the veins of the neck. He still had shortness of breath on ascending the stairs ; but the dulness and bronchial respiration had very decidedly diminished, and, in fact, were scarcely perceptible. With the view of increasing the red globules of the blood, the want of which seemed now to be as much the cause of the shortness of breath as the affection of the lungs, he was ordered to take twenty minims of the syrup of the iodide of iron, thrice a day, in place of the oil. On the 20th he had not only grown fat, but had also acquired so healthy an appearance that he would scarcely have been taken for an invalid. He still, however, had some pain below the cartilages of the false ribs on the left side, for which he was blistered. He remained in the hospital, and continued the syrup of iodide of iron till the 14th December, when the presence of tubercular disease of the lungs could scarcely have been pronounced, with certainty, by any one who had not previously seen him.

REMARKS.—This patient had not only the symptoms, but also well-marked signs, of tubercular deposit at the summit of the left lung, which were distinctly perceived by my clinical clerk also ; and, during the two months and a half he was under treatment, the dulness and other signs diminished so decidedly as to leave no doubt in my mind that the tubercular disease had undergone a very considerable amount of absorption. The

removal of the consolidation was chiefly due to the oil; but there can be no doubt that it was also promoted by the inunction with iodide of lead, and by taking the syrup of iodide of iron.

CASE II.—FIRST STAGE—TREATMENT BY COUNTER-IRRITATION, COD-LIVER OIL, &c.—RECOVERY.

A delicate youth, aged 13, of pale complexion, and the son of a gentleman of highly scrofulous constitution, some of whose relations had died of consumption, was seen by me on the 7th Dec., 1849. His parents had become alarmed on account of his having had cough, which had confined him to the house for more than a month. His appearance indicated a very delicate state of health. He was pale, but easily flushed by any excitement, and had been evidently losing flesh for some time. He had cough and considerable loose expectoration in the morning, and also occasional perspirations during the night. The appetite and digestion were still tolerably good. He had been treated with an expectorant mixture containing squill and paregoric, and by rubbing upon the chest a liniment with croton oil. On examining the chest, I found very evident flattening beneath the centre of the left clavicle, and in this situation the sound was less clear on percussion than on the opposite side, and the expansion on full inspiration was also less perfect. Respiration was somewhat harsh and bronchial in character, but no rales were audible on either side. He was ordered to continue the counter-irritation, to have mild nourishing diet, and to guard against exposure to cold, also to take a dessert-spoonful of cod-liver oil thrice a day. He began to improve very rapidly after he commenced taking the oil, and was soon able to take exercise in the open air. When I again saw him, on the 11th January, his appearance had undergone a great change: he had gained

flesh, colour, and strength, in a striking degree. I remarked this especially in the appearance of his thighs, which had become quite muscular. He went out daily to take active exercise for an hour or two, though the weather was then very severe. His cough had nearly left him, except in the morning, when he still expectorated a little. On the 1st of March, I again saw him: he then looked as well as before his illness, and had entirely lost his cough, but continued to take the oil. On examining the chest, I found a decided change; there was no flattening or dulness below the left clavicle: expansion on full inspiration was as perfect as on the opposite side; and there was no appreciable difference in the respiration on the two sides. Since then this patient has continued well.

CASE III.*—SECOND STAGE COMMENCING—WELL-MARKED SYMPTOMS AND SIGNS—TREATMENT BY ALTERATIVE APERIENTS, OIL, AND IODIDE OF MERCURY OINTMENT—COMPLETE RESTORATION OF HEALTH, AND PARTIAL REMOVAL OF LOCAL DISEASE—OBSERVATIONS ON EFFECTS OF COD-LIVER OIL ON CRETACEOUS TRANSFORMATION, &c.

W. Murray, aged 21, formerly at the sea, but latterly a porter, was admitted into the infirmary, on the 6th of December, 1849, with cough and other well-marked symptoms of consumption. He stated that his mother died of this disease, and that he had been ill for three months, during which period he had spat blood on two occasions; and he did so again the day after coming under my care. On admission, he was weak and considerably emaciated; his countenance had a shrunk and faded appearance. His cough had been so violent that he had frequently vomited every thing off his stomach. His expectoration consisted of only a little ropy white mucus; he had pain

* This case was shown to the members of the Liverpool Medical Society.

