

Outline of an inquiry on the pathology of consumptive diseases. Part 2 / by John Abercrombie.

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Abercrombie, John, 1780-1844.
Royal College of Physicians of Edinburgh

Publication/Creation

[Edinburgh] : printed by the heirs of D. Willison, [1822?]

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OUTLINE
OF AN
INQUIRY ON THE PATHOLOGY OF
CONSUMPTIVE DISEASES

PART II.

By JOHN ABERCROMBIE, M. D.

FELLOW OF THE ROYAL COLLEGE OF SURGEONS, EDINBURGH.

(From the Edinburgh Medical and Surgical Journal, No. 70.)

PRINTED BY THE HEIRS OF D. WILLISON.

OUTLINE

OF

INQUIRY ON THE PATHOLOGY OF

CONSUMPTIVE DISEASES

PART II

BY JOHN ABERCROMBIE, M.D.

LECTURER ON THE PATHOLOGY OF CONSUMPTION, IN THE

OF THE LONDON MEDICAL AND SURGICAL JOURNAL, No. 70

PRINTED BY THE UNIVERSITY OF LONDON

so important an organ; but, in the history of this affection, we see enough to fix a marked and decided distinction between it and that unhealthy ulceration which constitutes consumption.

This important difference is often referred to the scrofulous habit; but it does not appear that the existence of a scrofulous habit necessarily gives to ulceration an unhealthy character. This important principle may be inferred from a variety of remarkable facts. A scrofulous habit may be extinguished, and the wound heal favourably; whereas, if it has been allowed to advance to suppuration, the ulcer would have been most unhealthy.

After the amputation of a scrofulous limb, the stump may heal as favourably as in the scrofulous constitution; and even in the same person, at the same time, we may observe scrofulous ulceration existing in one part of the body, and in another part, the most healthy ulceration. A scrofulous habit, therefore, does not necessarily produce scrofulous sores; but, on the contrary, we often find difficulty in procuring from them that discharge which is usually the result of a healthy ulcer.

my case a gentleman who was afflicted with a disease of the knee, accompanied by a running sore, decidedly of a scrofulous character. While this was going on, without any appearance of amendment, he sustained a considerable injury of his hand, by a contused and lacerated wound. In such a constitution, I greatly dreaded the result, and feared that the disease would be as possible, leaving the knee entirely unchanged.

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so important an organ ; but, in the history of this affection, we see enough to fix a marked and decided distinction betwixt it and that unhealthy ulceration which constitutes consumption.

This important difference is often referred to the scrofulous habit : but it does not appear that the existence of a scrofulous taint necessarily gives to ulceration an unhealthy character. This important principle may be inferred from a variety of remarkable facts. A scrofulous gland may be extirpated, and the wound heal favourably ; whereas, had it been allowed to advance to suppuration, the ulcer would have been most unhealthy. After the amputation of a scrofulous limb, the stump may heal as favourably as in the soundest constitution : and even in the same person, at the same time, we may observe scrofulous ulceration existing in one part of the body, and, in another part, the most healthy suppuration. Blisters and issues in a scrofulous habit do not necessarily produce scrofulous sores ; but, on the contrary, we often find difficulty in procuring from them that discharge which we wish to produce. I had lately under my care a gentleman who was affected with a disease of the knee, accompanied by a running sore decidedly of a scrofulous character. While this was going on, without any appearance of amendment, he sustained a considerable injury of his hand, by a contused and lacerated wound. In such a constitution I greatly dreaded the result ; but the wound healed as favourably as possible, leaving the disease of the knee entirely unchanged.

In the cases now referred to, therefore, it is probable that the unhealthy ulceration did not depend upon constitution simply, but upon certain changes which had taken place in the structure of the affected parts themselves ; and these changes seem to admit of considerable and important varieties in degree in different cases, and in the same case at different times. These varieties we observe most remarkably in the lymphatic glands, when they become enlarged, in connexion with an unfavourable taint in the constitution. They may be simply enlarged, with their internal structure soft, fleshy, and highly organized ; in the next degree, we find them more indurated, and less organized ; then succeeds a firm whitish substance, which seems to possess much less organization ; and then the white cheesy matter, well known in connexion with scrofulous ulceration of the most untractable kind. With these varieties appear to be connected important differences in the progress of these affections. In the first degree, it is probable that the enlargement of the glands may frequently increase and diminish, and often disappear. In another form, they become permanently enlarged. All the varieties may advance to suppuration ; but with import-

ant diversities in the progress and the character of it. The more organized probably advance more rapidly, and suppurate more favourably; the less organized advance more slowly, and leave more untractable sores.

The ulceration of the substance of the lungs which constitutes true consumption, seems to derive its peculiarly unhealthy character from certain morbid changes which had previously taken place in the affected parts; and, in tracing these changes, we observe varieties considerably analogous to the diversities now referred to in the diseases of lymphatic glands. Whether these are distinct affections, or different stages of the same disease, it is perhaps impossible to ascertain; but the facts are worthy of minute observation, and appear to bear an important relation to the pathology of consumption.

When we investigate minutely these morbid conditions, they seem to be referable to the following heads.

I. *The White Tubercle.*—This substance is usually found in round nodules, varying in size from that of a large pin-head to the size of a walnut. They are usually in clusters of various extent, and, when examined individually, they appear to be in some cases enclosed in distinct sacs; in others, to lie more loosely in the cellular texture of the lungs. They are, in some cases, very few in number, perhaps only one or two, imbedded in sound pulmonary substance; in other cases, a great extent of the lungs seems to consist entirely of a continued series of them so closely impacted together, that the proper pulmonary structure has entirely disappeared. In their internal structure, they present a whitish or ash colour, and various degrees of consistency. In some cases they cut smooth and firm like soft cartilage, or the substance of scirrhus; in others, they present a firm cheesy substance; in others, a soft cheesy matter; and, at last, we find them in a pulpy state, or presenting the appearance of a partial and unhealthy suppuration. When cut across in their firm state, minute openings may sometimes be observed in them; but these do not appear to be blood-vessels, for they have not been found to admit any injection from the arteries of the lungs. The white tubercles seem to possess a very slight degree of organization, and to pass very slowly into the state of suppuration. This change seems, in general, to commence in the centre, and to advance very slowly through the substance of them. In the end they are often entirely softened or suppurated, and the matter finds an outlet by a branch of the bronchiæ. In some cases, it is probable that the communication with the bronchiæ takes place while the process of suppuration has but

partially advanced, and that the purulent matter is spit up gradually as it is produced; but in others, there is reason to believe that the whole contents of a tubercle are brought up in masses partially suppurated, so as to empty the sac in a very short time. When, in either way, the sac has been emptied, it is probable that in some cases an ulcerative process continues in it, and that the formation of matter goes on; in others, there is reason to believe that the sac may then pass into a healthy state, forming a small cavity communicating with the bronchial canals, but without any morbid action. This most important point will be more particularly referred to in the sequel.—The appearances now referred to can only be observed when the tubercles are few in number—are enclosed in proper sacs—and are surrounded by pulmonary substance in a tolerably healthy state. The cases which we more commonly meet with present such a mass of unhealthy ulceration, as bids defiance to every attempt at minute observation.

II. *The Semitransparent Tubercle*.—This variety presents the appearance of numerous small bodies, seldom exceeding the size of a grain of wheat, of a semipellucid appearance, and firm consistence like soft cartilage. They are comparatively of rare occurrence, and they have not been sufficiently investigated. There is some reason to believe that, at a certain period of their progress, they become opaque.

III. *The Fleishy Tubercle*.—These also have been little investigated; but they appear to constitute either a form or a period of the disease quite distinct from the two former. They present the appearance of numerous bodies, like peas; soft and fleshy in their structure; exhibiting, when cut across, a reddish colour, and a consistence resembling the substance of the kidney, or the mesenteric glands in their state of simple enlargement. This variety of tubercles, I think, has been little attended to, and they are certainly of rare occurrence. I have observed them chiefly in the lungs of children, and am quite satisfied of their existence.

