

An enquiry illustrating the nature of tuberculated accretions of serous membranes : and the origin of tubercles and tumours in different textures of the body : with engravings / by John Baron, M.D., physician to the general infirmary at Gloucester.

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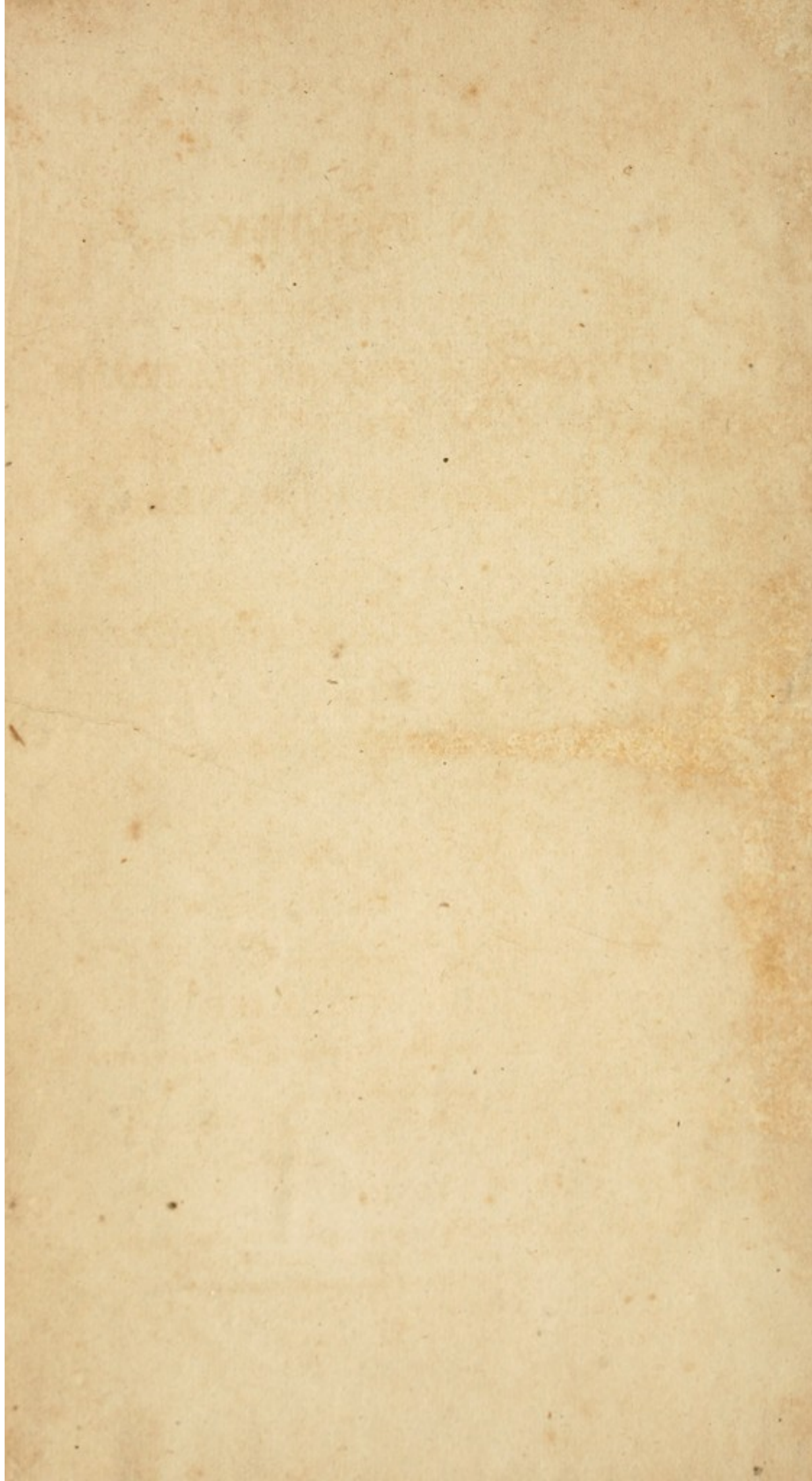
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GEORGE SHATTUCK

AN ENQUIRY

ILLUSTRATING THE NATURE OF

TUBERCULATED ACCRETIONS

OF

SEROUS MEMBRANES;

AND THE ORIGIN OF

TUBERCLES AND TUMOURS

IN DIFFERENT

TEXTURES OF THE BODY.

WITH ENGRAVINGS.

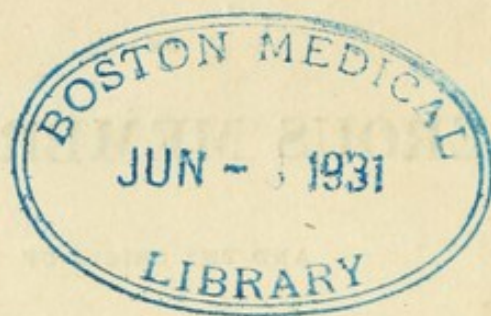
By JOHN BARON, M.D.

PHYSICIAN TO THE GENERAL INFIRMARY AT GLOUCESTER

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TO
MATTHEW BAILLIE, M.D. F.R.S.
PHYSICIAN EXTRAORDINARY TO THE KING,
&c. &c. &c.

THIS WORK
IS INSCRIBED, IN TESTIMONY OF
SINCERE RESPECT,
FOR HIS EXALTED PROFESSIONAL CHARACTER,
AND IN GRATEFUL RECOLLECTION
OF THE HAPPINESS
WHICH HIS MANY ACTS OF KINDNESS
AND FRIENDSHIP
HAVE CONFERRED UPON
THE AUTHOR.

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THE following pages contain only one portion of the work which the Author intends to lay before the public. He expected to have had the whole finished many months ago, but unavoidable delays have retarded its progress. As they are not of a nature to be entirely obviated, he is induced to bring forward what is now finished, reserving for a second Treatise, further Illustrations of the Subjects discussed in this Enquiry, together with Observations on Diseases of the Mucous Surfaces, and on some other Affections of the Serous Membranes of the Thorax and Abdomen. Allusions are made to these observations in the Introduction and other parts of this Volume; and it is the Author's wish, should the present attempt be favourably received, to expedite their publication as much as possible.

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PART II.

CHAPTER I.

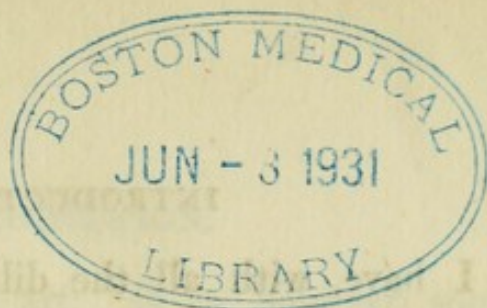
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INTRODUCTION.

WITH great diffidence I submit this work to the consideration of my professional brethren ; yet I trust that it will be found to contain accurate observation, and just reasoning, concerning various diseases which have not hitherto been well described.

The appearances observable on the dissection of diseased bodies have been, on many occasions, more faithfully recorded than the symptoms by which the changes of structure are denoted. Some of the diseases of which I am about to treat, have been noticed by different writers ; but their descriptions are too imperfect to guide us to an accurate knowledge of the nature of the complaints, at the only time wherein our efforts can be serviceable.

I have, with all the diligence in my power, endeavoured to supply this deficiency ; and have freely compared the experience of my predecessors with my own observations. In this exercise I have been more successful than I expected ; for though in no instance have I found satisfactory descriptions, I have nevertheless remarked, that the desultory and incidental reflections all tend to illustrate and confirm the general delineation which I have ventured to give. Coincidences of this kind, when they can be brought to bear decidedly upon any pathological question, are very valuable. They vouch for the accuracy of the different observers, and prove that their minds have not been warped by the influence of preconceived opinions.

If the history of the symptoms of a disease be incomplete, observations respecting the havoc committed on the organs that it attacks cannot be satisfactory. The morbid appearances may be faithfully described as they presented themselves to the spectator ; but if he has neglected to associate them with the peculiar signs which denote their origin and progress, he contributes little to

the usefulness of his art. It is, however, some satisfaction to know, that the subject does admit of greater precision ; and that, by well directed labour, much of the existing obscurity may be removed.

The views which have arisen during the progress of this enquiry, have assumed a much more comprehensive aspect, and seem applicable to a far greater number of diseases than I anticipated. My own mind in this respect, has experienced a degree of satisfaction, which has been gratifying to me,—not because I think merit due to myself, but because I have arrived at something that seems like truth, in one of the most obscure branches of pathology, through a fortunate application of the researches and opinions of some of the most distinguished men of our profession, to my own limited observations. In this manner has the subject grown upon me ; and had I, at the commencement, seen its extent and bearings as distinctly as I do now, I might have been deterred from presuming to enter on so wide a field of discussion :—for what I at first thought an affection peculiar to membranes of the serous class, and explicable by

the commonly received physiological and pathological doctrines, now wears a very different character. I see its connexion with the whole tribe of cachectic diseases, and its affinity with a vast number of disorganizations which occur under various modifications in every texture of the body.

Possibly the reader may be inclined to entertain different opinions; but let him not judge me hastily, nor refuse his assent to such doctrines as he may find, because they may be imperfectly stated or insufficiently illustrated. At all events, let him give credit to my faithfulness in the narration of facts, and to my earnest desire to contribute all that lies in my power to avert or alleviate the many sufferings to which man is exposed. I may have very ill executed my intention; but I would have this work considered as a small offering to the public store of information, due, as such offerings are, from all who hold stations in large public institutions, where the best opportunities for observation are afforded.

In detailing the cases, I have endeavoured so to mark the succession of the symptoms, that the reader may form precise ideas of the character of

the complaint itself, independent of any opinion that I may have adopted on the subject. It has been my wish, likewise, so to connect one case with another, that their coincidences and analogies may be discovered, and the inferences which they may afford rendered plain to all who peruse them.

This minuteness is not required in recording the results of practice in common and well known maladies; but it is necessary, on every occasion where accident or experiment has led the observer out of the ordinary path, and presented to him any thing remarkable either in the progress of disease or in the action of remedies.

Our art has suffered from the vague and conjectural statements of the older writers, as well as from the laconic and presumptuous style which modern doctrines have encouraged. In both instances, the "ancient and sober diligence" of the Father of Physic has been forgotten; and instead of the "*historia graphica et naturalis*," we find hypothetical and redundant descriptions, or brief generalities, very unfit to lead to a proper diagnosis or to successful practice. It is therefore no matter of wonder that our reasonings exhibit so many

lamentable examples of bad logic ; that our art possesses little of the certainty which other branches of knowledge have acquired ; and that we must trust to conjecture in some of the most difficult and trying parts of professional duty.

Every class of diseases will justify these remarks ; but to none are they more applicable than to one which I trust will receive some illustration in the course of this work. A bad theory long taught us to look upon all dropsical effusions as indicating a peculiar state of the system, which was to be removed in a given way. It is only lately that this delusion has been exposed, and that it has been ascertained that the varieties of dropsy arise from different causes, and of course require different modes of cure. If an author, therefore, in recording his experience in this branch of practice, were to enumerate merely the cases of hydrothorax, or ascites, or anasarca, that he may have treated, with the remedies used in each, he doubtless would convey very imperfect and very unsatisfactory information. He gives the generic character merely when he ought to mark the specific differences ; and it must remain with his successors to find out

what he had left undetermined. One consequence has been an almost universal lamentation over the uncertainty of the action of the remedies which are employed for the removal of this class of diseases. This regret, it is apparent, is misplaced. It is not the remedy that is to be blamed, but our want of skill in its administration, arising from erroneous theories, or ignorance of the peculiarities of individual cases.

It is one of the most difficult, but at the same time one of the most important objects of every enlightened man, to attempt to remove such causes of doubt. Unless this is in some degree accomplished, medicine must ever remain an obscure and unsatisfactory art, in many cases better fitted for the selfish purposes of designing practitioners, than for the benefit of their patients.

The most extensive experience, unless illuminated and directed by a spirit of this kind, (in which consists the essence of philosophy,) is but a blind guide to the enquirer who may be favourably circumstanced for observation, and it can be of little service to his successors. He sees through mists and prejudices—mistakes adventitious cir-

cumstances for essential characters—and twists all things to meet his own limited conceptions. Hence it becomes so difficult, in examining even the works of authors who claim for themselves the name of practical, to separate facts from the mass of unprofitable and unwarrantable conjectures by which they are too frequently encumbered.

These convictions were forced upon me at the commencement of my professional career. Some of the difficulties which they occasioned, will be found detailed in the following pages. It has been my object to give, as far as it could interest the public, an account of the progress of my own mind in acquiring knowledge; and if every Physician whose opportunities of observation are extensive, would do the same, we might soon accumulate that species of information which we at present so much stand in need of.

I am well aware of the beneficial influence of legitimate speculation and theory, on the progress of all branches of knowledge. But assuredly, in the practical exercise of our art, a greater degree of forbearance and caution than has generally been

exhibited, is required in trusting ourselves and our patients to the direction of such guides.

Successive speculations on any subject imply, for the most part, successive approximations to truth, as no false opinion can be destroyed but by the accession of information whereby its falsity is evinced. The theories, therefore, which an improved philosophy sanctions are the excitements to further enquiry, the bonds which hold together the disjointed elements of knowledge ; not impeding the march of truth, but preparing the way for her ultimate triumph. But it is only where the mind has made considerable advances, and after the “ lines and veins ” which mark the “ partitions ” of human knowledge have been in some degree ascertained, that the happy effects of speculative anticipations of unproved occurrences are felt ; for if the conjectures are formed by daring spirits, who look into their own little world, instead of consulting “ the great and common world,” and who presumptuously aim at giving a complete solution of a complicated and obscure branch of knowledge—then indeed are they most pernicious. They overlay the energy of enquiry, and ages

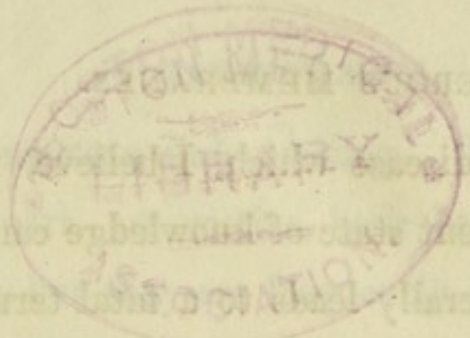
have not been sufficient to overturn the intellectual despotism. But a very few years ago, our art was under the spell of the splendid illusions of an ambitious and presumptuous speculator; and Heaven only knows the extent of the evils that they have occasioned.

I am very far from thinking that I have altogether avoided the faults which I reprehend; and many possibly will discover that the observations which I have made, are not of value enough to justify their publication. In any other art but our own, I am aware that this remark might hold true: but whoever considers the slow and embarrassed steps with which we advance in our knowledge of disease, will receive with indulgence, if not with favour, even an imperfect attempt to extend the boundaries of true science.

SEROUS MEMBRANES.

PART FIRST.

PERITONÆUM,



CHAPTER I.

TUBERCULATED ACCRETION OF THE PERITONÆUM—HISTORY OF THE DISEASE—CASES AND DISSECTIONS.

SEROUS Membranes, from their connection with all the principal organs of the body, produce, when in a diseased state, a great variety of important symptoms. Those arising from acute seizures have been well described; but there are others depending upon change of structure of a different kind, which, I believe, have not hitherto been accurately traced. The first part of the following work is meant to remove this deficiency, in some degree, as far as it applies to the Peritonæum and the Pleura: I begin with the former.

The symptoms about to be enumerated, are descriptive of an affection of a most alarming na-

ture. It is a disease which, I believe, no remedies in our present state of knowledge can subdue, and which generally leads to a fatal termination. This truth, when attended by the consciousness that early vigilance may prevent, what all the resources of our art, though administered with the most consummate skill, cannot cure, ought to make us more assiduous in watching the first symptoms, more resolute in combating them.