below the right clavicle; his breath was short, and he had perspirations at night. His skin was hot; his pulse 90; his tongue furred; and his bowels costive. There was well-marked dulness below the right clavicle; respiration was harsh, with some sibilant rale; expiration was very loud and prolonged, and the resonance of the voice and cough was very loud. He was ordered to take mercury with chalk, and rhubarb, of each four grains for four successive nights; and to commence with one spoonful of cod-liver oil, and gradually increase the quantity to two spoonfuls thrice a-day. On the 13th, he already began to feel stronger and better, and said that he had gained flesh—a statement which his improved appearance corroborated. On the 17th the improvement in colour and flesh continued. The cough had nearly left him, and the respiration was free from any rales. On the 24th there were a few bubbles of mucous rale below the right clavicle, in the spot where the resonance of the cough was greatest. He was ordered to rub in some of the iodide of mercury ointment twice a-day. On the 3d of January there were still a few bubbles of rale, but he felt quite well, and had a remarkably healthy appearance. He had hardly any cough or expectoration, and wished to go out and return to his work, but was recommended to remain till the weather became milder. He was examined by the spirometer, and it was found that he could expire 150 cubic inches. This was considerably below the number he should have expired, as his height was five feet five inches and a half. On the 21st he expectorated some dense heavy-looking yellow sputa. On the 24th he looked remarkably well, and very stout. He had hardly any cough or expectoration, but there were a few bubbles of mucous or subcrepitant rale in a spot below the right clavicle, where expiration was prolonged, and the sound of the voice very loud. In this spot I believed that a small quantity of tubercular matter had softened. He was now made an out-patient, but continued

to take oil, and rub in the ointment, till the 20th February. He was then told to omit all treatment, and return again in a short time.

On the 27th of February, he returned to show himself, and to say that he had been at work, and found himself so strong, that he was about to go to sea again. He was then a good-looking young man, with a healthy colour, and very stout and muscular. On examining the chest, I could find scarcely any dulness below the right clavicle. There were no rales or signs of any secretion in the air-tubes, but respiration was rough, and the expiratory murmur prolonged; the resonance of the voice and cough was also louder than on the other side. The vital capacity of the chest was again examined by the spirometer, and found to be 160, being an increase of ten cubic inches.

OBSERVATIONS.—This is a highly interesting case; the patient was, when admitted, advancing rapidly into a deep decline, and yet the progress of the disease was speedily checked; the symptoms all disappeared, and the local disease also underwent such a change that there is every reason to believe that its further progress is permanently arrested. The condition of the tubercular disease, during treatment, and after its termination, requires some notice. When he was admitted, the tubercles did not appear to have yet undergone softening, but had almost reached that stage: and from the fact of his having spat some yellow sputa at a time when some sub-crepitant crackling rale was also audible, I believe that a small portion of tubercle underwent softening, and perhaps a minute cavity formed; but the evidence of its presence was not distinctly ascertained by cavernous respiration or pectoriloquy. The diminution of dulness, and of the other signs of consolidation, shows that absorption had taken place to some extent; but as there was still a want of clearness on percussion, and increased loudness of the voice, it seems not improbable that the tubercular matter may have

been in process of transformation into cretaceous concretions. As this is the most common way in which tubercle becomes innocuous, it appears highly probable that the use of cod-liver oil should promote this favourable change ; and I may extract from Dr. De Jongh's work the following case, where it seems to have produced this effect. The case was furnished by Dr. Loncq, of Utrecht :—A man, about 30 years of age, spare, and of phthisical tendency, after suffering for three months from a cough, was seized with spitting of blood, and consulted him. He had all the usual symptoms of consumption well marked, and also the physical signs of a cavity in the upper part of the right lung. Symptoms of irritation were removed by blistering, sedatives, and mild diet ; after which he was treated with cod-liver oil for five months. From this period there was no pectoriloquy, no expectoration, no fever, seldom any cough ; his appearance improved, the strength was so restored that he considered himself cured, and gladly returned to his work. “ After two years, he again came under my treatment, extremely thin, suffering from a severe diarrhœa, with acute pain in the bowels. He, however, had no cough, and he mentioned that, for five months, his bowels were confined, and a short time afterwards diarrhœa commenced. As to the affection of the chest, he never suffered from it ; on the contrary, for the space of nine months he had found himself better.” He was treated for the diarrhœa, but died, and, on examination, many tubercles were found in the upper lobe of the right lung, partly crude, and partly chalky, and the *cicatrix* of a vomica nearly an inch long. The mesenteric glands contained tubercular matter, and the mucous membrane of the small intestines presented tubercular ulcers. It is evident that in this case the disease was of too extensive a nature to be entirely removed ; but yet we see that the tubercles had some of them become chalky, and a large

cavity in the right lung had healed under the influence of this remedy.*

CASE IV.—WELL-MARKED SYMPTOMS AND PHYSICAL SIGNS OF TUBERCULAR DISEASE OF THE LEFT LUNG ARRESTED.