IV. *The Black Degeneration of the Lungs—the Melanosis of the French writers*.—This sometimes appears in nodules like tubercles; and sometimes an irregular portion of the lung, of considerable extent, is affected with it. It is very firm; of a uniform black colour; in some cases it has been compared to the consistence of half-burnt leather.

V. *The Simple Hepatised Induration of the Lung*.—This may exist in a great extent, without the slightest appearance of tubercles. It presents a uniform solid mass, of a reddish colour, and varying a little in its texture, being in some cases granular,

like the substance of the liver; in others more fleshy, like kidney. The natural cellular texture of the lung has entirely disappeared. It varies much in extent, being in some cases in small irregular masses, in others affecting a great extent of the lung.

The various morbid structures now referred to are sometimes found quite unconnected with each other; tubercular masses, for example, surrounded by the pulmonary substance in a healthy state, or the hepatised induration of the pulmonary substance, without any appearance of tubercle. But in general we find them more or less combined. When the diseased lung in these cases is cut across, it presents a variegated surface, white, red and black, in which the various morbid conditions are blended irregularly, as the firm white tubercle, blended with small flesh-coloured nodules at one place, and with black portions at another; or the hepatised induration, with white or black tubercles interspersed through it; in some cases a portion of pulmonary substance, tolerably healthy, may occasionally intervene; in others, there is an extensive mass uniformly indurated, but presenting, when cut into, this variegated structure—in some places solid—in others interspersed with small abscesses; and, in the advanced stages, we find extensive cavities of ragged unhealthy ulceration, with only an outer shell remaining of the indurated substance.

The morbid condition which is thus formed is in some cases confined to small portions of the lungs; but in others is much more extensive, affecting perhaps the whole of one lung, and sometimes nearly the whole of both. The indurated part appears to be quite unfit for the function of respiration; and, when it is minutely examined, it is generally found that the blood-vessels of it are very much diminished in size, often obliterated; and this appears to be occasioned by the deposition of a firm substance which fills up their cavities. Dr Stark found that a vessel which, at its origin, was as large as half an inch in circumference, frequently could not be traced above an inch, being then obliterated; and in a case by Portal, in which he was desirous of injecting an indurated lung, he could not find, in any part of it, a vessel large enough to admit his smallest injecting tube. In some cases, again, while the branches have been thus diminished or obliterated, the trunk of the pulmonary artery has been found dilated like an aneurism. The air vessels become contracted and obliterated in the same manner as the blood-vessels.

A portion of lung which is thus indurated becomes, of course,

unfit for the purposes of respiration; but it may remain long, perhaps in some cases through life, in a dormant state, that is, without passing into any farther state of disease. If it be of small extent, it may produce little or no uneasiness; but if the extent of it be considerable, it must impede the circulation through the lungs, as it is nearly impervious to the blood from the pulmonary artery. Hence it is likely to produce dyspnoea, and, in the end, give rise to hydrothorax. But a mass of this kind is very prone to farther disease—to a low inflammatory action of a peculiarly unfavourable kind—and to a peculiarly unhealthy ulceration as the result of it:—and there are some points deserving minute investigation in regard to the effects of inflammation on the various structures of which the mass is generally composed. It seems doubtful whether the proper white tubercle be susceptible of inflammatory action. It appears to undergo a change peculiar to itself, by which its contents are gradually softened, until they at last degenerate into an ill-conditioned pus. Though the tubercle itself, however, be insusceptible of inflammation, it is probable that this process is accelerated by inflammation affecting the surrounding parts; but, in general, the tubercle seems to pass very slowly into the state of ulceration, and the ulceration to extend very slowly over the neighbouring parts. Hence the symptoms in such cases are not acute, and their progress is very slow; and, even after the disease has been of considerable standing, we may find, on dissection, but a few small vomicae amid the mass of tubercular disease. The hepatised induration, on the other hand, appears to be highly susceptible of inflammatory action, and, under the influence of it, seems to run rapidly into extensive ulceration of a peculiarly unhealthy kind, presenting appearances remarkably different from the tubercular ulceration, and forming a modification of the disease remarkably different from the pure tubercular consumption. The symptoms are more severe at their commencement, and their progress much more rapid, the case perhaps being fatal in three or four weeks; and we find, on dissection, a dark-coloured induration of the lung, with a large cavity lined by ragged ulceration, as if a large portion had been forcibly torn out. This most important modification of the disease will be more particularly referred to in the sequel.

This induration of the substance of the lungs appears to form the basis of the pathology of consumption. Researches calculated to illustrate the subject must be directed to the nature and origin of the induration—the nature of the various structures which enter into the composition of it—the peculiar changes

which they undergo—the varietles which occur in the disease, according as one or other of these structures may predominate in the mass, and as one or other of them may be the primary seat of the morbid action in the ulcerative stage of the disease, or the stage which immediately precedes the ulceration. The inquiry is difficult, and most extensive; much patient investigation, and numerous and accurate observations will be required, before much light can be thrown upon it, and before we shall be ready for any general conclusions; but it promises the most important results in regard to the pathology of consumption.

In attempting a few observations on this important subject, I do not profess to offer any thing new or original. I aim only at such an outline as may include the most important facts in the pathology of the disease, and those points particularly which stand most in need of being investigated by extensive observation. In a practical view, these points may be referred to the following heads.

SECT. I.—*There is reason to believe that an Indurated Mass, of the kind which has been alluded to, may exist in the Lungs, and may remain dormant for a long time, perhaps through life, without producing any alarming symptoms.*

This seems to occur chiefly when the induration is not extensive, and is distinctly circumscribed, and when the remainder of the lung is in a tolerably healthy state. But, in some cases of this kind, the disease has been found very extensive. In a woman mentioned by Bayle, who died suddenly in the cold stage of an intermittent, after labouring under the disease for six weeks, there was found most extensive induration and tubercular disease of the lungs, though there had been no pulmonary symptom but slight dry cough for the last fortnight. In a young man, mentioned by the same writer, who died of typhus, there were numerous tubercles in the lungs, some of them as large as filberts, and around them the pulmonary substance was red and dense. In a man aged 80, who died of an affection of the brain, Morgagni found a mass of induration in the left lung, in which all the vessels of the lung appeared obstructed and dry: And in an old woman mentioned by Morton, who died, gradually exhausted by urinary complaints with which she had been affected for twenty years, there were found much disease of the kidneys and bladder, and extensive tubercular disease of the lungs. It is unnecessary to multiply examples of this kind, as they must have occurred to every one who is conversant with morbid anatomy.

A person in whom such a mass of disease exists is in a precarious state, as there is both a great disposition to an extension of the disease, and a tendency to pass into ulceration of an unhealthy character. The latter seems to be the result of inflammatory action of a low insidious kind; and to this the diseased mass, or the parts surrounding it, appear to be extremely liable, from slight causes. It is probable that it may commence either in the substance of the mass—in the pulmonary substance near it—in the pleura covering it—or in the bronchial membrane most nearly connected with it. Hence the first symptoms may assume the characters of slight peripneumonia, pleuritis, or catarrh; but in either case terminate by bringing the mass into a state of activity. The patient is extremely liable to be affected by cold; and upon every attack from such exposure, there is usually a fixed point to which he refers his uneasiness, or, according to a mode of expression frequently employed, “the slightest cold always seizes him in that spot.” The symptoms usually are, pain in the part, more or less acute, and more or less affected by inspiration, cough, and frequently slight hæmoptysis; such attacks frequently subsiding under the appropriate treatment, and as often recurring upon the next exposure, until at length one of them terminates in that unhealthy ulceration which constitutes consumption. Much is to be done here by active, judicious treatment, and much by avoiding the exciting causes of these attacks; and it is in this state of the disease that removal to an equable climate, if adopted at the proper period, may be recommended as a remedy of real efficacy. In the cases now referred to, a part only of the morbid mass is the true tubercle, and it seems doubtful whether this be susceptible of active inflammation; but its peculiar change to a softened state of unhealthy suppuration appears to be accelerated by inflammatory action affecting the parts surrounding it. It may, however, undergo this change gradually and insidiously, without any inflammatory symptoms, giving rise to a form of the disease the most untractable, the least under the influence of any remedy, and generally hopeless.

