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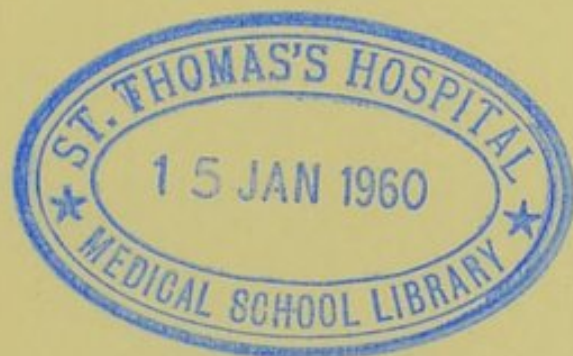
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REMARKS  
ON THE  
DIFFERENT FORMS OF PULMONARY  
CONSUMPTION.

BY

THOMAS B. PEACOCK, M.D., F.R.C.P.,

PHYSICIAN TO ST. THOMAS'S HOSPITAL, AND TO THE HOSPITAL FOR DISEASES  
OF THE CHEST, VICTORIA PARK.

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1870.



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THOMAS



REMARKS  
ON THE  
DIFFERENT FORMS OF PULMONARY  
CONSUMPTION.<sup>1</sup>

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It is, I believe, commonly considered that there are few diseases more simple in their character, more easy of detection, and of which the result can more readily be predicted, than pulmonary consumption; and yet, perhaps, it would not be far from true were I to assert that the very reverse of this is more correct,—that there are few diseases which differ more in their features, of which the diagnosis is sometimes more obscure, and the precise prognosis more open to doubt, than those which may be classed, and are generally understood to be embraced, under the general term of pulmonary consumption. I propose in the following paper to give a brief sketch of the chief forms of the disease, and to allude to some of the difficulties of diagnosis and sources of doubt in other ways which have fallen more particularly under my own notice.

FORMS.—MODE OF ACCESSION.

The affections to which the term pulmonary consumption is ordinarily applied present themselves under the following different circumstances:

1st. Where the disease of the lung is of constitutional origin,

The remarks contained in this paper were the substance of clinical lectures delivered at different times to the students of the hospital.



and may pursue its course without being necessarily materially modified by the presence of inflammation ;

2ndly. Where the disease, though originating in or closely connected with constitutional predisposition, is always greatly influenced in its symptoms, progress, and results, by the existence of inflammation ; and—

3rdly. Where the disease commences in inflammatory action, but where, generally from impaired constitutional power, phthisical symptoms subsequently become developed.

### I.

The first form of consumption, "*constitutional phthisis*," is relatively an acute disease, running its course in periods varying from three weeks to three or four months. It depends upon the deposit of small greyish or yellowish bodies, miliary tubercles, not only in the lungs but also in other organs, especially in the mucous follicles of the intestines, the mesenteric glands, and the membranes of the brain ; and less frequently in the liver, spleen, and kidneys. From the rapidity with which it runs its course and the febrile symptoms which ordinarily attend its progress, it has been termed by different writers "*acute phthisis*" and "*febrile phthisis*;" from the nature of the deposit upon which it depends, "*acute miliary tubercle*;" and from the tendency of the tuberculous deposition to involve various organs of the body, "*tuberculosis*." This form generally occurs in persons who inherit a strong predisposition to the disease, but the tendency may also be acquired by persons placed in unfavorable sanitary conditions, and who have long suffered from want of pure air, sufficiently warm clothing, and nutritious food. It is much the most common in females, and is probably rarely, if ever, found in persons exceeding twenty-five or thirty years of age. The symptoms by which the affection is characterised may be referable to the lungs, the brain, or the abdominal organs. It may prove fatal by interference with the function of respiration, without inflammation being excited in the lungs ; by inflammation of the mucous membrane of the smaller bronchial tubes and of the cells, with or without softening of the tuberculous deposit ; by sub-acute meningitis, resulting from the deposition of tubercle in the membranes of the brain ; and, occasionally, by severe and protracted diarrhœa,



originating in affection of the mucous glands of the intestines ; or by chronic peritonitis, from extension of disease from the mucous coat or mesenteric glands, or connected with the deposit of tubercle in the peritoneum. In some cases, and especially where there is tuberculous disease of the membranes of the brain, the affection bears a close resemblance in its general symptoms to typhoid fever, and it occasionally supervenes during convalescence from that disease.

Though all cases of this kind may be considered as acute relatively to other forms of phthisis, it is in some instances, as where the deposit is very generally diffused over the lungs and other organs are involved, a much more acute affection than in the cases where the disease is more limited in its seat and combined with less extensive affection of other parts. We may thus consider it as assuming two forms, the general and partial.

The following cases may be regarded as typical examples of the more general form ; they are cases selected from numerous instances of the same kind, and I give them concisely from not wishing to swell the bulk of the paper.

CASE 1. *Acute constitutional phthisis fatal by apnœa.*—A case which well illustrates the first form of constitutional phthisis fell under my notice four or five years ago. A young lady, æt. 22, who had previously enjoyed good health, though of a delicate family, had been engaged in working for the certificate of proficiency at the Ladies' College. After accomplishing her object she became somewhat indisposed, apparently from an overwrought mind ; but after having change of scene she soon recovered, and continued in her usual health during the following winter. On the 14th of May, on preparing to rise in the morning, she felt a sharp pain in the back of the neck, and, being somewhat feverish, remained in bed during the day. The bowels being confined, an aperient was given, but she was not relieved by it, and four days after she began to suffer from oppression in breathing, had a slight cough, some pain in the chest, and was very restless at night. From this time the feverish symptoms increased, and she had occasional attacks of difficulty of breathing ; but as she had marked hysterical symptoms, it was supposed that the dyspnœa was not



dependent on any serious disease. On the 24th she had slept at intervals during the night, and thought herself better, but the pulse was quick, 104. She had several attacks of dyspnœa, and began to suffer from the difficulty of breathing when occupying the recumbent position, and was in consequence compelled to sit upright in a chair. She could only articulate a few words at a time, and the expression of her countenance was very anxious. The bowels had been freely acted upon, and she had eructations of flatus which afforded her relief. On the 26th she had been very restless at the earlier part of the night, but afterwards, having taken an ether draught with ten minims of solution of acetate of morphia, became more composed. In the morning she was sick, and brought up food mixed with bile, and the retching continued for some time. She complained of pain at the chest and of the tumultuous action of the heart, and was exhausted and pale and anxious looking. Her pulse was 110; the skin warm. She continued to suffer from the dyspnœa, and was not able to lie down. She passed much flatus at intervals, and the bowels were relieved after a dose of castor oil. On the 27th and 28th she became worse, and I saw her for the first time on the 29th. She had taken an opiate and antispasmodic draught the previous evening, and had, in consequence, passed a better night, having slept at intervals. She was sitting propped upright in bed, and the expression of her countenance was most anxious; the face pallid, the lips livid, the eyeballs protruded, the hands cool, and the nails purple coloured. The pulse was rapid, about 130 in the minute, but regular. The tongue was dryish, and covered with a thick brown fur. She was breathing with extreme rapidity, about 80 times in the minute, and the respirations were short and panting and almost entirely abdominal, the chest being nearly immovable. The nostrils played in breathing. She was quite intelligent, but spoke in a short interrupted whisper. The respiratory sounds were found everywhere harsh, and especially so in the lower dorsal regions, but there was no rhonchus and no marked deficiency of the resonance on percussion in any part of the chest. The heart's action was rapid and tumultuous, but regular. I saw her again on the 31st, and was informed that she had, upon the whole, been somewhat easier. I found, however, that she was much worse; the rapidity of respiration was



nearly as great, 68 in the minute; the pulse was so weak and so rapid that it could not be numbered. The face was very livid, the lips purple and chapped, and the mucous membrane of the mouth of a deep purple colour; the tongue furred; the eyes very prominent. She was quite intelligent, and stated that she had no pain in any part of the chest. The left side, both before and behind, sounded less clear than the right, and the whole chest was sparingly resonant. At the left apex the respiratory murmur was much harsher than at the right, but there was no marked increase of cough or vocal resonance. In the left dorsal region the respiration was still more harsh; a decided thrill was felt with the respiratory acts at the left apex. The heart's action, though so extremely rapid, was regular, and its sounds were unattended by murmur. A purring tremor or thrill was perceived on pressure in the præcordial intercostal spaces. She had slept at intervals during the night under the influence of the morphia, but complained, on awaking after the short sleeps, of feelings of alarm and of a distressing sensation in the head. She had not taken much stimulus in consequence of its producing this sensation. She was much agitated after my visit, and I then thought that she would not live many hours, and towards the following morning her strength was evidently giving way, though she retained her intelligence. She died tranquilly at 9.20 a.m. on the 1st of June.

The body was examined on the 3rd. It was thin, but not emaciated. The lung on the left side adhered to the parietes by old cellular attachments over a large portion of its surface, but especially at the upper part. The right lung was very greatly collapsed. Both lungs were copiously infiltrated throughout their whole substance with miliary tubercles, having an average diameter of from half a line to a line, and uniformly of a yellowish-white colour. They were more numerous on the left side, and at the upper parts of the lungs on both sides. In no part had any of them undergone softening. The tissue of both lungs, more particularly the right, was peculiarly airless; and at the inferior and posterior parts there was much congestion, the parenchyma, however, retaining its natural firmness. It seemed, indeed, as if the appearance of congestion was due rather to the small space occupied by the collapsed lung than to true engorge-



ment. The bronchial mucous membrane was not injected, but in the tubes there was some bloody spumous fluid.

The pericardium contained a small quantity of clear serum. The heart was of natural size and free from disease, but in both ventricles there was much dark-coloured coagulum.

*CASE 2. Acute constitutional phthisis, fatal by acute capillary bronchitis.*—E. B—, æt. 24, was admitted into the Royal Free Hospital, June 15th, 1846. She had suffered previously for fourteen days with difficulty of breathing. The night of her admission she was seized with violent dyspnœa, which was relieved by the application of a sinapism between the shoulders. When seen by myself on the following day the symptoms were by no means urgent, and on auscultation no evidence of serious affection of the chest was detected. On the 18th, however, the extreme difficulty of breathing recurred, her face was very livid, and her hands cool and bathed with cold perspiration. Percussion was found to be good, or perhaps more correctly abnormally clear, posteriorly over the whole chest, except at the lower part of the left side. In front the resonance was natural. The respiratory sounds were feeble generally, and especially at the left back, and there was small crepitation in the lower parts of both lungs. She had a faltering and irregular pulse, but had no cough or expectoration, and made no complaint of pain.

June 19th.—Pulse 134, very rapid and feeble; face and lips livid; respiration very hurried, 60 in the minute; tongue dry and brown in the centre, white and moist at the edges. The bowels had been freely relieved, and she had made water freely. She had a slight cough, but complained of no pain and did not expectorate. She had had a blister applied to the chest, and had taken two pills, with four grains each of Extr. Hyos. and Pulv. Dov., and two of Camphor at night, and half a drachm each of Compound Sulphuric Ether and Compound Spirits of Ammonia every two hours, and brandy occasionally. She had experienced considerable relief from these means, but, owing to there being a delirious patient in the ward, had not slept during the night.

From this time her symptoms underwent but little change. She was compelled to remain constantly propped up in bed, and chose a position half inclined to the right side, which afforded



her some relief from the constant dyspnœa. The pulse was generally rapid and irregular, the face livid, and the respiration very hurried. She made no complaint of pain and had no expectoration. The stimulants seemed uniformly to afford temporary relief, the face becoming less livid after taking them and the pulse fuller and less irregular. From the position in which she lay and from her extreme prostration, it was impossible to make a satisfactory examination of the chest, but there was no deficiency of resonance in front till a day or two before her death, when there was some dulness beneath each clavicle, and the cardiac dulness was found increased. Respiration was generally feeble, and attended by very slight crepitation towards the lower parts of the chest. Before death, however, it was decidedly rough at the upper and anterior parts, and attended by sibilant and sonorous rattles. The sounds of the heart were natural at first, masked at the later period of her illness. She sank exhausted in the morning of the 24th of June.

The body was examined on the evening of the same day. There was but little emaciation, and the chest was sufficiently broad and expanded. The right lung was free; the left, on the contrary, adhered very firmly by dense and evidently old membrane. Both lungs were very voluminous, but more especially the right. On section they were found to contain a most copious deposit of small, round, yellowish-coloured and semitransparent-looking tubercles. These were nearly equally scattered throughout both lungs, but were larger at the apices, and perhaps more numerous in the upper parts of the lungs. The lung tissue was sparingly crepitant and much engorged; and this condition was more marked in the left lung, and especially in the posterior part of its lower lobe. In no part of either lung had the tubercles softened. The pulmonary tissue was also somewhat more condensed than natural, and the left lung was decidedly softened. The larger bronchial tubes did not contain much mucus; and the mucous membrane was only slightly injected. In the small tubes there was, however, a little bloody mucus; and the membrane was greatly injected, though smooth and transparent looking. The bronchial glands did not contain tubercle, but were softened so as to form a dirty brown-coloured pulp. The pericardium was very greatly distended with fluid, containing six to eight ounces. The fluid



was bright yellow coloured and opaque; it did not contain any flocculi of lymph, nor was there any exudation on the heart, except some small masses on the edges of the auricles, which, however, were not very recent. There was a small opaque spot on the pericardium covering the right ventricle, and one or two loose adhesions between the right auricle and aorta. The heart was of somewhat large size, and weighed 10 oz. 11 dr. There was some hypertrophy of the right ventricle. The stomach and duodenum were healthy. The mucous membrane of the ileum and cæcum was injected, but of natural tenacity. At the edge of the ileo-cæcal valve there existed a small, oval, and dark-coloured ulcer. The mucous follicles presented no appearance of disease and no enlargement. The mesenteric glands were large, but free from tubercle. The liver and kidneys were engorged with blood. The spleen was especially large. In the kidneys there were two or three pale spots, but otherwise, none of these organs presented any appearance of tubercle. There was some injection of the mucous membrane of the pelvis of both kidneys, probably from the irritation of frequent blisters.

CASE 3.—*Acute constitutional phthisis, rapidly fatal by capillary bronchitis, with softening tubercle.*—A case which shows the very great rapidity with which this form of disease may run through its stages came under my notice some years ago, in a prisoner under confinement in Chester Castle. He was a boy, nineteen years of age, who had been suffering great privation during the winter, and was sentenced to imprisonment for poaching. He served about four months of his time, and, except that he occasionally complained of cough, seemed well, till the 1st of April, when he was taken seriously ill. His breathing was short and hurried, and he had a troublesome cough at night. The symptoms went on, and two days after there was a general want of resonance over the whole of the front of the chest, and especially on the left side, and the respiratory sounds beneath each clavicle were very loud. On the 12th he had steadily got worse, and was labouring under such severe difficulty of breathing that he was incapable of lying down, and had fits of violent spasmodic dyspnoea; his pulse was rapid and scarcely perceptible; the expression of countenance very anxious; the cheeks livid and the lips



purple. He had a severe cough, and expectorated some glairy mucus mixed with small air-bells and tinged with blood and viscid. His intelligence was, however, entire. The symptoms continued till the 16th, when he expired in a violent attack of spasmodic difficulty of breathing.

The body was somewhat emaciated, the chest narrow and flat, the shoulders much elevated. The right lung was adherent at the lower and lateral regions by old attachments. The lung was less crepitant than natural and somewhat shrunken. On the left side there were no adhesions, and the lung entirely collapsed on opening the pleural cavity and was almost airless. The substance of both lungs was thickly studded throughout with tubercles of a yellow colour, and about the size of a pin's head; but larger on the left side than on the right, where also they were more numerous. At the apex of the right lung there were three or four small cavities about the size of split peas. The pulmonary tissue was somewhat reddened, and especially on the left side.

The pericardium contained about six ounces of clear yellow-coloured serum. The heart was small, its muscular substance pale, and the cavities filled with dark blood. The liver was large, but healthy; the spleen large and studded with small dark tubercles under the peritoneal coat. The intestines healthy except the lower portion of the ileum near the cæcum, where the mucous membrane was reddened but free from ulceration. The kidneys were healthy.