A married lady, aged 26, consulted me in the beginning of April, having been induced to do so from her husband having read the first edition of this work. She had been born in the West Indies, and believed that her father had died of consumption. In April, 1849, she was confined; and three months after this, while nursing, she was seized with cough, and continued to get gradually worse while under the care of her ordinary medical attendant. In the end of September she consulted a physician, who applied a blister beneath each clavicle, and ordered her to wean her child. Having examined her chest, he told her friends that her case was a very hopeless one; but that she might, perhaps, derive some temporary benefit from taking cod-liver oil. She was then very weak and emaciated, and had profuse night perspirations, and abundant expectoration; but her appetite improved, and the cough and other symptoms abated so much, that she was encouraged to persevere with the oil. In consequence, however, of the unfavourable opinion which had been given, she placed herself under my care. Having found herself very susceptible of cold, she had kept the house carefully during the greater part of the winter; and when I first saw her, though stout-looking, she was in reality very weak; the flesh was soft, and the skin so relaxed that she perspired very easily on exerting herself, and hence the susceptibility to attacks of cold. Menstruation

* For a detailed account of a similar case, see a paper by J. H. Bennett, M.D., *Monthly Journal of Medical Science*, May, 1850.

was profuse ; there was leucorrhœa, and also some tendency to diarrhœa. The cough was, however, trifling ; she slept well, and had only a very little mucous expectoration.

On examining the chest, I found that there was considerable depression below the left clavicle, the side on which she had been told that the disease existed ; and the sound was decidedly duller, and the elasticity less than on the right side. Respiration was feebler on the left than the right side, and interrupted, occurring in whiffs, especially about two inches below the centre of the clavicle. On the right side it was not altogether free from the whiffing character. There were no rales or other signs of active disease. There was a continuous murmur in the veins of the neck ; and I have already stated that, in such cases, I consider this a favourable sign.

I regulated the diet and digestive functions in this interesting case ; and, as there was a want of tone in the whole system, indicated by the softness of the flesh, the relaxation of the mucous tissues, and perspiration on slight exertion, I prescribed quinine with sulphuric acid, &c., and recommended her to sponge the surface with salt and water, followed by friction, so as to brace the tone of the system. The use of cod-liver oil was also continued, iodide of lead ointment was rubbed in beneath the left clavicle, and means were used to check mucous discharges. The patient is now (May 1,) very greatly improved under this plan of treatment. She looks better, the flesh has become firmer, she feels stronger, and does not perspire so easily.

Not having seen this case at first, it is impossible for me to form an opinion as to whether a cavity had existed or not. There can, however, be no doubt that the tubercular matter is now in a quiescent state ; and as the nutritive functions have received a healthy impulse, we may hope that by maintaining this, by removing any urgent symptoms as they may occur, and by improving the general health by tonic means and by

change of air, the health of the patient may be sustained till the tubercular matter has been absorbed, or rendered innocuous by cretaceous transformation.

CASE V.—SPITTING OF BLOOD, AND CAVITY IN RIGHT LUNG—TREATMENT BY CREOSOTE AND OIL WITH INHALATIONS, &c.—COMPLETE RECOVERY AND REMOVAL OF CAVITY.

A gentleman, 31 years of age, of rather stout make, whose parents were healthy, but one of whose sisters had died of decline, became affected with cough about Christmas, 1848. He felt languid and out of health all winter, and towards the middle of May, while walking upon the street, he was attacked with spitting of blood. The attack was severe, and did not stop until he had coughed up nearly a pint of blood. In the beginning of June I saw him in consultation with Mr. Slater, his ordinary medical attendant. He was then pale, and very weak, but had not lost his flesh to any great extent. He had night sweats, and purulent expectoration. On examining the chest, very decided dulness was found about three inches below the right clavicle, and in the same situation cavernous respiration and pectoriloquy indicated most distinctly the existence of a cavity of considerable size. There was, however, very little sign of fluid in the cavity or surrounding parts, and the left lung was free from disease. Cod-liver oil was prescribed for him, and also counter-irritation to the chest. The diet and digestive functions were regulated, and he was recommended to leave business, and go to the country for some time. Under this plan of treatment his health rapidly improved, and he found his "strength revived" by taking the oil, and by a month's residence in the country. Towards the end of September he had a trifling return of hæmoptysis, after which he again went to the country, and he continued the cod-liver oil

for eight months, during six of which he took it most regularly. He also took, by Mr. Slater's advice, during part of that time, a small quantity of creosote in combination with the oil, and used creosote and conium inhalations with benefit.