I cannot believe that the disease is of rare occurrence, as I have seen too many cases to prove the contrary; and different works contain accounts of the morbid appearances, though they are almost silent with regard to the history of the symptoms.

I have seen the disease in persons of all ages. More examples of it have occurred to my notice in females than in males; probably because the former are more liable to suffering, and less accustomed to make their sufferings known, than the latter; and the disorder is consequently often not detected, until all chance of relief is past.

The complaint comes on in general with tenderness and distension of the abdomen, accompa-

nied with nausea and vomiting. The bowels, for the most part, are costive, both before and after the attack, but they are frequently in an opposite state. At this period, the symptoms not being so violent as to force the patient to seek for proper relief, they are very apt to be neglected; but unless the true nature of the disorder be discovered, and its course arrested at an early stage, all subsequent efforts will probably be useless.

The progress of the affection is as follows: The bowels become more and more irregular in their action. The tenderness and swelling increase. The appetite fails; the pulse acquires greater velocity; the features look sharp and contracted; the countenance becomes pale or sallow; the lips parched and skinny; the tongue, sometimes of a bright colour, resembling what is seen in diabetes, at other times, it is covered with a thick whitish mucus. The flesh and strength decay rapidly; and I think I have seen greater emaciation in this disease than in almost any other. The skin, except towards the last stage, is for the most part dry and scaly; the urine small in quantity, occasionally clear, more frequently otherwise. If a

cough has not existed from the beginning, it is very apt to occur about this time; but this is by no means to be considered as a diagnostic symptom; its existence depending, as will hereafter be shewn, upon the spreading of the disease to the pleura, and the thoracic viscera.

The feet sometimes swell towards the conclusion of the disease, but I have seen the swelling confined to one leg and thigh. At this period, if the examination of the abdomen be made with due care, it will be found to communicate to the touch the feeling occasioned by a solid tumour; the integuments and muscles not rolling upon the contained parts as in a state of health. But in some cases, where effusion is conjoined with the original and more important disease, a sense of fluctuation may be discovered.

Very frequently the patients complain of a distressing feeling of a "*broiling heat*" at the stomach, the discharge of a tough ropy phlegm from the mouth, constant nausea, with violent retching and vomiting; and in two cases, the matter brought up during several days before death was stercoraceous.

In the course of the complaint, the appetite is for the most part very bad; but the desire for liquids is insatiable, even though a consciousness exists that a large quantity cannot be swallowed without occasioning very great distress. When a feeling of sinking and emptiness prevails, the patient eagerly thinks of many articles that might allay his uneasiness, but the sight of them seldom fails to excite loathing and disgust.

Should any sustenance be taken, it is either speedily rejected by vomiting, or it causes indescribable uneasiness. The patient rolls about in all directions, in vain seeking for some point where he may repose. Every action of the stomach or intestines comes to be performed with great pain. The passage of flatus upwards or downwards, the movements which take place before the evacuation of the bowels, all give rise to suffering. At times the pain is sharp and transient, at others it is heavy and obtuse. But a sense of weight is seldom absent; and it is more felt after vomiting or purging than before.

One patient, (an infant,) in allusion to this symptom, used to put its hand on the abdomen,

and exclaim piteously, "Oh! so heavy." Another said, that his bowels felt as if they were "tied up in a napkin." At another time he said, "they seemed to be in a mass;" and at a third, he declared, that if he had "a shot attached to every convolution of his intestines, he could not suffer more than he did."

These expressions were uttered by a professional man. They were singularly applicable to his situation, though he himself was not aware of its real nature.

A description of the morbid appearances, completely illustrates the symptoms of this malady. The stomach and intestines can perform none of their functions; and the necessary aliment acts as a foreign body, and occasions dreadful distress. The natural source for replenishing the frame being thus cut off, the system feeds upon itself, as long as matter sufficient can be taken up by the absorbents, to keep the vital functions in action.

Such is a brief but faithful history of the leading symptoms of this disease. The change of structure indicated by them is universal accretion of the peritonæum, binding all the con-

tained and containing parts of the abdomen into one confused mass. The membrane becomes much thickened, loses its smooth and shining appearance, and is studded throughout with innumerable tubercles of various sizes. These are seen sometimes singly, sometimes in clusters, occupying the different parts of the diseased membrane. They pervade also the mesentery and omentum; and all the lymphatic glands are frequently found enlarged and diseased.

I forbear to enter more minutely into this part of the subject, as I conceive the nature of the complaint will be better illustrated by the cases and dissections which I subjoin.

The first patient I saw labouring under it, was Sarah Tandy, a girl of 17 years of age. She was admitted into our Infirmary on the 4th of January, 1811. The following history of her complaint was recorded at that time.

S. T. is affected with a hard tense swelling, occupying the whole of the abdomen, which, when pressed upon, gives her considerable pain. The countenance has a sharp, anxious, pallid appearance, and she is excessively weak and emaciated.

She is also troubled with a cough, and expectorates copiously. The tongue is of a bright red colour, thirst urgent, pulse quick and feeble, appetite very bad, bowels loose.

This complaint is reported to have come on only four weeks ago, with pain and swelling of the belly, and nausea and vomiting. It was not much attended to, and no remedies have been employed. When the foregoing history of the complaint was written, I was ignorant of its real nature. The patient had the appearance of a person labouring under a *tabes mesenterica*; and from the havoc committed on her constitution, I thought that it must have existed for a much longer time than she allowed. I make this acknowledgment, to account for the plan of treatment which I employed, different as it was from what I subsequently adopted, after dissection pointed out to me what I conceived to be the origin of the complaint.

I ordered her pills with aloes and iron, and a grain of squills and calomel, to be taken twice a-day. The remedies seemed at first to effect a slight reduction in the size of the belly, and some

improvement of the appetite ; but the emaciation nevertheless went on rapidly. I then tried the compound mixture of iron, and a diet somewhat more generous than the ordinary one of the house. On the 11th of February, I find that the cough and expectoration had much increased. She was then ordered digitalis, with squills, and various demulcents. On the 6th of March, I find it mentioned, that the cough was somewhat relieved, but that she gets weaker ; that the feet swelled, and that she at times sweated profusely ; and that there was almost constant nausea and vomiting, with dreadful anxiety and restlessness, and some disposition to looseness. Every thing now denoted a speedy termination to her malady, the symptoms just mentioned continuing with little intermission to the 29th, when she died.

On opening the belly, it was found that the whole of its contents adhered to each other, and to the cavity, in such a manner as to form apparently one solid mass. None of the viscera could be distinguished, till the thickened layers of the peritonæum were torn from their adhesions. It was absolutely impossible to do so from the intes-

tines, for there the thickening and adhesions had proceeded so far, as to render any attempt at unfolding them impracticable. The intestine itself had undergone a remarkable change; after peeling carefully the thickened and granulated peritonæum from a portion of its surface, it was found to have been deprived of its healthy texture. It had lost its tenacity, and it appeared like a thin transparent membrane which had been macerated in water, and it tore on the slightest violence being applied to it. The mesentery and its glands were in a very diseased state. The latter were about the size of almonds, and had much of the same appearance when cut into.*

On separating the peritonæum from its adhesions to the diaphragm, the liver was found of a much larger size than natural. It was of a bright copper colour, and, like the intestines, it had lost its proper texture. The fingers pierced it in every direction without resistance, and it appeared like a part in a state of incipient putrefaction. On cutting through the right lobe, a lumbricus was discovered in one of the biliary tubes. When

* *Vide the plates.*

drawn out, it measured full six inches in length, and was alive at the time of examination.

In the thorax, some changes were observed in the pleura, similar to those which had occurred in the peritonæum. Universal adhesion and thickening had taken place on the left side. The diaphragm was studded with small granulated masses. The left lobes of the lungs contained tubercles in a state of suppuration, and the bronchial glands were enlarged.

About nine months after the death of Tandy, I saw my next patient, who was similarly affected. The name was Sarah Aldridge. She was eighteen years of age. My Infirmary journal for January 5th, contains the following history.

S. A. has a tense hard swelling of the abdomen, with violent cough, and considerable expectoration. The respiration is free, except on motion; but pressure on the tumor of the abdomen gives considerable pain. Bowels open, urine natural. Catamenia said to be regular. Pulse 100; skin dry; tongue of a bright red colour; lips parched; countenance pale, and there is great emaciation.

Her complaints began about four months ago. The swelling has gradually encreased in size, with-

out any great degree of pain, though she recollects that it was more severe at the commencement than it has been since. The cough came on not long after the other symptoms.

When I saw this patient, I was forcibly struck with the resemblance which all the external signs of the disease bore to those of Tandy. She had the same sharp and anxious countenance, the same wasting of flesh; and the examination of the tumor still further confirmed my suspicions. Notwithstanding the duration of the complaint, and the little chance of altering the morbid structure which I believed to exist in the peritonæum, I resolved to try the effect of evacuation, carried as far as was proper. I ordered her to lose ten ounces of blood from the arm, and a blister was applied to the belly. She was purged also with a solution of the sulphate of magnesia, containing a small portion of the tartrate of antimony.

4th.—Coughed none since she was bled. Blood shews a strong buffy coat. Pulse 110. The mixture produced three stools, and some nausea and vomiting. Twelve ounces of blood were drawn from the arm, and the purging solution was repeated the following morning.

5th.—The blood drawn is contracted on the upper surface, but the buffy coat is not so thick as it was yesterday. Pulse 120. Skin hot. Tongue as before described. No stool, though she has taken three doses of the mixture. Coughs but little. The state of the tumor of the abdomen is not changed, though she can bear pressure rather better than formerly. She was ordered to take calomel, with extract of aloes, every two hours till the bowels acted.

Seeing the little success obtained from bleeding, the increased velocity of the pulse, together with the exhausted state of the patient, and bearing in mind the opinion which I had formed of the nature of the complaint, and that the time for removing it by the means employed was probably past, I determined to pursue them no further. Mercury was the next remedy which I had recourse to; but my experience of it in this, as well as other diseases of membranous parts, satisfies me that little benefit is to be expected from it, if the change of structure I have described has already taken place. She was at first ordered five grains of the blue pill every night,

and now and then an aperient solution. After the blue pill had been used about three weeks, it was necessary to leave it off, in consequence of diarrhœa. Mercurial ointment was afterwards rubbed upon the belly, but with no advantage. The tender state of the belly continued; the emaciation went on rapidly; her nights were excessively restless, and the pulse was seldom under 120. She died on the 25th of February.

The appearances on dissection, in this patient and Tandy, were so remarkably similar, that they verified in almost every respect the opinion I had formed; and by detailing what was observed in one, I am saved the necessity of reporting minutely what was seen in the other. In Aldridge, the peritonæum was denser and thicker, than it was in Tandy. The liver was enlarged, and had the same appearance. No worm was found in its substance, but several were discovered on opening the ileum. Both the pleura and the lungs were in the same state as in the former case.

The next patient, Sarah Elias, æt. 52, was admitted into the Infirmary on the 24th of Sept. 1812. At that time the origin of her complaint

was rather obscure, and it was not till she had been in the house some time that I was satisfied of its nature. She complained only of obstinately constipated bowels, with frequent nausea and vomiting; and although, on her admission, her belly was both swelled and tender, she made no mention of these symptoms till I ascertained them by more minute inquiry.

The disease had been of several weeks duration. It began with griping pain, she said, and sickness and vomiting. She was costive at the same time, and her seizure was attributed to that cause. She had taken some active purgatives before I saw her, but with little relief. I pursued at first a similar plan of treatment, ordering her calomel and extract of colocynth, and castor oil. She took also pills containing sub-carbonate of soda and soap. These means afforded but partial relief. On examining the belly accurately, a few days after she came under my care, I found it enlarged, and affording to the touch the peculiar sensation which I have already described. It was painful, and she was much disturbed with flatulence.

She was ordered to take five grains of the blue pill night and morning, to have the abdomen rubbed with a strong camphorated liniment, and to take occasionally a solution of the carbonate of potass. It was also at times necessary to assist the bowels by the use of the gamboge pill. On the 12th of October the vomiting returned, and the mouth was rendered sore by the mercury. The bowels remained tense and tender, the appetite was extremely bad, the bowels were very irregular in their action, and she lost flesh and strength rapidly. The mercury was left off, and she was ordered to take an infusion of rhubarb and ginger, with carbonate of potass, three times a-day.

The vomiting was checked for a day or two, and some scybalæ were discharged from the bowels. The vomiting, however, soon returned, and continued more or less till her death. On the 21st of October, the stools became liquid and very offensive. The emaciation increased, as did the uneasiness and tension of the belly, and the pulse became more feeble and frequent. To allay the irritation of the stomach, a blister was applied to the epigastrium, and small doses of opium were

given. On the 3d of November, I find that all the symptoms had increased. Pulse 110, very small, skin dry, extremities cold, and the vomiting of a greenish matter continued. No stools obtained but by the aid of drastic purgatives, and these thin and very offensive.

I determined to try mercury again, and ordered a drachm of the ointment to be rubbed upon the belly every night. The other remedies were employed as circumstances required.

November 11th.—The left foot began to swell, but the vomiting had been checked, and the uneasiness and pain of bowels were somewhat relieved.

On the 13th, the mouth was made sore, the vomiting returned, and the belly was more painful. The ointment was discontinued, and another blister was applied to the abdomen.

19th.—The swelling had extended to the left leg and thigh; it was not painful, and pitted on pressure. Urine scanty and turbid; pulse 100, and remarkably feeble. From this period the bowels became so constipated, that no evacuations could be procured but by drastic purgatives, aided

by stimulating glysters. On the 5th of December, great obstruction was presented to the throwing up of the latter, and they were instantly returned without fæces. The uneasiness at the stomach, and the sickness and vomiting, increased to a most distressing degree; the mouth constantly filled with a bitter phlegm, and she complained of pain at the soles of the feet.

Matters continued in this way till the 10th of December. On that day, the evacuations from the stomach had a stercoraceous smell, nothing having passed downwards for some time. On the 14th, she vomited fæculent matter, and died on the following day.

On opening the abdomen, it was found that some pints of yellow serum had been effused into a sack composed of the thickened and adherent surfaces of the peritonæum. On removing the fluid, the viscera were seen lying united into one irregularly shaped mass. The omentum was universally attached to the viscera with which it is in contact, and all the other parts were firmly bound together. The whole, when taken out of the body, had the feel and appearance of a solid

tumor, except in one or two places, where a portion of the convolutions of the intestines could be discovered; but in general they were so thoroughly incorporated, as it were, that the interruption to their functions was readily explained. The liver was not so much enlarged as in the other patients, though it had the same loose texture. The thoracic viscera were sound, except the pleura, which was thickened in some places like the peritonæum.

In the fifth volume of the Medical Commentaries, there is the "history of a case, in which remarkable adhesions of the alimentary canal terminated fatally, by Dr. Andrew Willison, physician in Dundee." The symptoms are detailed with great accuracy and truth. The attack was much more acute in its nature than any that I have seen. There was effusion into the abdomen, as well as universal adhesion of the intestines. "Their convolutions even could scarcely be traced, and they seemed almost as if included in a round bag."

I have seen many other cases of this disease. One patient, a female, was about the age of

Tandy. Before I saw her, the disease had proceeded so far that I had no doubt with regard to its nature. She was able to walk about, even when the belly was much enlarged, and had acquired its peculiar hard and tense feel. The pulse was above 100; the countenance shewed the signs which I have already described, and the functions of the stomach and intestines were impaired in the usual way.

Repeated bleedings by leeches, blisters, and other remedies were of no avail, and she died about six weeks after I saw her. I was not permitted to open the body; but the course of the disease, and every thing connected with it, gave me the strongest conviction of the accuracy of my diagnosis.