In the less acute form of constitutional phthisis the disease is generally limited to one lung, and the symptoms are for a considerable time often very obscure. Generally the attack commences with dyspeptic symptoms. The patient, after having suffered for a longer or shorter time from defective appetite, flatulency, and sense of sinking, weight or pain at the pit of the stomach or under the left ribs after taking food, combined with nausea and occasional vomiting, a torpid or irregular condition of the bowels, &c., slowly declines in health, and begins to manifest symptoms of affection of the chest. There is some uneasiness or pain at one or other apex, often at the back of the shoulder; with a hacking cough, which is at first and often for a long time dry, but subsequently is



attended by expectoration and especially in the morning. The cough increases in frequency and severity, and the expectoration becomes more copious, and occasionally there are streaks of blood in the matters expectorated. These symptoms are aggravated by exposure to cold and by the state of the weather; and with their advance the patient loses flesh and strength, and sinks into decided consumption after a few weeks or months, or sometimes after a much more prolonged period of slight indisposition.

Sometimes this form of disease assumes a more active form, and the patient sinks rapidly without having manifested any very marked symptoms of pulmonary disease;—the appetite is extremely defective, so that little food can be taken and that is not unfrequently ejected, and the patient rapidly loses flesh and strength; yet there may be little or no cough and scarcely any expectoration, the physical signs, nevertheless, indicating the gradual advancement of consolidation in the lung and the softening of the deposit which has taken place. This affection is most common in young females strongly predisposed to phthisis; and it may run its course to a fatal termination before the more ordinary symptoms of the disease become developed; but more frequently, after it has progressed latently for a longer or shorter time, the patient suddenly becomes worse, expectorates a large quantity of purulent matter, and soon sinks with the usual phthisical symptoms.

The following cases afford instances of this form of disease.

CASE 4.—*Subacute constitutional phthisis, without material cough or expectoration, but with marked dyspeptic symptoms.*—D. R—, æt. 19, of a very phthisical family, was admitted into St. Thomas's Hospital, on the 10th of January, 1859. She had then been ailing about six months, suffering from pains in the chest and back, with slight cough and expectoration and severe dyspeptic symptoms. She had almost entire loss of appetite, or rather extreme disinclination for food, with pain at the pit of the stomach and occasional vomiting. The catamenia were irregular both in quantity and frequency. She suffered from profuse night perspirations; had a feeble and quick pulse, 120, and rapid respiration, 28 to 30. There was some deficiency of resonance on percussion at the right apex, both before and behind, and an irregular



crepitant sound was heard at the end of a forced inspiration. But with these symptoms there was only a slight hacking cough, and so little expectoration that it was with difficulty she could be got to furnish any sputum for microscopic examination. The portions examined consisted of small pellets, partly pale and glairy looking, partly opaque, and they were found to contain portions of lung tissue. While in the hospital she rapidly declined, the dyspeptic symptoms became more severe, the evidences of deposit and softening in the lung advanced, the pulse became very weak and rapid, 130 to 136, and the respiration short and hurried, 40 in the minute; but the cough and expectoration were scarcely, if at all, more severe than when she first entered the hospital. She died on the 6th of April, three months after her admission and about nine from the commencement of the symptoms. Unfortunately no examination of the body could be obtained.

CASE 5.—*Subacute constitutional phthisis, with marked dyspeptic symptoms.*—A case which well illustrates this form of phthisis occurred at the Victoria Park Hospital three or four years ago in a girl, twenty years of age, a sempstress. When she first applied at the hospital she stated that she had been ailing for about four months, and had recently had an attack of spitting of blood. She inherited a predisposition to phthisis, her father having died of that disease at the age of forty-four, and a sister at twenty-three. Her mother also was dead. She then (October 17th) complained chiefly of debility, a slight cough, restlessness at night, and perspirations, and she had a very variable appetite. The catamenia were regular. The chest was fairly expanded and there were no marked evidences of disease, though the resonance on percussion was rather less at the right than at the left apex, and the expiratory sound was somewhat prolonged in that situation. She was thin, and weighed only 7 st. 6 lbs., being 5 ft. 3 in. in height. She was placed upon a tonic course of diet and regimen, yet, though she had no active symptoms, she lost flesh and strength, and on the 23rd of December weighed 13 lb. less than on her admission. There was now some little deficiency of resonance at the left apex, and below the middle of the left clavicle there was slight crepitation at the end of a forced inspiration. She had a frequent hacking cough but no expectoration; her respiration



was short and hurried, her appetite very defective, and there was tendency to sickness and vomiting after food; her tongue was morbidly red, clean and dryish; the bowels generally torpid.

These symptoms continued, and she gradually declined in weight till, on the 24th of March, she had experienced a total loss of  $25\frac{1}{2}$  lbs. The physical signs also indicated advancing disease. There was obvious falling in over a limited space beneath the left clavicle, with a somewhat tympanitic sound on percussion, some cough and vocal resonance, and slight subcrepitation; and these signs were audible also behind.

On May the 18th she had sustained a further loss of weight of 2 lbs., and the physical signs indicated that the disorganization of the lungs was steadily progressing. On July the 20th she was discharged from the hospital. At this time she weighed  $4\frac{1}{2}$  lbs. less than at the last date—only 5 st. 2 lbs., or 72 lbs. She had similar symptoms to those before enumerated: want of appetite or distaste for food, tendency to sickness and vomiting, morbidly red tongue, rapid breathing, hacking cough, but no expectoration. She also suffered from palpitation, and had occasionally syncopic attacks; but she was able to leave her bed for a longer or shorter portion of each day and to walk in the corridor. After leaving the hospital, however, she deteriorated rapidly, and was nearly confined to bed. In about six weeks she suddenly began to expectorate very copiously, though up to that time the sputum had been very scanty. She died in four weeks after the commencement of the expectoration, the total duration of her illness having been one year and eleven months.

## II.

The second form of consumption is also often connected with hereditary predisposition, though it is much more frequently an acquired disease than the former; and in all its varieties its symptoms, progress and effects, are greatly modified by the occurrence of inflammation in the bronchial mucous membrane and in the lung tissue. It affects persons of both sexes, but, from their greater exposure to the weather, males more frequently than females; and it is especially common between the ages of fifteen and forty-five, though it also occurs at more advanced periods of life, especially when acquired from exposure to hard-



ships and want, and when it occurs in persons of intemperate and dissipated habits.

It presents four varieties in the mode in which it makes its attack :

(a) *The catarrhal*, in which, with a gradual impairment of health and strength, the patient displays a peculiar susceptibility to cold. The catarrhal attacks are severe, and, instead of subsiding at the end of a few days, usually result in a cough with more or less expectoration, and they are often attended with hoarseness or loss of voice, and are of long duration and difficult to throw off. At first, these colds may only occur rarely, as at the commencement of autumn, or during winter or spring ; but after a time they become more frequent, and attack the patient also during summer, or are brought on by any slight exposure or trifling change in the state of the weather. At length the cough and expectoration become permanent, the pulse is constantly quick, the digestion is impaired, the patient emaciates, the sputum becomes occasionally bloody, and the general symptoms of consumption rapidly manifest themselves.

(b) *The dyspeptic*.—In all cases of consumption, dyspeptic symptoms are present to a greater or less extent. They are observed in the early stages before decided evidences of defect can be detected in the lungs ; they attend the development of the more characteristic signs and symptoms of the pulmonary mischief ; and they very generally usher in the fatal termination. But there are also cases in which the dyspeptic symptoms form so marked a feature, and in which the pulmonary affection seems so directly the result of the impairment of nutrition consequent upon defective digestion, that they may well be regarded as constituting a special variety of the disease.

In cases of this description the patient often suffers from inveterate dyspeptic symptoms long before there is any proof that the lung tissue has become diseased. He has generally a very defective appetite, and on any slight disorder is apt to have an entire distaste for food. The food which is taken also disagrees, causing flatulency and pain, and being often followed by sickness and vomiting. The liver also is very apt to be disordered, so that the patient has frequent bilious attacks and sick headaches, attended by pain in the right hypochondrium and sallowness of complexion. The action of the bowels is also very



uncertain; generally speaking they are torpid, but they are very easily disordered by any error of diet and from the influence of the weather. The patient thus becomes pale and ill-nourished, his strength is impaired, he is fatigued by slight exertion, and has usually a hacking cough, and is very susceptible to cold. After a time—it may be only after some months or years have elapsed—he is observed by his friends to have become more ailing than usual. He is thinner and paler, and is equal to less exertion than before. The cough is more troublesome and may be attended by expectoration, and his breathing also is short and easily hurried by excitement or exercise; not unfrequently he has palpitation of the heart, and tendency to perspire at night, and so, by slow degrees, the more characteristic symptoms of phthisis develop themselves.

(c) *The hæmoptysical.*—In this form of consumption the patient is first seized with spitting of blood, and after a variable period the symptoms of consumption supervene. The hæmoptysis may occur in persons previously in sound health, and is then usually preceded by some more or less decided exciting cause. Thus, the attack may follow the practice of athletic exercises, as running or playing at cricket, rowing or lifting heavy weights; or may occur after exposure to damp and cold, as from walking or riding in the rain or sitting in wet clothes, after remaining too long in water when bathing, or accidentally falling into the water. In other instances the hæmoptysis is preceded by a longer or shorter period of indisposition and declining health, and may then happen without any obvious exciting cause. Thus, it occurs in persons who have been too laboriously occupied with business or study, working for too long hours, leading dissipated lives, exposed to want and destitution, or exhausted by any other cause.

The amount of blood expectorated may vary greatly, but usually when hæmoptysis ushers in an attack of phthisis the hæmorrhage is profuse. In appearance the blood is generally fluid, florid, and frothy, but it may be dark coloured and free from air, or partially coagulated.

At the time the hæmorrhage occurs the patient usually experiences pain, sense of heat or tightness in some part of the chest; if he has had a cough previously it becomes more troublesome; if not, he now generally suffers from cough, and



as the spitting of blood ceases, though the cough may be less severe, it does not disappear, and is attended by mucous or muco-purulent expectoration, especially in the mornings.

Attacks of this kind may recur at more or less distant intervals, and with each attack the patient's state deteriorates; or after a copious hæmoptysis there may be no return; but usually the symptoms of phthisis develop themselves with greater or less rapidity after any serious hæmorrhage has taken place, and this though at the time the most careful examination may fail to detect any signs of the presence of disease in the lungs.

(*d*) *The laryngeal.*—A very common form of consumption is that in which the first symptoms are those of a catarrhal sore throat and hoarseness, or, as such affections are ordinarily but erroneously termed, bronchitis. The attack, however, instead of subsiding as in a healthy person it would do, leaves behind it some degree of huskiness or hoarseness. Speaking, and occasionally also swallowing, is attended with difficulty and pain, and there is often great feebleness of voice or complete aphonia; there is also a slight abortive cough, with but little or no expectoration and heat or sense of dryness and soreness in the fauces and larynx. On looking into the throat the mucous membrane may be found red and swollen and with an undue amount of secretion, usually of a viscid character; or it may be pale and dry, and with large contorted veins on its surface. The uvula is usually long and somewhat œdematous, and the mucous follicles are enlarged and sometimes distended with a yellowish-coloured secretion. If the larynx be examined with the laryngoscope the mucous membrane of the glottis is found tumid and somewhat red. With this condition of the throat the general health is much depressed, and there is a peculiar susceptibility to cold, so that the slightest exposure to damp, and especially to damp and cold, as by being out in the evening when the dew is falling, is followed by increased soreness in the throat with hoarseness and cough. At first, on the most careful examination of the chest it is often impossible to detect any evidences of pulmonary disease. After a time, there will be found some want of expansion or of movement, or both, under one clavicle; then a little crepitation will be heard at the end of a forced inspiration; often the patient complains of some pain or uneasiness about the shoulder of the affected side, and so the unmistakable indications of pulmonary disease gradually present themselves.



The affection of the larynx and trachea which attends phthisis is stated by M. Louis not to be the result of the deposit of tubercle in the mucous membrane, but to be due to ulceration, caused by the irritation resulting from the constant passage of the morbid secretions from the lungs over the mucous surface; and there is no doubt of the general correctness of this opinion. It is thus that the ulceration is first observed and is generally most advanced, about the *cordæ vocales*, where the secretions are the most delayed in their passage. Some time ago I examined a patient in whom the disease in the trachea was clearly produced in this way. There was a large ulcerated aperture between a sac external to the right bronchus and the mucous membrane, a short distance beyond the bifurcation of the bronchi. This was probably produced by the suppuration of a tuberculous bronchial gland. The interest of the case was, however, that while a string of small oval ulcers extended up the trachea from the opening, there was no ulceration of the mucous membrane below that point or in the left bronchial tube, the lungs not being involved in the disease. Similar small, oval, superficial ulcers are seen in the mucous membrane of the ureters in cases of strumous pyelitis, which are doubtless produced in the same way. Judging from clinical experience, I feel convinced that the laryngeal affection in a considerable number of cases precedes the development of the pulmonary disease, and probably originates in tubercular deposition in the mucous follicles of the larynx. When the affection is once developed in the lungs it apparently proceeds more rapidly there than elsewhere, so that the mischief is generally found more advanced in the lungs, though possibly it may have been of later origin. Enlargement of the mucous follicles in the fauces is very common in persons predisposed to consumption and in the first stages of phthisis, and in the opinion of some observers the presence of tubercle has been detected in the follicles of the trachea.

The form of consumption which originates in the modes now described may be either more acute or chronic; but most usually it is slower in its progress than the purely constitutional form of phthisis. It may also be temporarily arrested, and may even undergo a permanent cure; and often the disease runs its course in a series of temporary cures and relapses, extended over a period of many years. The condition of the lungs after death



from this description of phthisis varies in different cases. The tuberculous deposit is usually found combined with the remains of old or recent inflammatory condensation, and there are often evidences that the lungs have been the seat of successive crops of tubercle. Thus, with a solid deposit or with tubercles only beginning to soften or which have formed recent abscesses, there are often found old excavations with smooth lining membranes and surrounded by consolidated pulmonary tissue, or the cretaceous masses which are regarded as the remains of tuberculous depositions which have become abortive.

Occasionally, instead of the common discrete tubercle, larger or smaller portions of the lungs are found converted into a pale, yellowish or greyish granular substance, to which the term tuberculous infiltration has been applied. In this form of the deposit softening generally commences in the centre of the diseased portion and gradually involves the whole, but occasionally it takes place around the circumference of the deposition, and so leads to the entire separation of the diseased mass.

### III.

The third description of consumption, that which commences with ordinary inflammation and subsequently lapses into phthisis, presents itself under two forms—the pneumonic and the bronchitic.

(a) *The pneumonic.*—In this the patient may be attacked by the ordinary symptoms of acute pneumonia or pleuro-pneumonia, though of a low type and rapidly passing into consolidation, with but slight evidence of disordered respiration, little dyspnœa or cough, and perhaps no expectoration. The consolidation instead of subsiding in a short time, continues or even extends, though the general symptoms may undergo some amendment. The improvement, however, in the state of the patient is only temporary; his strength declines, he becomes greatly emaciated, the cough and expectoration, if previously present, increase, and if not, now manifest themselves. The sputum, instead of being of the russet colour and viscid character of that of healthy pneumonia, generally contains distinct streaks or specks of blood or becomes decidedly bloody, and the breathing is rapid and laboured. On examining the chest the original disease



may be found much in the same state as before, or there may be some improvement in the condition of that portion of the lung; but consolidation will also be generally detected in the more ordinary seats of tubercle, softening rapidly occurs there, and the case quickly assumes all the features of confirmed consumption.

In other cases the pneumonic attack is in the subacute form, and involves both the tissue of the lung and the smaller bronchial tubes, or is combined with some general bronchitis. This form of disease is especially apt to supervene on ordinary catarrhal attacks, and especially on epidemic influenza. The disease progresses very insidiously, and will sometimes be found to have involved a large part of one lung or portions of both lungs, though the general symptoms may not have indicated the presence of any material disease; more frequently, however, there is extreme prostration of strength, with rapidly advancing emaciation, and an absence of appetite and entire inability to take and to digest food. From this condition there may be partial recovery, while portions of the lung remain nearly impervious to air and the chest contracts, but sooner or later true disease generally occurs elsewhere, and not unfrequently the originally consolidated lung rapidly breaks down.

In yet other cases the disease first assumes the form of an ordinary feverish attack, but with more evidence of pulmonary complication, pneumonic or bronchitic, than generally attends simple fever; and these symptoms, instead of subsiding with the improvement of the general condition, rather advance, and at length the patient presents the characteristic signs of phthisis.