Having been told by Mr. Slater that this gentleman was in the enjoyment of good health, I went along with him on the 20th of April to see the patient. I found him looking stout and perfectly well, and at a loss to know why two medical men should visit him. He stated that in the morning he coughed a few times, and brought up a little mucus, but that he had no shortness of breath at all. He had been most regular in his mode of living, and had avoided stimulants; taking, while in the country, milk, and riding on horseback.

On examining the chest, considerable depression was discovered below the right clavicle, in the situation where the cavity had been discovered. The dulness was less marked than when I had seen him in summer, but there was still considerable dulness, and also a loss of elasticity about three inches below the clavicle. There was no sign of a cavity, and the respiration was quite dry, and free from any rale; but it was somewhat harsh; the resonance of the voice was loud; and the cough was loud and somewhat tubular in character. Posteriorly the respiration was feebler, and the resonance of the voice and cough louder, on the right than on the left side, in the scapular regions.

This is a most interesting and satisfactory case, and requires no comment, further than that the physical signs give us every reason to believe that an ulcerated cavity has healed.

CASE VI.—THIRD STAGE: LARGE CAVITY IN RIGHT LUNG; RECOVERY WITH PERSISTENCE OF SIGNS OF A CAVITY NEARLY A YEAR AFTER.

Thomas Alpen, aged 40, was admitted into the Infirmary on the 21st of June, 1849. He had been a soldier more than

twenty years, during which he had been ten years in the Mediterranean, three in the West, and four in the East Indies. Three months previous he had been much exposed to wet and cold, in enforcing the collection of rates in Ireland; and this brought on cough and other symptoms of consumption, on account of which he was discharged from the service as incurable. He was much emaciated, and his whole appearance indicated phthisis. He had hot skin, profuse night perspirations, and abundant expectoration. He had diarrhœa, the tongue was red at the tip and centre, and he had lost his appetite and strength. The physical signs were equally well marked. On percussion, the sound was very dull below the right clavicle. In this situation there was cavernous respiration, mixed with loud gurgling, arising either from a large cavity, or from several communicating. He took cod-liver oil, in addition to some mixture, to relieve the cough, and improved very speedily under this treatment. On the 9th July he had gained flesh, and improved in appearance. He had no night sweats, and very little cough or expectoration. The bowels continued rather loose, and the tongue reddish at the centre, but in all other respects he was better. There was loud blowing cavernous respiration, but no movement of fluid in the cavity could now be heard, except when he coughed violently. On the 17th, some astringent mixture was given to check the diarrhœa, and after its removal he improved most rapidly. On the 5th August he looked so stout and healthy, that no one, from his appearance, could have supposed that he had a cavity in the lung, or that he was ill at all. His appetite was good, his tongue clean, his pulse 88, his skin cool, his complexion healthy, respiration easy, no night sweats, scarcely any cough, expectoration scanty and no longer purulent, but consisting of only a greenish-yellow mucus. There was still dulness below the right clavicle, and considerable depression, with dry blowing respiration, and other signs of an empty cavity tending to col-

lapse. The patient felt so well that he did not wish to remain longer in the Infirmary.

Since this case was published, I have the satisfaction of stating that the patient has not had any return of the phthisical symptoms. On the 19th of March last, I met with him by accident at the Infirmary, and found that he had been operated upon for fistula by one of my colleagues, who was not aware that he had ever had symptoms of consumption, otherwise he would have hesitated in operating. He did not then suffer at all from his chest, but he coughed a few times in the morning, and brought up a little clear mucus. He looked strong, and stated that he had kept his flesh well since he had been under my treatment. On examining the chest with the spirometer, I found the vital capacity 170, and, as his height was 5 feet 7 inches, and his age 42, this showed a diminution of 45 cubic inches; but we must observe, that the average diminution, even in the earliest stage, is 76 cubic inches, and therefore as the patient must have been in the third stage when under my care, there is reason to believe that an improvement in the capacity must have taken place to a very considerable extent. Examination of the chest, by percussion and the stethoscope, showed that there was still dulness below the right clavicle, and loud blowing respiration, perfectly free from any rale. The voice and cough were heard very loud in this situation.

I believe that, in this case, we have an example of the healing of an ulcerated cavity by being lined with a fibro-cellular membrane, without the void space being entirely obliterated. The twenty-second observation of Laennec is a very similar case in a lady, 48 years of age, who, after having had all the symptoms of consumption, recovered completely, but still presented the signs of a cavity at the top of the right lung.

In Dr. Carswell's *Illustrations of the Elementary Forms of Disease*, also, there is figured the contraction of a cavity into a fistulous sinus, such as I believe to be present in this case.

CASE VII.—THIRD STAGE FAR ADVANCED; UNEXPECTED TEMPORARY RECOVERY, BUT FATAL TERMINATION AT THE END OF TWELVE MONTHS WITH AN AFFECTION OF THE BRAIN.