The case of the next patient resembled very much that of Elias, in its latter stages. She was a person about the same age. In her, the affection began with the pleura; and it was not till the symptoms peculiar to this attack had existed for some time, that those marking the peritonæal disease came on. In general, I have observed that this order is inverted. I saw her at a period when I thought bleeding from the arm

necessary. Repeated evacuations of this kind, and the other remedies used, gave temporary relief. She languished for about three months, having frequent nausea and vomiting, the broiling heat at the stomach, the discharge of tough phlegm from the throat and mouth, and the tense hard belly. Before she died, the left leg and thigh swelled exactly as it did in the case just alluded to. I was refused permission to examine this body also, and have no further proofs to offer of the similarity of the diseases, than the facts which I have stated.

The following very instructive case, I first saw on the 24th of June, 1815.

Henry Higgins, æt. 13. The abdomen is very considerably swelled. Round the umbilicus the skin is of a brownish copper colour, and the cuticle is cracked. Exactly at the place marked by the discoloured skin, the tumor is soft, and feels as if it contained a fluid. The whole of the rest of the belly is tense and hard, and communicates a sensation similar to what a solid body would give.

The face is thin and pale; the lips and the tongue are of a bright red colour. The skin

feels dry; he has considerable thirst, and the pulse is quick and small; appetite much impaired; bowels irregular.

He says that the complaint began twelve weeks ago, with violent pain of the belly; the other particulars cannot be accurately ascertained.

The opinion which I formed of this boy's case was in every respect justified by subsequent observation. I looked upon the disease of the peritonæum as having already taken place, and that adhesion to the parietes of the abdomen existed at every point, except round the navel. He was admitted into the hospital, not because I expected to cure him, but that I might for a time watch the progress of the complaint.

At one period, I thought of evacuating by a puncture the fluid which was obviously contained under the navel; but when I considered the proofs of the existence of very extensive disease in the abdomen, I judged that the operation promised no advantage, and it was not performed. The sequel will shew that I had not lightly formed this opinion.

I kept him in the house till the 5th of October. During that time he had the weight and uneasi-

ness about the bowels, and occasionally severe pain about the epigastrium, followed by violent retching and vomiting. Sometimes he required purgatives; sometimes it was necessary to employ astringents. The emaciation went on, but not so rapidly as in some other cases.

Together with the medicines just mentioned, blisters, with occasional anodynes and cordials, were used. Seeing that he could not be relieved, I did not deem it right to keep him longer in the Infirmary, in opposition to one of its rules. He went out at the time already specified, and I never expected to see him again, as he lived at a considerable distance from Gloucester.

He was brought back, however, on the 30th of November. He was much changed. The skin at the navel had given way, and there was a copious discharge of a whey-coloured glutinous fluid. In a short time it was observed that air-bubbles escaped from the opening, and in a day or two faeculent matter was observed on the dressings.

His strength now very rapidly declined, though he was supported by cordials and as generous a diet as he could take, till January 12th, when he

died. The discharge from the navel had become very copious and offensive, and very little was evacuated per anum. It is clear, therefore, that the former outlet was the means of saving him from much of the misery which he probably would otherwise have endured. In the last part of his disorder, he had neither the distressing nausea, nor the retchings and vomitings which so much afflicted the other patients, and which he himself had to a very considerable degree before the tumor burst, and established an opening into the intestine.

The appearances on dissection were such as I had anticipated in almost every respect—nearly universal adhesion of all the contained and containing parts of the belly, except where the matter effused round the umbilicus had occasioned a separation. The peritonæum was not so much tuberculated as I have seen it; but those tubercles that did exist were of a larger size than usual. Many of them, when cut into, contained a yellow cheesy matter. Those that were attached to the inferior portion of the liver were pendulous, some of the size of peas, others had an oblong shape, and were as large as beans.

The ulcerated opening into the intestine was quite visible, about an inch to the left of the navel. The liver had the same mottled appearance that I have so often observed, when its investing membrane was diseased. Its texture, too, was somewhat looser than natural. The kidneys, and the spleen, notwithstanding the progress of this fatal disease all around them, were in a natural state. In this instance, the pulmonary organs were less affected than I had observed in any of the other cases. The pleura had not assumed the morbid action, nor were there either the tubercles in the lungs, or the enlarged glands, that I had previously met with. If the reasonings in another part of this inquiry are just, it is not improbable that the circumstances alluded to have some connection with the discharge which had been established from the navel.

The following case I saw, with Mr. Sweeting, surgeon, of Stroud, on the 10th of January, 1818.

M. Browning, æt. 40. The abdomen is distended. It feels hard to the touch, and pressure on it gives pain. She suffers much from general uneasiness and restlessness. There is a great deal

of internal heat, with constant nausea and vomiting of whatever is taken into the stomach. A few days ago, after long continued retching, a large quantity of fæculent matter was brought up.

There is great emaciation. The tongue is of a dark red colour, and the lips are parched. She has much thirst, but she is afraid to swallow any thing from the uneasiness which it occasions. Pulse 100, and very small. She has frequent cold sweats.

This woman had laboured under a femoral hernia of the right side, for many years. It became strangulated. After having been six days without any evacuation from the bowels, the operation was performed by Mr. Sweeting on the 17th of October, 1817. On opening the sack, about two ounces of exceedingly offensive, dark-coloured fluid escaped; and the intestine itself was found completely black. It was nevertheless reduced, and a more favourable result arose from the reduction than might have been expected.

The external wound put on a healthy appearance; but no stools were procured till three days after the operation. This event afforded a pros-

pect of a successful termination of the disease. The bowels acted with tolerable regularity, and the incision had nearly closed. Such was the state of the patient about three weeks after the performance of the operation. At that time, things materially changed. The belly became exceedingly uneasy, the wound in part opened, and through it fæculent matter was discharged *for three days*. While this was going on, stools *were* passed per anum.

The wound did not finally close until about the middle of last December. On that event taking place, the soreness and tumefaction of the abdomen arose. The action of the bowels became again exceedingly irregular, and the vomiting and other symptoms which have been already detailed came on.

They continued without intermission till within five days of her death. At that time the vomiting ceased, and diarrhœa came on, and apthæ appeared in the mouth. She died on the 23d of January.

Mr. Sweeting examined the abdomen the following day. After cutting through the integuments and muscles, he was surprised not to reach

the cavity. He went deeper; and after dividing the very thick peritonæal accretion, and separating some portions of it, he found the intestines united together into a mass, apparently not much larger than the bulk of the fists. On pursuing the examination, he found that a large quantity of fæculent matter had escaped into a space in the right iliac region, which was the only one where the accretion had not taken place. The fæces had passed from an opening in the intestine, about an inch above the portion which had been originally strangulated. At that point the intestine had become thickened, and a stricture had been formed, which rendered the canal almost impervious.

The different stages of this woman's disorder are very remarkable. The intestine must have sphacelated after the operation, as is proved by the discharge of fæculent matter through the wound. The reunion of these parts, and the consequent formation of the stricture in the intestine, seem to have occasioned the rapid progress of the peritonæal disease—the vomiting of fæculent matter—and finally the rupture of the intestine, and the discharge into the abdomen.

The thickening of the peritonæum was very great, and the tuberculated structure was universally seen. Mr. Sweeting was not permitted to examine the thorax; it is therefore uncertain whether the disease had extended to the pleura or the lungs.

The following cases were attended with peculiarities which it is necessary to record.

Elizabeth Sunnock, æt. 24. Feb. 22, 1816. Was this day admitted into the Infirmary, complaining of a troublesome cough, frequent nausea and vomiting, pain and uneasiness about the right hypochondrium, and swelling of the abdomen. She is much emaciated, has a clear florid complexion, with parched lips, and red tongue, and a rapid small pulse. The skin is dry and hot, and the appetite is very bad. The bowels are very irregular, but costiveness is the prevailing state. The abdomen, on being minutely examined, feels tense and hard; but there is no fluctuation to be discovered.

This complaint began about three months ago, with frequent and severe pains about the abdomen, nausea and vomiting. But the illness was

not so great as to prevent her following, to a certain extent, her ordinary occupation. After a time, it was found that a fluid was effused into the cavity of the abdomen. She was tapped; and it is said that about eight quarts of serum were drawn off. This gave her some relief; but it does not appear that it in any degree checked the progress of the complaint. Shortly after, the cough came on, and the tenderness of the abdomen and the irregularity in the functions of its viscera continued. It swelled again; but instead of affording the sense of fluctuation, it gave the sensation of a solid tumor.

The facts just mentioned induced me speedily to make up my mind as to the nature of this case; and it was amply confirmed by all my subsequent examinations, as well as by the dissection.

She was leeches and blistered on the abdomen. I endeavoured to allay the cough and irritation of the stomach by anodynes; and, as in other cases, it was necessary sometimes to give purgatives, sometimes to use astringents. The pulse was seldom under 120, frequently 130. She coughed a great deal, and suffered dreadfully from thirst,

and from nausea and vomiting. But she lived till the emaciation had got to its extreme point, which was on the 6th of April.

The next day I examined the body. In the abdomen the tuberculated accretion of the peritonæum, was quite as extensive and universal as in any of the other patients; and the cavity which had contained the fluid was obliterated. The liver was large, and had the pale copper colour, and the loose texture, that I have already described; and both the pleura and the lungs were diseased. The former was granulated and adherent; and the latter contained tubercles, some being in a state of suppuration, others not.

The next case, I had the honour of attending with Dr. Jenner. He has favoured me with the following very impressive sketch of its early history.

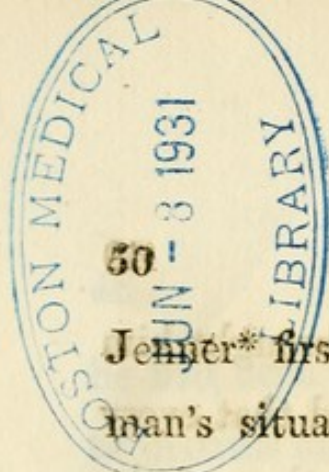
“W. F. Shrapnell, Esq. After serving an arduous campaign in Ireland, as Surgeon of the Royal South Gloucester Regiment of Militia, in the year 1816, and suffering from dysentery, he became on his return to England debilitated, but not to such a degree as to prevent his attending to his ordinary occupations. Sick head-ache, a malady

he had been subject to for many years, now began to distress him at shorter intervals than usual, and the fits were more severe, especially after any little irregularity in diet; and he was sometimes apparently gaining, sometimes losing ground, till about the 29th January, 1817, when he first consulted me. He then complained chiefly of a pain in the right hypochondrium, diverging in one direction to the scrobiculus cordis, and in the other nearly to the spine. Suspecting a disordered state of the liver, I examined him in various positions, but could only discover an apparent tenderness on the left lobe. He was advised to pursue a mild mercurial course for some weeks: however, as there was no increase, but rather a diminution of his uneasy sensations, it was not adopted.

“ He was now determined to put the powers of his constitution to the test of a considerable exertion, and ascertain whether he was fit to go on with the laborious part of his profession or not. Accordingly he resolved upon a long walk, and went on foot to visit a patient at the distance of twelve miles. On his return, I found him by accident halting at the house of a friend, a good deal

tired, but by no means exhausted. I brought him home with me in a carriage, and found that every jog gave him pain in some part or other of the abdomen, but chiefly about the right hypochondrium. He often changed sides with me, but could find no easy posture. From this time his complaints increased rapidly. His respites from pain, or an uneasiness arising from a sense of tightness, as if the parts within were compressed with a bandage, were but of short intervals; except on one particular day, when, after a copious evacuation, he passed the whole of it in perfect ease, and danced for some hours in the evening with a party of friends at his own house. I happened to be there; he gave me a whisper, and said he was quite well, and his complaint turned out to be nothing more than from fæces long lodged in the colon."

(It was on the 2d of May that the event just mentioned occurred. On the 5th, he dined with Dr. Jenner. On the 7th, he was cheerful, but complaining of his uneasy feelings. On the 8th, they became so much worse that he was "fairly laid up." This was the day on which Dr.



SEROUS MEMBRANES.

Jenner* first wrote to me respecting this gentleman's situation; but I did not see him till the 15th.

The symptoms were precisely such as I have described as generally characterising this disease. The belly was enlarged and tender; and in the right side he had occasionally very sharp pain, which was much increased by pressure. There was great languor and distress, and that peculiarly anxious expression of the countenance which constant internal uneasiness occasions. He mentioned the sense of weight in the abdomen, and employed at different subsequent periods the expressions already recorded, as descriptive of this symptom. His bowels were very irregular in their action. His appetite was almost gone; but his thirst was very urgent. Any thing taken into the

* The obligations conferred upon me by this illustrious individual, I feel to be the most honourable circumstances of my life, and as such I gratefully record them. He knew that my attention had been particularly directed to diseases of this description, and he kindly wished me to have an opportunity of witnessing the course of the one in question. I had many times detailed to him such observations as I had made; and another part of this work will shew how much the profession, as well as myself, are indebted to him for many facts illustrative of its nature.

stomach occasioned great distress. The pulse was not much quicker than natural, nor did it become so till towards the conclusion of the disease.

He had been several times bled from the arm, and leeches had been repeatedly applied to the abdomen, before I saw him. The blood was inflamed, and relief followed each evacuation; but the disease did not seem to yield. It was determined to carry the bleeding still further. As the progress of this disease was particularly instructive and interesting, I am glad that it is in my power to illustrate it minutely and accurately by my own observations, as well as by the reports which I from time to time received from Dr. Jenner and Mr. H. Shrapnell, the very affectionate son of our patient.

On the 19th, the former gentleman favoured me with the following remarks :

“ This disease in the abdomen of poor Shrapnell, seems unwilling to quit its hold. He has been bled from the arm and leeched, three or four times since you were here. These operations constantly subdue the pain for a while, particularly the former; but it returns again, and with it the miseries attendant on such a case—every position

of the body uneasy. This morning he shaved himself, and it brought on all but fainting, and he continued near an hour in this state. The tumor or general swelling, I think is increased: the abdomen presents to the eye that kind of appearance which would tell you, till you make an examination by the touch, that effusion had taken place, and was putting the integuments on the stretch: but on a careful inspection this morning, I could not discover any fluctuation. Pressure on every part of the surface, gave me the idea of a solid mass within, or at least a general thickening. He does not appear sinking; and I think his countenance is of a better aspect than when you saw him. The bowels are sufficiently open; but the stools pass with that kind of difficulty, which arises perhaps less from the want of muscular power to propel them, than an impediment from the *bandages* which it is to be feared nature has woven round the intestines."

On the 20th of May, Mr. H. Shrapnell says, "We have followed up the plan of bleeding, leeching, blistering, and the application of sinapisms to the abdomen. The same evening after

you left us, I repeated the bleeding until he fainted. Since that time the oppression and pain in the abdomen has not been so great, but it has never left him entirely. The debility is excessive, and comes on at times with a sense of fainting. The stomach will not bear solid food, and his stools produce a barm-like mucus.”*

After all hope of removing the disease by bleeding and the other applications, was abandoned, he was occasionally purged with calomel and colocynth; and it was attempted to mitigate his restlessness and uneasiness by the use of some of the anodyne extracts.

In allusion to these circumstances, the following letter was written on the 24th of May.

“My father had great relief from the operation of the purgatives on Thursday, until towards the evening, when the abdomen became much distended with flatus. We repeated the hyoscyamus and extract of poppies, but he had a very bad night, and was in the greatest distress, from

* This symptom I had observed in two children labouring under this disease; and this day I noticed it in a young man who is affected with all the symptoms of this alarming malady. *March 12, 1818.*

an anxious desire that something should be given him to pass through the bowels." A purgative similar to the former one was repeated, and its action was promoted by salts and senna. After it, he became much easier, and said that he was free from pain, except that which distension occasioned.

After this period, the warm bath, and frictions with mercurial ointment on the abdomen, and purgatives, varying according to circumstances, were ordered.