SECT. II.—*On the other hand, the Induration may be so extensive as to prove fatal, without advancing to Ulceration.*

The symptoms in these cases usually are, frequent harassing cough, without expectoration, or with scanty mucous expectoration from the bronchial membrane, short uneasy breathing, frequent pulse, in some cases distinct hectic paroxysms, diarrhoea, and death by gradual wasting. The bowels frequently become

affected at an early period, and the ulceration of the mucous membrane of them seems in some of these examples to be the immediate cause of the rapid exhaustion and death. A man mentioned by Broussais had dry cough, with frequent pulse, and slight uneasiness in breathing, which affected him chiefly when he walked. After some time he had diarrhoea, with rapid wasting and œdema of the legs, and died after an illness of five months and a half. Both lungs were full of tubercles without any suppuration; and the right was, besides, extensively hepatised. There were small round black ulcers in the colon, and the mucous membrane near them was inflamed and thickened. Another man, mentioned by the same writer, died with nearly the same symptoms, after an illness of six months. The right lung was found extensively hepatised, and full of innumerable tubercles, some of which were very large, and contained a white matter in the centre. The left lung was less hepatised, but equally full of tubercles as the right; there was no ulceration in either. There was tubercular disease also in the liver and in the spleen. The mucous membrane of the colon was inflamed and ulcerated. A man mentioned by Bayle had obstinate dry cough, hectic fever, and night sweats; then mucous expectoration of an opaque white, anasarca, and colliquative diarrhoea, and died completely emaciated about a year from the commencement of the cough. There was no ulceration of the lungs, but extensive induration, with numerous small tubercles; there was ulceration of the mucous membrane of the cæcum.

This tendency to ulceration of mucous membranes is a remarkable feature in all the forms of consumptive diseases; and in many cases it appears to be the fatal disease, while the original affection is stationary, or has not made much progress. It is observed in the mouth, the nose, the œsophagus, the stomach, the bowels, and in the trachæa; and I think I have observed it in the urinary bladder. The most common seat of it is the cæcum, or the lower end of the ileum; but it is met with through the whole intestinal canal, producing diarrhoea of a most untractable kind, which reduces the strength very rapidly. It is not confined to cases of true consumption, but may exist in connexion with most of the affections formerly referred to. A girl mentioned by Bayle had short dry cough for six months, then diarrhoea and great emaciation, and, after six months more, died with symptoms of acute inflammation of the lungs. On dissection, the lungs exhibited only the usual appearances of recent inflammation, but were otherwise healthy; the glands at the root of the lungs were enlarged, but not suppurated; and

there was ulceration of the mucous membrane of the intestine. In a remarkable case by Prost, there was ulceration of the ileum, combined with ulceration of the larynx, fatal in a month, without any disease of the lungs.

This modification of the disease however may be fatal, without the affection of the bowels, as in a case by Bayle, which was fatal in three weeks, with dry cough and difficult breathing—the patient dying suddenly in a fit of suffocation. The only morbid appearance was most extensive tubercular disease of the lungs, of that kind which he calls the granular species, without any suppuration. A man mentioned by Broussais had severe cough, with pain under the ensiform cartilage, and in the left side of the thorax, frequent small pulse and rapid wasting, without either perspirations, diarrhœa, or expectoration, except that he began to expectorate a little puriform matter in the last six or seven days of his life. He died in the last degree of emaciation, after several months. The right lung was almost entirely indurated, and full of solid tubercles, some hard, others a little softened. Three-fourths of the left lung was entirely composed of tubercles, many of them as large as eggs, some of them of scirrhus hardness, others fatty, and others full of cheesy matter, dry and brittle; a few of the smaller ones had a soft pulpy matter in the centre, but these were very few. The remainder of this lung was hardened and red. This form of the disease, therefore, may be fatal without any expectoration, or with very slight mucous expectoration, forced out from the bronchiæ by the mere irritation of coughing; or it may be complicated with some of the other morbid affections formerly referred to, which may occasion a variety in the symptoms. If it be combined with disease of the bronchial membrane, there may be copious expectoration of a puriform character, giving to the case the appearance of the ordinary ulcerative phthisis, though the lungs are found, on dissection, entirely free from ulceration. A man mentioned by Bayle died after a year's illness, having had cough with expectoration which was mucous, in part purulent, and often bloody; he had afterwards fever, night sweats and diarrhœa, and died in a state of extreme emaciation, the expectoration having been at last purulent and very copious. The inferior lobe of the left lung was healthy; the remainder of it had entirely degenerated into a substance fleshy, reddish, and crowded with tubercles, which were white and opaque. They were so numerous that very little space was left for the intermediate fleshy substance. The right lung was in the same state. There was ulceration of the mucous membrane of the cæcum and colon. It is also found in combination with

chronic inflammation of the pleura. In a case of this kind by Broussais, there was severe dry cough with pain of the left side—attacks of dyspnœa—febrile paroxysms—œdema—rapid emaciation—at last orthopnœa, and death in three or four months. There was much bloody fluid in the left cavity of the pleura; the left lung was much diminished in size; the upper part of it was almost entirely transformed into dry tubercles; the lower part presented a flabby induration without tubercles; the pleura was red and thickened. The right lung filled the cavity, and adhered throughout; was much hardened and full of tubercles, but without any suppuration. When a lung in this state is attacked by active inflammation, it forms a case of peculiar violence and rapidity, resisting every remedy, and proving fatal, by suffocation, in a very short time.

SECT. III.—*At a period of its progress more advanced than the preceding, this extensive Induration may prove fatal with portions of it in a state of suppuration, yet without purulent expectoration, the purulent matter not having yet found its way into the bronchial canals.*

In the following case a disease of this kind was unusually rapid in its progress, and the morbid mass of remarkable extent.

CASE I.—A young lady, aged 13, had been very healthy till the beginning of June 1819, when she began to be inactive, with loss of appetite; and there was observed, occasionally, a dark purplish flush of her cheeks; her pulse was a little frequent; but she would not allow that she was ill. About the 22d of June, she was first observed to cough, but very slightly; and, for the first time, complained of languor and weakness. On the 24th, there was slight pain of the chest upon taking a full inspiration, but it attracted little attention. On the 25th, she went to the country, where she continued till the 6th of July. On her return, it was found that the cough was rather increased, but the pain was inconsiderable. Her breathing, however, became quick and short, the pulse frequent, with increase of frequency towards evening, and considerable decline of strength. On the 9th, the uneasiness in breathing had increased so much, that a small bleeding was employed (about $\frac{3}{4}$ vij.) with considerable relief. After it, she could take a breath without pain; in other respects as before. On the 14th, I saw her for the first time. The pulse was then 130; countenance anxious, with a purple flush; breathing quick and short, about 50 in a minute; and pain was complained of on attempting to take a full breath. Was bled to $\frac{3}{4}$ v. with much relief; the pain was removed, and the breathing became less frequent. The cough continued, frequent and short, without expectoration; the

pulse 120. From this time the weakness and emaciation increased rapidly, with frequent dry cough, rapid pulse, and occasional quickness of breathing, and without any other change in the symptoms, she died on the 5th of August, all the usual remedies having been employed without benefit. There was, to the very last, no expectoration, except very small quantities of light white mucus, scarcely to be distinguished from mere saliva. *Dissection.*—The lungs did not collapse on opening the thorax. Both lobes, through nearly their whole extent, presented such a mass of disease, that it was difficult to find the smallest portion which exhibited the natural structure. They were uniformly firm and unyielding, like a mass of liver, but harder; and, when cut into, were hard and solid, and of various colours, chiefly a mixture of white, and dark red or brown. The white portions had the appearance and consistence of firm cheese, and lay in irregular masses, of various shapes and various extent, with the firm dark portions interspersed betwixt them. The white portions seemed to predominate in the left lung, and were rather less extensive in the right, though in its structure it was equally dense as the left. In the posterior part of both lungs, there were several small abscesses, two or three of them the size of Spanish nuts; they were full of a thick puriform matter. In the inferior part of the left lung, there was a small portion, about two inches in depth, and extending along a part of the thin edge of the lung, which appeared to be the only part that retained the cellular structure, or had been capable of admitting air. Even in this part, however, there were several small abscesses. The other viscera were healthy.