Mr. W., aged 35, was seen by me on the 2d of February, 1849, in consultation with Mr. Atcherley. The patient had been intemperate in his habits, and dated his illness from about the preceding Christmas. He was much emaciated, and had violent hectic fever. The pulse was above 120, and the perspirations were unusually profuse, continuing during the day as well as the night. He had no appetite, and the tongue was much loaded, but there was no diarrhœa. He was confined to bed, and had considerable œdematous swelling of the ankles—a symptom indicating great debility and an advanced stage of the disease. The cough was unusually violent and troublesome, and the expectoration was brought up with difficulty, and was of a tenacious muco-purulent character. The physical signs showed that the right lung was sound, but the left was extensively diseased. There was a great degree of dulness at the upper part, before and behind, and the gurgling and other signs of cavities were heard in both situations. Over every other part of the lung, mucous and subcrepitant rhonchi, mixed with sibilant, indicated that extensive softening of tubercular matter was going forward. We resolved to make trial of cod-liver oil, though we had little expectation of benefit in a case apparently so hopeless. Counter-irritation, with croton oil, was adopted, the diet was regulated, small doses of mercury with chalk and rhubarb were given, and an attempt was made to stop the perspirations with sulphuric acid. Sedative expectorants were at the same time given, to relieve the cough. These means were, however, of little service beyond preparing him for the use of cod-liver oil, which he began to take on the 9th of February. In a short time he began to recover; and some

months after, Mr. Atcherley informed me that he had got stout and well. About the beginning of July, I had again an opportunity of examining him. He had then, for a long time, ceased taking any oil, but was still so stout that I could not have known him. He had at that time a slight return of cough, but had been nearly free from cough or expectoration, until a few days previous. The upper part of the left side of the chest was still dull on percussion, though less so than when I first saw him. Respiration was harsh and blowing, with some sibilant rhonchus, but there was none of the gurgling cavernous rhonchus; and towards the lower part of the lung the breath-sound was natural. The habits of this patient have been so intemperate, that he has not given himself a fair chance of recovery; and when I saw him in the beginning of winter, I did not find that any farther progress towards reparation of the local disease had been made.

About the middle of February 1850, I was again called to see this patient along with Mr. Atcherley. His cough, which had during winter returned, had again for a fortnight ceased, and symptoms of an affection of the brain had come on, so that when I saw him he was quite insensible. By the application of a small blister behind each ear, he was restored to a temporary state of consciousness, but died on the 17th of February. This patient did not give himself any chance of recovery; he was most intemperate in his habits, and although he had been raised up from the most advanced stage of consumption to such a state of health as to be able to go about and enjoy himself again, yet he would not persevere in the use of the means which had been of such remarkable service to him.

CASE VIII.—THIRD STAGE FAR ADVANCED—REMARKABLE CASE WITH ABUNDANT FETID EXPECTORATION, ABSCESS OF LEFT LUNG POINTING EXTERNALLY—QUIESCENCE OF THE DISEASE, AND RECOVERY UNDER TREATMENT BY CREOSOTE, COD-LIVER OIL, AND OTHER REMEDIES.

A ship-carpenter, aged 36, was admitted under my care in the Northern Hospital, on December 6th, 1848. More than twelve months previous, he had been attacked with spitting of blood, and other pulmonary symptoms, which had never entirely left him. He was much emaciated, and had profuse perspirations; he expectorated large quantities of puriform secretion of an offensive odour; and, when he coughed, his breath was insupportably offensive, scarcely less so than in cases of gangrene. The left lung was extensively diseased. There was a great amount of dulness, extending from the clavicle into the mammary region. There was the gurgling of a large cavity below the left nipple. Below the clavicle, there was the gurgling of smaller cavities, as well as the subcrepitant rhonchus, indicating extensive softening of tubercular matter. There were no decided indications of disease in the other lung. He was treated with mild mercurial aperients, and a sedative mixture for the cough; and as he had much pain in his left side, a blister was applied. On the 11th, cod-liver oil was prescribed. Below the left nipple, where the large cavity was found, a fluctuating tumor formed, and was opened on the 14th. When he coughed, air was expelled along with matter, showing that the abscess communicated with the lung. He continued taking the oil till the 23rd, when he was somewhat better; but as it caused nausea it was omitted, and he took a mixture composed of creosote, oxymel of squills, and compound tincture of camphor, with great benefit; the abundant purulent expectoration being much lessened by it. On the 1st January, the cod-liver oil was resumed, in two drachm doses; and in a

fortnight from that time, he had improved in a remarkable manner, he had gained flesh, and considered himself half a stone heavier. His countenance had assumed a cheerful and more healthy appearance, and his skin had become soft and smooth. Though he had some return of the pain in the side, and the abscess was opened more than once, he continued to improve steadily, after recommencing the oil. On the 4th of February, he had every appearance of health; the abscess had all but healed, his appetite was good, and the expectoration had almost ceased. There was considerable contraction of the left side of the chest, and a great amount of dulness. The lung had been extensively excavated; but the progress of the disease was now arrested, and instead of the gurgling and rhonchi indicating the passing of air through muco-purulent fluid, there was heard the dry blowing of air passing into empty cavities. On the 16th February, he considered himself capable of following his employment, and left the hospital to go to New York.