On the 27th, he was comparatively easy the whole of the day, and took his dinner with greater appetite than at any time during his illness; but in the course of an hour afterwards, the distress recommenced, and it was very severe during the night. He took some decoction of cusparia, with carbonate potass; but it gave great pain. He had several evacuations from the bowels, and the abdomen appeared somewhat diminished in size. The warm bath afforded relief, but it was only temporary. The friction with the mercurial ointment was rather agreeable to him, and soothed him for some hours.

On the 28th, when he could place the body in a half recumbent position, inclining to the left side, he was tolerably tranquil. The pain at times was very oppressive in the small of the back, but generally more at the sides of the abdomen. At this time, he first began to express the idea that the "intestines were all in a mass;" and he complained of a burning heat in the stomach. The pulse continued about 80. The purgative medicines operated freely, but pain arose from the movements and disturbance which they occasioned in the intestines. The warm bath still proved highly beneficial. He continued tranquil for some hours after it. Yesterday it was repeated twice. While in the water, he complained of great pain arising from a sense of pressure from "*within outwards.*"

30th. He loses strength rapidly, and is at times quite faint. The abdomen remains distended, and is more painful. The warm bath ceases to relieve it; and the exertion of using it was last time so fatiguing to him, that he is not inclined to try it again. An artificial Cheltenham water was this day substituted for the aloetic

purgative which he has recently been taking. The distension of the stomach, after drinking the water, was (as it is with whatever is swallowed) very distressing. The countenance is become peculiarly sharp, and the temples are much sunk. The tongue is of a bright red appearance. The pulse varies from 80 to 95. He complains at times of a severe pain in the left side, in the course of the arch of the colon; and below this point a sharp *ridge* can be felt, under which the fingers can be pushed.

By a letter from Dr. Jenner, dated on the 4th of June, I find, that on that day it was *ascertained*, for the first time, that a fluid was effused into the abdomen. His words are—

“Poor Shrapnell, I think, is much as you left him with regard to general symptoms; but for some days past, on examination of the abdomen, I have thought that I could now and then perceive a fluctuation. On seeing him this morning, this matter was put beyond all doubt.”

I saw him on the 6th; and on that day he was tapped by Mr. Fry, of Dursley. The relief on the flowing of the fluid was at first very great;

and he expressed himself in confident terms that his disorder might now take a more favourable turn. The *ridge* under the arch of the colon towards the left side, which was formerly felt, now became much more manifest, and an irregular shaped tumor could be distinctly felt. Although two gallons of yellow serum were withdrawn, all the uneasy feelings soon returned. In particular, the sense of weight became quite as bad as ever, and the *pain* and tenderness of the abdomen increased. The countenance seemed exceedingly anxious and oppressed; the pulse was 100, and the thirst was very urgent.

He was next recommended to use the nitro-muriatic bath, and to take the same acids internally. The effects of the bath on the mouth, he compared to those which arise from the extrication of the galvanic fluid, when the tongue forms part of the circle. Every other expedient that could be devised for lessening his suffering was also tried, but with little advantage.

Two days after the tapping, I find that the pain, which increased after the operation, had continued ever since, and at times that it was

“*excruciating*.” He compares his sufferings to the scraping with *wire combs*. The evacuations are more jelly-like. The pain, when the intestines are acting, is at times quite intolerable, and makes him cry out. The pulse becomes quicker, and the skin is dry. The burning heat at the stomach, the irregularity of the bowels, the vomiting, and the distress after eating any thing, are quite as troublesome as ever.

To recount the subsequent progress of this disease, is to repeat what has already been detailed in the other cases. Fluid collected again in the abdomen; and on the 16th of June, the operation of tapping was repeated. The fluid was higher coloured than the last, and about two-thirds of the quantity.

On the 17th, he felt an irresistible desire to leave Berkeley, and go to Sharpness Point, a villa belonging to Colonel Berkeley, about three miles distant, on the banks of the Severn. Mr. H. Shrapnell wrote to me on the 18th, “that nothing could deter him from the undertaking. His mind appeared to overcome every feeling of fatigue, and he was much easier when we arrived, than

when we set out. He continues to vomit a bilious viscid matter, but not so dark coloured as at first. The stomach now rejects every thing, and in a very short time; the pain, and great oppression has increased, the pulse is feeble and sinking, and has a thread-like feel. He is much altered, losing strength, and becoming more emaciated daily. A few days ago, his voice was weak and sharp; it is now hollow, deep, and hoarse. This change took place the night before last."

On the 21st, this most afflicting malady put a period to the sufferings of our patient.

The following day the body was examined, in presence of Dr. Jenner and myself, by Mr. Fry, of Dursley.

On cutting into the abdomen, it was found that about three pints of dark coloured fluid had collected since the last tapping. The intestines appeared at once, but no omentum was visible. They were a little redder than usual; they adhered together, and the thickened, and tuberculated state of the peritonæal coat was every where seen. The accretions, however, which united the convolutions of the intestines, were by no means so dense

and firm as I had seen them on other occasions. But the peritonæum, where it lines the abdomen, shewed the diseased structure in the most perfect form. It was very much thickened and tuberculated. In some places, the tubercles were distinct and well defined, having patches of turgid vessels between them; in others, this distinctness of form was not found, the tubercles having coalesced, and given to the surface a rough appearance, with protuberances of various sizes diffused over it.

On searching for the omentum, a large irregular shaped tuberculated mass was found, occupying part of the epigastrium and left hypochondrium. It bore some resemblance to a diseased spleen, and for an instant it was thought to be that organ. A little further inquiry pointed out the mistake, and proved the diseased mass to be the omentum. All round it, the peritonæal coat of the stomach and intestines was much thickened, and in its vicinity, too, the agglutination of the contiguous parts was greatest.*

* It was this mass which was felt before, but still more distinctly, after the tapping, and under which the fingers could be pushed. Before dissection, I conceived the tumor to have arisen from the agglutination of the intestines.

The tubercles on the curvature of the stomach, near to the place where the diseased omentum was attached to that organ, were very large and very numerous. The thickness of the omentum, at the point alluded to, was fully an inch and a half. Part of the arch of the colon was imbedded in its substance.* When cut into, it had a firm cheesy sort of texture; some portions of it shewed distinct circular tubera, corresponding with the inequalities on the outer surface. They were of a cream colour, the interstitial parts being precisely like that of the spleen.

Both the mesentery and mesocolon were very much diseased. They had a dense leathery appearance, and were studded with tubercles. All the glands were enlarged. The peritonæum, where it lines the diaphragm, was nearly half an inch in thickness. The cavity of the gall bladders was completely filled up with two large calculi, and its coats were much diseased. The liver was of a loose texture, and of a copper colour. The spleen,

* I expected to have been able to have presented to the reader an accurate engraving of this morbid structure; but I fear that it will not be finished in time, and I do not think it necessary on that account to delay the publication.

the kidneys, and the pancreas, were in their natural state.

The pleura, excepting some old adhesions, was sound, and so were the lungs.

I have seen two examples of this disease in children of the same family. The first was about two years of age. In him, the fatal termination took place about fourteen weeks after the seizure. In the other, who was younger, the same unfortunate event happened in nine weeks. She had suffered much from difficult dentition, and was also affected with a species of porrigo.

In both, the disease seems to have commenced in the mesentery. There certainly were no signs of acute inflammation, and the pain was never very severe; but the weight in the abdomen caused one of them to refer to this symptom, in the words already quoted.

I have now detailed the most important facts that I have observed in this most formidable malady. I subjoin a few extracts from the works of different writers, with the hope that they may confirm what I have stated, and in some degree elucidate the subject which will be discussed in the next division of this inquiry.

Among some of the works of the older writers, there are appearances described which certainly arose from this disease; but the information which is given respecting the symptoms is miserably defective. Bonetus gives the following observation, from P. Barbette.

“ In hydropicis peritonæi tunicæ valde increascent, imo successu temporis cartilagineam duritiem acquirunt, quod in paracentesi abdominis scire necessarium est.”*

The practical remark at the conclusion of this quotation, is an important one. The case was of a complicated nature, and probably similar to those of Elias and Sunnock, and Mr. Shrapnell; consequently, one in which tapping could not be performed with any reasonable hope of success.

The section of the *Sepulchretum de Adstrictione Alvi*, p. 882, contains another history, which is manifestly an example of the disease I have described; and it is worthy of remark, that the appearance of the patient induced the observer to form an opinion of the nature of the complaint, similar to what I entertained respecting my first case.

* *Vide Bonetus, vol. ii. p. 1147.*

“ Virgini cachecticæ per tres dies ante mortem alvus adstricta fuit, &c. Omentum erat inerasatum, et fere coriaceum cernebatur, quod omnia prope viscera sua latitudine adeo arcte complectebatur, ut intestina quasi conglutinata a se invicem ægre separari possent.”

Here the detail of symptoms is meagre and unsatisfactory; but those mentioned, as well as the appearances observed on dissection, seem fully to justify my opinion as to its nature. The following observation of Haller applies probably to a state of disease differing in its progress from the one I am considering. It seems to belong to those acute attacks of inflammation to which serous membranes are liable. “Viscera abdominis,” he observes, “omnia inter se connata, hepar ventriculum jejunum ileum ipse in purulento vidi.”

De Haen has recorded a great many cases of disease of the pleura and peritonæum. His object seems chiefly to have been to refute Haller's doctrine concerning irritability and sensibility, rather than to describe minutely the characters of the different affections. This is a matter of regret; for all the writings of this author denote a mind well fitted, by its penetration and its candour, to

extend the limits of our art. Among his *Proble-mata et Difficultates*, I find that the sixth refers to adhesions of the pleura; the tenth, to a disease of the peritonæum, very similar to what I am investigating. I give part of the account of the dissection.

“ Aperto abdomine, peritonæum hic lineam, ibi tres quatuorve crassum, cæterum album, granulose, tuberosum ubique. Omentum non inveniebamus. An ideo tam crassum peritonæum, quod omentum a nexu suo cum colo et ventriculo solutum, in unam informem membranam cum illo degeneraverit? Quidquam tamen omento simile, veluti extensum, atque connatum cum intestinis apparuit nobis, verum minime omentum fuit, cum marsupii instar æque tegeret intestina ad dorsum quam ad anteriora, arcte cum illis ubique coëuns. Probe autem et lente producto examine, vidimus clare externam omnium intestinorum tunicam ab intestinis omnibus secessisse, et cum vicini intestini tunica secedente coaluisse. Erat autem tunicæ externæ secessus in toto intestini cujusque ambitu. Quando enim uno in loco percideram hanc extimam tunicam, digito sub illa

potui perambulare circum totum intestinum, ipsiusque intestini ex hac vagina educti portionem adtrahens, evaginavi omnia intestina ex sua tunica externa, sine vel minima laceratione," &c.

In every particular except the last, this dissection accords with that I have described. I never could unsheath the intestine without difficulty, and then I always observed it changed in its texture.* The course of the symptoms as given by De Haen is very unsatisfactory; but those that are mentioned are precisely such as I have met with in the last stage of the complaint. "Dextro latere doluit, difficulter animam duxit, tussim frequentem habuit, pulsumque celerem, ac debilem, sitibundus alvo obstructus," &c.

In *Lieutaud's Historia Anatomico Medica*, a book more remarkable for the number than the accuracy of the observations which it contains, there are several cases which it may be worth while to quote. Their nature does not seem

* Since this observation was written, I have had one remarkable case, where the intestine, from the duodenum to the colon, was easily unsheathed from its peritonæal covering. *Vide* the case of Bennyman, in another part of this volume.

to have been well comprehended by this author, nor by those from whose works he has copied them. They are, however, evidently examples of the disease of which I have been treating; and the symptoms, as far as they can be ascertained, correspond with what I have observed.

“ Puer tredecim annorum, longa *et non satis intellecta ægritudine* confectus, tandem ad extremam maciem redactus, ad plures migravit.

“ Exenterato cadavere omnia patent viscera, hepar scilicet lien, ventriculus et intestina, ita invicem connexa et conglutinata ut nulla arte integræ separari possent. Hepar grandissimum erat et schirrhosum. Lien putris et fere absumptus conspiciebatur, sicut et epiploon. Mesenterium variis steatomatibus erat refertum. Pulmo dexter semiputridus costis pertinaciter adherebat.”*

“ Puer quatuordecim annorum jam pridem patiebatur tormina, cum ventris tumore, et per vices ingenti diarrhœa. Sæviebat tussis cum febræ lenta et macie, quibus tandem persistentibus fatiscunt vires et accedit mors.

* Obs. 1595, p. 381.

“ Flatus cum ichore recondebat abdomen. Omentum erat putridum, intestina admodum involuta et invicem adnata. Occurrebant glandulæ intestinorum majusculæ, duriusculæ et nigricantes. Hepar etiam conspiciebatur purulentum; pancreas schirrhosum, renes corrupti, ac demum pulmones putridi.”*

I need not point out to the reader the vagueness of some of the language used in the foregoing extracts. It is such as almost to vitiate the testimony of the writer; and were it not in essential points supported by the remarks of others, I should not deem it right to bring it forward. The work is filled with matter of the same description, and all inferences must of course be made with great caution.

* Obs. 1596, p. 381.

CHAPTER II.

TUBERCULATED ACCRETION OF THE PERITONÆUM — ORIGIN OF TUBERCLES — CONNECTION BETWEEN TUBERCLES AND HYDATIDS.

THE character of this disease, and the changes of structure by which it is occasioned, having been made known, it remains that we endeavour to trace their origin and their progress. Should this investigation be in any degree successful, there is reason to hope that it may throw light upon the morbid appearances of other organs and textures, as well as upon those of the peritonæum.

Almost all recent Physiological and Pathological doctrines have been so exclusively founded upon certain views of the sanguiferous system, that some effort is required to avoid assigning to it more than its due share of influence in enquiries of this kind. The changes on membranous surfaces have been especially ascribed to inflammation. But this is not all; for even though we are

not agreed respecting the nature of inflammation itself, in any of its stages or degrees, we do not hesitate to render our speculative notions the basis of our reasoning, when we contemplate the origin of tumours, or the various disorganizations that are visible in the different viscera. It is of very great consequence to acquire precise notions on this subject; to find out what may justly be referred to inflammatory action, of whatever sort it may be, and what ought to be attributed to a different agency.

It is with the view of laying this question before the reader, that I bring forward the following facts and observations. They may not be sufficient to satisfy him regarding all the phænomena of the diseases under consideration, but they may at least serve to indicate the magnitude of the subject, and its intimate connexion with many questions most interesting to all who feel for the sufferings of their race.

Serous membranes form a boundary between contiguous viscera, and invest most of those that are lined by the mucous texture. They are very largely supplied both with exhalants and absorbents; and their healthy state depends very much

upon the due balance being kept up between the different functions of these vessels. The symptoms of diseases that attack the substance of a viscus, may on many occasions be distinguished from those that occur when its membrane is affected; and we have already seen the extent to which altered structure may proceed in the latter, while the former scarcely undergo any change.

None of the membranes of the serous class can be compared with the peritonæum, either as to its extent, or to the variety of function to which it directly or indirectly ministers. The vessels that perform the first and most important act of absorption, are transmitted through its substance.* In the disease under consideration, these vessels become in general diseased; and from this circumstance arise its most distressing, as well as its most fatal symptoms. Should the mesentery escape, the complaint may be found to have existed in every other portion of the peritonæum; but in this

* This remark applies merely to the lacteals or chyliferous vessels; but the reader must bear in mind, that the mesentery and intestines are supplied, like every other part of the body, with absorbents of a different kind, whose office is to take up what is deposited for their use by the exhalants.

case the patient will of course be free from many of the worst symptoms, and his life may be prolonged beyond the time usually allotted to the progress of the disorder.

In the eyes of some pathologists, the powers of inflammation are unlimited. It forms by the aid of coagulable lymph, cysts and tumours, and all the varieties of diseased texture, that dissection constantly exposes to our view. The same convenient form of reasoning, is the one which naturally occurs on the present occasion. But a little reflection will show how erroneous, how unsatisfactory, it is.