The amazing extent of disease in this remarkable case—the previous health of the patient—and the rapidity with which it ran its course without expectoration, present points of extreme interest in the pathology of this affection. How little can we rely on symptoms, in cases of this kind, when we recollect that, in this young lady, the only permanent symptoms were short dry cough, frequent pulse and emaciation; and that, at an advanced period, she appeared to take a full inspiration without uneasiness, when the portion of lung that was capable of admitting air could not have exceeded a few inches in extent! It is unnecessary to multiply cases of the same kind that are on record. One which excited much attention in France, was that of the Dauphiness, mother of Louis XVI. She was seized with a dry cough, followed, soon after, by slight fever. She wasted; the menses were suppressed; and she fell into a true atrophica, without experiencing either pain in the breast, or any remarkable expectoration, or the least uneasiness in breathing in any posture of the body. In this manner she died, in a state of complete marasmus, after three months illness, much differ-

ence of opinion having existed in regard to the nature and seat of her disease. On dissection, there was found extensive induration of both lungs, especially the right, with numerous abscesses. *

SECT. IV.—*When the Diseased Mass is of limited extent, and the remainder of the Lungs in a tolerably healthy state, the case may go on in a much more gradual manner, and with considerable varieties in the symptoms, and in the rapidity with which they advance.*

When the mass is of the pure tubercular kind, of limited extent, and surrounded by healthy parts, the symptoms may go on very slowly and insidiously, and with very little interruption of the functions of the lungs. The two following cases are valuable, from the circumstance of both being fatal by incidental occurrences, while the symptoms were still going on in this slow and obscure form.

CASE II.—An ingenious artist, aged about 30, of a family which had suffered severely from phthisis, had been, for several years, extremely liable to cough, and had frequently expectoration of a purulent appearance; so that he had been long considered as in a very precarious state, and in great danger of consumption. In the beginning of summer 1819, his symptoms continued nearly as they had been for a considerable time; he had cough, and a good deal of expectoration, but his breathing was natural; he could take a full breath without the slightest uneasiness; and, though somewhat reduced in strength, was able to attend to his business. In the beginning of June, being one day much agitated in discussing some business in which he thought himself ill used, he suddenly complained of his head, and his speech became inarticulate. It was on account of this attack that he came under my care, for he had not considered his pectoral complaints as requiring medical assistance. The headach increased, and was referred chiefly to the left side and the back of the head, and the upper part of the neck; the speech continued very indistinct; the pulse from 90 to 96. The usual remedies were actively employed, without relief; he sunk gradually into coma, and died with the usual symptoms of hydrocephalus, in rather more than a fortnight. From the first appearance of these symptoms, the pectoral complaints greatly subsided, and, after the first two or three days, entirely disappeared. *Dissection.*—There was extensive effusion in the ventricles of the brain; and the central parts, the fornix, septum lucidum, and a part of the corpus callosum, were broken

down into a soft pulpy mass. This appearance also extended into the substance of the brain, where it formed the lateral ventricles. In the upper part of each lung, there was a tubercular mass the size of a small orange, externally very hard, but internally extensively ulcerated. The remainder of the lungs was quite healthy.

CASE III.—A gentleman, aged 36, had been, for great part of his life, liable to what was called an "habitual cough," but enjoyed good health until the spring of 1819, when he was partially confined to the house with feverish and catarrhal symptoms; got better by a little confinement; went out (as was supposed) too soon, and "his cold was renewed;" and this happened several times. After being for some time in this state, he began to have paroxysms of fever, which attacked him daily about three o'clock *p. m.* with all the violence and all the regularity of an intermittent; and the complaint was treated as intermittent by several eminent medical men who had the care of him at that time. He first took bark, and afterwards arsenic; and the attacks subsided gradually, after three or four weeks. During this time he had cough, but so very slight, that it was considered as his "old habitual cough," and not at all connected with his present complaint. In the intervals of the attacks, his pulse was quite natural; but his appetite was bad, and his strength much reduced. After several weeks, these attacks of fever disappeared entirely; he then removed to another part of the country, and improved considerably, but did not get well. His chief complaints were now bad digestion and pain in the right side; the disease was considered by another eminent medical man as an affection of the liver, and a gentle course of mercury was recommended, under which his digestion improved considerably. The same cough still continued, but still so very slight, that it was not considered as a symptom of any importance. In this manner he passed the summer. About the beginning of September, he was affected with huskiness of voice, and some uneasiness about the throat; and another medical man suspected an affection of the larynx. Finally, he came to Edinburgh in the end of September. He was then considerably reduced in flesh and strength; his pulse usually varied from 80 to 90, and was sometimes quite natural. He had very slight cough, which scarcely affected him except in the morning, when he expectorated a good deal of matter, which was partly viscid, and of a clear gelatinous appearance, but with a mixture of an opaque friable matter of a puriform character. About this time, also, it was several times slightly tinged with blood. During the day, he frequently did not cough at all; he took a full breath with ease. His nights were rather disturbed, but without any thing like hectic; and, when closely questioned, he admitted that he felt occasionally transient pain in the chest. His debility and emaciation now showed some fixed and extensive disease; and the appearance of the expectoration distinctly referred it to the lungs. With the other usual remedies, immediate change of climate

was recommended; and he was advised, in the mean time, to expose himself as little as possible, the weather, by the time he left Edinburgh, in the middle of October, having become extremely cold. The former part of this advice he determined on following, but neglected the latter. He had removed to the west coast, and was ready to embark, when, after a long ride on horseback in a cold day, he was seized with profuse hæmoptysis. After the first attack, the hæmorrhage subsided for two days, and then returned in the night with such violence, that it was fatal in a few minutes. *Dissection.*—Every part of the lungs was in a healthy state, except a well-defined portion at the very lowest and posterior part of the right lobe, occupying the angle formed by the diaphragm with the ribs and the mediastinum. This portion adhered to the ribs; externally, it was hard and very firm; internally, it contained an abscess full of purulent matter. This abscess communicated by a very small opening with a more irregular ulcerated space; and this communicated with the bronchiæ about three inches from the bifurcation. This ulcerated space appeared to have been the source of the hæmorrhage; its internal surface was very irregular; and on several parts of it there were discovered open mouths of blood-vessels. The bronchial tubes over the whole of the lungs were in a great measure filled by coagulated blood. The heart was nearly without blood. The other viscera were sound.

These two cases, particularly the latter, I think extremely valuable, as illustrating the obscurity with which the symptoms may advance when the diseased mass is of limited extent, and is surrounded by pulmonary substance in a healthy state. This obscurity, it is probable, will be greatest when the mass is of the pure tubercular kind, in which the changes advance with little or no active inflammation; and when it is so situated, as not to be much affected by the inflation of the other parts of the lungs. Perhaps some effect may also arise from the mass being so surrounded with induration, as to be completely cut off from inflation itself. In such a case, I think we can easily conceive how considerable disease may go on and advance to ulceration with little cough, and little or no pain or uneasiness in breathing.