This remarkable case, which has been condensed from notes, for which I am indebted to Mr. Wall, the house-surgeon, was the worst in which I have ever seen the disease arrested; and the patient derived great benefit from the mixture containing creosote, which checked the abundance and feter of the expectoration, and from the cod-liver oil, which improved his general health in a remarkable manner.

CASE IX.—CHRONIC PHTHISIS WITH A CAVITY IN LEFT LUNG—DISEASE
ARRESTED BY ANTI-SPASMODIC EXPECTORANTS, OIL, AND BLISTERING.

Mrs. B——, aged 45, came under my care on the 13th September, 1849, with cough and difficulty of breathing. She had suffered from the cough ever since her last confinement, three years previous. Four months after this, and again six months after, she spat a considerable quantity of blood; and,

on the last occasion she was so ill that she was confined to bed for a month. After this, her health was never good; and for twelve months her breath had been short, and she had frequently had night perspirations. She complained of having become much thinner, but was still stouter than consumptive patients usually are. She had, when I first saw her, considerable lividity of the countenance, the breathing was difficult, and the pulse 120, and full. There was dulness and depression below the right clavicle, and in the same spot the gurgling of a cavity was audible. A sinapism was applied to the chest, an aperient prescribed, and also a mixture to relieve the difficulty of breathing, consisting of compound spirit of sulphuric ether, oxymel of squill, and compound tincture of camphor. She was relieved by this plan of treatment, and was then put upon the use of cod-liver oil. On the 3rd of October she had improved very greatly in appearance, and had very little cough or expectoration, and no perspirations at night. She had dry cavernous respiration below the right clavicle. On the 11th of October she had some pain in the right side, for which a blister was applied. She continued under my care till the end of the month, taking the oil. I saw this patient in the beginning of January, at which time she continued well; and I believe she would have applied to me again, if she had since had a return of the symptoms.

CASE X.—CHRONIC PHTHISIS—PRESENCE OF CRETACEOUS CONCRETIONS PROBABLE—FREQUENT SUSPENSION OF DISEASE, AND ARREST BY COUNTER-IRRITATION, THE USE OF OIL, AND EXPECTORANTS.

M. G., aged 50, rather thin and of dark complexion, born of healthy parents in Ireland, but resident in Liverpool for 25 years, was admitted into the Infirmary on the 18th March, 1850. He stated that for 15 years he had been subject to cough, especially in winter; and ten years ago he had so much cough, emaciation, and

expectoration, that the surgeon who attended him did not expect him to recover. Three years ago, he was again so ill, as to be unable to work for five weeks. Twelve months since, he spat a considerable quantity of blood; and, for six weeks before his admission, he had been unfit for any work, having cough, expectoration, night sweats, and debility, with considerable emaciation, and shortness of breath. Below the right clavicle there was dulness, and the respiration had a bronchial character, with some sibilant rale. From these signs, it appeared that there was some tubercular consolidation, and, from the long duration of the disease, I thought it probable that partial cretaceous transformation had taken place. He was blistered to relieve the cough, and he also took a sedative expectorant consisting of oxymel of squill with acetate of morphia. An ounce of cod-liver oil was given thrice a day, and he rubbed upon the chest a liniment with acetum cantharidis, and began speedily to improve. The bowels being very costive, he had to take frequent aperients, and his mouth became sore from taking pills containing calomel, which had been taken by mistake more frequently than ordered. This did not, however, produce any injurious effect upon the state of the lungs; and on the 27th of April he had very little cough; the expectoration was trifling in quantity, consisting of yellowish mucus; the appetite was good, and he had no perspirations at night. He had also become stouter, and wished to return to his work. The dulness below the right clavicle was still perceptible, but rather less so, and the respiration was free from any rales.

This, as well as the preceding case, are examples of that chronic form of consumption to which allusion has been made at page 26.

CASE XI.—THIRD STAGE IN PATIENT OF UNHEALTHY SCROFULOUS
CONSTITUTION—RAPID AMENDMENT.