“ The particular symptoms which characterise or distinguish this species of inflammation, (*i. e.* inflammation of diaphanous membranes,) are not yet accurately ascertained. *We are certain*, however, that it is attended with great pain, and with a high fever.”*

Again, the same author observes, “ Diaphanous membranes, in consequence of inflammation, are found thickened, opaque, sloughy, with a gelatinous or purulent exudation on their surface,

* *Vide* Dr. Carmichael Smith's Paper on the different kinds of Inflammation

sometimes causing preternatural adhesions ; at other times, the cavities lined by those membranes are filled with a turbid serum, with filaments floating in it."

" The symptoms accompanying peritonæal inflammation, are fulness, tension, and a general soreness of the abdomen, with purging and fever ; the pulse is remarkably small, quick, and thready ; and the slightest pressure on the part causes pain, sickness, and vomiting. Upon dissection, there is found a kind of gelatinous exudation all over the intestines ; and the cavity of the abdomen is often filled with a turbid whey-coloured serum."

The foregoing description of the symptoms of inflammation of serous membranes is very accurate, and the account of the consequences of that state is not less so. I am induced to quote from the writer in question, because he was the first to introduce scientific and precise views into enquiries of this kind. It is to be regretted that they have not had a greater influence upon the writings and reasonings of his successors.

It is obvious, that nothing yet has been said that strictly applies to the disease which is the

subject of this discussion. It exists without acute pain and high fever ; and the appearances observable on dissection, do not accord with those which all the most *accurate* anatomists enumerate as consequences of inflammation.

These considerations forcibly struck Bichat ; and they have betrayed him into an inconsistency seldom to be found in his writings. He was aware of the peculiarity of this disease ; and though he at one time enumerates it among the consequences of inflammation, he seems soon to have detected his error, and to have assigned to it a different origin.

Thus, he speaks at one place, “ *de ces inflammations chroniques, avec productions d’une foule de petits tubercules blanchâtres, qu’il est si fréquent de trouver sur ces membranes.*”^{*} Shortly after, he maintains that this is a malady “ qu’il faudroit plutot ranger dans une classe autre que celle des phlegmasies, et que la production des petits tubercules qui l’accompagnent, caractérise surtout. Les auteurs qui n’ont point assez fixé leur attention sur elle, l’ont dénommée entérite chro-

^{*} *Vide Anatomie Generale, tom. 4. p. 517.*

nique dans le pèritoine, inflammation latente dans la plèvre, etc. quoique cependant étrangère à tout organe subjacent, excepté dans les derniers temps où elle se propage par le tissu cellulaire, elle ait exclusivement son siège dans les membranes séreuses, *et soit une affection propre à ces membranes, comme les éruptions miliars le sont à la surface cutanée, comme les aphthes le sont aux surfaces muqueuses.*"

There is reason to believe that this writer has fallen likewise into error, in describing this disease as peculiar to serous membranes. Tubercles exist in almost every texture, and their origin and essential character will probably be found to be the same wherever they are discovered. When they attack the peritonæum and mesentery, they give rise to the symptoms already enumerated. When the lungs or pleura are affected, the course of the symptoms is different; and so it must be, according to the situation and function of the diseased part.

We have seen that inflammation in any of its known forms or terminations, does not satisfactorily explain the question under examination. I subjoin two cases, which I think are peculiarly valu-

able in this stage of the discussion. They both occurred to me since the first part of this enquiry was printed. They serve to shew, first, the origin and progress of the tuberculous disease without inflammation; and next, the occurrence of that state, with all its well marked symptoms and consequences, after the change of structure peculiar to the former disorder had existed.

Priscilla Bullock, æt. 17, Feb. 5, 1818. Complains of pain and tenderness of the belly, with frequent cough, and quick and laborious respiration. The appetite is very bad, and what food is taken is speedily rejected, after violent retching. The bowels are loose, and she has a general sense of uneasiness about them. Pulse 130. The skin is hot, and for the most part parched; except at night when she has cold sweats. The tongue has a bright red colour. The lips are dry, and the cuticle is frequently peeling off. She complains also of pain about the shoulders and chest.

This girl's symptoms are reported to have come on about ten weeks ago, after being exposed to cold and rain. The looseness began at that time, and it has continued ever since. About a fortnight

ago, she was attacked with the measles. To that attack she ascribes her cough and the uneasiness about the chest.

I pronounced this to be an affection of the peritonæum, and probably also of the lungs and pleura, like those of Tandy and Aldridge. A complete removal of some of the most distressing and characteristic symptoms, led me at one time to doubt the accuracy of my diagnosis. She was repeatedly blistered; and the irritable state of the stomach and bowels was so effectually obviated by chalk, and catechu, and opium, that both the vomiting and looseness left her about a fortnight after she came into the Infirmary. The velocity of the pulse, too, was very much diminished, and so was the cough and difficulty of breathing. The appetite improved, and she certainly gained flesh. This circumstance convinced me, that though the peritonæum might be affected, the mesentery could not have suffered so much as in the other cases.

She continued improving till the 1st of April. Then came on more cough, with heat of skin, and a quick pulse and pain about the chest and belly; but it was especially severe in the temples and

the forehead. She was bled by leeches on the head, and purged. She nevertheless fell into a state of stupor; the pupils of the eye became dilated, and a rigid and spasmodic action of many of the muscles took place. During this state, the disorder both of the thoracic and abdominal viscera seemed to give her no uneasiness. She was bled at the arm; the head was shaved, and both temporal arteries were opened, and purgatives and blisters were used; but all did no good. She died on the 7th.

I next day examined the body. The abdomen felt hard and tense; but it was not protuberant. Its peritonæal lining was universally thickened and tuberculated. The tubercles were very numerous, many of them being circular and pendulous. They varied in size, from that of a pin's head to that of a Spanish hazel nut. The latter contained a soft, curdy, yellowish matter. Others were of a cartilaginous hardness and texture. On the surface of the intestines they were numerous, and small, and distinct.

With this state of disease, I saw another, which I never before witnessed in so perfect a form, or

under such circumstances. There was not accretion of the intestines to each other, and to the sides of the abdomen, as in the other cases; but there was a beautiful illustration of the result of simple adhesive inflammation, very minute and delicate crimson-coloured membranous filaments, uniting together every convolution of the intestinal tube. These filaments were not of a nature to interfere much with its peristaltic motion: they were distinct in all their characters from the tuberculous disease, and manifestly had been formed at a much later period. The mesentery contained tubercles; but it was far from being so much obstructed by them as I had often seen it. The liver was very large, and so turgid with bile, that it flowed freely on the knife when an incision was made into its substance. The pleura of the left side, and where it lines the sternum, was diseased like the peritonæum. There were no tubercles in the lungs.

The blood vessels of the brain were turgid; and the quantity of fluid in the ventricles seemed rather more than is usually found.

Samuel Haynes, æt. 23. This man came to the Infirmary as an out-patient. His symptoms were obscure, and were not considered as alarming by himself or his friends. To me, however, his countenance and manner indicated so much serious illness, that I urged him strongly to come into the house. This advice was not complied with till some time after I first saw him. He then complained of languor and weakness, with a feeling of weight and of oppression about his chest and bowels. He had pain about the sides and back, and could not feel at rest or comfortable in any position. His appetite was bad, the tongue was foul, and the bowels were very irregular. Symptoms of this kind had troubled him more or less for six months; but he was able to continue to labour as a blacksmith, almost to the period when I first saw him.

On the evening of the 8th of April, he was seized with the symptoms of enteritis. He had pain and tenderness of the bowels, vomiting, and obstinate costiveness. By means of bleeding, the warm bath, purgatives, glysters with infusion of tobacco, &c. &c. the obstruction of the bowels was removed on the 12th. He seemed in every re

spect much relieved. The vomiting had ceased, and so had the tenderness; and he took freely gruel and other articles of nourishment. On the 13th he had several loose stools: one passed off suddenly and involuntarily in bed. His abdomen at the same time became distended, and in five minutes thereafter he expired.

On examining the body, I found the abdomen much larger than natural, and it had a firm, solid feel. On cutting through its parietes, I arrived at a dense thick mass, of a close granulated texture. It was at least half an inch in thickness, and was spread over the whole surface of the intestines, and was in the closest union with the peritonæal lining of the belly. It became apparent, on due examination, that this diseased structure was the omentum. On separating it carefully from the subjacent parts, a quantity of bright yellow serum escaped; and the intestines themselves were found in a state of high inflammation, and large quantities of purulent looking flakes were seen floating in the effused fluid. Tubercles of various sizes, and with their contents of different

degrees of consistence, were attached to the diseased surface of the peritonæum.

The mesentery was very turgid with blood. It contained tubercles, but none were large; and small ones were seen thrown up here and there on the surface of the intestines. Wherever these tubercles were most numerous, the signs of increased vascularity were the greatest; the vessels being seen converging to a centre on the apex of the tubercle. The vessels, however, did not seem to enter the tubercle, but merely to be spread over its surface; for by a little care they could be separated from it; and then it was found to have the same sort of pearly hue, and cartilaginous hardness, that I have remarked in the other cases, where no signs of acute inflammation had existed.

All the viscera of the abdomen were sound. The pericardium was almost entirely devoid of its proper liquor; it was very thin and transparent, and seemed as if it had been stretched and dried in the sun. There were strong adhesions in the right side of the thorax.

It were difficult perhaps to find two cases more illustrative of the point under consideration than

those just quoted. The distinctive characters of inflammation, strictly so called, and the tuberculous disease, seem to be pointed out, as much by the diseased appearances as by the symptoms. It is obvious, that in the case of Haynes, the disease of the omentum must have been long in existence before the acute inflammation came on. The tuberculous disease was spreading to the mesentery, and to the surface of the intestines; and probably soon would have afforded all the symptoms which accompany it in its extended form; and a termination similar to that which occurred in the other patients would probably have been his lot, had it not been more speedily determined by the supervention of enteritis.

The case of Bullock affords the only example I have ever seen, of a complete interruption to the progress of the disease, after its peculiar characters were apparent. The account of the dissection, in some measure, explains this circumstance. The mesentery was not completely involved in the disease; and the adhesive inflammation seems to have come on subsequent to the existence of the tuberculous disease; and, as

in the case of Haynes, to have destroyed her before the other affection had run its usual course. It is remarkable, that the head should have been the part to which her sufferings were at the last almost exclusively referred, the altered structure having been found altogether in the abdomen.

Although pain, acute or otherwise, had been felt at some period of the disease by all the patients, it does not in any of them appear to have been such as results from any well ascertained inflammatory affection; and we have just given proofs that the change of structure, both in the peritonæum and the mesentery, had proceeded to a great extent before inflammation came on. I think, too, we have the same thing demonstrated, by the occurrence of effusion in three of the cases subsequent to the existence of all the early symptoms of the disease. In the case of Higgins, suppurative inflammation seems to have come on under the umbilicus, after the tuberculated accretion had agglutinated most of the contents of the abdominal cavity. The cavity which contained the fluid, in the case of Sunnock, was obliterated by the accretion of its sides, after the fluid was with-

drawn. A similar event I anticipated after the tapping, in the case of Mr. Shrapnell; but the very acute pain which he suffered after the operation, denoted an accession of inflammation, which was rapidly followed by another effusion; and accretion of course became impossible.

We have not been able to show where this disease really originates, though it is perhaps now apparent where it does not. Nothing that is known, either of the physiology or pathology of the sanguiferous system, seems capable of explaining what we are now in quest of. We must therefore direct our attention to another part of our structure.

This inquiry has hitherto been confined to the symptoms and consequences of tubercles in the peritonæum; but the dissections have proved the existence of the disease, not only in other membranes of the same class, but in other textures. They have been found in the lungs and in the pleura; and it will afterwards appear, that they may exist in almost every texture of the body. Their origin must therefore be connected with some one of those elementary parts of our frame, which are diffused through the body, and enter

into the composition of every organ. This is the case with the sanguiferous, and so it is with the nervous and absorbent systems.

Disorders of the latter are supposed to occasion many of the symptoms of a numerous and most unmanageable class of diseases. To this class may perhaps be referred the complaint under consideration; and we are now to see whether, by fact or analogy, we can trace the morbid appearances so far, as to enable us to give a satisfactory account of their origin.

When the disease is in the peritonæum, all its symptoms denote an unhealthy condition of the functions of digestion, absorption, and assimilation. When the tubercles are in the lungs or in the pleura, such occurrences seldom take place; and the nutritive system may continue almost unimpaired during a great part of the disease.

Sir Everard Home has recorded, in his book on Cancer, a case strongly resembling the tuberculated disease of the peritonæum. Its origin luckily is very clearly ascertained; and the author very justly refers it to disordered action of the lymphatics, which arose from a cancerous ulcer on the penis.

“ The body was examined nine hours after death, and the following were the appearances :*

“ On opening into the cavity of the abdomen, the peritonæum, which lines the abdominal muscles between the pubes and the navel, was studded over with small white opake bodies, of a firm consistence. Immediately within the abdominal ring, the lymphatic glands were in a diseased state : on the left side there were two of the size of chestnuts ; and on the right there were three of the same size : a chain of diseased glands of different sizes was traced from these round the margin of the pelvis to the lumbar vertebræ. On the anterior surface of these bones they formed a solid mass, an inch and a half in thickness, completely surrounding the aorta and vena cava. They were met with as high as the sixth dorsal vertebra, gradually diminishing in size and number to that part ; but none could be discovered on the anterior part of the spine, higher up.

“ There was a large cluster of similarly diseased glands at the root of the mesentery, and a few were met with in the mesentery.

* *Vide* Home on Cancer, p. 28.

“ The psoas muscle of the left side, in which the diseased glands were in the greatest number, were studded over by small oval white bodies of a firm consistence, not much larger than millet seed, the interstices between them not exceeding one eighth of an inch. On cutting into the substance of the muscle, the interstices between the fasci- culi of muscular fibres contained a number of the same substances; they appeared to be evidently connected with the diseased state of the lymphatic system.

“ These glands, when cut open, presented different appearances: those nearest the groins contained a soft white substance, of the consistence of thick cream; and those higher up in the loins were harder and more solid.

“ The liver was studded over on both its surfaces with flattened hard irregular bodies of different sizes, from that of a silver penny to that of a shilling: their internal substance, when cut into, was similar to that found in the glands above described.

“ The other viscera contained in the cavity of the abdomen, had their natural appearance.

“ Upon examining the thorax, the lungs were found in a healthy state; the heart was rather smaller than it is usually met with. On the anterior part of the diaphragm there were several tumours of the size of chesnuts; and on different parts of the pleura, in both sides of the chest, smaller tumours were met with; all of these resembled, in their internal texture, the diseased glands in the loins.”

As far as one case goes, the evidence of what has been quoted is very conclusive; and when it is examined in conjunction with the facts in another part of this inquiry, it affords at least fair reason for believing, that the opinion to which I incline is not destitute of foundation.

That it may be properly understood, it is necessary to lay before the reader various pathological facts, which of late years have been somehow or other overlooked. They were in the first instance pointed out to me by Dr. Jenner. By his kindness I have been enabled to examine almost every appearance that I am now to describe. The subject had long occupied his attention; and while investigating it, he certainly was not aware that other observers had entertained opinions similar to his own; but I find that several distinguished wri-

ters had pursued the same line of inquiry; and the reader will be gratified by having their evidence likewise, in support of the facts which I am about to detail.

The question respecting the origin of hydatids, was a subject of interesting discussion soon after the discovery of the absorbent system. Of late years little has been said on the subject in this country; and there are many distinguished and experienced men who do not seem to be aware, that a very great variety of important changes of structure take their rise from hydatids, whatever may have been the source whence they themselves originated. To establish the first opinion, is our present purpose. The connection between it, and the main object of this part of our inquiry, will be seen as we advance.