SECT. V.—*Whatever importance may be attached to the explanation proposed in the preceding Section, it is an important fact in the history of the disease, that under various conditions of the parts, the affection may go on to a very advanced period with very slight and obscure symptoms, and sometimes with scarcely any symptoms indicating pectoral disease.*

These cases are generally characterised by gradual wasting, with quick pulse, and obscure hectic symptoms, and may go on

in this manner, without the real nature of the disease being ascertained, until purulent expectoration appears a short time before death. Febrile paroxysms, occurring with the regularity of an intermittent, have been the prominent symptoms in some of them, and have gone on for a very considerable time, giving rise to various conjectures in regard to the causes of the paroxysms, until pectoral symptoms appeared at an advanced period. Several cases of this kind have come under my observation. Others have assumed the appearance of disease of the liver. A gentleman mentioned by Portal had loss of appetite, and wasting, without any obvious cause. He had then some degree of yellowness; and, on examination, a tumour was felt in the region of the liver. There was no cough, and no uneasiness in breathing; and the disease was treated as an affection of the liver by Portal and another physician. But the disease increased, with febrile paroxysms and colliquative diarrhoea; and was fatal by gradual wasting, with some uneasiness in breathing, but without the least cough or expectoration. On dissection, the liver was found perfectly sound; the disease was entirely in the lungs, especially the right lobe, which was full of indurations and abscesses; and its substance was so much enlarged that it pressed the diaphragm downwards, and made the liver project considerably from its natural situation.* In a case by Bayle, there was gradual wasting, with loss of appetite, for six months; then cough, with some expectoration and diarrhoea; but, after six or seven weeks the cough ceased entirely, the diarrhoea then continued without any other symptom, and in five or six weeks more was fatal, with extreme emaciation. On dissection, the lungs were found most extensively indurated and impervious to air, with many tubercles and abscesses. About a fourth part of each lobe at the lower part seemed healthy. There were ulceration of the mucous membrane of the ileum at the lower end, and extensive disease of the mesenteric glands.† Another modification of the symptoms occurs in a case by Portal. A stout young man, aged 29, after exposure to great heat and fatigue in hunting, complained of heat over his whole body, and red spots came out on his skin. After some time he had extreme lassitude, and febrile paroxysms, with night sweats; but when he was brought to Paris, at an advanced period of the disease, he had no cough, or scarcely any, and no uneasiness in his breast; he had slight

* Portal sur la Phthisie Pulmonaire. Tome II. p. 258.

† Bayle, p. 369.

hoarseness, and his pulse was extremely rapid. Diarrhœa then came on, and he died in a state of extreme emaciation in less than two months from the first attack, having expectorated a little purulent matter in the three or four last days of his life. On dissection, the right lung was found full of a substance like that which is found in wens, partly firm and white, and partly soft and yellow; there were also several abscesses, which did not appear to communicate with the bronchiæ; the left lung was a mass of suppuration at the lower part, where a considerable part was destroyed; the upper part was full of hard concretions, not suppurated. Many other cases of the same kind are on record. In a girl mentioned by Nonnius, there were extensive suppuration, and extensive destruction of the substance of the lungs, though there had been neither cough nor expectoration. The only symptom had been febrile paroxysms, which assumed the characters of quartan intermittent. In a case by Massa, there was a large ulcer, hollow and putrid, in the left lobe of the lungs; the patient having died of gradual wasting, without any cough, or the least complaint of pain. In some other cases, again, the first symptom that excited alarm has been copious hæmorrhage from the lungs; and the patient being rapidly cut off in this manner, it has been found that extensive disease had been going on previously.

The following case is the most remarkable example that has occurred to me of the subject referred to in this Section—extensive disease of the lungs, with slight and obscure symptoms.

CASE IV.—A young woman, aged 25, had an attack of pneumonia in April 1815, which, having been neglected in the beginning, was severe and untractable; and, for several weeks after the urgent symptoms were subdued, cough continued, with short anxious breathing. By care and quietness, however, these symptoms soon disappeared; and, though she continued weak, she had no symptom, except that her breathing was easily hurried by any exertion. During the summer she continued nearly stationary, but in the following winter she improved considerably in strength; her breathing was still easily hurried by exertions, and her pulse commonly about 100; but there was no symptom that indicated any serious disease of the lungs. In spring 1816 there was an increase of debility, with failure of appetite, and small frequent pulse, and an acute pain, which was referred to the spine about the middle of the dorsal vertebræ, a little to the right side; but it did not affect her breathing. In the beginning of May she was considerably better, and able to walk out. One day she walked about a mile, and felt the better for it. On Saturday, 11th May, at night, she was suddenly seized with oppression of breathing, without pain. On Sunday was better; but became worse

in the night, with small frequent pulse and rapid failure of strength, and died on Monday morning. *Dissection.*—The right lung was much wasted in its substance, extensively indurated, and full of abscesses; and in the cavity of the pleura there was a large collection of purulent matter. The left lung was diseased in the same manner, but in a smaller degree. In the cavity of the posterior mediastinum, there was a large collection of pus, of a scrofulous character, mixed with a great quantity of a soft pultaceous substance of a yellowish colour. The matter was in contact with the spine; and five or six of the dorsal vertebræ were extensively carious and so eroded, that large pieces of the bodies of them could be easily broken off with the fingers.

SECT. VI.—*The most interesting question connected with this Inquiry is, Whether, after a mass of tubercular disease has become ulcerated, the Ulcer may heal? In other words, Whether the true Consumption of the Lungs may be cured?*

The following case is the only one which has occurred to me that bears directly upon this important point.

CASE V.—A lady, of a family which had suffered from consumption, was seized about the age of 18 with cough, pain of the left side, and other symptoms, which were considered as indicating the commencement of phthisis. An elder sister, whose complaints began in the same manner, had recently died of consumption in the ordinary form; and the symptoms were such as led to the opinion, that this lady was consumptive also. After continuing, however, for a considerable time in a very precarious state, she gradually recovered, and enjoyed good health till the age of 48, when she suffered an apoplectic attack, which left her affected with hemiplegia of the right side. It was on account of this affection that she came under my care in 1817; the hemiplegia being then of several months standing. She made very little improvement, but continued in a helpless state of palsy until August 1819, when she died suddenly in the night, having been seized with severe dyspnœa about two hours before her death. *Dissection.*—There were several ounces of fluid in the ventricles of the brain, and an extensive apoplectic cyst in the substance of the left hemisphere, which however was quite empty. It was lined by a firm yellow membrane; and the opposite sides of it, though in contact, were quite unconnected, except at a few points where slender bands of the same substance with the lining membrane passed from the one to the other. There was considerable effusion in the thorax, and the bronchial tubes were much loaded with thin frothy mucus. On the lower and outer part of the left lung there was a remarkable depression, as if a portion beneath had been destroyed; and the superficial parts, in consequence, had sunk inwards. This

was found to be connected with a mass of tubercular disease, consisting chiefly of the white or ash-coloured tubercle in irregular masses, with some friable matter of a calcareous appearance interspersed through it. The whole was very hard, and without any cavity.

The appearances in this case were such as seemed to favour the supposition, that the tubercular mass had been in a state of ulceration, and that the disease had stopped after a considerable portion of the mass had been destroyed. The case, I therefore think, is one of considerable importance; and presents a most interesting subject for farther observation, in which little has hitherto been done. The recovery of a patient, in whom there had been consumptive symptoms, with purulent expectoration, is by no means to be received as evidence on this subject, as these symptoms may arise from various other sources: it is only by an extensive examination of the bodies of those who, after recovering from consumptive complaints, have died of other diseases, that we can hope to arrive at any satisfactory information. In the present state of our knowledge, we have certainly some ground for believing that the disease may be arrested in its progress, after a tubercular mass has advanced to ulceration. Two distinct states of the disease are to be kept in mind in connexion with this Inquiry.

(1.) The one is, when the tubercular disease is in an extensive undefined mass. This is, perhaps, the most unfavourable case, and least likely to do well after it has advanced to ulceration. The mass in such cases generally consists of a variety of structures, possessing various degrees of organization; and the probability of the ulceration being arrested, will probably depend upon the degree of organization of the part in which it is seated;—being greatest when the part is more organized, and the disease consequently more allied to healthy ulceration; and less when the part is less organized, or the proper white tubercle. This is conjecture; but it is probable that, in Case V., an undefined mass of this kind had been in a state of ulceration; and the same probably occurred in a case mentioned by Laennec, Tom. I. p. 79.