CASE 6.—*Phthisis supervening on pneumonia.*—One of the most striking, and to myself painful, examples of the form of the disease originating in pneumonia occurred in a medical student. He had just completed his term of study, and was actively engaged in hospital and dispensary practice. While in his usual health he took cold, and still continued for several days to follow his occupations. After he had been confined to the house for two or three days I went to see him, and found that he was labouring under very extensive pneumonic condensation of one lung; and on seeing the physician under whose care he had been I found that the lung had been in the



same state almost from the first time he had seen him. Notwithstanding the treatment pursued, there was no improvement in the condition of the chest, and his friends decided on removing him into the country. Though the journey was a long one, he bore it well, and for a time slowly recovered. I saw him about six months after; he was then capable of going out, but had a frequent cough and expectoration and a quick pulse, and his appetite and digestion were much impaired. On examining the chest the diseased side was found altogether contracted and dull on percussion, and there was sub-crepitation audible more or less in all parts. He continued in much the same state for some months, when the other lung became affected, and he then sank rapidly, having survived about a year from the time of his first attack.

CASE 7.—*Phthisis probably originating in pneumonia.*—Another instance, and I might quote many very similar examples, of the commencement of phthisis probably in a low form of pneumonia, fell under my notice in September, 1856. The captain of a merchant vessel, when in his usual health, was exposed to very bad weather during a fortnight or three weeks in the China seas. One night, after having been long without rest, he fell asleep while on the poop; and continued standing in the same spot for two hours, no one thinking anything was amiss with him. After a time one of his officers spoke to him, and found him fast asleep, and on awaking him he was so prostrated that he required to be carried down into his cabin, and was very ill for six days; he then rallied, but had never been well during the two years which had elapsed before I saw him. For the three or four weeks before his visit to me he had had a ringing cough, not generally with much expectoration, but he stated that he occasionally spat bloody matter. A few days previously he had spat nearly a pint of pure blood. On examination I found that there was some defect in the resonance on percussion and expansion of the chest, more especially at the upper part of the right side, and the signs existed both before and behind. With ordinary breathing the expiratory sound was somewhat prolonged, and with a forced inspiration there was a little sub-crepitation. In other words, there were evidences of slight consolidation and



tendency to softening at the upper parts of the lungs; and this was confirmed by the results of an examination in March of the following year, when the signs of consolidation were found much more marked. There was dulness on percussion, cough resonance, and bronchial respiration. He had a return of spitting of blood shortly before I last saw him. On that occasion he had lost flesh and strength, and had been much worse for six months. He died about twelve months afterwards, having been ill about four years.

(*b*) *Bronchitic*.—It not unfrequently happens that a patient has an attack of bronchitis brought on by exposure to cold, which at first appears to be only of an ordinary character; but instead of subsiding at the end of a few days, it proves very persistent, the cough becomes more severe and frequent, and the expectoration more profuse, and occasionally there is some little blood in the sputum. The patient also emaciates and is subject to night perspirations; after a time, while the bronchitic signs become less marked in the posterior and inferior portions of the chest, they continue at the upper and anterior parts, and are perhaps combined with some want of expansion and movement in those situations; and then, but this is less certain, with some want of resonance or increased sense of resistance at one or other apex, and so the case runs into an ordinary attack of phthisis.

The form of pulmonary disease which is so frequently met with in persons following certain unhealthy occupations, causing them to inhale gritty particles of stone or minute metallic dust, or to breathe a very impure air, probably also generally originates in a subacute or low form of inflammation of the mucous membrane of the larger or smaller bronchial tubes, though the substance of the lungs may become ultimately implicated in the disease. The occurrence of this form of disease has been long known in needle pointers, gun-flint makers, dry grinders, miners,<sup>1</sup> and stone masons; and I have myself some years ago described it as it occurs in the French millstone makers, or "builders," as they term themselves.<sup>2</sup> In these cases the

<sup>1</sup> For diseases of metalliferous miners, see 'Report of Royal Commission 1864;' and "Report of Examination of the Body of a Cornish Miner," 'Path. Trans.,' vol. xvi, 1864-65, p. 57.

<sup>2</sup> 'Brit. and Foreign Med.-Chir. Review,' No. xlix, Jan., 1860, p. 214. In this paper two post-mortem examinations are reported, in one of which siliceous matter was found in the lungs.



irritating particles of stone or metal or of the two combined, lodge in the mucous membrane of the smaller tubes and in the cells of the lungs, and there set up inflammation, which becomes excited into more active operation under the influence of cold. Doubtless, also, the habits of the workmen conduce to the evil. It unfortunately happens that in all dangerous occupations in which the duration of life is much curtailed, the men are apt to be reckless and dissipated, and to add in that way to the other evils with which they have to contend.

In this and the pneumonic description of phthisis the state of the constitution and the condition of the lungs varies very greatly from that in the constitutional form of the disease, and also to a less extent from that in the second variety. True tuberculous deposition is not found, but, on the contrary, the tissue of the lung is indurated and converted into a solid grey-coloured material, and though cavities are often formed, they are due to the breaking down of the lung tissue under a latent or passive form of inflammation.

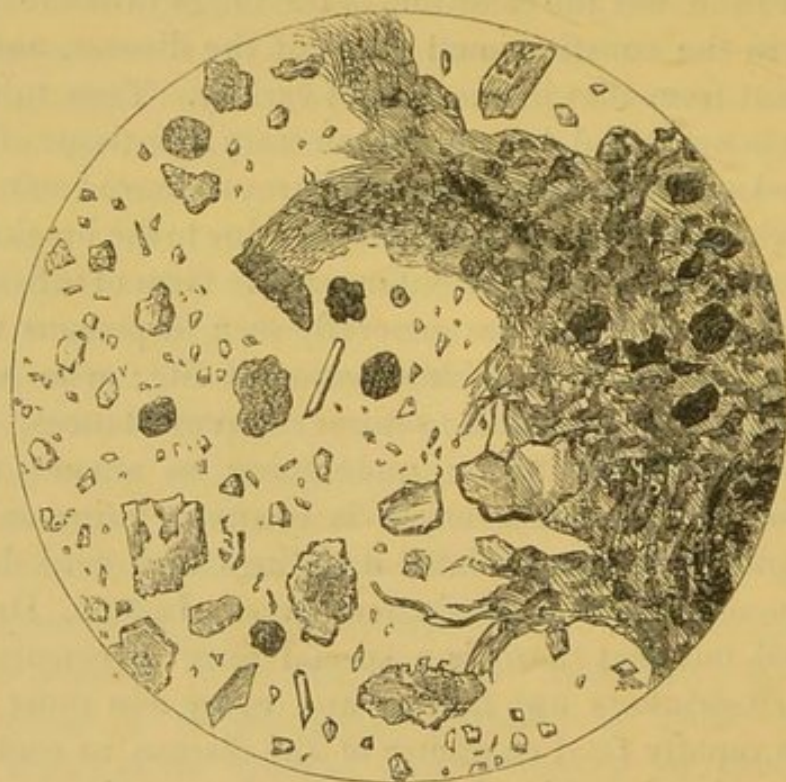
These kinds of disease are generally seen in persons who have attained or exceeded the middle period of life; who have been long placed in unfavorable sanitary circumstances, suffering from poverty and destitution, undergoing an amount of bodily exertion for which their strength is unequal, living or working in damp and close ill-ventilated dwellings and workshops, and very frequently leading dissipated lives. Indeed, Dr. Sutton has pointed out that there is a special form of consumption to which spirit-drinkers are liable; and every one must have observed the rapidly fatal character of the disease in such persons when once developed.<sup>1</sup> I have also frequently noticed the rapidity with which the disease usually progresses in persons who have been exhausted by prolonged or close attendance upon the sick, and especially in the cases of wives who have nursed their husbands while labouring under phthisis. Generally speaking, however, this description of phthisis is more common in men than in women, and obviously from their greater exposure to the causes which act as predisponents and excitants to the disease.

The following case, which is an abstract of one published in the 'Pathological Transactions' for 1861, very well illustrates the condition of the lungs in cases of "French millstone makers' phthisis."

<sup>1</sup> "Fibroid Degeneration of the Lungs," 'Med.-Chir. Trans.,' vol. xlviii, 1865, p. 287.



CASE 8.—*French millstone-makers' phthisis—siliceous matter found in the lungs.*—A. J—, æt. 48, a French millstone maker or builder, was admitted into St. Thomas's Hospital on the 3rd August, 1860. He had been before an out-patient, and stated that he had been suffering more particularly since the previous October, but had had a cough, expectoration and difficulty of breathing, especially during winter, for three years. He served his apprenticeship to the milling trade, but about ten years ago commenced to work at the millstone making, and had continued to do so ever since. He considered himself to have been regular in his

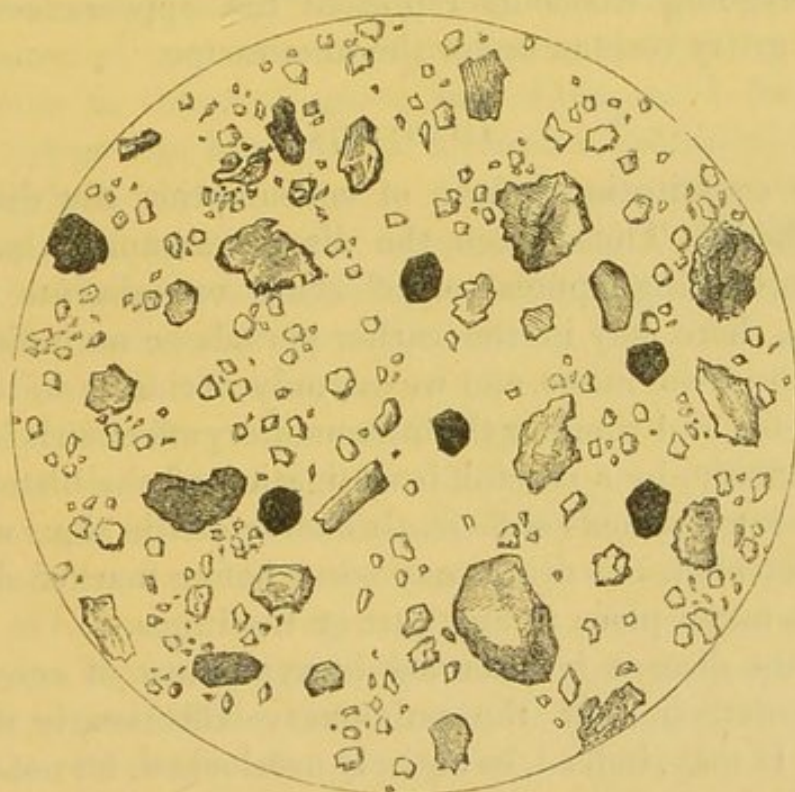


Portions of lung magnified 200 diameters. The pulmonary tissue obscured by carbonaceous material.

habits, having only taken two or three pints of beer daily and occasionally spirits. He ascribed his illness to cold, and said that he had got gradually worse, though suffering more severely during winter. Last year for the first time he spat blood, but only in streaks. He complained of cough, and the expectoration was copious, massive, muco-purulent, viscid, and of a dark colour, sometimes almost black. He had difficulty of breathing, had lost much flesh, and was thin and old looking for his age. The appetite and digestion were defective, the bowels irregular, and he had night perspirations.



The pulse was very feeble, but not materially accelerated. The resonance on percussion was defective in all parts of the chest, and the movements were very imperfectly performed. The deficiency was most marked at the apices, and there was sibilant and sonorous rhonchus in all parts, but especially at the upper portions. He died on the 30th. On examination after death the lungs were found firmly adherent to the parietes, especially at the upper parts, where there were thick and firm attachments. Both lungs were throughout sparingly crepitant, and at the apices were much contracted, solid, and of a dark colour; no



Siliceous and carbonaceous particles after maceration in nitric acid.  
Magnified 200 diameters.

tubercles were found anywhere, but there were numerous hard, black, gritty masses, about the size of a split pea, imbedded in the tissue, more particularly at the upper parts and on the right side. The inferior part of the left lung was in the state of pneumonic condensation passing into suppuration. The larynx and trachea and bronchial tubes were dilated, and the mucous membrane was throughout thickened, but free from ulceration. The follicles on the under surface of the epiglottis were enlarged. The bronchial mucous membrane was reddened, but there was not any material increase of secretion in the smaller tubes. The



bronchial glands were very large, dark coloured, and solid, but not tuberculous. The heart was enlarged and its cavities dilated, especially the right auricle and ventricle.

Portions of the hard gritty masses from the apex of the right lung having been reduced to a white ash in the flame of a spirit lamp, and then boiled in strong nitric acid, left a considerable residue, which under the microscope proved to consist of sharp, angular, granular matter, which, except as to its greater fineness, bore a close resemblance to the dust collected in the workshops in which the millstones are made.

The foregoing woodcuts represent the appearances of the lung and gritty residue under the microscope.

#### DIAGNOSIS.

In the constitutional form of consumption the diagnosis is often difficult. Thus, when the disease assumes the form of rapidly advancing apnœa, or of acute or subacute capillary bronchitis, there may in the earlier periods be no indications of any deposit in the lungs, and we can only decide as to the nature of the disease, and whether the inflammatory affection is idiopathic or symptomatic, by a careful investigation of the history of the case. At later periods sufficiently characteristic signs will generally be detected, but death may occur before marked disorganization has taken place in any part of the lungs.

When the disease is attended by symptoms of cerebral disorder the detection of the pulmonary affection is still more difficult. It may, indeed, be entirely overlooked, for not only may the physical signs be altogether indefinite, but the general symptoms may be almost absent; there may be no marked difficulty or rapidity of the breathing, little or no cough, and no expectoration; scarcely any symptoms, indeed, to indicate disease in the chest. In these cases, however, an accurate knowledge of the condition of the lungs is of use chiefly as throwing light upon the nature of the cerebral affection, for our attention must necessarily be mainly directed to the disease of the brain, as constituting the more immediately dangerous and, therefore, more important condition.

Perhaps the cases which involve the greatest difficulty in diagnosis are those of acute constitutional phthisis. Cases come under notice in which there are all the signs of sub-



acute capillary bronchitis, combined at the same time with a history of marked family predisposition and excessive delicacy in the individual, and it becomes a grave question to decide whether the attack under which the patient is labouring is really commencing constitutional phthisis or merely a low form of idiopathic capillary bronchitis. In some such cases the symptoms, however threatening, may wholly subside; and the practitioner will, therefore, wisely withhold his opinion till definite proofs of the existence of tubercle present themselves.

In some cases of phthisis, also, there are feverish symptoms altogether disproportioned to any amount of local mischief which can be detected, and the feverish paroxysms bear a very close resemblance to those of ague; and when, as I have known happen, the patient has been in malarious localities, it becomes very difficult to decide whether the symptoms are due to the deposition of tubercle in the lungs, of which the fever is the constitutional expression, or to ague, with which some pulmonary disorder is combined. So far, however, as I have observed in cases of this kind the duration of the paroxysms is very much greater than in ague. The cold stage occurs in the morning, the fever in the afternoon or evening, and the sweating at night or in the early morning, so that the patient can scarcely be said to be free from the attack during any part of the twenty-four hours. Whereas in true ague the paroxysms occur at different times in the day, and complete their course in a much shorter time. I believe in the cases in which this very marked hectic occurs the disease is always rapidly advancing; and the prognosis is, therefore, unfavorable, however slight be the physical signs, and even though the most careful examination fails to detect any evidence of disorganization in the lungs.

In the second form of consumption, and this is by far the most frequent, our means of arriving at an accurate knowledge of the existence of the disease are more complete. It is true that in every case of phthisis, except the form which commences with an ordinary attack of inflammation or fever, there is a period when the disease is only threatened and the symptoms are chiefly referable to the condition of the digestive organs, and we may be only led to suspect the supervention of phthisis by the absence of any other apparent cause for



the constantly increasing emaciation and debility. When, however, material changes have occurred, the seat which they occupy and the extent to which they have advanced, may be accurately ascertained. If under these circumstances we fail in detecting the nature of the disease, it is much more frequently from ignorance of the means at our disposal, or carelessness in their application, than from the imperfection of the means themselves.

In the first stage, or that of incipient consumption, there are signs of some defect in the permeability of the lung, or of a slight state of congestion or sub-inflammation, tending to the deposit of tubercle, and interfering with the free entry of the air into the cells.