Hydatids have been found connected with almost every texture of the body. In their natural state, they are composed of two coats,* the interior

* Dr. Jenner has observed varieties in this respect. Besides the two coats just spoken of, there may be seen in the common hydatid before its changes commence, a soft internal lining, of a spongy texture. Its attachment to the next coat is so slight, that it may easily be lifted off by the point of a probe.

being more soft and delicate than the exterior. They are filled with a limpid fluid. This fluid does not coagulate by heat nor by rest. Its taste and smell much resembles that of the flesh of the animal in which the hydatid is found. They vary much in size, from a body smaller than the head of a pin, to a magnitude which seems only to be limited by the resistance offered by the surrounding parts. But they sometimes overcome resistance in a very surprising way. I remember to have seen three large ones, which had grown between the intercostal muscles. They ultimately acquired the size a goose's egg, separating the ribs, and forming tumours which were very visible during life on the outside of the thorax. But they had grown equally towards the cavity of the chest; and one, which was situated between the eighth and ninth ribs of the right side, pressed both upon the lungs, the diaphragm, and the liver, and left upon the convex surface of the latter a smooth and deep indentation, strongly marking where the pressure had been made. The contents of these hydatids were perfectly clear and fluid; but their investing membranes were very dense and strong;

and before being slit open, they felt like solid tumours. They were easily dissected from the surrounding parts, which were quite free from disease.

When the hydatids are recently taken from the body, and punctured, they suddenly contract, and send forth their contents with considerable force, so as to project them to a height of many feet. On examining the interior surface afterwards, it will be found to have fallen into convoluted rugæ, and to exhibit an appearance similar to that of the stomach of a small carnivorous animal. This contractile power seems to warrant the conclusion, that they possess a certain share of vitality, independent of the animal in which they exist. But this independence is very limited indeed, because (except in those cases where small hydatids are found floating within larger ones,) there is always some adhesion, direct or indirect, between them and the contiguous parts.

Sometimes a cluster of hydatids receive their nutrition from a small pedicle, or stalk, like a bunch of grapes from a branch of the tree. At other times, they are imbedded in the body of the viscera, or are spread over the surface of mem-

branes, and diffused through the cellular substance and muscular textures.

Such are the ordinary appearances of the commonest species of hydatids, in their natural state. Occasionally they grow to a very great magnitude, without undergoing any change of structure; but this is a rare occurrence, for sooner or later a conversion takes place, and the limpid contents, as well as the containing parts, are changed to substances of very different characters, and occasion tumours and tubercles, and other disorganizations, which are now to be noticed, and which it has of late been customary to ascribe to causes of another kind.

These changes are progressive, but not uniform; and it is only in the larger hydatids that they can be accurately traced. They commence with an opaque spot, which advances, in some instances, with rapidity; in others, more slowly; and ultimately renders the coats thicker, and destroys their contractile power: but no regularity is observed in this process, and the morbid changes proceed in various ways. The conversion is sometimes into a substance resembling cartilage, pos-

sessing both its density and colour; again, signs of ossification are seen in the coats of the hydatid, while its contents retain their original character; but more frequently the latter are changed, and assume a vast variety of appearances. Most commonly a pulpy kind of substance, resembling scraped cheese in appearance and consistence, is met with. Sometimes a fluid resembling cream is found; at other times, it is dark coloured, like a mixture of blood and water; or it may be transparent and glairy, like the white of an egg. With these, gritty or earthy concretions are frequently found.

It occasionally happens, when a cluster of hydatids have grown together, and when, in the progress of their transformation, they have formed a large encysted tumour, that punctures or incisions into different parts of the mass, will afford many of the varieties of contents that are mentioned above. I remember to have seen this in a very interesting case that I had the honour of attending with Dr. Jenner, at Cheltenham. By puncturing the abdomen at three different points, before death, we got a glairy fluid, a dark coloured one, and a

thick cream coloured matter. After death it was found, that the immense tumour which filled the abdominal cavity, and caused dreadful distress from its distension, sprung from a small root or pedicle, which grew from the right ovary. The original hydatical structure, in some places was very visible; but in others, besides the peculiarities already marked, we found portions of the mass which had acquired the character and appearance of a schirrous tumour.

The whole of the morbid growth, with its *various contents and textures*, was free from adhesion with the surrounding parts, except at the point already mentioned, and where the punctures had occasioned inflammation and attachment, between it and the peritonæum.

I have seen a case likewise, where the section of a transformed hydatid exhibited a series of concentric laminæ, resembling very much the appearance of a urinary calculus. This was observed in a very remarkable disease of the lungs and pleura, an account of which will be found in the second part of this volume.*

* *Vide* the case of Wingate.

The periods at which these transformations take place, are very uncertain. They may commence in a few days after the hydatid is brought into existence ; or they may not occur at all, the original structure continuing for many years. The first position was demonstrated by experiments instituted by Dr. Jenner, on some very young animals, particularly rabbits. He found, that by feeding them with some kinds of food, the liver soon became studded with hydatids ; and by examinations, at different times, he was able to trace the gradations already mentioned, from the first inspissation of their contents, and thickening of their coats, to their final conversion into tubercles of varying size and hardness. In the same liver, he has also repeatedly found every gradation, from compact caseous looking matter, to the limpid contents in their first stage.

Small hydatids sometimes unite in clusters, and ultimately form what has been called a schirrous tumour. In this case, though they may not be of a greater size than a pin's head, yet they go through the same changes as the larger ones. At first sight, tumours which are formed in this way seem

to have a uniform texture, but on close inspection, it will be found to be granulated, and that it has been formed in the way just described.

Some of the foregoing facts were applied by Dr. Jenner, to explain the origin of tubercular phthisis. He sent two communications to Dr. Beddoes on this subject, which are to be found in his work on factitious airs. They form a valuable illustration of this part of our inquiry; and as they have not met with the consideration which they merit, I subjoin them.

“ I took the liberty, during our short interview, of offering an opinion respecting (in some instances at least) the origin of tubercles in the lungs. A few days ago, I saw, at a butcher's shop, the lungs of a young heifer, which appeared to be diseased with tubercles. On cutting into some of these tumours, a family of hydatids immediately appeared. Some of these tubercles, though similar in external appearance to those containing hydatids, had within them a brown fibrous kind of substance, which to the feel was a little gritty. In this case it is pretty clear, that the tubercle was a *mansion built* by the *hydatid*; and I am sorry to say, this destructive

little animal appeared to be unassailable within its walls, as I could not perceive any branches of the trachea opening within them : but this may not be the case in the early stages of its structure. May not the infant tubercle described by Stark be an hydatid ?”

“ The fact of the hydatids forming tubercles in the cow’s lungs, was very clearly ascertained. I made a preparation of the parts. Many of Dr. Stark’s observations on tubercles tend to strengthen my idea of their origin, particularly the following : “ No blood vessels are to be seen upon them, even when examined by a microscope, after injecting the lungs from the pulmonary artery and vein. —(*Medical Communications*, I. page 390). If, as I suppose, they are extraneous bodies, they are of course no more capable of receiving injections, than worms that adhere to the intestines. Stark describes the tubercle, as being hard and compact before it arrives at any considerable size. If I recollect right, that species of hydatid, which pervades the cellular membrane of the hog, is solid, or nearly so. It is singular enough, that hydatids

should be more common among those animals which live in a state of nature, than among the human species. Hares, rabbits, cows, and hogs, are infected with them perpetually: the hog, indeed, can scarcely be said to be in a state of nature here. Among quadrupeds, I do not see that the constitution is affected by them: the animals thrive and grow fat, in an equal degree with those which are free from them, even though they occasion suppurations among the viscera. In the liver of the cow that produced the hydatids from the lungs, were several distinct bags of well-formed pus; yet the animal was very fat, and had no marks of disease before it was slaughtered."

There is an inaccuracy in the first extract, which Dr. Jenner soon detected, and which it is necessary to correct. It is said, that the tubercle is a mansion built by the hydatid: now it has already been shewn, that the tubercle is nothing but the hydatid itself, in one of its stages of transformation. It is needless to point out to the reader the importance of the facts which have been recorded, whether as applicable to the subject immediately under consideration, or to the

whole class of cachectic diseases. But many will be surprised when they find, that the testimony of such men as Boerhaave and De Haen should not have lived longer in the memory of their professional brethren ; and that the *facts* and observations which these authors have recorded touching the nature of hydatids, and the origin of tumours, should have been so much overlooked.

Boerhaave, adopting the opinion of Malpighi respecting the existence of follicles, which he considered as the simplest glandular apparatus, attributes to their expansion and their morbid actions, the formation and growth of the various encysted tumours which are found in different parts of the body. This question was the subject of a very interesting correspondence between him and Ruysch. The latter denies the existence of follicles altogether ; and Hewson, following him, maintains, that what were supposed to be *cryptæ* and *folliculæ* are nothing but convoluted arteries.

The art of injecting, and the important anatomical discoveries which that art has been the means of bringing to light, has evidently contributed to draw men's attention too exclusively to the

sanguiferous system, and to disregard every thing which ought to have led to more enlarged views of the animal economy. But be this as it may, the facts themselves to which I am now to beg the reader's notice, are particularly valuable, and seem to fill up some of the chasms which may be discovered in this part of our inquiry. I must quote rather more fully than I intended; but I am sure this will be excused, when the importance of the discussion is considered.

I have given one case from Sir Everard Home, to prove the connexion between diseased lymphatics and the tuberculous disorder within the abdomen. There is another from De Haen, which is still more illustrative of my views on this subject, and affords most striking confirmation of the various facts which have been recorded.

“Puerum 10. annorum, multis in collo, et sub axillis, tumoribus scatentem, muco turgidum, ventre tumidum, cachecticum totum, prægressi anni autumno ad me attulerant. Quæ remedia in usum advocata sunt, hæc postea historiæ aliorum ægrorum dabunt. Puer hydropicus factus, post exple-

tas decem in Nosocomio septimanas, calamitosam vitam terminavit.

“Cadaver lustravi cum clarissimo et dexterrimo anatomes Professore Gasser, et exercitatissimo Chirurgo Nosocomii Civici Leber, qui in omnibus dissectionibus semper gratum mihi, utileque, præbere auxilium solent, tota studiosorum præsentē cohorte. Aperto abdomine mesenterium tum vehementer tumidum fuit, tum penitus nudum ac conspicuum, intestinis omnibus quasi naturaliter versus ambitum remotis. Tumores mesenterii magni, durique iidem et solitarii, cum peritonæo vero, et ligamenti vertebrarum lumborum, adeo intime concreti, ut mesenterium citra dilacerationem haud potuerit a vertebra solvi. Quoad naturam tumorum, in quibusdam medium folliculum occupabat alba materies, aut grisea, unita, æquabilis, crassa pulte durior, mollior lardo, et in meditullio veræ pulti similis. In aliis materies tum albidior erat, tum etiam in meditullio durior. In aliis tota iterum dura, æquabilis scissilis. In nonnullis veluti calx aqua mista oculis adparebat, digitis nullam exhibens asperitatem. Denique, in una alterave, vera calcarea materies, dura, tactu, aspera, ceu in

fungosum lapidem concreta. Ad vasa iliaca utraque, ad pericardium, sternum, diaphragma, supra asperam arteriam ad jugulum, ad axillas, ubique ejusmodi reperiundi tumores erant. Multa in thorace, et abdomine, aqua.

“Ad monstrosum nunc collum verso examine, tumores non amplius solitarii, sed et pluribus minoribus, sibi incumbentibus, accumbentibusque, et communi cellulositate circumdati constabant. Membranas alii tenues, crassiores alii, nonnulli denique prope cartilagineas, habebant. Intercurrebant per tumorum intercapedines, supraque eosdem, arteriæ, venæ, nervi multi, per tunicarum substantiam dispersi. Tumore prudenter aperto, vasa eadem in minores, quibus, massa major componebatur, tumores, se dividebant : tumorumque multi vasis in collo majoribus tam firmiter increverant, ut sine alterutrorum læsione separari non possent ; vasa tamen illa majora a tumoribus non videbantur notabiliter comprimi. Encephalon* solum ab his

* Hydatids, in their various stages, are very frequently found within the brain. I have seen them likewise attached to the dura mater, and to the choroid plexus. The latter occurrence I found in the case of my lamented colleague, the late Mr. Trye. Some of the hydatids were quite in their

malis immune fuit. Ubique in colli tumoribus diversitas materiæ: imo aliquot ante mortem septimanis ingens adparuerat tumor, suppuraverat, disparuerat. Plerique vero quasi una cartilaginosa substantia erant, vel atheromata. Sedes porro omnium aut glandulæ erant, aut adiposi folliculi.”*

The connexion between tubercles and hydatids is almost demonstrated by the following most interesting case. It exhibits the morbid appearances in a striking combination, and supplies the only link in the chain that was wanting to complete the pathological inquiry, which we are pursuing. I give only the morbid appearances.

“*Factu difficilis anatome fuit, eademque adhuc difficilior explicatu. Ita ut qui præsens eandem non viderit, ejusdem legitimam ideam vix formare sibi possit.*

“*Ut in vita, ita in cadavere nihil non extenuatissimum, solo ventre excepto. Animus erat, ablatis integumentis ac musculis, peritonæum prudentissime aperire; quo in situ immutato et natural state; others were transformed, and contained an earthy matter.*

* *Vide De Haen, Ratio Medendi, cap. xx. vol. 1. p. 127.*

acuminatum tumorem, et totum contemplaremur abdomen. Conamen vero hoc nostrum elusit idem peritonæum, indissolubiliter, ac frequentissime, cum contentis in ventre partibus, connatum. Pertundendum ergo ubique fuit, eoque facto gelatum flavum, separatis in loculis inclusum, prodiit undecumque. Digitus singulos intrusus in loculos, aliorum loculorum sepimenta detexit; e quibus pertusis, pressisque, liquor priori similis, præ tenacitate vix fluens, prodiit.

“ Lento demum, ac tædioso, sordidoque plane examine, constitit degenerascentem uterum non esse, qui corpus adeo prominens in abdomine produceret, ut forte suspicati *Part V. pag. 28.* eramus. Uterum enim invenimus mole naturali minorem, vaginam autem ejus elongatam et productam ad altitudinem illam, quæ quatuor digitis latis altior pelvi esset. In latere sinistro ovarium durius quidem, sed mole non majus, parvaque cum tuba. Uterus apertus facultatem dabat stylo prudenter subeundi orificium tubæ dextræ, atque ita docuit hanc tubam ad latum ab utero digitum mox abire in saccum ingentem sic, ut totum hoc monstruosum abdomen tam in sinistro hypogastrio, ac

ventre, quam in dextro, expleret. Crassus præterea hic saccus erat, informis, interne politus, ac glutinosissima sanie repletus.

“Deprehendebatur autem idem duos includere tumores; alterum suo in fundo prope uterum, ovalem, depressum, palmæ manus magnitudine parem, polita membrana vestitum, ast loculis simili glutinosa sanie refertis divisum; alterum in suo dextro latere, rotundum, rubrum, tuberosum, biennis pueri pugnum æquantem.

“Cum ovarium dextrum non inveniremus, alterutrum horum tumorum suspicabamur ovarium esse, verosimilius autem eum, qui utero propior; idque ita contigisse, ut tuba primo ovario extenso accrevisset, ac postmodum inferiora ovarii præternaturaliter circumplexa, idem demum intra suum cavum locasset.

“Atque hi quidem tumores ii erant, qui in cavo sacco prominebant: ceterum plures cernere erat, minores, majores, unum pugno majorem, intra crassam sacci substantiam locatos, ob idque internam ejusdem externamque superficiem inæqualem admodum ac tuberosam efficientes. Erant et hi, haud secus, quam priores, sanioso glutine repleti.