(2.) The other state of tubercular disease is when the tubercles are in circumscribed nodules of small extent, enclosed in distinct sacs, and surrounded by pulmonary substance in a healthy state. In this case, it is probable that the tubercular matter may become softened and suppurated, and may be entirely discharged by expectoration, leaving the sac empty: that the sac may then continue in a state of unhealthy ulceration

discharging matter; or that it may pass into a healthy state, presenting the appearance of a firm membranous cyst, with one or more bronchial tubes opening into it,—the symptoms ceasing with the entire discharge of the tubercular matter. Several of these cysts were found by Laennec in the lungs of a woman who had been supposed to be cured of consumption eighteen years before. He mentions another woman, aged 68, who had been for many years liable to cough, with expectoration and uneasiness in breathing; but without much interruption of her general health, until she died, after a few day's illness, of acute peripneumony. The lower part of both lungs presented the usual appearances of the fatal attack. In the upper part of the right lung there was a cavity capable of containing a large filbert; many bronchial tubes opened into it, and its inner surface presented the appearance of a smooth membrane of a gray colour, and a semicartilaginous structure. It was surrounded by pulmonary substance in a healthy state. In the upper part of the left lobe, there was a similar cavity, which contained a little serous fluid; and its inner surface presented an intermediate appearance betwixt the smooth cartilaginous structure of the other cyst, and the appearance of a mucous membrane. The pulmonary substance surrounding it was a little indurated. In a man, aged 30, who died of an affection of the brain, without any pulmonary symptoms, but whose previous history was not known, the same writer found, in the upper part of the right lung, a cavity the size of an egg, formed by a firm, smooth, semicartilaginous membrane, and many bronchial tubes opened into it. It was full of coagulated blood. The surrounding substance was crepitating and healthy; but in other parts of the lungs there were small tubercles, in some of which the tubercular matter was becoming friable. In a case in which consumptive symptoms had continued till death, Laennec found a cavity of this kind, the inner surface of which was covered with purulent matter; and in another case he found an appearance as if such a cavity had been nearly obliterated, by adhesion of its sides. There was externally a depression or falling in of the substance of the lung, as if occasioned by a cavity beneath; but on cutting down, there was found an induration, and in the centre of it, a white semicartilaginous membrane, about half a line in thickness, which was continued horizontally for a certain space, and then divided into two layers, leaving betwixt them a small cavity full of yellow friable tubercular matter. There was tubercular disease under this part, and throughout the lung, in various places. This man died of an affection of the brain, after being for some time affected with cough which had excited no attention, and his

previous history is not mentioned. In another old man he found, on the surface of the left lung, a depression as if the part were drawn inwards and corrugated. Beneath this, there was an appearance of ossification; and from this point there proceeded a band of white condensed cellular substance, an inch long, six lines broad, and three or four lines in thickness. Several bronchial tubes terminated at this place, and seemed to be obliterated. The part altogether was very white, and presented a remarkable contrast to the dark pulmonary substance which surrounded it. The same writer mentions a man aged 62, who had habitual cough for many years, but was otherwise in good health, till he died, after five days illness, of peripneumonia. In the superior part of the right lung, there was a fibro-cartilaginous mass of a conical shape, and the size of a walnut, which, when cut into, presented every appearance of a cicatrix. Many bronchial tubes passed towards it and became obliterated; one, of very considerable size, was traced half an inch into its substance, and presented the appearance of a solid cord. In the upper part of the left lung, there was a small cavity like those described in the former cases. It was lined by a smooth membrane, and contained some tubercular matter in a soft state. The surrounding substance was crepitating and healthy; other parts of the lungs were hepatised and inflamed.

SECT. VII.—*Of the Hepatised Induration, and its consequences.*

The preceding remarks refer chiefly to the proper tubercular disease of the lungs. Some of them may be considered as in a great measure conjectural, and much observation is certainly required to enable us to arrive at any certain conclusions. But, in the present state of our knowledge, there is reason to believe, that the induration of the substance of the lungs, which lays the foundation for consumption, varies considerably in its characters in different cases, and in some of them consists of a mixture of various structures, differing considerably in their nature, and in the morbid changes which they undergo, and thus giving rise to considerable varieties in the characters of the disease. In the minute investigation of these varieties, little has hitherto been done; but I think we are fully warranted in establishing a distinction betwixt the two structures which seem to form the extremes—the white tubercle, and the simple hepatisation.

The hepatised induration seems in some cases to be the result of active inflammation, in others to be formed silently and insidiously without any active symptoms. It probably arises from a gradual deposition of animal matter, which fills up entirely

the cellular structure of the lung, and then, becoming organized, presents a solid mass, resembling the structure of the liver. It varies in density in different cases, and in different parts of the lung in the same case, and is also diversified by having in many cases tubercles imbedded in it.

A mass of this kind, if it be of limited extent, may continue long, perhaps through life, without passing into any farther state of disease, and without producing much uneasiness; and such masses accordingly are met with on dissection, in the lungs of persons who have died of other diseases. If it be of greater extent, so as to impede in any considerable degree the circulation through the lungs, it may give rise to dyspnœa, and may prove a cause of hydrothorax. But besides these effects of it, it is liable to pass into ulceration of a peculiarly unhealthy kind, constituting a case of a most dangerous and untractable nature, but differing remarkably from the ordinary tubercular consumption.

The indurated mass, in these cases, appears to differ from the tubercular induration, in being more organized, and consequently more susceptible of inflammatory action—in the inflammatory action being more of an acute kind, and running more rapidly into ulceration. It differs from pulmonary substance in a healthy state—in being affected by inflammatory action from slighter causes—in being more liable, when inflamed, to run into ulceration—and in the ulceration being of a peculiarly unhealthy kind. It usually presents the appearance of an irregular cavity, lined by loose ragged ulceration of the indurated substance itself, as if a piece had been forcibly torn out, while the abscess of the healthy substance is lined by a smooth uniform coating of coagulable lymph.

The inflammatory action, in these cases, may be more or less acute, and more or less extensive. The symptoms, therefore, may vary, both according to the activity and the extent of it, and according to the extent of the indurated mass in which it is seated; in some resembling an ordinary attack of pneumonia, in others being at first slight and obscure, more resembling the commencement of phthisis. In both cases, they usually advance rapidly; in the former, assuming the appearance of pneumonia of a peculiarly untractable character; in the other, constituting a modification of phthisis of a peculiarly rapid kind, remarkably different from the ordinary tubercular phthisis.

The morbid condition of the lungs, to which I refer in these observations, forms a subject of very great interest in the pathology of consumptive diseases. The following cases appear to illustrate some of the principal modifications of it; but much

observation is required before we can arrive at any satisfactory conclusions.

CASE VI.—A gentleman, aged 39, who had long been liable to cough and difficult breathing, was seized, in October 1814, with the ordinary symptoms of pneumonia. He was bled three times; and the other usual means were employed, by which he was very much relieved. But, after the urgency of the attack was subdued, he continued to have considerable cough, and the expectoration became purulent; he had then dyspnœa and hectic fever, and died within three weeks from the pneumonic attack. *Dissection.*—Both lungs were extensively hepatised, and in many places beset with tubercles; but none of these were in a state of suppuration. In the substance of the right lung, there was a large cavity, containing ill-conditioned matter. The inner surface of the cavity presented an irregular surface of dark-coloured ragged ulceration, as if a piece had been forcibly torn out, without any lining membrane; and the pulmonary substance around was dark-coloured, and much indurated.

This case I consider as illustrating the effect of active inflammation on lungs previously indurated. I add the following as a contrast to it; being an example of the abscess from active inflammation in lungs previously sound, at nearly the same period from the attack.

CASE VII.—In September 1814, I saw a woman, aged about 30, who was affected with cough and thick puriform expectoration; her breathing was rather quick, and a little oppressed, but without pain; her voice was tremulous and weak, and her pulse frequent. But she was out of bed, and able to walk about, and that day had walked from a distant part of the town, where she had been a servant, to the house of her father, where I saw her. I learnt that she had had a pneumonic attack about a fortnight before, for which she had been bled with relief, but had continued to be affected with cough, thick expectoration, and some uneasiness in breathing; and the latter symptom had increased considerably for the last two days. On the day on which I saw her, she continued to walk about the house, and even into the houses of some of the neighbours; went to bed apparently somewhat relieved, and died suddenly in the night. *Dissection.*—The left cavity of the pleura contained about lbij. of a fluid which appeared to be a mixture of pus, with the serous effusion usually found in the pleura. The left lung adhered considerably to the surrounding parts; and in the substance of it there were two large abscesses, both of which had burst into the cavity of the pleura. They were both lined by a layer of coagulable lymph, forming a firm, smooth, uniform lining, of a light yellow colour. The substance of the lungs surrounding the abscesses was considerably loaded with

thin mucus, but was quite soft; and when the mucus was pressed out, it appeared quite healthy. There was a small quantity of fluid in the right cavity of the pleura; but the right lung was tolerably healthy. No communication could be traced betwixt the abscesses and the bronchial canals.