In the second stage, or that of confirmed consumption, there are evidences of decided consolidation, the result of inflammation or of the deposit of tubercle, and generally of both, and more or less completely preventing the entrance of air into portions of the lung.

In the third stage, or that of advanced consumption, there are signs of the breaking down of the consolidated tissue or of the deposit, and of the production of cavities.

In investigating these conditions we must not expect to find all the physical signs corresponding in their indications, for the character of the resonance on percussion and the particular signs which are detected on auscultation will depend on the nature and seat of the consolidation and the existence of inflammatory changes in the tissue of the lungs or in the pleura. It becomes, therefore, necessary carefully to observe the form and movements of the chest; to practise slight, moderate, and decided percussion; to note the sense of elasticity or resistance; and to listen to the respiration in its ordinary state, and when aggravated by effort or after coughing; and carefully to note the degrees of cough and vocal resonance. Thus, a consolidated portion of lung may be covered by tissue into which the air enters, and which, therefore, on slight percussion, yields a clear resonance; or ordinary breathing may be natural, and the existence of any crepitation indicating the presence of a localized bronchitis or of softening tubercle, may only be detected when the air is forced into the terminal tubes or cells by exaggerated breathing, or on the full inspiration which follows the act of coughing; or the increased resonance may be scarcely noticed when the patient speaks in an ordinary voice, but may be very apparent when he coughs loudly.



The nature of the process by which these changes have been produced must be inferred from our inquiries into the history of the patient and his family, the seat of the disease, and the course which it has pursued.

To dwell more fully on the signs which indicate these several states would be beside the purpose of this paper, and would occupy more time than is at our disposal; but I would remark that, simple as is the diagnosis in ordinary cases of characteristic consumption, there constantly occur instances in which it is difficult to arrive at a decided opinion. Thus, disorder of the general health connected with dyspepsia often very much resembles commencing consumption; and hysteria in delicate females may closely simulate all the symptoms of the disease and the signs which indicate its early stages. Simple abscesses in the lungs or in the bronchial glands, cirrhosis of the lung the result of bronchitis or of chronic pleuro-pneumonia, empyemata which have opened into the bronchi, and occasionally primary cancerous affections of the lung, may very closely resemble advanced consumption, both in the general symptoms and physical signs. On the other hand, various affections may greatly mask the characteristics by which consumption is ordinarily distinguished. Thus, laryngeal disease, by interfering with the full expansion of the chest and by depriving us of the signs deduced from the breath, cough, and voice; emphysema of the lungs, by preventing the deficiency of resonance on percussion which is usually produced by a local deposit of tubercle; and pleurisy and bronchitis, by substituting other signs for those which ordinarily indicate consumption, may greatly embarrass or altogether prevent our arriving at a full and accurate diagnosis of the condition of the lungs. I have known all the signs of a deposit of tubercle at one apex closely simulated by a circumscribed pleuritic effusion in that situation, so closely indeed, that it was only by prolonged observation that the true nature of the affection was ascertained.<sup>1</sup> It is often only after having carefully examined the patient a

See "Case of Cirrhosis of the Lung," by T. B. Peacock, M.D., 'Monthly Journal of Medicine,' April, 1855, No. IV, N. S., p. 281; and also "Two Cases of Obscure Pulmonary Disease following Typhoid Fever," 'Medical Times and Gazette,' April 26, 1862, vol. i, p. 425.



second or a third time, at more or less prolonged intervals, that we are able confidently to express an opinion.

In the third or inflammatory form of the affection, where, indeed, it is rather a complication of that first existing than a new disease, we may be led to apprehend the supervention of consumption if the primary affection does not follow the usual course in persons of healthy constitution. Thus, if in an attack of pneumonia very extensive consolidation has occurred with very slight constitutional disturbance and after the lapse of several days there is no return of permeability, we may fear that the case may lapse into phthisis. The suspicion will be stronger should the hepatization extend while there is an apparent improvement in the state of the patient, and especially if the disease has its chief seat in those situations which tubercular deposits most usually occupy. If in a case of acute or subacute bronchitis, with the gradual disappearance of the physical signs in the lower and posterior portions of the lungs there be no improvement in the upper and anterior parts; and if to the ordinary muco-purulent sputa of bronchitis there be superadded streaks or specks of blood or decided bloody expectoration, it will be but too probable that tubercle is being deposited in the lungs, or at least that the case is running into consumption. If in an old case of bronchitis and emphysema there is a steadily advancing reduction in the weight of the patient extending over many months, with gradual impairment of appetite and digestion, constant quickness of pulse, more troublesome cough and copious expectoration, and especially if the sputum be occasionally bloody, we may equally apprehend the development of phthisis. If towards the conclusion of an attack of typhoid fever, or of a febrile seizure bearing a close resemblance to that disease but with absence of symptoms indicating serious intestinal lesion, the fever assumes more of the hectic character, the patient's strength does not increase or even declines, the tongue continues furred and the pulse quick and feeble, and the pulmonary symptoms become more marked, we may also fear that phthisis may supervene. The probability of this occurrence will be greater if, after a partial convalescence, there has been a relapse with predominant symptoms of pulmonary affection.

In all these cases, therefore, we should carefully watch the condition of the patient and frequently examine the state of



the chest, for on the adoption of suitable treatment at the commencement of the phthisical symptoms rests the hope of arresting their progress.

In the previous remarks, beyond referring to the presence of blood in the sputum, as indicating the probable development of phthisis, I have made no allusion to the appearance of the matters expectorated as conveying information of the condition of the lungs in cases of threatened or suspected phthisis. Indeed, while in some cases of consumption the appearance of the sputum to the naked eye is quite characteristic, in others it affords but little aid in the diagnosis. When, also, the matters expectorated are characteristic it is generally only in cases in which the physical signs are equally well marked, and the information which it conveys is, therefore, only confirmatory and almost superfluous. Such is the case with the dense, airless, nummular, purulent masses which are expectorated in cases of advanced consumption. In cases of incipient or suspected consumption, on the other hand, where every assistance to the formation of an accurate diagnosis is of the greatest value, the sputum is generally only the glairy mucus of bronchitis and conveys no positive information. It is true that in some cases of commencing consumption the remains of disorganized lung may be detected in the matters expectorated when examined under the microscope; that in more advanced cases occasionally, but very rarely, small masses of tubercle may be expectorated almost alone; and that when a large vomica suddenly bursts the patient may bring up obvious cheesy matter mixed with the sputum. But it is much more common, even when tubercle is doubtless expectorated, that it forms so small a proportion to the rest of the secretion brought up as to be wholly incapable of being recognised by the naked eye. The method employed by Dr. Fenwick, of treating the matters expectorated with caustic potash, so as to render most of them soluble, will generally, however, as shown by that gentleman, enable the remains of disorganized lung tissue to be detected in the sputum of patients in whom the disease is rapidly progressing, even though the amount of expectoration be very great from the large intermixture of mucous and purulent secretions.<sup>1</sup>

It occasionally happens that larger or smaller cretaceous masses

<sup>1</sup> 'Med.-Chir. Trans.,' S. S., vol. xxxi, 1866, p. 209.



are expectorated by phthisical patients. When this is the case it may be inferred that the lungs have previously been tuberculous, and that the tubercle deposited has become abortive and remained for a considerable time in a quiescent state, till fresh disease being set up in the same situation, the cretaceous masses have been separated from their connections, and enabled to enter the bronchi, and so have been expectorated. Sometimes, however, such masses may be expectorated when the lungs are free from any evidences of disease. I had some time ago a case of this kind at St. Thomas's Hospital, in which I supposed the chalky matters were removed from bronchial glands which had been tuberculous in early life.<sup>1</sup>

I have also not alluded to the employment of Hutchinson's spirometer to aid in the diagnosis of pulmonary disease. It is shown that the amount of air capable of being expelled from the chest bears in the healthy subject a general relation to the height of the individual, and that a defect in the soundness of the respiratory apparatus is attended by a reduction in the amount of air expelled; there are, however, too many exceptions to the former rule, resulting from temporary or permanent want of vigour in the person examined or from nervousness and awkwardness in the employment of the instrument, for it to be of much avail in practice. I have found that making the patient count aloud is for all practical purposes a better means of estimating the breathing power. Thus, a person of average height, not too stout and with healthy lungs, should count, without drawing a fresh breath, to from thirty to thirty-five; but the precise number will vary considerably, much in the same way as the vital capacity varies in different persons, as estimated by Hutchinson's spirometer. In cases of disease, and even of early disease, the power of counting is very strikingly reduced, and thus furnishes a ready means of detecting any defect in the breathing power, and of ascertaining approximatively the extent to which it has gone.

In all cases of threatened phthisis, and where the physical signs and general symptoms are indecisive, I attach much importance to the presence or absence of pain at the top and back of the shoulder on the suspected side. This symptom is often one of the first and generally the most constant indication of the

<sup>1</sup> 'Path Trans.,' vol. viii, 1856-57, p. 64.



existence of some mischief, and should always have the greatest importance attached to it.

#### PROGNOSIS.

The general prognosis in all forms of phthisis is unfavorable, for the largest proportion of cases must necessarily sooner or later terminate in death, and of the others many will only undergo an uncertain cure. The probability of the fatal termination is, however, greater, and the result occurs at an earlier period, in some forms than in others.

When the first or constitutional description of phthisis assumes the acute form, it is invariably and generally rapidly fatal. I have known it run its course, when involving both lungs, in three weeks, and probably few patients survive more than three or four months. When, indeed, the disease of the lungs is combined with tubercle in the membranes of the brain, it is even still more rapidly fatal. The subacute or partial form of constitutional phthisis is also rapid in its course relatively to the other forms of the disease, but it is less acute than the former; and though the patient will often get steadily worse without any active symptom and the disease run its course in a few months, in some instances there is a partial arrest of the disease and life may be more prolonged, but under any circumstances it is rare that the patient survives more than from six to nine months.

The second form of consumption is, as before mentioned, a more chronic disease, but it is also very variable in its course and duration. Its attack is often very insidious and its progress uncertain, being more likely to be temporarily or permanently arrested; and when this is not the case, its duration may, by care and judicious treatment, be much prolonged. It varies considerably in its course, and the probability of temporary or persistent relief differs in the different varieties. The dyspeptic and catarrhal forms are often long prevented from running into serious disease; and when the lungs have already become tuberculous, if the change be limited to one side and not there extensive, and if there be not much constitutional disturbance, the life of the patient may be prolonged for many months or even for years, the probability of this being greater



if the hereditary predisposition to the disease be only slight. Should, however, the affection have undergone a temporary arrest or cure, there is always a great proneness to the recurrence of more active mischief.

The hæmoptysical variety of consumption is generally unfavorable in its result. In some cases, where a copious hæmorrhage has occurred in a person not hereditarily predisposed, and after he has been exposed to some obvious exciting cause, the loss of blood may be entirely recovered from, and the patient may have no other phthisical symptoms and no recurrence of the bleeding. More frequently, however, and especially when the hæmorrhage occurs in a person predisposed to consumption, who has previously been out of health and suffering from symptoms threatening the occurrence of phthisis, and when the bleeding has come on without any obvious or sufficient exciting cause, the occurrence is sooner or later followed by the development of decided phthisical symptoms and these rapidly progress. There are few cases also which pursue a more unsatisfactory course than those in which there are repeated recurrences of bleeding, even though the quantity of blood lost on each occasion be only small. The power of the patient is not only prostrated by the loss of blood, but there is excited action in the lung which is very little amenable to treatment, and the lung tissue generally quickly breaks down.

There is, however, no form of consumption which is less capable of relief and which more surely and steadily advances, than that which commences with laryngeal symptoms. Such cases are often seen in persons who have led intemperate lives, having been addicted to spirit drinking. It frequently happens that, though the patient may be seen at the very commencement of the disease, when there are, perhaps, no signs of any pulmonary mischief, and only a husky voice, and a cough often dry but sometimes with a little expectoration and occasionally of blood, and where the chief symptoms are dyspeptic, yet the patient will steadily emaciate and die in a few months, before any material disorganization has taken place in the lungs.

The third form of phthisis, though often rapid, is not equally so in all its varieties; and, like the last, there may, in some cases, be partial and temporary or even permanent, recovery.

The pneumonic form generally leads to speedy disorganization



of the lungs in the part originally affected, or is followed by the deposition and softening of tubercle elsewhere; but in some cases the disease is arrested, a part or nearly the whole of one lung is left permanently impermeable to air and the corresponding portion of the chest contracts; and in this state the patient may survive for a long period.

In the bronchitic form of consumption the progress may be rapid or slow. When tuberculous disease is attended by more general bronchitis, the affection is acute; when, on the contrary, there is a more localized bronchitic affection, the fatal event may be long deferred, and the patient may experience partial and temporary recovery.

The prognosis in cases of consumption is also much dependent on the stage at which the disease has arrived. In the early stage I am probably correct in stating that many cases are arrested and some are cured. In the second stage some are arrested and a few are cured; in the third stage a few cases only are arrested, and a very small number are probably cured. I make the latter assertion, however, with considerable hesitation. In consultation and also in hospital practice, our acquaintance with the cases which come under our notice is generally very fragmentary. Patients are seen who may have more or less completely recovered from consumption in its advanced stages, and others are lost sight of who have been steadily improving for a considerable period, and in whom arrest or cure may ultimately be accomplished; but it is comparatively rare that in chronic diseases patients continue under observation during the whole period of their illness. As a general rule, however, we can scarcely hope to accomplish more than the arrest of the disease when the tuberculous matter has softened and cavities have formed. That result we may, however, confidently anticipate in some cases; and in others, where entire arrest cannot be obtained, the life of the patient may be greatly extended and his sufferings be very materially lessened by judicious treatment. I cannot better illustrate what may be done in even unfavorable cases of consumption than by referring to the instance of the late Dr. Coombe, who for twenty years of his life laboured under serious disease of the lungs, yet who afforded a remarkable example of intellectual activity and usefulness. In



his case the patient was also the physician, and few ordinary invalids could, I fear, be induced to practise for a sufficient length of time the self-restraint and to carry out the judicious system which he adopted.

The result in cases of consumption is influenced by the constitution, the temperament, and the age of the patient. In robust persons the disease is more apt to be complicated with hæmoptysis or with active inflammation, and is under such circumstances more rapid in its progress; whereas in those who are weak and delicate it more frequently assumes the catarrhal and dyspeptic forms, and is usually a more chronic affection. It has been generally supposed that persons of the sanguine temperament with light hair, blue eyes, and fair complexion, are the most prone to consumption, but I think the disease is quite as often seen in the nervous and leucophlegmatic with dark hair and eyes, and sallow complexions. It appears, however, to run a more rapid course in the former than in the latter class of persons. It is not uncommonly seen in tall, overgrown, and coarse-featured and large-boned men, with brown or reddish-coloured hair, and florid complexions; and when it occurs in them is but little amenable to treatment and generally runs a rapid course. Indeed, I have seldom seen consumption more quickly fatal than it sometimes is in hard-working men—navigators and labourers—whose bulk and physical power are remarkable.

In young persons, and especially in young men exhausted by rapid growth, the disease is more likely to be arrested than in persons more advanced in life. It, however, generally runs a more rapid course in the young than in those of greater age; and when it attacks persons upwards of forty-five or fifty years of age its progress is sometimes very slow. The habits of the patient also very much influence the result, and there are no cases so unsatisfactory as those which arise in persons of intemperate habits—the patient sinking with an amount of disease which would be altogether unimportant under other circumstances.

The extent to which the diseased process in the lungs may be recovered from varies with the stage to which it has advanced. When there have only been evidences of slight defect, the signs may entirely disappear, and even careful examination, with a



full knowledge of the condition before existing, may, after a considerable period has elapsed, fail to elicit any proofs of disease. When, on the contrary, the signs have indicated more marked and extensive changes, some evidences of permanent disorganization probably always continue. In the former case the pulmonary tissue is either entirely restored to the healthy condition, or only some little induration remains or a few small cretaceous masses continue scattered through a portion of the lung. In the latter instance there is usually a considerable amount of dark-coloured impervious lung, with abortive tuberculous deposits imbedded in it.