“ Porro in epigastrio erat sacci fundus. Dixeram saccum replere cum dextrum sinistrumque hypogastrium, tum ventrem : non replebat tamen spatium anterius circa umbilicum, infraque eundem ; spatium, inquam, illud, in quo venter quondam adparens acuminatus, graviditatem mentitus erat, ut *pag. 28. Part V.* relatum est. Erat igitur in spatio descripto alius peculiaris tumor, magno sacco anterius adnatus, capitis humani magnitudinem æquans, posterius planus, anterius protuberans, compositus quoque numerosissimis hydatidibus, per sua latera mutuo accretis, hincque referens totidem separatos loculos, hic tenues, ibi densos, membranis tuberosos, omnes autem tenacissimo glutine, in alio fuscesciente, in alio flavescente, alio iterum viridesciente, repletos.

“ Jamque peritonæum aliud spectaculum dabat. Concreverat siquidem id cum sacco magno, in toto ejusdem ambitu, quo contiguum illi erat ; verum ita ut peritonæum esse crederet nemo nostrum. Etenim, et qua parte saccum magnum contingebat, et qua reliquum cingebat abdomem, et qua viscera abdominis includebat, gerebat ubique tubercula plurima, quæ in loculos divisa, eandem glu-

tinosa materiem continebant : eorundemque loculorum ope etiam hydatidibus cum magno illo ac glomerato ad umbilicum tumore intime et commistum, et confusum, deprehendimus.

“ Vix intestina cognovimus. Ea quippe, tam erassa, quam tenuia, adeo inter sese commista erant, adeo concreta et connata, ut primo intuitu nihil minus quam intestina referrent. Vera horum ratio erat quod hydatides in universo intestinorum ambitu, et in utraque mesenterii ac mesocoli superficie excrevissent, inter sese coivissent, ob idque ita omnia intestina inter se mutuo adunassent, conglomerassent, contraxissentque, ut nihil intestinis simile referrent. Sed et hydatidas easdem glutinossissimus ichor, saniesve, expleverat. Interia mirabamur vesicam urinariam loco locatum suo, ita ut a peritonæo suo in loco servata illa, vagina et sursum excrevisset, uti antea dictum, et deorsum relaxata esset, cum prolapsum formasset ; suo tamen cum vesica nexu mansisset immobilis. Forte pondus incumbentis sacci impedivit vesicam sursum pergere, et vaginam sequi : dum e contrario in historia relata *Part VI. cap 10. pag. 152.* degenerascens testiculus dexter, recto intestino immoto,

vesicam urinariam viri in cristam ilei sinistri usque dimovisset, adeoque urethram elongasset.

“Thoracis angusta valde capacitas. In dextra camera gibbum diaphragmatis distabat a summo jugulo digitis latis quatuor, quinque digitis in sinistra. Pulmones nec mali, nec compacti, nec ulli pleuræ, nisi versus jugulum, accreti. Cor in dextro ventriculo polypum gerebat magnum, atque album, adscendentem in arteriam pulmonalem in sinistro suo ventriculo duplo minorem, eumque cum alio, qui in auricula, polypo, connatum.

“Vasa piæ matris sanguine turgida. Ventriculi laterales, sive superiores cerebri, vix guttulas lymphæ paucas gerebant; egregie licet distenti, magni fornicati. Quid causæ, cur, ubi omnia in cranio tam plena, ut mox a compressione externa ablata cerebrum excrescat in fungos, tamen vacuos toties a nobis repertos hos ventriculos non comprimant, non deleant, vis reliqua molis cerebri, sanguinisque appellentis? Cur in vacuis ventriculis plexus choroidæus non perpetuo aneurysmaticus, varicosus, hydaticus?”*

* *Vide Ratio Medendi. Pars septima, cap. xvi. p. 279.*

The following appearances which I found some years ago, in a young man who died in our Infirmary, are almost as illustrative of the point under consideration as those which have just been quoted.

There were hydatids attached to the convex surface of the liver, and imbedded in its substance. The pancreas was enlarged, and pressed upon the common bile duct, so as to obstruct the passage for a considerable time before death. The diseased mass had formed strong turbereculated adhesions with all the surrounding parts. The mesentery was full of tubercles, and they were visible in other parts of the peritonæum.

On examining the thorax, a large cyst, containing a yellowish coloured fluid, was found in the posterior mediastinum. Tuberculated accretions had taken place between the pleuræ on both sides, but they were by no means so complete in the left side as in the right; for in the former, effusion had taken place to a considerable extent, which had very much compressed the lung. The quantity of the liquor pericardii was greater than natural, and several small hydatids were attached to the external surface of the right ventricle of the heart.

In this case, the symptoms of the abdominal disease were always very distressing. But he never complained of any thing that could have led to the suspicion of such extensive disease within the thorax.

The whole of what De Haen says, in his chapter *De Hydrope Cystico et Hydatidibus*, is well worth attentive perusal. I quote what he says respecting a disease of the thyroid gland.

“ In cadavere horrendam mole thyroidæam glandulam nactus, publice dissecai. Mecum auditores mirabantur nullum fere genus tumorum dari, quin in hac sola thyroidæa inveniretur. Hic enim steatoma, ibi atheroma, alio in loco purulentus tumor, in alio hydaticus, in alio erat coagulatus sanguis, fluidus fere in alio, imo hinc glutine locus plenus erat, alibi calce cum sebo mista, &c. Hæc autem omnia in una eademque thyroidæa glandula.”*

The origin of hydatids themselves is, at present, a question of less importance than the consideration of the vast variety of formidable changes of structure to which they give birth. This being the case, we need not attend to the immediate object of

* Ut supra. p. 285.

dispute between Boerhaave and Ruysch, but let us weigh candidly the various facts by which the former supports his opinion. The following paragraph well expresses and illustrates his sentiments:

“ At quoties tota facies tumoribus formidolosis equidem tuber! jam ulcerosis, alias vero leprosam scabritiem æmulantibus: sæpe tædiosa hæc ego ulcera, et tubercula, inspiciens puto, omnino me deprehendisse, quod omnis hæc malorum cohors sit degenerantium glandularum subcutanearum, et suo incremento, exilioris olim fabricæ aucta magnitudine demonstrantium priscam tamen indolem. Neque esse adeo vasorum mutatorum effectum, quam præ-existentis naturaliter folliculi dilatatione sola incremententem structuram. Atheromata quoque, melicerides, et steatomata, quam maxime docere plane videntur hanc talium glandularum per cutanea et subcutanea præcipui loca presentiam: prima quippe bina, in primo suo ortu, parvum modò, idque rotundulum, tuberculum referunt in eo semper loco, ubi tales folliculi naturales præexistere. Hæret in his semper materies simillima equidem, at crassior modò, ut in sanitate olim solebat in ista contineri glandula. Ubi autem distenta magis au-

gescunt, spissant materiem, atquæ suæ propriæ, et naturalis membranæ crassitiem simul, duritiemque, semper adaugent; unde in enormes frequentissime moles excrescunt; unam tamen tantem cavitatem formant simplicis figuræ, semper tamen vestigium pristini olim emissarii in apice retinent. Quando autem incisa cute, deglubuntur ab exiguis vasculis, quibus habendo lentescunt, unus exemitur saccus simplex, spisso atque uniformi sub involucro tenens simplicem, unitam, lentam, materiem. Atque illa quidem, si alba, lenta, pastam, pultemve, referens eognomine græco satis proprio, atheroma audit; si flavescens, dilutior, massam instar ceræ in melle solutæ simulans, æque vere meliceris inde fuit appellata. Qui tumores frequentissimi, et fere ubique in exterioribus, vel et interioribus, corporis deprehensi, à primo initio in ultimum incrementum usque successive juxta gradus crescendi, et varia interim nata phænomena, inspecti, adeo clare docent, quod malum hoc sit à materie lentescente in proprio suo, nativo, cavo, sensim dilatato, ut liber præjudiciis, reique gnarus, aliter censere nequeat. Et puto sane, te quoque, qui toties hos observavisti, toties examinasti, tumores, longe ma-

gis credere, oriri eos à distento alveolo membranoso ibi ab ipsa natura formato, quam ut suspicari velis, vel recens ibi nasci, vel ex canali ad extrema sua obstructo, indeque mutato, ita efformari.”*

The following quotations still more distinctly refer to the subjects under discussion:

“ Atque ita quidem harum nos rerum contemplatio ad hydatidas sensum speculatione hac deduxit. Qui sphærici tumores liquida primo turgent lymphæ, sensim degenerante, juxta varios in colore et crassitie mutata modos. Sunt autem vesiculæ hæ undique clausæ, ab omni vicina parte integræ separabiles, liquorum tamen, et tunc, suum retinentes: adeoque videntur mihi evidentissime demonstrare, quod vesiculæ tales glandulosæ in imis corporis, ubique præsto sint, atque in sua cavitate retineant humorem hunc tenuem, remoras ibi passurum, donec tandem deferatur inde sua per emissaria ad loca, quorum usui destinat CREATOR. Quum autem hydatides hæ in omni corporis universi parte interiore, exteriori, repertæ fuerint, atque ipsa sæpe viscera tota in eas transfor-

* *Vide* H. Boerhaave Epistola Anatomica ad Fredericum Ruysch, p. 73.

mentur; probabile fit ubique in ipsis quoque visceribus glandulas serosas et lymphaticas, sed quam minimas, a natura formatas fuisse, usumque, nondum satis explicatum, necessarium habere.”*

“ Hydatides quoque sive vesiculæ sero turgentes, per omnem ejus molem extensæ, repertæ ibi sunt. Cujus quidem rei tam memorabile ipse exemplum offers, *Thes. 1. pag. 34, 35. Thes. 6. pag. 10, 60, 61, 62.* ubi tam diserte narras videre in cadavere hydropici totum quantum hepar ita mutatum in vesiculas rotundas, materie limosa, vel gelatinosa, et pellucida, plenas, ut in toto ejus corpore ne vestigium quidem superesset venæ portarum, venæ cavæ, arteriæ hepaticæ, ductuumve biliferorum. Atque hæ quidem vesiculæ ibi enarrantur obdisse intima quoque hujus visceris, ut quidem omnis ejus moles in has abierit. Ita se habet res ipsa in morbis his deprehensis in hepate: unde ergo liquido constat, obtinere in intimis, minimisque ejus partibus, et recessibus, illa mala, omnino eadem, quæ propria observata fuerunt contigisse in glandulis simplicissimis corporis jam supra satis, credo, recensita. Nonne igitur admodum inde plausibile

* *Ibid*, p. 74.

apparet, etiam interioris visceris hujus fabricam habere in se organa similia istis glandulis? quum morbi in hoc nati sint iidem, neque illi interim aliis in partibus corporis unquam deprehensi sint. Quicunque sane bina hæc, quæ adduxi, rationum pondera accurato librat judicio, reperiet, nisi me vehementer fallit animus, non ita inanem argumenti *Malpighiani* vim, quod à morbis in hoc viscere petit. Neque ignoro tamen, quam subtiliter labefactare coneris et infringere hanc ipsam: dum putas omnes illos enarratos tumores hepaticos æqui nasci posse ex degeneratione extremorum vasorum, ita mutantium suas figuras, dum obstructa sunt ad suas ultimas angustias; ut, amissa specie antiqua canalis, per impeditam, aggregatamque, materiem in hujusmodi figuratos globosos, polyedrosve, folliculos transformantur.”*

It has now been demonstrated, that hydatids are the causes of many changes of structure; and their connexion with morbid states of the lymphatic system, has been traced by a series of analogical and collateral circumstances, which have almost the force of a direct and satisfactory chain of evidence.

* *Ibid*, p. 82.

They illustrate the origin and progress of a great variety of the most fatal and alarming chronic diseases, which cannot be accounted for by any doctrines now in vogue, without involving the reasoner in the most palpable contradictions and inconsistencies.

Almost all the varieties of *physconia* may be included under that genus of disease which I have attempted to illustrate in this chapter; and the morbid appearances, as given by different authors, afford, in a striking degree, proofs and illustrations of the doctrine delivered respecting their origin.

To render this apparent, little more is necessary than to enumerate the varieties of *physconia mesenterica*, as given by Cullen. He begins with the *physconia hydatidosa*, and then mentions a series corresponding very closely with the changes which the hydatids themselves undergo in the various stages of their transformations. Thus we have the *physconia strumosa*, *schirrodea*, *sarcomatica*, *steatomatosa*, and *fungosa*.

This coincidence is the more remarkable, as this distinguished author did not seem at all aware of the probable source of the diseases which he enumerates.

Inflammation is characterised by certain signs and symptoms ; but to accommodate our notions to the workings of nature, we are on some occasions compelled to suppose, that inflammation may have effected the most marvellous transformations in our bodies, without having been accompanied by any of the signs that are indicative of its existence. It is not uncandid to suppose, that theories which demand such sacrifices of sound reasoning, must be erroneous. Like other errors, they have an evil influence upon all points connected with them. We have been forced to make large and gratuitous assumptions, to support what it seems difficult to support ; we have shut our eyes to many valuable facts which our predecessors had observed, because they were at variance with such assumptions ; and, from an unwise and premature effort to simplify our pathological doctrines, we have too much limited our inquiries, and deprived them of the accuracy and comprehensiveness that truth demands.

Let me not be understood as if I intended to show the slightest disrespect to the great men who have, in our days, rendered the most important

services to science and to humanity, by the bold and successful application of their knowledge of the sanguiferous system, and of the nature and consequences of inflammation, in alleviating and removing the most formidable diseases. All I have said, may be considered as bearing testimony to their genius and to their success. So great has it been, that other parts of our constitution have been neglected, and minds of inferior power have been dazzled and led astray by unbounded confidence and admiration.

We must take it for granted, that inflammation, strictly so called, really has symptoms by which it may be known, not only when it attacks outward parts, but likewise when it seizes internal organs. Unless we admit this proposition, there is an end to all precision and accuracy of diagnosis. But do we not almost daily find cysts containing fluids and substances of various kinds imbedded in the viscera, or attached to them, or appearing on the surface of the body, when no perceptible inflammatory symptoms existed? Is not all that we really know of any of the kinds of inflammation, as observed in situations where we can watch their

progress, different from what occurs in the cases just referred to? Such cases do great violence to our commonly received opinions, and have justly been considered as forcible illustrations of the inaccuracy and uncertainty of our art.

The observations detailed in this chapter, may perhaps tend to remove some of the ambiguity which hangs over subjects of this kind; and it may now perhaps be asserted, that inflammation is not always a cause of altered texture, but that it many times is a consequence, rather than a cause, of that state. Proof of this opinion (as conclusive almost as the nature of the subject admits) was afforded by the occurrences in the cases both of Bullock and Haynes. Tubercles in the lungs, too, there is every reason to believe, exist, anterior to the appearance of inflammatory action; and scrofula, in its commonest forms, shows itself in lymphatic obstructions and tumefactions, long before other changes take place.

I do not mean to deny that, in constitutions predisposed to cachectic diseases, inflammation may be the means of calling tubercles into existence, either in the lungs or elsewhere. But though I

admit this to be a possible occurrence, I am very much inclined to believe that it is not a common one; for the very existence of a pre-disposition to such disorders, proves something wrong in our system, and may warrant the inference that inflammation merely puts the latent* disease into a state of fatal activity. It is impossible, on any other principle, to account for our want of success in treating such disorders. The remedies which subdue inflammation in other cases, do not remove these complaints, which we have every reason to believe they would have done, had increased vascular action been alone concerned in their production. In phthisis pulmonalis, we daily witness melancholy events of this kind; and similar disappointments in the treatment of the tuberculous disease in the peritonæum, first led me to distrust the doctrine which gave inflammation for its cause.

* Objections may be offered against the use of this word; but it appears to me to be peculiarly adapted to express what really seems to occur in nature. Tubercles, in certain states, do exist both in the lungs and elsewhere, without affording any symptoms. At this period, the disease may be strictly said to be latent; and its becoming active depends upon a variety of circumstances, not yet completely ascertained.

The reader may trace, in the foregoing inquiry, the facts by which my judgment has been guided. From the whole I am induced, not to refer the disease under consideration to the phlegmasiæ, but to another class. It seems to belong to an important family, whose origin may be more satisfactorily ascribed to the absorbent than to the sanguiferous system; and our hopes of being able to avert or cure such maladies, must rest upon some other means than those which are merely calculated to subdue vascular action.