In the two following cases, the disease appears in a more obscure form, and assuming in its early period more the appearance of incipient phthisis. It is chiefly on account of this form of the affection, as well as another to be next referred to, that I have introduced the subject in connexion with this Inquiry.

CASE VIII.—A gentleman, aged 24, of a consumptive family, and himself tall, thin, and delicate, was first confined from his usual employments about 26th February 1818, by the symptoms of a common cold; he was hoarse, had slight cough and a loaded tongue, but very little fever. After several days, the hoarseness subsided; but the cough became rather more severe, and was troublesome in the night time. He had slight uneasiness in his breast, but his pulse was very little affected; and his whole appearance was such as indicated a tendency to phthisis, but no immediate danger. After several days more, his breathing became considerably oppressed, with some pain, but by no means acute, and a feeling of tightness across the præcordia. The pulse was then about 90. A bleeding was now employed, with immediate relief of all these symptoms; and, on the following day, he appeared very much better. This was about the 8th or 9th day of his illness. After another day or two, he was seized with a sudden and remarkable diminution of the secretion of urine, so that for a day or more he passed almost none; and the catheter was employed, under the suspicion of retention. Diuretics were then given; and, after a day or two, the secretion became natural. The cough still continued, and was at times severe, especially in the night; and he had considerable expectoration of a viscid matter, semipellucid and yellowish. The pulse was little affected; and there was now no complaint of pain, or uneasiness in breathing. He was next attacked by diarrhœa, which was at first removed by opiates; but returned, and was then removed in a few days by the ordinary astringents. Amid these various turns of the disorder, however, his strength had been sinking rapidly; he had now a pale, feeble, exhausted look; no appetite; the cough continuing as before, and the pulse little affected. Without any other urgent symptoms, he now sunk rapidly and died, exactly a month from his first confinement, and about three weeks from the appearance of the uneasiness in breathing, on account of which the bleeding was employed. *Dissection.*—The right lung was in some parts extensively hepatised, in others tubercular, but not suppurated. The left was a mass of disease throughout; great part of it hepatised, and in a state of great induration; and much of the

internal structure of it soft and broken down, like putrid liver. On the external part there was a large, irregular cavity, which communicated with the cavity of the pleura by a large opening, as if a piece had been torn out. The inner surface of the cavity was of a dark red colour, and extremely irregular, and without any membranous lining. There was another smaller cavity of a similar kind adjoining to it. In the cavity of the pleura there was some dark, sanious fluid, partly puriform.

CASE IX.—A gentleman, aged about 20, during the winter 1819–20, had been a good deal confined by an indolent swelling which formed on his left buttock. It began like a phlegmon, but increased to a great size; and no applications that were employed could either make it discuss or suppurate. After continuing long in this state, it at length began to subside, and gradually disappeared. In April he went to the country, and appeared to be in very good health. About the 1st of May he first began to feel himself unwell; he was feeble, depressed, nervous and tremulous; and his breath failed him in walking up an ascent. On the 7th he was seen by a medical friend, who only remarked a considerable frequency of pulse, which he saw no symptom to account for. I saw him on the 11th, when he came to Edinburgh. His look was then febrile and anxious; his pulse 130, and rather sharp; his breathing short, and about 32 in a minute; he had some cough, but not severe; no pain in his breast or side; and no uneasiness on a full inspiration; tongue clean; appetite good; pretty good sleep; had walked out a good deal the day before. A bleeding was advised, which he bore well; appeared relieved by it, and the blood was buffy.

12th.—Found him up, and dressed. Breathing much less hurried. Pulse 120, and soft; some cough in the night, but not severe. Appeared tremulous, anxious, and easily agitated; but his tongue was clean, and his appetite tolerable, and he complained of no uneasiness.

13th.—Pulse 116; breathing 24; considerable cough, but no uneasiness in any part of the thorax. Was desired to keep in bed, and the usual remedies were employed.

14th.—Pulse 112; cough rather more severe, especially in the night, with a deep hollow sound; otherwise little change.

15th.—Pulse 120. Some delirium in the night; cough at times severe, at other times free from it for several hours. Expectoration purulent; increasing weakness; no complaint of his breast, or of any pain. Breathing rather more frequent than natural.

16th.—Pulse 130. Much delirium; cough as before.

17th.—Pulse 140. Constant delirium; little cough; great exhaustion. Died in the night.

Dissection.—The right lung was a mass of disease; the whole much indurated; externally inflamed; internally there were several abscesses; particularly one large irregular ulcerated cavity, resembling that described in the preceding case. This was at the upper part; lower

down there were several smaller cavities ; and at the lower part there was a dense tubercular mass, of light ash colour. At the very lowest part of the lung, there was a very small part, which was in a tolerably healthy state. The left lung appeared much smaller than the right, and was throughout, both externally and internally, of a very dark colour, nearly black—in some places exhibiting dark gangrenous ulceration, and cavities containing dark sanious fluid—in other places a soft black mass, like putrid muscle. No part of it was in any degree in a healthy state ; and there was no appearance of tubercles. The diaphragm on the left side exhibited, on its upper surface, a dark gangrenous appearance. There was considerable effusion in both cavities of the pleura ; that in the right cavity was light-coloured and puriform, that in the left was dark and sanious. The other viscera were healthy.

The former of these cases is the most distinct example of the disease to which I refer under this head. The second is nearly allied to it, though still more rapid, and in its symptoms still more obscure ; the frequency of pulse which was wanting in the former case alone indicating any thing of the nature of acute disease.

There is another modification of the disease in which the progress is much more slow, and yet similar appearances are met with on dissection. As it cannot be supposed that the symptoms could have gone on in this slow chronic form, with the morbid appearances which we find in these cases, I think it probable that, in the early stage of them, the hepatisation had been going on, commencing probably by a low inflammatory action ; and that it had advanced to ulceration only a short time before death, when the symptoms generally become more severe. This was probably the course in the two following cases, which will serve to illustrate this modification of the disease. In the one it was complicated with tubercles, but there was no vestige of tubercles in the other.

CASE X.—A gentleman, aged 21, died after an illness of nearly six months, in which the symptoms were extremely obscure. He was first seized after exposure to cold with diarrhœa and vomiting, and he had at this time a peculiar, pale, exhausted look. The symptoms yielded readily to the ordinary remedies ; and he then complained only of his stomach ; of oppression and indigestion, with variable appetite. Soon after this, he was seized with cough, accompanied by a copious expectoration of viscid matter, tinged with blood. After a short time, however, these symptoms also disappeared, and he complained again only of his stomach. He was feeble and languid, with a sallow, waxen, unhealthy look, a variable appetite, and va-

rious uncomfortable feelings about his stomach; but he would not admit that he had any cough deserving attention. When closely questioned upon this point, he said he sometimes coughed a little when his stomach was empty, but not at any other time. His breathing was natural; and there was no uneasiness about the thorax. His pulse, when sitting up, was frequent and small; when in bed, it was natural. In this manner he went on for several months, without any thing more decided in the symptoms; while the progressive decline of his strength, and his whole appearance, indicated serious disease. About a fortnight before his death his cough increased considerably, with some expectoration and slight uneasiness in breathing; and he died gradually exhausted, having been confined to bed only a few days. *Dissection.*—Right lung most extensively indurated. On the anterior part of it there was a large opening, leading into a deep and extensive ulcerated cavity; at the lower part, a considerable portion was healthy. The left lung was almost entirely indurated, with more of the tubercular appearance; numerous small vomicae and cavities containing a soft curdy matter. The other viscera were healthy.