When the disease is arrested after the formation of vomicæ, the substance of the lungs probably never recovers its healthy state. Generally stethoscopic examination furnishes signs of a larger or smaller cavity, containing little or no secretion; but occasionally the cavernous sounds nearly or entirely disappear, and there are only the indications of some slight consolidation in the seat of the disease. If there be a cavity found in the lungs it may be lined by a smooth glistening membrane, but there may be only solidified lung with the more or less decided appearances of cicatrix. It is only under the latter circumstances that consumption can be said, strictly speaking, to be cured; in the former the disease is only arrested, and there is proportionate proneness to relapse.

It will be seen that I regard the healing of tuberculous excavations as of less frequent occurrence than was supposed by Laennec, and has, since his time, been contended for by some other writers. There are reasons to believe that the puckerings at the apices of the lungs which are so often met with, are not to be regarded as necessarily proving the former existence of cavities; they are more probably generally the results of inflammatory condensation surrounding deposits of tubercle which have become abortive before the occurrence of softening. The frequency with which these puckerings and the cretaceous masses are found in the bodies of persons who die in more advanced life must, however, be accepted as showing that a large proportion of persons are to some extent phthisical during some period of their lives.

The result in cases of phthisis is much affected by the presence of various complications which are apt to arise during its progress, such as *pneumonia*, *bronchitis*, *pleurisy*, *abdominal affections*, *hæmoptysis*, *cerebral and cardiac complications*, &c.



When pneumonia supervenes during the course of consumption, it may either be in the form of general inflammation of the substance of the lung—intercurrent pneumonia; or it may be of more limited extent, involving only a larger or smaller portion of one or more of the lobes. When bronchitis occurs it may be in the acute or sub-acute forms, and may be limited to the larger or smaller tubes, or more generally diffused.

M. Louis states that, of the two forms of complication, bronchitis is more fatal than pneumonia, and I can confirm the general correctness of his assertion. Some time ago I had a patient at St. Thomas's who was phthisical, and passed safely through two attacks of pneumonia, one of which involved portions of both lungs. In two other cases consumptive patients had pneumonia which went on to gangrene, from which they recovered; and I have recently attended a lady whose convalescence was satisfactory, though the lungs were considerably diseased; and another who had pneumonia at the base of the right lung, with a cavity at the apex, who also recovered. In these cases the inflammation went on to the stage of decided hepatization, yet the lung resumed its healthy condition, and the phthisical symptoms were not materially affected by the occurrence.

Intercurrent pneumonia is, however, a very serious complication, and acute bronchitis, and especially acute capillary bronchitis, when it occurs during the progress of consumption, is almost always fatal. In the epidemic influenza of 1847 the latter form of disease was a very common occurrence, and, when it attacked persons whose lungs were previously at all unsound, generally terminated in death. The great danger which attends bronchitis as a complication of consumption, may probably be ascribed to the inflammation diffusing itself rapidly over the whole aërial mucous membrane, and so almost necessarily involving the portion of the lung which is the seat of the tuberculous deposit, and exciting or accelerating the softening and the breaking down of the diseased structure. Pneumonia, on the contrary, is more limited in extent, and may be confined to a part in which the deposit does not exist or is only trivial in amount, and the original affection may so be little affected by the superinduced disease.

Pleurisy, as shown by the almost constant existence of adhesions between the two surfaces of pleura after death from



phthisis, is of very frequent occurrence; though it is often only partial, not attended by any material amount of liquid effusion, and entirely latent; and such is especially the case when in general tuberculosis, tubercles are deposited on the pleural surfaces. In some cases, also, phthisical patients are attacked by acute pleurisy with extensive liquid effusion. This may occur from a sudden chill or exposure to cold, from extension of inflammation from the interior of the diseased lungs, or most frequently from perforation of the pleura by a tuberculous abscess and the escape of the contents of the cavity and of air into the pleural sac. Upon whatever cause the pleurisy depends, it is generally a serious complication; for if the disease of the lungs has been previously extensive, and especially if both sides of the chest have been affected and the patient's strength much reduced, it is most likely to prove rapidly fatal. If, however, the disease in the lungs be limited to one side, the effusion in the pleura may be of little importance, and may even by compressing the lung arrest the morbid process, so that, as the fluid becomes absorbed, the patient may temporarily recover with contraction of that side of the chest. I have seen several cases where the patients' lives have been in this way considerably prolonged, and have known a similar result occur in cases in which there was both air and liquid effusion in the thorax as the result of perforation. Of the former description of cases, that of a girl fifteen years of age, who was some time ago a patient in Elizabeth's ward, affords an example. When admitted she had a cavity at the left apex, and extensive effusion on the left side of the chest. The fluid gradually became absorbed, the side contracted, the cough and expectoration diminished, her general health improved, and she left the hospital having to a great extent recovered both health and strength and with an apparent arrest of disease in the lung. The following cases are also examples of the same kind.

CASE 9.—*Phthisis rapidly advancing till a cavity formed in lung, when remarkable improvement occurred, this coinciding also with the occurrence of pleurisy on the diseased side.*—J. J. M—, æt. 17, employed as a shopman in a large drapery business, was admitted into the Victoria Park Hospital on September 24th, 1859. He stated that he had been out of health for six



weeks. His indisposition commenced with cough, attended by expectoration, and about a week after he spat a small quantity of blood. The cough and expectoration had continued up to the time of his admission. He was pale and thin, and weighed only 8 st.  $4\frac{1}{2}$  lbs., though his height was 5 ft. 7 in. His appetite was defective, the tongue coated in the centre, pulse 120 and feeble; the cough was especially troublesome at night, and prevented his getting proper rest. He complained also of night perspirations; there was but little expectoration, except in the morning. The bowels were regular. On examining the chest it was found to be generally dull at the upper part of the left side, but without other marked evidences of disease. He was directed to have the cinchona and acid mixture with compound tincture of camphor. The cod-liver oil was also ordered, and a pill containing hyoscyamus and Dover's powder was given at night, and he was allowed a liberal diet.

He, however, lost flesh and strength, his appetite continued defective, and he occasionally vomited the food taken. The cough became more frequent and severe, and the expectoration more profuse. On November 18th he had lost four pounds in weight, and was altogether worse. There was marked dulness on percussion at the left apex, and cavernous sounds with the cough, respiration, and voice; and some sub-crepitation was heard at the right apex. A day or two after, symptoms of pleurisy appeared on the affected side, and the blistering fluid was applied and was directed to be followed by poultices. On December 13th he had improved in general condition, his cough had become less, and the expectoration had declined, and only troubled him in the morning. He had a better appetite, and took food more freely. There was marked dulness on percussion at the left apex, with cavernous signs there, and dulness on percussion and absence of respiration also low down on the same side. On January 17th he weighed nine pounds more than at the period of his admission into the hospital. He took his food well. He had but little cough or expectoration, and that only in the morning. The left side of the chest was contracted and dull on percussion, and the signs of the cavity at the apex were very indistinct. From this time he continued to improve, notwithstanding having had a slight attack of hæmoptysis, and was discharged in March.



CASE 10.—*Phthisis in the third stage ; empyema of left side ; expectoration of matter followed by pneumothorax and contraction of side ; arrest of disease in lung and great improvement in general health.*—E. S—, æt. 21, a gold burnisher, was admitted into the Victoria Park Hospital on September 2nd, 1859. She stated that she had been out of health for two months, during which time she had suffered from cough and expectoration. She was pale and thin, and weighed only 6 st.  $3\frac{1}{2}$  lbs., her height being 5 ft.  $\frac{3}{4}$  in. Her appetite was defective, tongue somewhat red, pulse very quick and feeble. The catamenia had been absent for three months. On examining the chest obscure tympanitic resonance was heard on percussion over a large space at the left apex, and cavernous sounds accompanied the respiration, cough, &c. ; at the right apex the expiratory sound was somewhat prolonged. She was directed to have a liberal diet, and to take the quinine and iron mixture. A fortnight after her admission the Ol. Morrhuæ was ordered.

Under this treatment she improved considerably, but on December 12th she was seized with symptoms of pleurisy on the left side, where dulness on percussion and a distinct friction sound were detected ; and the signs advanced till there were evidences of extensive effusion in the left pleural sac, the side being entirely dull, and the respiratory sounds inaudible. At the beginning of February she was suddenly attacked by a violent cough ending in sickness, and brought up a large quantity of pure pus without any admixture of air, and similar seizures continued to recur several mornings in succession. On the 10th the left side of the chest was very obviously enlarged, and did not move with the respiratory acts. A tympanitic sound was detected on percussion over a large portion of the anterior, lateral, and dorsal regions, and the levels of clearness and dulness changed their places with the changes in the position of the patient. The respiratory sound was inaudible over the whole side, except above the clavicle, where it was accompanied by slight crepitation, and cavernous sounds were heard with the cough. She had not expectorated the purulent matter for the last two days, and the sputum was of the ordinary character. She continued, however, to have occasional attacks of the sickness, vomiting, and expectoration, and brought up considerable quantities of pure pus every few days ; and, though greatly exhausted at the time,



improved in the intervals. On March 20th the left side was found markedly contracted, and entirely dull on percussion, and respiration was inaudible over the lower parts; about the clavicle, however, there was some sub-crepitation, and cavernous sounds were heard with a full inspiration. From this time the purulent expectoration ceased, and though the side remained contracted and she complained of uneasiness in drawing a full inspiration and had some cough and expectoration, she improved till her discharge in June, when she weighed 1 st.  $\frac{1}{2}$  lb. above the weight at the time of her admission and had improved proportionately in strength and appearance.

Hæmoptysis may occur as a complication of phthisis in all its stages,—during the progress of the tubercular deposition, when the tubercle is softening, and after cavities have formed. It is not uncommon that hæmoptysis occurs without the slightest evidence of disease being detectable in any part of the chest, and when death ensues from the loss of blood the lungs may be found entirely free from tubercle. Judging, indeed, chiefly from clinical observation, both copious and slight hæmoptysis would appear not unfrequently to occur in persons whose lungs are free from actual disease, though it almost always indicates the tendency to the deposit of tubercle.

Usually, when hæmorrhage occurs at the commencement of an attack of consumption it is copious, whereas in the later stages of the disease it is generally only to a small extent. In the former case the bleeding probably proceeds from the rupture of a large vessel, but it is very rare that the actual source can be detected after death. I have, however, known the escape of blood to be traced to a small aneurism of one of the large branches of the pulmonary artery, originating in expansion of the coats of the vessel from the loss of support consequent upon the formation of a small tuberculous excavation.<sup>1</sup> Hæmorrhage thus occasioned, as far as I know, generally occurs in early cases of phthisis, where the tubercle is only commencing to soften. In more advanced cases, where there are large cavities, the blood-

Aneurism of a branch of the pulmonary artery within the lung. Specimen exhibited at the Anatomical Society, Edinburgh. 'London and Edinburgh Monthly Journal of Medical Science,' vol. iii, 1843, p. 383. This was, I believe, the first case of the kind recorded.



vessels in the lung-tissue around are usually obstructed by adherent clots, so as to have become impermeable, and copious hæmorrhage cannot therefore take place. Sometimes, however, where there is even extensive disease in the lungs and cavities of old date, there may be copious hæmorrhage, probably resulting, not from the rupture of a large vessel but from slight oozing from one or more smaller branches, which first fills the cavities, and the blood is then expectorated in large quantities at a time, thus simulating the hæmorrhage which occurs from the rupture of a large vessel.

When copious hæmoptysis occurs it is a most serious complication of phthisis, for immediate death may result; and even when the hæmorrhage is small, if the lungs be previously much diseased and the patient's strength reduced, there is great immediate danger. I have seen several patients die almost instantly from very trivial losses of blood when suffering from advanced phthisis. In such cases death is doubtless often due to suffocation; but sometimes the escape of blood into the lungs is very small, and the fatal result must be caused by syncope, aggravated probably by alarm. An instance of this kind occurred some time ago in a patient of mine at the Victoria Park Hospital. A girl, about nineteen years of age, who laboured under phthisis in the third stage on one side, had very greatly improved, having regained flesh and strength remarkably, when one day, after having taken her dinner, she suddenly spat a small quantity of blood and died. On examination, so far from the body being emaciated there was a considerable deposit of fat, and but little blood was found in the bronchial tubes.

The prognosis in cases of hæmoptysis, whether copious or slight, and whether occurring in persons whose lungs are sound but who inherit a predisposition to phthisis or in those who are already in some degree phthisical, must be regarded as, with very few exceptions, unfavorable. For in the former case, however great be the care exercised, few patients escape the development of disease in the lungs after a longer or shorter period. In the latter the disease already existing is very generally aggravated after an attack of hæmoptysis. Indeed, where there already exists some amount of tuberculous deposit, the appearance even of minute specks or streaks of blood in the sputum must be regarded as of serious import, for they too



often indicate the commencement of the process of softening, or, where the affection has been for some time arrested, the re-appearance of active disease.

As, however, before stated, there are a few exceptions to these rules. In some cases, where the lungs are sound and the patients free from phthisical predisposition, a temporary state of congestion or commencing inflammation, may give rise to hæmorrhage, generally, however, only to a small extent, and under appropriate treatment the patient may entirely recover. When also the lungs are more or less tuberculous a state of temporary congestion may give rise to, and even be relieved by, a slight attack of hæmoptysis, and the local disease may undergo no aggravation. In some cases of tuberculous deposit also which are in process of arrest slight hæmorrhages may occur without any unfavorable effects. It is not uncommon for patients to assert, and sometimes for medical men to concur in the idea, that the blood which is expectorated does not come from the lungs. I believe that small streaks or specks of blood may, and often do, come from the fauces when there is a congested condition of the mucous membrane and follicular disease; but except where there is actual ulceration, the presence of which can be readily ascertained by inspection or at least rendered probable by the symptoms, anything like decided hæmorrhage is always derived from the lungs, and should be looked upon with grave suspicion.

I have already alluded to the dyspeptic symptoms with which consumption sometimes commences, and which are present in all cases to a greater or less extent. In the later stages the tendency to vomit food generally indicates the final break up of power; and there are few cases, whatever be the mode of commencement, which are more difficult to treat than those in which the sickness and vomiting are predominant symptoms. At these periods of the disease complaint is frequently made of the occurrence of sickness in the morning when the patient awakes or commences to dress. On examining the matter vomited it will often be found to consist of the sputum which had been unconsciously swallowed during the night. The sickness in the later stages often coexists with an irritable and tender condition of the mucous membrane of the mouth and throat, and probably also of the membrane throughout the alimentary canal. Patients



in this state are liable, and especially during hot weather, to the occurrence of an aphthous condition of the mouth and fauces, with pain at the pit of the stomach, sickness and vomiting, and diarrhœa. With these symptoms the fever often assumes a marked hectic character, and the patient generally rapidly sinks. The exudation scraped from the lining membrane of the mouth is found on microscopic examination to consist of a confervoid growth intermixed with epithelial cells.

In some cases I have met with a peculiar ulceration of the mouth and fauces, which occurs in cases at a comparatively early period of the disease, and is attended by great prostration of strength and is generally followed by the death of the patient in a few days. The ulcers assume a curious vermiform arrangement, ramifying over the velum and back of the throat and palate, and their surfaces are covered by an ash-coloured secretion, and the mucous membrane around is much reddened. There is great pain in the throat, with difficulty of swallowing, and often sickness and vomiting. When first I noticed this condition I suspected it was specific, but I have since been quite satisfied that it has no connection with syphilitic poisoning. In a case recently under my care, however, in a young girl, the velum was covered with superficial ulcers, and the uvula had been entirely destroyed, and from the peculiar appearance of the teeth, and the circumstance that, as a child, she had had an inveterate scalp affection, I am disposed to believe that the condition originated in congenital syphilis.

I have before stated that the condition of the bowels in the early stage is generally uncertain—apt to be confined, but also prone to be too freely acted upon. In the later stages of the disease diarrhœa is an almost constant symptom, and one which, from the exhaustion which it occasions, requires careful attention. Sometimes also diarrhœa, especially in young persons, is one of the earliest symptoms of commencing consumption; and where there is a predisposition to the disease an attack of diarrhœa, which is of long duration and does not yield to appropriate treatment, should always be looked upon with suspicion. The diarrhœa depends upon the softening of the tuberculous deposits in the mucous glands of the small and large intestines, forming ulcers which are often numerous and of large size. Doubtless the intractable diarrhœa which occurs in



the more advanced stages of the disease is also in part due to the tendency to general relaxation of the mucous membrane with the diminishing strength of the patient, and thus it is found often to correspond to, and alternate with, the colliquative perspirations.