P. D., aged 32, a pale unhealthy-looking man, with scrofulous scars upon the neck, came under my care on the 24th of Dec., with cough of three months duration. He had purulent expectoration, night sweats, and had recently spat blood. His tongue was much loaded, he had pain in the left side of the chest, and at the upper part great dulness, and the signs of a cavity of considerable size. His appearance was such that I formed a very unfavourable opinion of the case. I ordered a liniment with croton oil to be rubbed upon the side of the chest where the pain was ; and I also prescribed a few alterative aperient powders, and cod-liver oil. I have scarcely seen any case in which the benefit of treatment was more rapid. He began almost immediately to gain flesh, and before the end of the following month he felt so well that I could not persuade him to continue the treatment any longer. The local disease had then undergone considerable improvement, but there was still a great amount of dulness and feebleness of respiration. The dryness of the sounds showed, however, that the disease was in abeyance.

This case illustrates the observations I made at page 74, in reference to the disregard of patients to their true condition, in not giving that continued attention to their health which is necessary in a disease often of such slow growth as consumption ; and, especially, in not persevering in the use of cod-liver oil, so as to give that remedy a fair chance of doing permanent service.

CASE XII.—THIRD STAGE—WELL-MARKED SYMPTOMS, AND DISEASE
IN BOTH LUNGS—TREATMENT BY NAPHTHA, OIL, MORPHIA, &c.

E. M., aged 27, a sailor, was admitted into the Infirmary on

the 5th November, 1849, with cough, emaciation, and other well-marked symptoms of consumption. Both lungs were affected, but especially the left, and below the clavicle on this side there was dulness, depression, and the gurgling of cavities. Cod-liver oil was prescribed, and at first he was able to take it; but, on the 16th, great irritability of the stomach came on, and he vomited his food, and was unable to continue the oil. I now ordered for him a mixture with naphtha, acacia mixture, and peppermint water. On the 24th, I found him much better; the irritability of the stomach had been at once removed by the naphtha; he had no sickness; his appetite had improved, and he had been able to resume the use of the oil. His cough, however, continued very troublesome, especially in the night, and therefore I prescribed a pill with a quarter of a grain of muriate of morphia, to be taken every evening. He derived much relief from the pill, and continued to improve in colour, strength, and stoutness, till the 3d of December, when he complained of pain below the left clavicle, for which he was ordered to apply a concentrated tincture of iodine: this caused purulent vesication, and removed the pain. From this time until the end of January he progressed upon the whole favourably; but he had occasional attacks of hæmoptysis and other symptoms, requiring the omission of the oil for a time, and recourse to other remedies. Towards the middle of February, the cough had become less troublesome, the expectoration less abundant, the perspirations had ceased, and the local evidence of disease had undergone very decided improvement. The dulness had diminished below the left clavicle, and respiration had become drier; but there was still some sub-crepitant rale.

On the 18th of February, he thought that he had ceased to make the same progress he had formerly done, and wished to be made an out-patient. Before this his appetite had fallen off, the oil had been omitted, and he had been taking the compound iron mixture, with bicarbonate of potass. Instead of this, cod-

liver was again prescribed for him. On the 28th February he was very much better, having acquired a better appetite and healthier colour since being out; and he stated that his health was then so good that he was going to sea.

The extent of disease was so considerable in this case, that I should have some doubt of it being permanently arrested. The patient, however, from being a weak emaciated individual, had acquired so healthy an appearance, that an ordinary observer would not for a moment have supposed him consumptive. The good effect of naphtha, in improving the appetite, removing sickness, and enabling the patient to take the oil, as well as the improvement on being made an out-patient, and thus having more exercise, are worthy of observation.

CASE XIII.—EXTENSIVE DISEASE OF RIGHT LUNG—CAVITY—FREQUENT SPITTING OF BLOOD—HECTIC FEVER, &c.—TREATMENT BY CONTINUED COUNTER-IRRITATION AND VARIOUS REMEDIES—RECOVERY.

W. K., aged 37, of strong frame, and healthy parentage, was admitted into the Infirmary on the 5th of July, 1849, with cough, pain in the right side of the chest, and spitting of blood to a great extent. At this time there appeared to be some dulness in the mammary region and about the lower part of the scapula posteriorly. Turpentine with castor oil was given to stop the hæmorrhage, a blister was applied to the side, he also took an expectorant sedative mixture for the cough, and afterwards quinine with sulphuric acid in infusion of roses. On the 20th he was so much better that he wished to go out. On the 17th September he was again admitted with pain in the side, having had several violent attacks of hæmoptysis. He was then much emaciated, and there was increased dulness at the lower angle of the scapula, as well as other signs of consolidation of the central and lower part of the right lung. Cod-liver oil was at