CASE XI.—A girl, aged 18, of a very consumptive family, had suffered in early life repeated pneumonic attacks, but had enjoyed very good health for several years until January 1821, when she was affected with considerable cough and catarrhal symptoms. These complaints continued for some time, and then disappeared, leaving her, however, considerably reduced in flesh and strength; but she made no complaint, and was able to attend to her usual employments. In the middle of April she was seen by my friend Dr Begbie, who found her considerably reduced, with quick breathing and a small frequent pulse, but without cough or any uneasiness in the breast; appetite good; tongue clean; catamenia suppressed since January; bowels natural. She continued in this state, but becoming gradually weaker and more emaciated, until about the 7th of May, when she began to have a short dry cough. She still complained of no uneasiness in the breast; but her breathing was much hurried by any exertion, and was at all times short and much quicker than natural. From this time, by increasing weakness, she was confined to the house, though never entirely to bed: when in bed, she could only lie on her right side or her back. Hectic symptoms now appeared, with increase of cough, and quick and difficult breathing; and she died in the end of May in a state of extreme emaciation, but without having complained of any pain, and without having had any expectoration. *Dissection.*—The left lung adhered extensively; and, where it was free from adhesion, there was considerable effusion in the cavity of the pleura. The substance of the lung presented one mass of disease, part hepatised and part broken down into a dark-coloured, soft, gangrenous-looking matter; and there were several irregular ulcerated cavities, containing bloody, ill-conditioned pus. There was no vestige of tubercles, and the right lung was healthy.

The form of disease which these cases are intended to illustrate presents an affection remarkably different from the ordinary tubercular consumption. It may be complicated with tubercles, and it may occur without any vestige of them: and its progress, as appears from the cases, admits of remarkable varieties. In a practical view, it presents a subject of much interest, as it is probable that the more acute forms of it would admit of active treatment in their early stages, with more prospect of success than we can hope for in any period of tubercular consumption.

SECT. VIII.—*Practical Conclusions.*

The slight and imperfect outline of this important subject, which I have attempted in this and a former paper, leads to some conclusions of considerable importance in regard to the prognosis and treatment of consumptive diseases. On these points we still find a remarkable diversity of opinion,—some considering consumption as in all cases a hopeless disease, while others have with confidence detailed cases that have terminated favourably even in the more advanced stages. In some of these fortunate examples, the recoveries have been ascribed to tonics, nourishing diet, and exercise; in others, to bleeding, spare diet, and other remedies of an antiphlogistic nature; and, by men of observation and talent, these opposite methods have been recommended with equal confidence, as successful modes of treating consumption. On these contradictory statements, some light may probably be thrown by attention to the various forms of disease, of which I have attempted an outline in the former part of this Inquiry, and which assume in a great degree the characters of consumption. They vary exceedingly in their nature, and in the degree of danger which accompanies them,—and they certainly require varied and even opposite modes of treatment. This part of the subject I must allude to very briefly.

I. In the affection which, for the sake of a name, I have called *Sympathetic Cough*, the prognosis is generally favourable; though, in many cases, the appearances are such as to excite considerable alarm. The treatment must vary according to the cause: In the most common form of it, the tonic treatment is required, with exercise, nourishing diet, and minute attention to the bowels.

II. *The Cough from Irritation of the Diaphragm*, is perhaps most commonly connected with organic disease in the abdomen; and the prognosis consequently will be unfavourable. When

the cause is more of an active kind, there is more chance of recovery, as in that which is connected with certain acute affections of the liver.

III. In the *Laryngeal Phthisis*, the prognosis will depend very much on the period of the disease. If, by minute attention, the nature of the case be detected at a very early period, and the necessary practice adopted with decision and promptitude, I believe its progress may be arrested in a great proportion of instances. If this period be allowed to go by, the disease is generally hopeless. The remedies, in the first stage, are blood-letting, particularly large and repeated topical bleeding, blistering, issues, spare diet, perfect rest, and regulated temperature. In the advanced stages, it admits only of palliative treatment.

IV. *The Disease of the Bronchial Membrane* may terminate favourably in all its stages, even in the more advanced, when the patient is much reduced, and has very much the appearance of an advanced period of consumption. The remedies in the early stage are blood-letting, particularly large topical bleeding, blistering, antimonials, with opiates, digitalis, spare diet, rest, and regulated temperature; in the more advanced stages, tonics, stimulants, the balsams, nourishing diet, exercise in the open air, and change of climate.

V. *The Chronic Inflammation of the Pleura* may often be arrested at its commencement; in its advanced stages, it is generally hopeless. Much attention is required for detecting its existence; as, from the pulse being in many cases little affected, there is great danger of the pain being considered as muscular, and the period being allowed to go by, when it may be treated with success. The remedies are blood-letting, particularly topical bleeding, blistering, issues, spare diet, confinement, and perfect rest.

VI. *The Disease of the Posterior Mediastinum and Bronchial Glands* is generally hopeless. It is, in most cases, combined with tubercular disease of the lungs.

VII. *The Abscess from Active Inflammation* may be suddenly fatal by suffocation; or it may be spit up in immense quantities, and the strength of the patient may sink gradually under the discharge, with all the symptoms of consumption. But it may also terminate favourably, even after a large quantity of purulent matter has been expectorated; the abscess healing gradually, if the lungs are otherwise healthy, as a healthy abscess does in any other part of the body. The treatment in this case must be upon the tonic plan.

VIII. *Hæmoptysis* may be an acute disease of lungs other-

wise healthy, or it may arise from the bronchial membrane; and, in either case, with reasonable attention, the danger is not great. If it arise from lungs previously diseased, it is likely to be followed by consumption; or it may be suddenly fatal by suffocation.

IX. In regard to the *True Consumption*, the facts which have been stated seem to lead to principles of considerable importance. Consumption may be considered as the ulceration of indurated lungs; but in the mass composing this induration, there is a variety of structures, differing remarkably from each other in their characters, and probably differing materially in the morbid changes which they undergo. The white tubercle and the hepatised induration seem to form the two extremes; the fleshy tubercle and the melanosis probably hold intermediate places. The white tubercle appears to pass slowly and insidiously into ulceration without active symptoms, while the hepatised induration is often the seat of considerable inflammatory action. Now, the mass of indurated lung, when we find an opportunity of examining it at an early period, before it has been much destroyed by ulceration, generally appears to be composed of a mixture of these structures, and the proportions of them appear to vary in different cases;—some consisting chiefly of the tubercular disease, with very little of the hepatisation; others of the hepatisation, with tubercles imbedded in it in various proportions; while some consist of the hepatised induration, without any appearance of tubercles. Hence probably arises a source of great variety in the character of the morbid actions, some being more, others less acute; and of corresponding variety in the treatment, which may be adopted in the early stages; some cases being the subjects of antiphlogistic treatment, with considerable prospect of being able to arrest their progress; others advancing slowly and insidiously, without any mode of treatment being of the slightest avail. Other important varieties arise from complication with some of the other affections formerly alluded to; the disease in some cases commencing in the pleura or the bronchial membrane, and afterwards advancing to the lungs; or it may commence in the form of active inflammation in a part of the lungs which is healthy, and, extending to a part which is indurated, may excite there the unhealthy ulceration, which might perhaps have been prevented had the affection been checked at first in the active stage. From these sources of variety will appear the difficulty of laying down any precise rules for the treatment of consumptive diseases, and, still more, the impossibility of proposing any one mode of treatment which is to be applicable to all the forms of

consumption. There is, perhaps, no class of diseases which admits of greater variety, or in which our success must depend more intimately on minute attention to the characters of individual cases in their early stages. It is only by a careful investigation of these varieties, that we can ever expect to add any thing to our knowledge of consumption, and not by the vague and flimsy speculations by which the public mind is by turns amused and distracted. Consumption, says one, is a disease of debility—says another, it is a disease of excitement. The sound pathologist knows that it is a morbid degeneration of a vital organ; and that except he can combat it there, in its proper seat, the excitement and the debility are equally beyond his control. In this morbid condition there are many varieties, and many of them are obviously beyond the reach of any human aid. There are others in which the tonic treatment is proper and expedient, and in which supporting the strength of the patient by every possible means, is giving him the only little chance that remains to him of throwing off the disease. But in others, certainly the antiphlogistic treatment is required; and, by the judicious employment of it at the proper period, some considerable prospect is held out to us of arresting the disease at its first appearance. If these be trifled with, or injudiciously treated at the commencement, the period for active practice is soon gone by, and the error is fatal.