In some cases the disease is not limited to the mucous membrane of the bowel but involves also the serous coat; and occasionally there are symptoms of more general peritonitis, though usually of a sub-acute or passive character. In the former case the peritoneal surface of the intestines, corresponding to the seat of the internal ulceration, is covered with small nodular concretions of lymph. In the latter there are more continuous deposits of lymph in places, with small granulations thickly disseminated over a larger or smaller portion of the peritoneum, and partaking more or less completely of the nature of tubercle. There is also generally some serous effusion in the peritoneal sac. Tubercles may also, especially in the cases of constitutional phthisis, be found in the mesenteric glands, the liver, spleen, and kidneys; and occasionally on the surface of the heart or pericardium, in connection with active or latent pericarditis. Not unfrequently, also, there is that condition of the urinary organs which has been described by Rayer under the term of "strumous pyelitis." The mucous membrane of the pelvis and calyces of the kidneys and the subjacent parenchyma, is found converted into a yellowish granular material, often with an ulcerated surface; and the cavities are distended by a grumous kind of pus. In such cases the mucous membrane of the ureter is studded with small oval superficial ulcers, and the other coats are thickened; generally the bladder is contracted and its coats are hypertrophied and the mucous membrane is in places ulcerated; often also there are tubercles and abscesses in the prostate and testicles. In some instances the tuberculosis seems to commence with the changes in the kidneys or in the peritoneum, and the lungs appear to be affected only secondarily, or the disease may even be limited to these parts; but generally the law of Louis—that if in grown-up persons there be tubercle anywhere, it will be found in the lungs, will be found to be correct. Fistula in ano is also a frequent complication of phthisis, resulting from the ulceration of the mucous membrane of the rectum and abscess in the subjacent cellular tissue. This may occur in persons simply predisposed to phthisis and in whom no disease in the lung can be detected,



in those in whom the pulmonary affection is commencing, and in persons who are in the advanced stages of the disease. In the second case it seems sometimes to act beneficially in preventing the more active progress of the pulmonary mischief,—the latter for long remaining in a quiescent state; and the pains in the chest, cough, and expectoration becoming greater when the discharge from the sinus lessens, and diminishing when a freer escape takes place. When the abscess occurs in the more advanced stages of phthisis, and especially when it is of large size and leads to a copious discharge, it greatly aggravates the sufferings of the patient and accelerates the progress of the disease.

In addition to the complications which have been mentioned, it is not uncommon for the veins of the lower extremities to become the seat of thrombosis, so that there is œdema of the ankles and feet; and occasionally the obstruction extends up the course of the vessels so as to involve the iliac veins or even the ascending cava.

Softening of the brain and diabetes also occasionally occur during the progress of phthisis; and in the latter affection the patient is often carried off by a peculiar form of lung disease.

I have elsewhere shown that Dr. Clendinning was not correct in supposing that the emaciation in phthisis involved chiefly the general structures of the body, and did not affect the heart, that organ becoming, indeed, he supposed, hypertrophied. My own observations show that it is only when the tuberculous disease of the lungs is complicated by chronic bronchitis, or there is some source of obstruction to the passage of the blood through the cardiac orifices or in the arterial system, that the weight of the heart is increased; and that in true tuberculous phthisis that organ undergoes a very marked diminution in weight, though, probably, to a somewhat less extent than would be the case were the circulation not at all interfered with. The contrary opinion entertained by Clendinning was apparently due to his having included amongst the hearts which he weighed some from cases of phthisis which were complicated in one or other of these ways.<sup>1</sup>

<sup>1</sup> "Observations on the Weight and Dimensions of the Heart," &c., 'Monthly Journal of Medical Science,' 1854; and 'Croonian Lectures on some of the Causes and Effects of Valvular Disease,' 1865.



Dr. Bright, when investigating the pathology of renal disease, the true significance of which he was the first to point out, found that obsolete tubercle not unfrequently occurred in the lungs of persons who died of such affections, and was led to suppose that some opposition or antagonism existed between the two diseases. This inference is, however, one which more extended observation has shown to be incorrect. Obsolete tubercle is met with very frequently in the bodies of persons dying beyond the middle period of life, without reference to the precise cause of death, and simply indicates that those in whom it is found had been at some period of their lives the subjects of phthisis. It has further been shown that active tuberculous disease and renal affection not unfrequently coexist, and especially at the earlier periods of life, so that it is now fully recognised that some forms of renal disease are predisposed to by the strumous diathesis.<sup>1</sup> The frequency of the coexistence of the two affections, if estimated by testing the urine during life and examination of the kidneys after death, is greater than would be expected from the comparative infrequency of general dropsy. The absence of this symptom is, however, readily understood when the diminution in the amount of the circulatory fluid, from the copious expectoration, frequent occurrence of diarrhœa, and profuse night perspirations, is considered. Œdema of the lower extremities is not of uncommon occurrence; but this does not necessarily show any renal complication: it is in some cases simply due to the feeble cardiac power and to the obstruction to the circulation in the lungs, while in others it depends on the obliteration of the large venous trunks of the lower extremities.

It has also been thought that there is an antagonism between phthisis and cancer, but this has been shown not to exist. The two affections chiefly occur at different periods of life, and should not, therefore, frequently be found to coincide; and their coincidence appears to be so frequent as to preclude the idea of any opposition between them. In some cases a cancerous deposit in the lung closely simulates the appearance of tubercle, and may indeed be readily mistaken for it.

The supposition that malarious affections and phthisis are

<sup>1</sup> "On the Coexistence of Granular Disease of the Kidneys with Pulmonary Consumption," &c., by T. B. Peacock, M.D., 'Lond. and Edin. Monthly Journal,' No. viii, 1845, p. 558.



opposed to each other has also attracted much attention, both in this and other countries. Dr. Wells, the author of 'The True Theory of Dew,' and formerly a physician to St. Thomas's Hospital, devoted much attention to this subject, and collected the opinions of medical men practising in malarious districts, to show the comparative rarity of the disease in such localities; and more recently M. Boudet, from his experience in the French army in Algeria, has strongly maintained the same view. It appears, however, scarcely to be well founded. In this country phthisis is quite as common in malarious as in non-malarious districts; and I have myself published cases showing that phthisical persons may take ague, that phthisis may attack persons who have had ague, and that when the two diseases coincide the progress of the pulmonary affection is exceptionally rapid and all the symptoms of the disease are greatly exaggerated.<sup>1</sup> The idea of the antagonism is a popular one, and probably few popular notions are without some basis of fact. The small amount of truth upon which this popular belief is based is probably that a moist bland air, such as that of a malarious climate, generally affords some alleviation to pulmonary cases. As, however, it has been shown that phthisical patients enjoy no immunity from ague, and as the symptoms of consumption are aggravated by complication with that affection, the practice of sending persons to such districts in hopes of relief or cure is one which would be not only futile but injurious.

Laennec regarded the imperfect aëration of the blood, giving rise to cyanosis, such as obtains in bronchitis and emphysema of the lungs, as a condition opposed to the deposition of tubercle; and other authors, and especially Rokitansky, have carried this view much further, the latter writer, indeed, supposing that there is an absolute incompatibility between a venous state of the blood and that condition which leads to tuberculosis. Whatever truth there may be in the partial views of Laennec, those of Rokitansky are certainly not correct. The most marked venosity—such as occurs in some forms of malformation of the heart or larger vessels, where only a very small portion of the blood circulating in the body can be subjected to the influence of the air, is not unfrequently found to coexist with tubercle in the lungs.<sup>2</sup>

<sup>1</sup> 'Brit. and Foreign Medico-Chirurgical Review,' No. xlv, Jan., 1859, p. 202.

<sup>2</sup> 'Malformations of the Human Heart.' Second edition, 1866, p. 188.





Indeed, phthisis is the most common cause of death in such cases, if the patient survive to a sufficiently advanced period of life for that disease to supervene. It is true we sometimes observe in families predisposed to consumption one or more members become asthmatic, and that those so affected outlive, often by many years, the rest of the family—and this is in some degree confirmatory of Laennec's views — yet such asthmatic patients do often ultimately become phthisical. I have also several times had under my care patients who have been markedly cyanotic from chronic bronchitis or deformity of the chest from spinal disease, who have died of phthisis. I might refer to the case of a nurse in Elizabeth's ward who suffered from chronic bronchitis, and was for several years as deeply cyanotic as even patients with malformation of the heart generally are, and in whose lungs decided tuberculous disease was found after death. The following case affords a very striking example of phthisis supervening on asthma.

CASE 11.—*Phthisis supervening on asthma with emphysema of the lungs.*—A gentleman, aged 49, several members of whose family had died in early life of phthisis, came under my notice in 1853. He had for years laboured under marked asthma. The paroxysms were brought on by moist or foggy air, by residence in a damp locality, or by any error of diet, and he was scarcely able to live with comfort anywhere else than on the top of Highgate Hill, where he resided. He was a tall and large-made man. His lungs were remarkably emphysematous. The chest was everywhere morbidly resonant, and the respiratory sounds were very imperfect, the inspiratory sound being so feeble as to be barely audible, and the expiratory sound prolonged, and there was ordinarily more or less sibilant rhonchus. The heart's sounds were feeble, but without murmur; the pulse weak; the lips somewhat purple, and the face flushed. The uvula was long and tumid. He had once derived relief to his asthma from the eruption of a crop of boils, and this improvement continued for eighteen months. During the time he was under my care he was occasionally benefited by slight alteratives and antidyspeptic treatment; the removal of the enlarged uvula also afforded him some temporary relief.

For the last several years he had been gradually losing flesh,



but he continued to enjoy fair health till the autumn of 1855, when he took cold from exposure in crossing the Channel from the Continent; and this was followed by some permanent dyspnoea and a frequent hacking cough. Some little time after he reached home he spat a small quantity of blood, and after this he expectorated a fibrinous cast deeply tinged with blood. On examining the chest some very slight deficiency of resonance was detected at the left apex, and a valvular click was heard with a forced inspiration. After this he rapidly declined in strength, his breathing became quicker, his voice had a slightly husky sound, and his cough, though not severe, was troublesome from its frequency; his appetite was also uncertain, his digestive organs were very readily deranged, and he was occasionally subject to gouty or rheumatic pains in different parts of the body.

In the early spring of 1856 he again had a slight attack of hæmoptysis, brought on apparently by over-exertion in speaking. He then went down to Torquay, and while there had a very profuse spitting of blood, from which he very slowly recovered. He returned to Highgate in June, certainly much weaker than when he left home, and with marked sub-crepitation over the whole of the left side. He, however, continued pretty well till August, was able to be wheeled into the garden in a chair and to go out in the carriage generally every day, and his appetite and digestion were pretty good. At the time, however, I mentioned, he began rapidly to lose strength, and he died at the end of August. To the last there was no marked dulness or increase of cough or vocal resonance, though it was evident that there was some consolidation and softening, especially at the upper part of the left lung.

It has generally been considered that the state of pregnancy is unfavorable to the development of consumption; and it is common for delicate females strongly predisposed to the disease to improve in health after marriage if they become pregnant; but generally, after having had several children in quick succession, the symptoms of consumption appear, and they rapidly sink under the disease. It has, however, recently been contended by M. Grisolle in France, that the immunity from phthisis during pregnancy does not exist, or, at least, to so great an extent as has been supposed; that consumption does com-



mence during pregnancy, and that, when so developed, it runs a rapidly fatal course, terminating shortly after the birth of the child. I have met with several cases which were confirmatory of M. Grisolle's views, but I have in some cases in which the disease commenced during pregnancy, and which appeared most hopeless, seen the patient recover to a remarkable extent, and survive for a considerable time. In many cases also pregnancy does seem to avert the tendency to phthisis, and when the disease is only slight to arrest its progress. Whereas when delicate females marry and do not become pregnant the consumptive tendency appears to be aggravated.

It is impossible at the commencement of any case to say with more than probability what will be its course and duration. Thus, some cases will pursue a rapid and almost certain course from bad to worse without being in the slightest degree relieved or mitigated by treatment; others, on the contrary, will undergo after a time a partial recovery of longer or shorter duration, to be followed by a relapse, and that again, perhaps, by a second temporary improvement, till, by a succession of similar changes, the patient at length sinks. I have sometimes seen cases which have commenced with urgent symptoms, the patient's appetite and digestion being greatly impaired, his strength quickly giving way, and the hectic symptoms being very severe, so as to threaten a very rapid progress, which have yet after a time become much less active or have even been arrested. The improvement generally occurs after the tubercle has softened, and an abscess has formed and been evacuated. The condition of the patient will then sometimes undergo a remarkable change for the better; the hectic will subside, the cough and expectoration become much less, the appetite and strength improve, and the patient gain flesh so as to acquire a very remarkable increase of weight; and this improved condition may be of long duration, though too often it only lasts for a few weeks or months.

Generally speaking, the probability of a favorable result in any given case of phthisis is rather to be estimated by the amount of constitutional disturbance, by the state of the digestive organs, and by the extent of the disease and its diffused or limited character, than by the degree to which it has advanced in any one part. Indeed the benefit derived from treatment is



often as decided and striking, when there is advanced but only circumscribed disease, as when the affection is only in an early stage but more widely extended. Usually, whatever be the stage of the disease, the patient's strength and the weight of the body will be fairly maintained, so long as the appetite and digestion remain good; but sooner or later the patient suffers from distaste of food, the little which he is able to take is not retained, and the symptoms of rapidly advancing disease set in and he quickly sinks. There is no doubt that a much larger amount of benefit is derived from treatment among the poor than in the upper ranks of society; in the former the disease is often acquired, and results from the defective quantity and quality of the food and the want of pure air and proper clothing, and as these can be remedied the patients are proportionately benefited by hospital treatment; but we are too frequently consulted by those who have throughout their lives been placed in good sanitary circumstances, and to whom it is, therefore, in our power to do comparatively little good.

The following cases illustrate several of the points referred to in the preceding remarks—

CASE 12.—*Long duration of advanced phthisis.*—L. H—, æt. 27, married; no family, but has had five miscarriages. First came under my care at St. Thomas's Hospital on the 25th of September, 1855. She then complained chiefly of dyspeptic symptoms, with vomiting and slight cough; but on examining the chest, there were decided evidences of a cavern at the left apex. She continued in the hospital till the 17th of December, and improved considerably during that time, and for the ensuing ten months during which she continued to attend as an out-patient she remained in much the same state. On the 14th of November I admitted her into the Victoria Park Hospital. She then chiefly complained of the night perspirations and of morning sickness; but the matters vomited consisted almost entirely of the sputum which had been swallowed during the night. Her breathing was quiet when she was at rest, but became hurried on using any exertion. She had a troublesome cough, and the expectoration was marked by streaks of blood. Her appetite was good, and the bowels regular; the pulse was small and feeble, and the tongue slightly furred; the catamenia had only



appeared two or three times during the previous fourteen months. She stated that she had been out of health two years and a half, and that her illness had commenced with a cough soon after a miscarriage, which occurred at between three and four months. She had expectorated blood the winter before I saw her. She was considerably emaciated, and weighed 8 st.  $0\frac{1}{2}$  lb., her height being 5 ft. 3 in.

On examining the chest entire dulness on percussion was detected at the upper part of the left side, with an obscure tympanitic resonance, and the cracked-pot sound was heard occasionally; there were also cavernous sounds with the voice, cough, and respiration, and less marked dulness all over that side, and defective respiration lower down; at the right apex there was some sub-crepitation. During the time she was in the hospital she improved considerably in appearance and in her general symptoms. The sickness became less constant, her cough was not so troublesome, and she felt less languid; but the increase of weight was very trifling, being only three pounds in about ten weeks, and the physical signs continued at the time of her discharge, on the 24th of January, the same as before.

After leaving the Victoria Park Hospital she continued to attend as an out-patient at St. Thomas's, and remained in much the same state till the summer of 1857, when during the hot weather her strength failed greatly. In September she was much worse; her breathing was more difficult, and was attended with wheezing in all parts of the chest; her cough was very troublesome, the expectoration more profuse; the pulse was quick and weak, and the lower extremities became swollen. The physical signs gave evidence of increased disease at the left apex and of advancing consolidation at the right. I admitted her again into St. Thomas's, but she died with urgent dyspnoea and anasarca in three or four days.

I had not the opportunity of examining the body. The total duration of her illness was about three years, and she had a large cavern in the left lung for at least two years. The case when first seen might be said to be completely one of latent phthisis, though she was at that time labouring under advanced disease. She complained chiefly of dyspeptic symptoms, and the pulmonary affection was only detected by examination of the chest.