this time prescribed, but it was of no service; and febrile symptoms having come on, with severe pain in the side, it became necessary to blister him repeatedly, and to give antimonial and other antiphlogistic remedies. The expectoration became very abundant, and rather foetid, and along with the signs of consolidation of the central part of the lung there were also mucous and subcrepitant rales. Creosote, with oxymel of squills, and compound tincture of camphor, was now given with some benefit. Towards the end of October he was in a very weak state, and had hectic fever, with profuse perspirations. Quinine, with sulphuric acid, was now of some service, and the cough was much relieved by taking a mixture with prussic acid, ipecacuan, and squills. On examining the chest on the 27th, I found cavernous respiration and rale, and the other signs of a large cavity, external to, and a little below, the lower angle of the scapula, where the dulness was most marked. Cod-liver oil was again tried; but attacks of spitting of blood and severe pain in the side interfered with the use of this remedy, as well with syrup of iodide of iron, which was also given. For these symptoms it became necessary to make powerful counter-irritation by tartar-emetic ointment, and to give turpentine repeatedly. He continued to get weaker till the 10th of December, when I again made trial of cod-liver oil; and on this occasion it agreed well with the patient,—it no longer “rose upon his stomach;” and he soon began to show a decided improvement in appearance. On the 20th of December he had already gained flesh; his appetite had improved, and the cough and quantity of expectoration had considerably diminished. The local disease had also undergone some improvement, indicated by a diminution of the subcrepitant rale. From the 10th of December he continued the oil pretty steadily, along with a mixture for the cough, and the occasional application of a blister to remove attacks of pain. Quinine with acid was occasionally given instead of the oil, when the tendency to spitting of blood rendered it necessary to

alter the treatment; and the dulness, which had become almost complete, and the signs of consolidation and those of a cavity, gradually lessened. In January he became an out-patient, and continued to visit me, and to take the oil, till the beginning of March, when he had become quite stout. The signs of a cavity had then disappeared, the dulness had greatly decreased, and the respiration was dry, feebler than on the left side, and somewhat harsh and bronchial.

The treatment of this case was a matter of more than usual difficulty, and it is well adapted to show that the mere use of cod-liver oil does not constitute the sole treatment of this disease; but that there are conditions which must be removed before it can be of any service. The situation of the disease towards the middle and lower part of the lung may cause some doubt as to the cavity being really of tubercular nature; but there are exceptions to the rule of tubercles being deposited, exclusively in the first instance, at the summit; and the progress of the case, and the physical signs, lead me to regard it as a case of tubercular consumption: and, if any should consider it as a case of chronic pneumonia, it is still a remarkable example of what may be done by the judicious and persevering use of cod-liver oil.

When I last saw this patient, he had not got entirely free from his cough; but I have been informed that since then he has improved; and he is now able to maintain himself and family by taking charge of a weighing machine.

CONCLUDING OBSERVATIONS ON THE PERMANENCY OF RECOVERY IN CASES WHERE THE DISEASE IS ARRESTED.

It will naturally be inquired how far recovery is permanent in the preceding cases, as well as generally in those where consumption is arrested. It is a matter of no trifling moment, that we possess the means of arresting this terrible disease in a very considerable number of cases, even should this prove in many instances only temporary. I would remark, that it is to the early stage we must look for the chief proportion of permanent cures, and not to that period when the lungs are extensively ulcerated. Of the cases I have related, many were in an advanced stage, with one or even both lungs so much disorganized, that it could scarcely be expected the cure should in all of them be permanent; yet I believe that, in the majority, under favourable circumstances, and with due attention on the part of the patients, it is not only quite possible, but even probable, that the injury sustained by the lungs will be permanently repaired. In some of them, especially Cases III. V. and VI. it seems to be so even now; and, as we have seen in the preceding inquiry, that, before the introduction of cod-liver oil, pathological researches and stethoscopic examination had united in proving that

recovery occasionally occurred in consumption, and was lasting, I can see no reason that it should be otherwise in those cases where the disease is arrested by a definite plan of treatment. I do not, therefore, hesitate in expressing my belief that the disease may be permanently arrested in many cases in an early stage, and even in a few of those more advanced, especially as I am borne out in this opinion by some eminent observers, and by the Report of the Hospital for Consumption, which assumes very properly, that, as in some cases under observation the improvement is permanent, it must also be so in many that have not returned.

Consumption will, however, necessarily continue a more or less fatal disease ; but the treatment has already undergone much improvement, and I believe that the close attention which is now being devoted to it will enable medical men to accumulate proofs of its permanent curability in an encouraging number of cases.

THE END.