CASE 13.—*Long duration of life with advanced phthisis, the patient still living twenty years after the formation of a cavity.*— I have within the last few days seen a lady who affords a very remarkable example of the prolongation of life and the enjoyment of a large amount of vigour, with even advanced disease of the lungs which has existed for many years. In 1852, when she was twenty-two years of age, I saw her for the first time; she had then been confined with her second child about twelve months before, and was in a state of early pregnancy. She was suffering at the time from symptoms of commencing phthisis, and soon after a cavity formed at the right apex, and she had all the evidences of rapidly advancing disease. The symptoms, however, after the expectoration of the matter from the cavity, became quiescent; she regained flesh and strength, and in a few months recovered very much her ordinary condition, and continued for several years to enjoy a fair amount of health. In 1864 she had an attack of pneumonia on the same side, which went on to extensive consolidation; but from this also she recovered without the former disease in the lung being apparently affected. She has since, though requiring great care during winter, continued to enjoy a fair amount of health and vigour, and her appearance scarcely indicates the existence of serious disease. The signs of a cavity, not generally containing any secretion, still remain, and the disease does not appear to have at all progressed, though fully twenty years have elapsed since she was first attacked.

#### TREATMENT.

From the sketch which has been given of the different forms under which consumption may manifest itself, it will be evident that the treatment to be pursued in different cases must vary with the form of the disease, the stage which it has reached, and the special symptoms by which it is complicated.

The following general rules may, however, be laid down as the indications which require to be followed out:

1st. To correct the disorder of the digestive organs, which leads to the development of the imperfectly organized and unhealthy tissues, and to impart vigour and tone to the general system.

2ndly. To prevent the occurrence of inflammation, which



accelerates the deposition and softening of tubercle, and to subdue it when it occurs.

3rdly. To uphold the general power and relieve the various complications which may arise during the course of the disease, and which greatly aggravate its symptoms and accelerate its progress.

It is not my intention to do more than very cursorily to allude to the mode of carrying out these several indications ; for to dwell more fully upon the various means which may be employed in the treatment of consumption would be both superfluous and tedious.

The correction of the disorder of the digestive organs and the imparting greater tone to the system are usually the most important indications in the treatment of consumption. In the first form of the disease, or in cases of constitutional phthisis, the preventive system of treatment is generally almost all we can have recourse to, for when actual disease has manifested itself, it always, and often very rapidly, runs its course to a fatal termination. In the second form of consumption in which the constitutional predisposition is less marked, there is greater scope for treatment, but in these cases also the same indications are to be carried out, for generally the dyspeptic symptoms are predominant throughout the course of the attack. They precede the development of tubercle in the lungs, attend its deposition and softening, and are frequently the immediate cause of the fatal termination.

The means by which the tendency to phthisis may be counteracted or warded off are :—

(a). By hygienic measures, change of air and scene, nutritious food, fresh air and exercise, proper clothing, ablution, bathing, &c.

(b). By the employment of alterative and tonic medicines.

(c). By the use of remedies supposed to be specifically opposed to the development of scrofulous affections.

Change of air and scene are beneficial in consumption—First, by affording a pleasurable excitement of mind, which withdraws the attention from the patient's bodily ailment, and tends to dissipate those gloomy forebodings which, at least in the early stages of consumption, are so constantly observed, whatever may be the feelings of the patient in the later periods. Secondly, in our own variable and chilly climate, a patient, though not labouring



under advanced disease, must often be confined to the house during a large portion of the year, to avoid the almost certainty of his taking cold. By removing to a warmer and more genial climate, he may be enabled to get out during nearly the whole of the winter, and to enjoy those most powerful of all tonics, fresh air and exercise, to an extent which he could not possibly do at home, and his appetite and digestion and general tone will be proportionately benefited. Thirdly, by stimulating to a greater extent the functions of the skin, a warmer climate proportionately relieves the lungs. And, fourthly, a warmer and more equable climate lessens the liability to inflammatory action in the lungs, which is so often set up by exposure to cold and damp and by sudden changes of temperature.

In recommending change of climate, our advice should be regulated by the nature of the case, the constitution of the patient, the stage of the disease, and the special symptoms with which it is complicated. As a general remark in the early stage of the disease, when it is as yet only threatened or when the physical signs indicate but little unsoundness in the lungs, in young persons possessed of considerable vigour and fond of change, and especially in men of vigorous mind and accustomed to a life of active occupation in business or other ways, it is better to recommend the patient to travel from place to place than to advise him to remain stationary in any one locality. For such a person foreign travel is especially adapted; and it is often a good plan to recommend his leaving home in the early autumn and to travel gradually to the south, so as to spend the winter in a warm situation, and return home in the same way at the commencement of the following summer. Or if the patient prefers a sea voyage, one may be selected which affords a similar stay in a warm climate during winter. In this way the tedium of want of occupation, and still more the unfavorable influence of associating constantly with other invalids is avoided; and I have very often known patients who left home in most delicate health return well and strong and free from any symptoms of pulmonary disease. The peculiar symptoms of the case must, however, be taken into consideration. It is undesirable for any one who is subject to spitting of blood or to attacks of an inflammatory character, to be exposed to the danger of taking cold or to unusual exertion which might bring on an attack in places where they cannot



procure proper medical advice and care should such seizures occur. In the more advanced cases of phthisis, when the physical signs indicate that considerable disease has already taken place in the lungs, where the patient's strength is much reduced, or in persons originally of feeble power and not capable of much exertion, or indisposed to travel on any other grounds, and especially in females, it is better to select a permanent place of residence for the winter. This selection it is often very difficult to make, and in deciding as to the most desirable locality, much must depend upon the peculiarities of the individual case. Generally, persons of relaxed habits and feeble powers, who labour under atonic dyspepsia, and have a tendency to passive hæmorrhages, will be benefited by a moderately bracing climate; those who are more plethoric, who suffer from tendency to bronchitis, pneumonia, or pleurisy, and who are subject to active hæmorrhages and irritable dyspepsia, require a mild and moderately relaxing climate. The best climates for most phthisical invalids are those which are warm, dry, and equable; and a dry climate is especially beneficial in most cases which are complicated by bronchitis, and in which the breathing is more embarrassed and difficult than is explained by the amount of disorganization in the lungs. In some cases, however, a damp climate agrees well with consumptive patients, and not unfrequently an air which is injurious to healthy persons is beneficial to the consumptive. Thus it often happens that in families who remove to the south-west of England on account of the health of one member, the robust suffer while the invalid benefits by the change. It is, indeed, impossible to lay down any certain rule as to the climate which may be most beneficial in any given case. I have known a gentleman with symptoms threatening an attack of phthisis spend the winter in the north of Europe, Sweden and Denmark, and return home in the spring greatly benefited; and of late years it has become the practice rather to recommend the cool and bracing climates, and especially those of elevated table lands, than those which are warmer, and in some cases certainly with remarkable benefit. Phthisical affections are, for some cause, either dietetic or climatic, less frequent in the severely cold climates, Russia, Norway, and Sweden, than in this country; and it seems well ascertained that the frequent changes of our own climate are more injurious than the settled cold of those which are more rigorous. The de-



cision as to the desirableness of sending patients to reside abroad or of their remaining at home, must also much depend on considerations of personal and family convenience. Generally speaking, there are no climates at home so well adapted for the different forms of consumption as those of foreign countries; but, nevertheless, there may be considerations which render it desirable to keep the patient at home, and if so he may often be placed in circumstances perhaps nearly, if not quite, as favorable for recovery as if he were to go abroad.

There is no advantage to be obtained by sending away patients in the advanced stage of the disease when cavities have already formed in the lungs, and if such persons leave home there is but little probability that they will ever return. As also when there is but little vigour of constitution, and the slightest exposure or change of temperature excites pain in the chest and increased cough and expectoration, the patients wherever they are sent must be almost always confined to rooms of equal temperature, the external climate is of comparatively little importance. It is, however, sometimes desirable on other grounds that persons so circumstanced should not remain at home, and if so the shorter distance they are removed the better; and there are generally to be found in all parts of the country warm and sheltered situations which afford most of the advantages which can be gained from change. When it is decided to send a patient away in an advanced stage of disease or in a weakly condition, if he be not liable to suffer from sea-sickness it is a good plan to let him visit the shores of the Mediterranean in a yacht, or in one of the steamers which ply to different places, stopping at the different stations as long as he is disposed and going on by another vessel.

The use of proper food, the adoption of adequate clothing, and the employment of ablution and bathing, are of such obvious importance in supporting the strength, protecting against cold, and rendering the system less susceptible to its influence, that it is not necessary to do more than simply refer to them; but I may remark that some patients and their friends fall into the error of over-clothing, and so by unduly encouraging perspiration increase the tendency to take cold from the occurrence of sudden chills. When also patients are confined to the house, too high a temperature is sometimes maintained, the hygrometric condition of the air is not attended to and ventilation is neg-



lected. From the experience of the Victoria Park Hospital it appears that the temperature of the rooms to which a patient is confined should not much exceed 60° Fahr., as when they are kept warmer the circulation is excited, languor is produced and the appetite and digestion are interfered with, and they are rendered so susceptible that the slightest exposure to the open air, even in mild and genial weather, is followed by catarrhal attacks. Indeed, I doubt whether it is desirable to maintain, at least in a hospital, at all times so high a temperature. I have noticed so frequently that I cannot hesitate to regard it as a rule, that the patients do quite as well at the temporary St. Thomas's Hospital, where the temperature cannot be much raised and the windows are kept constantly open, as at the Victoria Park, where, formerly at least, great care was taken to prevent the direct entrance of any cold air into the wards and corridors.

In the relief of the dyspeptic symptoms which precede and attend consumption, great assistance may be gained from the use of the mild mercurial alteratives with alkaline remedies and tonics. In recommending the employment of the mercurial alteratives, I am aware that I am in opposition to the generally received views of the profession; but while I am fully convinced that the free or continued use of mercurials is undesirable, I am equally satisfied that the occasional employment in small doses of the milder remedies, as the pil. hydrarg., the hydrarg. c. cretâ, or the hydr. c. magnesiâ, is eminently beneficial, especially in the dyspeptic forms of phthisis and in the cases which are characterised by a torpid condition of the liver. As generally in phthisis, there is a very acid condition of the system, shown by the sour eructations and by the odour of the breath and perspiration, the alkaline remedies, the Liq. Potassæ, the bicarbonate of potash, or the bicarbonate of soda, or lime water, are also of great use, and these should be combined in cases where there is much flatulency or eructations, with the sesquicarbonate or the aromatic spirit of ammonia. These medicines are best exhibited in bitter infusions, as Cascarella, and especially Calumba when the stomach is irritable and there is a tendency to diarrhœa, or rhubarb or gentian when the bowels are torpid. If there be much pain after food and nausea or actual vomiting, hydrocyanic acid, hyoscyamus, or morphia, may be



added, and the different forms of opiate medicines are especially applicable when there is much diarrhœa, or when the patient is troubled by a frequent and severe cough. With these remedies a light but nutritious diet should be directed, as milk, eggs, and farinaceous food, fish, poultry, or game; and if stimulants be admissible, bitter ale, dry sherry or brandy may be allowed according to the state of the stomach and bowels.

Subsequently, when the appetite has increased and the digestion has improved, or in cases where the dyspeptic symptoms have been less urgent from the commencement, the more decided tonics may be had recourse to, as the infusion or decoction of bark, the cinchona alkaloids, or the mineral tonics. Of the latter remedies the chalybeates are especially applicable in the treatment of consumption in young females, in whom the appearance of the catamenia is delayed or where there is irregularity or suppression of the flow, combined with the usual signs of anæmia. They are also very useful in the similar form of disease which is frequently seen in young men about the same period of life, and especially in those who have grown quickly, passing rapidly from youth to manhood. When this state of system is united with an irritable condition of the stomach, acidity of the secretions, and atonic dyspepsia, the iron is best exhibited in the form of the citrate, with the addition of the aromatic spirits of ammonia. Quinine may be added when the appetite is defective, and hydrocyanic acid when there is sickness and vomiting. In this condition of stomach the trisnitrate of bismuth has been much prescribed as an anæsthetic; but, so far as my observation serves me, it is a remedy of little efficacy, even when exhibited in large doses and for a long period. The nitrate or oxide of silver are, however, often useful in cases in which there is marked irritability of the mucous membrane of the stomach, indicated by pain after food and nausea. The oxalate of cerium is also useful in checking the tendency to vomiting which occurs in the later stages of phthisis, and in some of the cases of dyspeptic phthisis pepsine is beneficial. When, on the contrary, the stomach is not materially disordered, but there is a generally relaxed state of system, with profuse expectoration, night perspirations, and diarrhœa or leucorrhœa, iron may be exhibited in the form of sulphate, with an excess of sulphuric acid, and with some opiate, or quinine, according to



the other symptoms, or the sulphate or oxide of zinc may be given. In the form of disease which is characterised by the undue susceptibility to cold, or by the frequent occurrence of hæmoptysis, the acid tonics are especially useful, as the sulphuric, phosphoric, or nitro-muriatic acids. When the fauces and larynx are affected, the chlorate of potash is often beneficial, and these different remedies may be exhibited in combination with some form of bitter infusion. In cases where with want of tone in the system generally there is a torpid condition of the bowels, the nux vomica, given in combination with aperients, is very useful, especially in delicate females. With the course of treatment now mentioned a less restricted diet may generally be allowed, as a larger proportion of animal food, and a freer use of malt liquors or wine.

In combination with the remedies mentioned, others which have been supposed to exercise a more specific influence over the strumous diathesis may be administered; and of them the cod-liver oil has received the greatest attention, and deservedly, for, when judiciously exhibited, it is eminently beneficial in most of the different forms and in all the stages of consumption, and more favorable results are obtained from its use than from the employment of any other remedy. It probably acts chiefly, though not entirely, as a nutrient, and the condition of the blood has been shown greatly to improve under its use. Its easy digestibility seems to constitute the most marked distinction between the cod-liver oil and other kinds of oil; and it differs considerably in its composition from the vegetable oils, containing especially small portions of iodine and bromine, and the elements of the bile, which may assist its beneficial effect.

In commerce two kinds of cod-liver oil are known, the pale and the dark. The former, obtained by expression, with the aid of steam, from the fresh livers of the cod, ling, and other species of fish of the genus gadus, is of a pale straw colour and has a not disagreeable fishy odour and taste. The latter is either prepared by a rough process of percolation from the livers of the same fish thrown into a large cask and left exposed to the sun on the sea shore, or by boiling; by whatever mode prepared, this kind of oil is dark coloured, fetid to the smell and offensive to the taste; and when obtained by boiling it has a strong empyreumatic flavour, and produces a biting sensation in the throat



when swallowed. There is also the light brown oil, which is extensively advertised, and resembles the better specimens of the common brown oil.

Of these different oils, I always recommend patients to take the pale, as being less objectionable to the palate, and generally more easily digestible; but at the Victoria Park Hospital we use, from motives of economy, large quantities of the common brown oil, and, so far as appears, with equally good results to those which attend the use of the pale. Indeed, it not unfrequently happens that patients who have taken the brown oil, and from its disagreeing have had the pale ordered instead, after a time request to be allowed to recur to the brown oil, stating that they derived more benefit from its use.

In commencing the use of the oil much care is required. It should generally be preceded by the alterative and anti-dyspeptic course which I have sketched out; and should be commenced in a small dose,  $\zeta j$  to  $\zeta ij$ , at first once a day, then twice; and the dose should be cautiously increased. I seldom recommend patients to exceed  $\zeta sss$  twice or three times daily. For the vehicle milk, or wine, or brandy diluted, answers very well, but some patients prefer to take it with their tonic medicine, and children often do not object to its exhibition in steel wine or syrup of iodide of iron and water. The best time for the administration of the oil is from half an hour to an hour after taking food, when primary digestion is advanced and the food is about to pass into the duodenum. It then passes quickly out of the stomach and becomes emulsified with the alkali of the biliary and pancreatic secretions and is readily assimilated. In this way the eructations which are apt to occur and are so unpleasant when the oil is long retained in the stomach are avoided. Generally the meals which are selected to be followed by the oil are breakfast, and lunch or the early dinner; but some patients prefer it at night, and I have known a very full dose then taken without difficulty by those who could not otherwise bear it.

If after a fair trial the oil does not agree, but produces distaste for food and nausea or actual sickness or diarrhœa, it should not be persevered with; and, when it has been for some time taken, if the patient feels a disinclination to its use, it should be temporarily discontinued. If the oil really agree, the appetite should increase, but it may safely be persevered with if the appetite be



not interfered with by its employment. Sometimes also the bowels are confined under its use, and the patients become, as they say, bilious, a condition generally best relieved by a mild alterative pill, followed by alkaline stomachic medicine. It is of great importance to avoid the patients acquiring a disgust for the remedy, for if once thoroughly nauseated by it, they seldom if ever, overcome their repugnance, and this is very apt to occur if the oil be taken for too long a time.

When the employment of the remedy is long continued, I have observed that while it seems to become a necessity so that the patient cannot do without it, he does not derive any marked benefit from its use, and it is therefore well to suspend it for a few days every fortnight or three weeks. On whatever account the remedy has been discontinued, the dose should be reduced when the patient recurs to it. The oil should also generally not be given in cases where there is marked indigestion; in such instances it most usually aggravates the evil, and I have seen decided injury done to patients by pressing its use. In some cases, however, the oil will agree when scarcely anything else is capable of being digested; and generally, provided the remedy be preceded by the anti-dyspeptic course of treatment described, the patients are able to take it with advantage, even in cases in which it had previously been tried and found to disagree.

In some cases, in which the oil cannot be taken by the mouth, it may be administered in the form of enema, and it is said that good results have been obtained by inunction with the oil; but for this purpose any bland and inodorous oil would probably be quite as efficacious, and the smell of the cod-liver oil so applied is so extremely unpleasant that it becomes a great annoyance to the patient.

Besides the cod-liver oil, other animal and some vegetable oils have been used in the treatment of consumption, but these seem to be not less disliked by the patients than the *Ol. Morrhuæ*, and not otherwise to yield such good results. Butter and cream may be usefully had recourse to as permanent or temporary substitutes for the cod-liver oil. Glycerine has also been administered, but so far as I have observed, without any great advantage.

The other specific remedies which have been employed in cases of consumption are chiefly the iodinous and phosphatic. Of the former, iodine, iodide of potassium, and the combination



of the two, as in the formulæ of Lugol, have been extensively used; but though useful in the treatment of some of the complications of phthisis, they do not exercise any markedly beneficial influence in ordinary cases. The phosphatic remedies have been given in the form of phosphoric acid, and the phosphates of lime, iron, and zinc. The phosphoric acid, which I have frequently prescribed, does not, however, appear to possess any material advantage over the other mineral acids, unless it be, perhaps, less liable to disagree with the stomach. The phosphate of iron is rather useful as a chalybeate than for any specific effects. Naphtha, or the pyroxylic spirit, at one time was greatly praised as a remedy in phthisis, and I then employed it somewhat extensively. It is useful in some cases of the bronchitic form in restraining the expectoration, and so in some degree relieving the cough and lessening the exhaustion of the patient. It is also sometimes beneficial in the colliquative diarrhœa of the advanced disease, but it has failed to maintain its reputation as a remedy possessing any specific value. The ordinary terebinthinate medicines are also of use in cases of bronchitic consumption. At the time when the hyposulphites were first recommended as remedies in phthisis, they were tried at the Victoria Park Hospital, but, so far as I was able to observe, did not exercise any very special alleviative influence.

The treatment of the more advanced stages of consumption resolves itself into the endeavour to relieve the different complications which arise, and to uphold the strength of the patient. I shall briefly allude to the chief means of accomplishing these objects.

Hæmoptysis is a symptom which always demands careful attention, for it most usually either involves immediate danger from the large quantity of blood lost or from the weakness of the patient, or it indicates the existence of active disease in the lungs. It should not, however, be always immediately checked by the use of styptics, for, in some cases, it results from an engorged or congested condition of the lung and affords relief. In other cases, the discharge of blood is not connected with any evidence of excited pulmonary action, and styptics may be had recourse to. In cases of slight hæmoptysis the milder astringents may be used, as the gallic or sulphuric acids; but, when the loss of blood is copious, the most powerful styptics, as the acetate of



lead, combined with opium to allay nervous excitement and quiet the circulation, must be freely exhibited. In cases of this kind ice may be allowed to dissolve in the mouth, but the application of cold to the exterior of the chest, which is sometimes practised, seems to me very objectionable. It cannot produce any cooling effect on the chest and so assist the tendency to coagulation in the bleeding vessel; while it must increase the internal congestion with which the hæmorrhage may be connected, or it may chill the patient and so excite inflammation in the lung, a condition which we should carefully guard against and which is very apt to occur after copious loss of blood. In cases of hæmorrhage which have been some time in progress and occurring in debilitated subjects, the *Ol. Terebinthinæ* in small doses is often the most efficacious remedy. Generally after profuse hæmoptysis a period sooner or later arrives when the powers of the system begin to fail, and it becomes necessary to exhibit some kind of stimulus. The determination of the period at which this change of system is needed is one of the most difficult problems in medical practice. When hæmoptysis occurs only to a slight extent in persons in the more advanced stages of phthisis and when the patient is very weak, the usual support must be most cautiously reduced, and only for a limited time; and in many such cases it is necessary to continue to give the stimulants while the bleeding is still proceeding. I have seen hæmorrhage at once arrested after the exhibition of stimulants had been had recourse to, which was entirely unchecked by the astringent remedies employed.

The inflammatory complications of phthisis must be variously treated according to the urgency of the symptoms, the progress which the disease has made in the chest, and the strength of the patient. In the more active cases, and in sthenic conditions of the system, mild saline and alkaline remedies with counter-irritants may be used, but in others no reduction of the powers of the system can be borne, and stimulants and supports must be more or less freely exhibited throughout the attack.

As a general rule, I think that the use of temporary counter-irritants is preferable to the more permanent, as the repeated application of blisters or sinapisms, rather than blisters kept open, or setons or issues. The latter are more apt to produce irritation, and so interfere with the rest of the patient, and yet



do not appear to exercise any very beneficial effects on the local disease. I am frequently in the habit of using the liquor vesicatorius, as it is easy so to apply it as exactly to regulate the amount of irritation produced. When there is much pain from more active pneumonia or pleurisy, the constant application of warm poultices, or of the spongio-piline, generally affords the greatest relief. In other cases of a similar kind, the free use of the compound tincture, or concentrated tincture of iodine, is of great use; and in the bronchitic forms the inunction of terebinthinate liniments, as Stokes' chest liniment, is very beneficial. The cough and restlessness, which are such distressing attendants on phthisis, are to be relieved by the use of anodynes, of which morphia, the liquor opii sedativus, nepenthe and hyoscyamus, are generally the best. In using these remedies it is desirable to commence with a small dose of anodyne, and to increase the amount as the effect subsides. This rule does not, however, apply to the employment of anodynes throughout the whole period of an attack of phthisis. In the later stages, when the circulation is becoming embarrassed from the great extent of the disease and the patient's strength is failing, the dose should be decreased. When the anodyne, instead of procuring sleep rather creates excitement, and especially in the later stages of the disease, this effect may be obviated by combining some diffusible stimulus with it, as ether, ammonia, or brandy, or by giving at the same time some mild and easily digestible food. Some time ago we tried extensively at the hospital the use of chlorodyne, at the request of a member of the committee who forwarded a stock of the preparation; and while there can be no doubt that it is a useful anodyne, it did not appear to possess any great advantage over the combination of opiates and diffusible stimulants which we were previously in the practice of employing.

In some cases, when the cough is of a spasmodic character, and especially in the early stage of phthisis and in hysterical females, advantage results from the employment of the valerianate of zinc or iron with morphia, hyoscyamus, or Dover's powder, and from the occasional inhalation of small quantities of chloroform. It is not uncommon also in cases of consumption, and particularly where the affection is complicated with bronchitis, for the patient to suffer from dyspnoea to an extent altogether disproportionate



to the amount of disease which can be detected in the lungs. In these cases also slight inhalations of chloroform are often very beneficial—say ten minims, inhaled from a pocket-handkerchief; but in using a depressing remedy of this description, great care should be taken that the inhalation should not be carried too far, and that it be not so frequently repeated as to reduce the already feeble powers of the patient.

The cough in cases of phthisis is often caused or much aggravated by irritation, inflammation, or actual disease of the fauces and larynx; and it is probable that in some cases these affections precede and tend to produce the disease in the lungs. For their relief, I formerly frequently made use of the solutions of nitrate of silver, applied by means of a sponge or camel-hair pencil to the fauces or to the interior of the larynx, in the mode adopted by Mr. Horace Green, of New York. The first effect of these applications is often beneficial, and the irritation in the larynx and fauces is considerably lessened; but after repeated trials I came to the conclusion that, except when there is active inflammation present, the caustic solutions ultimately aggravate the irritation; and that greater benefit is obtained from the use of astringent gargles—as alum and rose-water, or infusion of roses; or the chlorate of potash and hydrochloric acid, or nitrate of potash, partly swallowed—than from the direct application of the stronger remedies. The inhalation of the vapour of water impregnated with various substances—hyoscyamus, conium, hydrocyanic acid, or creosote—is also often beneficial. To these means should be added for the relief of the laryngeal and faucial complications, the employment of counter-irritation externally, by means of stimulating liniments, sinapisms, tincture of iodine, or vesicating applications. The use of the spray which has more recently been introduced, has in some cases been found beneficial in allaying irritation in the fauces, larynx, and chest, and in checking hæmorrhage.

The bowels in the earlier stages of phthisis are sometimes either torpid or relaxed, but in the later stages diarrhœa is generally present to a greater or less degree. For the relief of this symptom I generally employ the vegetable astringents, and especially the tannic acid, with morphia or opium. In the more severe cases, however, the stronger astringents, as the acetate of lead or sulphate of copper, are preferable; and in some cases



the trisnitrate of bismuth by its mechanical properties seems to be an effectual remedy.

I have not thought that much advantage has generally resulted from the use of astringents in checking the night perspirations, though in some cases, when the patient is much troubled with them, some relief may result from combining the opiate with tannic or gallic acid or sulphuric acid, according to the state of the bowels. The greatest relief is, however, obtained from the judicious exhibition of food and stimulants. The perspirations generally occur during the morning sleep, and in part depend on exhaustion from want of food. They are, therefore, best relieved by directing that the patients shall take a fair allowance of food, with some stimulus before going to sleep; or some small amount of food and stimulus in the interval between the night and morning sleep—a little cold-tea made strong and mixed with much milk and containing a small quantity of brandy, or a little wine and a sandwich or meat biscuit, very well accomplish this purpose. In all cases of phthisis the administration of food and stimulus is of great importance, and should receive great care. In the morning the patient is feeble, languid, and depressed, and a somewhat stimulating diet should then be allowed; rum and milk on awaking, or tea with much milk and a small quantity of brandy before dressing, are then often of use. Subsequently, a more solid breakfast should be taken, if the state of the stomach will allow; and again at eleven or twelve o'clock, or at an early dinner, animal food with some fermented beverage may be allowed. In the after part of the day, on the contrary, there is a feverish and excited state of system, the patient feels better, is disposed to talk, and has often a great inaptitude for sleep. In this state, therefore, the food taken should be of a milder character, and stimulus should be given only in small quantity or a mild form.

Such is a general sketch of the plan of treatment which proves most efficacious in the different kinds of consumption. By following it out the disease may in many cases be warded off when threatened, and in some be cured or arrested after it has commenced; and in the more advanced stages of the disease, when an arrest cannot be hoped for, much temporary relief may be obtained, and the duration of life may often be



greatly prolonged. I feel, indeed, satisfied that a much larger number of cases are now arrested, and the duration of life is much more extended at present under the analeptic treatment adopted than was the case when a more depressing course was had recourse to.

The course of a case of phthisis is generally a very variable one; few follow an uninterrupted career of decline, but on the contrary, they generally display a succession of temporary improvements and relapses. Thus, in some cases, the patient will, in the early stage of the disease, get steadily worse till a cavity forms and the matter is evacuated. Improvement will then commence and be maintained till a fresh deposit begins to soften, when the same course is repeated; and the patient sinks at last exhausted by these repeated changes. The best test of the progress which is being made in any case is the increase or loss of weight which the patient sustains. Neither his feelings nor his appearance can be relied on. Some patients will say that they are stronger and better when they are rapidly declining, and others will constantly complain who are regularly increasing in weight. In some cases by careful dietetic and regimenal means the supply and exhaustion may be so nicely balanced that there is little variation in weight for a long period. In others there may be constant small gains and losses coinciding with variations in the state of the digestive organs or of the pulmonary symptoms.

The patients admitted into the Victoria Park Hospital often at first lose weight, and this may continue every week for a month or six weeks; after this, in many cases, they begin gradually to improve—regain the weight they have lost, and subsequently recover rapidly till when they leave the hospital, after a residence of two or three months or upwards, they have often gained several pounds, or even a stone or more. When this increase occurs in persons who are only threatened with consumption, or in those in whom the disease has not advanced beyond the first stage, the improvement may be permanent, and the patients may continue to progress after their discharge. When, on the contrary, the disease is more advanced, though the improvement may be equally great, it is too often, but by no means always, only temporary, and the patient soon sinks after leaving the hospital.



A remarkable example of the gain of weight in a patient, in whom the pulmonary disease was yet steadily making way, occurred two or three years ago in the Victoria Park Hospital. The patient, a female, twenty-four years of age, was under the care of my colleague, Dr. Bennett. When admitted she stated that she had had severe hæmoptysis four years before, but had only had a cough for two months. She weighed 7 st.  $8\frac{1}{2}$  lbs.; on examining the chest the right apex was found deficient in the resonance on percussion relatively to the left, and there was mucous crepitation and bronchitic rhonchus in all parts of the chest. She remained in the hospital three months, and during that time gained twenty pounds in weight, being at her discharge 9 st.  $0\frac{1}{2}$  lb.; the physical signs, however, at the time of her discharge indicated that the pulmonary disease had considerably advanced during this time. There was defective resonance on percussion at the left apex, and moist sounds with indistinct gurgling on drawing a full inspiration after coughing. The signs of bronchitis had disappeared from other parts of the chest.

This case, indeed, like many others which I have seen, shows that, though the gain of weight is generally the best test of the result of the treatment pursued, it yet cannot always be relied upon. I have known patients improve in appearance, and gain strength and flesh, so as to be really plump and relatively healthy looking, and yet the local disease has continued steadily to advance, becoming obvious where it was before scarcely detectable, or passing from simple consolidation into softening. Sometimes, also, the improvement may take place too rapidly, and a sudden attack of hæmoptysis or of pneumonia or of severe gastric disorder or diarrhœa, may undo all that has been done, or even precipitate the fatal result. Generally those cases do best which improve only slowly, and I have learnt by experience to distrust a too rapid amendment, and that it is better in such cases to reduce the diet and other tonic measures. Most generally when there is an improvement in the general health there is also, sooner or later, an amendment in the local affection, the pain and uneasiness in the chest, the cough and expectoration, and the evidences of active disease become less marked, but as would *à priori* be anticipated, these proofs of amendment are much slower in making their appear-



ance. If, however, there be any improvement in the condition of the patient, it must be welcomed as holding out encouragement to hope that by a steady perseverance in the use of the same means still more satisfactory results may be ultimately achieved.





PLATE I.

Dr. Peacock's case of aneurism of a large branch of the pulmonary artery in a phthisical cavity of the lung.

The preparation was removed from the body of a man, *æt.* 39, who died suddenly of hæmoptysis, after having suffered from symptoms of phthisis for four months. An incision has been made into the lung, and the two portions are separated, so as to show the openings from the vessel into the small sac, bristles being placed in the openings. External to the upper portion of the sac the walls of the phthisical cavity are well seen.



PLATE I

The figure shows a large amount of the material  
found in a physical cavity of the lung.

The material was removed from the body of a man, and  
was found to be composed of a large amount of  
small pieces of tissue, and a few larger  
pieces of tissue, and the two portions are  
shown in the figure. The material is  
found in the upper portion of the wall of the  
physical cavity and will not.





E. Burgess, del et lith.

M & N Hanhart imp

DR. PEACOCK'S CASE OF ANEURISM OF LARGE BRANCH OF  
PULMONARY ARTERY IN PHTHISICAL CAVITY OF LUNG.