When I reflect upon the many interesting physiological and pathological questions, which are closely connected with that view of the lymphatic system which the circumstances already detailed seem to support, I feel conscious of the many imperfections of this discussion. On first recording the phenomena of the peritonæal affection, I was quite at a loss how to account for them. I adopted the notion, that chronic inflammation might have been their cause; but I soon abandoned this opinion; and my communications with Dr. Jenner, and the facts which I derived from him and other sources, have led to the conclusions which

the reader has seen. I have given only an unfinished sketch; but it rests on well ascertained truths, which of themselves must be valuable, even should the inferences be rejected.

The distinguished person, whose name I have just mentioned, has pursued the subject into all its ramifications, and has obtained facts from the economy of vegetables as well as of animals, which could not fail to elucidate many of the obscurest points of professional inquiry. The results of his very accurate and ingenious observations, it is to be hoped, will not be lost; and I am convinced, that I state the feelings of all my professional brethren, when I express a wish that they may speedily be given to the world.*

Since this sheet was in the press, I have met with the accounts of two other recent cases, both of which supply facts so much in favour of the doctrine delivered in this chapter, that I deem it necessary to notice them.

The first occurred to Mr. Adams, surgeon, of

* I have the authority of Dr. Jenner for stating, that the wish expressed in the text might by this time have been accomplished, had not his unceasing attention to vaccination, and the subjects connected with it, interfered with his purpose.

Wotton-Underedge, in this county. The second is recorded by Dr. Hay, in the last number of the Edinburgh Medical and Chirurgical Journal. They took place in females, and the morbid appearances were much alike in both.

In Mr. Adams' case, six quarts of turbid fluid were found in the abdomen. The omentum was much thickened, and studded with numerous tubercles, which gave it the appearance of a bunch of grapes. There were strong adhesions between this mass and the peritonæal covering of the liver and intestines, particularly in the epigastric and hypochondriac regions. The mesentery, too, was much thickened, and its glands were enlarged. The substance of the liver had a firm texture, and a white appearance when cut into.

There were adhesions between the pleuræ; the lungs were filled with tubercles, some of which were in a state of suppuration. The pericardium adhered firmly to the heart.

I am not accurately informed respecting the symptoms of this case; but I believe they corresponded in all essential points with those which were found in the other patients. She was con-

fined to the house about six months ; but she had not been in good health for two years before her death. She was liable to shortness of breathing, and a troublesome cough. The pulse varied from 90 to 120. She was always chilly, and her feet were generally cold. The catamenia were regular, till about five months before she died.

The case given by Dr. Hay is the more valuable, because it confirms what has been before asserted respecting the transition from hydatid to tubercle. They both existed at the same time and in the same textures; and I think a doubt can scarcely now remain in the mind of any one who has attended to all that has been said, that they had a common origin. I give the account of the dissection :

“ The cavity of the abdomen contained about four quarts of a thick coagulable fluid, so viscid that it could with difficulty be made to run through the canula of a trocar which had been introduced to draw it off; it had little smell, and its colour was a greenish yellow.

“ When the integuments, muscles, and peritonæum were divided and turned back in the usual manner, a singular appearance presented itself.

The whole of the peritonæal membrane had undergone an alteration in texture, excepting the portion covering the upper surface of the bladder, which was unusually delicate. It had become whitish, firm, and granulated. From its surface numerous fleshy and vascular appendiculæ, or tubercles, hung suspended like grapes into the cavity of the abdomen. They varied in size and in their mode of attachment, some hanging by narrow necks, others were more firmly fixed in their situation.

“ The peritonæum lining the muscles of the abdomen and the diaphragm was thickly set with the tubercles, and one attached immediately behind the umbilicus gave the appearance and feeling of a hernia in this situation.

“ The omentum had become a strong leathery membrane, covered by numerous tubercles and hydatids containing an amber-coloured fluid.

“ The surface of the stomach and intestines was granulated, with few tubercles growing from them, but the mesentery and mesocolon were thickly studded with them, and here and there a hydatid was perceived; one particularly large was found under the arch of the colon.

“ The liver was almost entirely changed in its appearance and structure; the anterior edge was fringed, and had numerous tubercles depending from it. Its colour was white, its texture firmer than natural, and resembled that of the tubercles growing from the surface of the peritonæum in general. A small portion, with the gall bladder distended with bile attached to it, retained its healthy structure. The size of the organ was natural.

“ The peritonæal surface of the spleen was also granulated, and had some tubercles growing from it.

“ The kidneys were sound.

“ The uterus was scarcely to be distinguished; its surface, and that of the ligaments, were tuberculated, and much changed from their natural state. A large hydatid existed in its centre.”*

In the two cases just mentioned, the state of the liver was somewhat different from what it is usually found in this disease. But I am convinced that the same reasoning is applicable to the alterations in the structure of this and the other viscera, that has been more especially directed to the peri-

* *Vide* Edinburgh Medical and Chirurgical Journal—vol. xiv. p. 624.

tonæum. I have at this instant before me, specimens of diseased structure from the lungs, the pleuræ, from a tumour external to the sternum ; as well as from the omentum, the mesentery, the peritonæum and the liver ; all of which have undergone similar morbid changes. They all exhibit a close granulated, firm texture ; and it is impossible almost to detect the slightest difference in their characters. The case wherein there was the tumour on the outside of the chest, which was identified by a perfect similarity of properties with the disease that had taken place in the lungs and pleuræ, will hereafter be described ; and the connection of the whole, with the previous existence of hydatids, will be demonstrated. This I conceive to have been already done, with regard to what has been said of changes in the abdominal viscera ; and it is not perhaps too much to affirm, that the same doctrine is applicable *mutatis mutandis* to all tumours and tubera, of whatever denomination, whether they be encysted or formed by the accretion of a multitude of smaller tubercles, as has been already described.*

* Vide ꝑ. 96.

CHAPTER III.

RATIO SYMPTOMATUM.

THE connexion between symptoms and altered texture, is not more accurately traced in any disorder, than it is in that which we have been examining. This is satisfactory, as in too many instances we discover morbid appearances when we did not expect them, and not unfrequently anticipate others which do not exist.

It is obvious, at the same time, that it is only when the abdomen is the seat of the disease, that we can with much certainty ascertain its existence. In the thorax, or in other parts, its symptoms are less decided, and likewise less alarming, than when the very fountain of nutrition is choaked up. Whoever reflects upon the functions of the alimentary canal, can be at no loss to explain the symptoms which arise from this source; but we have seen, in two instances, that such symptoms

were not presented, because the mesentery was not completely affected with the disease. Neither Bullock nor Haynes were emaciated, like the other patients; digestion, absorption and assimilation, though in some measure interrupted, were carried on with sufficient activity to keep up a certain degree of strength; and these functions might have been performed for a still longer period, had it not been for the occurrences already noted.

Reasons have been given for believing that the tuberculated affection of the peritonæum, and of other parts, does not proceed from inflammation, and that the disease may exist without the symptoms which point out that state. It is certain, nevertheless, that inflammation may be conjoined with it, and that it often attends it in some stage or other of its progress. But when this combination takes place, the remedies which are generally successful in removing either acute or chronic inflammation, are of little avail; for even should the inflammatory symptoms be subdued, the other affection would, probably slowly, but certainly, advance to a fatal termination.

In the preceding chapters, too, the affinity between this and other cachectic disorders was traced. Its generic character was thereby attempted to be established, while its specific nature, as depending upon the situation and function of the part affected, was pointed out by almost every case. Further to illustrate the forms of these points, it may not be without its use to refer to the origin of the word *scrofula*. The reader may have observed, that Dr. Jenner, in his letters to Dr. Beddoes, alludes to the tuberculous disease that so often affects pigs.* The frequency of the disease, and its resemblance to affections common to the human species, evidently pointed out that word which we now employ, to denote the latter, *scrofa—scrofula*.

* Pigs are very frequently affected with another species of hydatid, which generates tubercles of a different kind. When they occur, the animal is said, in vulgar phraseology, to be *measley*. On this subject I am favoured with the following observations from Dr. Jenner :

“ Nothing is more common than tubercles in the liver, and among the other viscera of the pig ; but these for the most part arise from the common hydatids with thin coats, while those which gave birth to the term *measley* are of a different kind. They pervade almost every part of the animal—the heart, the diaphragm, the serous and the mucous membranes,

By the strumous or serofulous habit of body, we understand a state of disease, or rather perhaps a predisposition to disease, which varies in particular instances, and produces different consequences, according to the nature of the part that is under its influence. Had the disease of the lungs which occurred in several of the cases already described, been unconnected with the peritonæal affection, we should merely have seen examples of tubercular phthisis proceeding in their usual course; but combined as they were with the symptoms arising from the extension of the complaint to the perito-

the eyes, &c. The disease proceeds not unfrequently to such great lengths, that from a fourth to an eighth part of the animal is infested with them. The inferior part of the neck and haunches now become œdematous, and effusions take place into the cavities. These hydatids differ from the hydatids of the liver, in being of a more diminutive size. They are for the most part not larger than ordinary shot, and to the feel are almost as hard. They differ, too, in having thicker coats, and consequently have less fluid within them. I have rarely seen them so large as middle-sized peas. Similar to this species of hydatid, is that which pervades the interior of the brain of sheep, and appears to be generated on the coats of the ventricles. I have found them adhering to it, and also swimming in the fluid which had been let loose into these cavities, occasioning hydrocephalus internus, vertigo, and death."

næum, they lost, in some degree, their importance, and only attracted a secondary attention.

The combination to which I have referred, throws great light upon both disorders; and to such inferences as may be deduced from this and other similar occurrences, we must look for the methods of obtaining success in the treatment of these formidable maladies.

The disease, when it attacks the membranes of the abdomen, is much more distressing, and perhaps too, more rapidly fatal, than when it occurs either in the pleura or in the lungs themselves, or in any of the other viscera. It is only necessary to refer to the account of the dissections, to see how this arises. Life may be continued with a small portion of lung: and it is compatible with great disorganizations of the other viscera, or with accretions of the pleura. But when the whole of the alimentary canal is impeded in its functions, and when by far the most important of them become ultimately interrupted entirely, what are we to expect but such events as have been described?

The disordered digestion, and the irregular state of the bowels, with the weight and uneasiness

about the abdomen, are generally to be met with at the onset; but as such occurrences sometimes arise from causes not of a very serious nature, they are often overlooked; and in the majority of cases, our aid is not required till tumefaction, and tenderness, and vomiting, and all the other characteristic signs, have taken place. It is at such times, too, that the pyrexial symptoms become most manifest. They probably depend upon the supervention of inflammation, which, as has been already said, generally makes its appearance during some period of the disease, as a consequence of the altered texture. When this happens, there is an increase of the tenderness of the abdomen, heat of skin, thirst, parched tongue, and a decided augmentation of all the other symptoms.

The consequences of inflammation coming on after the tuberculated disease had taken place, were illustrated in the cases of Elias, Sunnock, Mr. Shrapnell, Haynes, Bullock, Higgins, and Browning. In the four first there was effusion, in the next there was simple adhesion, and in the two last ulceration.

Although it has been demonstrated, that tubercles are found in many textures, it is nevertheless apparent, that the structure and functions of the part attacked have great influence in regulating the spreading of the disease. When it occurs in the abdomen, it often confines itself to the membranes, and leaves the substance of the viscera untouched. In the thorax, it is otherwise; for we seldom find the tubercles and accretions in the pleura, without detecting also the former in the lungs themselves.

I do not know how to explain the changes which the liver sometimes undergoes, in this and other cachectic diseases. It is often much enlarged, and has a bright copper colour, and its texture is for the most part looser than natural. But the appearances I allude to are not peculiar to the disease we have been describing. I have seen them in two other instances, where the patients died in a state of emaciation, as great, and with the nutritive system as much impeded, as in those cases where diseased texture more satisfactorily explained the origin of such events.

In cases of well marked inflammation of the peritonæal coat of the liver, I have often remarked another appearance of that viscus. When an incision is made into its substance, instead of having its dark brown colour, it presents a mottled appearance, resembling exactly the section of a nutmeg.

The resemblance between the state of the tongue of persons labouring under the tuberculous disease of the peritonæum, and of those affected with diabetes, has been already noticed. But this is not the only point in which an analogy may be traced. The external characters of the respective complaints, are very much alike; and a diseased condition of the lungs is very common in both. There is something in this affinity which future observations will doubtless bring to light. The one disease seems to proceed to a fatal termination, by an imperfect assimilation, and the excretion of what ought to go to nourish the body; in the other, absorption and assimilation are nearly stopped altogether; and it is not difficult to see how these different causes produce nearly similar results.

The patient who complained most of the sense of weight, evidently suffered more in this respect

than the others, in consequence of the situation and bulk of the indurated and thickened omentum. It pressed with considerable force upon the stomach, and grasped the colon; and it was from this latter circumstance, too, that he felt so acutely, either on the passage of flatus, or of fæculent matter. By the same reasoning, we must explain the very temporary relief that he obtained from tapping; the abstraction of a large quantity of fluid affording none of the benefits that might fairly have been looked for under less unfavourable circumstances.

The swelling of the extremities is not a constant symptom, and it is sometimes confined to one side. This occurrence, in whatever form it is met with, is satisfactorily accounted for, either by the effect of pressure, or by the extension of the disease to the lymphatics of the limb affected.

It does not appear to be necessary to dwell more minutely upon this part of the subject, as no person acquainted with the structure and functions of the organs that are affected by this disease, can find any difficulty in explaining the causes of the other symptoms that announce its progress.

CHAPTER IV.

DIAGNOSIS.

ALTHOUGH some doubt may exist as to the origin of this complaint, it is easy to account for its course after it has taken place; and its nature can scarcely be mistaken by an attentive observer, after his mind has been once drawn to its contemplation.

A faithful history of symptoms ought to include all that is necessary to enable us to form a correct diagnosis. The few remarks which I am now to make on this subject, will not, I hope, be without their use, should they have no other effect than to bring back to our recollection some of the leading traits of the disease, and enable us to contrast them with such complaints as they are most likely to be confounded with.

There is, in the outward appearance of persons labouring under this complaint, an expression of

distress and wretchedness which is scarcely to be described. The incessant feeling of weight and uneasiness about organs whose functions are necessary to life, (and which functions, unless they are performed with regularity and ease, embitter every hour of existence,) is sometimes changed for a state of acute pain. The former sensation extracted from an infant moans of a most piteous nature: another patient declared it to be intolerable, begging for relief, and saying that he felt as if he were about to be squeezed to death. All patients do not suffer so much from this symptom; but I have seen none who did not complain of it more or less.

The disease, of all others with which this one is most likely to be confounded, is ascites. Should this be the case, the hopes of benefit which the patient, as well as the physician may entertain, are likely to be disappointed. The fluctuation may be felt, and fluid may be evacuated; but this is only to make way for the fatal progress of the disease. The relief is very fleeting. In one patient, the pain and uneasiness was nearly as bad as ever in two hours, after two gallons of fluid had been

discharged. He was a medical man himself, and anticipated the most happy event from the operation. It will be seen from one of the quotations, that the same mistake has been made by others, an accidental, and by no means a constant, symptom of this fatal affection, having been looked upon as the primary disease.

In the case of the gentleman just referred to, the abdomen filled again in about ten days. In another patient, who was also tapped, there was no second effusion, for the tuberculated accretion spread, and completely obliterated the cavity which had contained the fluid.

In the case of Higgins, the diagnosis was most difficult; and the nature of the fluid was different from that contained in the two last instances. It was of a purulent nature; and it had made its way to the surface, and through the intestine. Had this boy been tapped, it is not likely that he would have derived so much benefit, as he did by allowing the disease to take its own course: in the former case, ulceration would have been prevented, and probably the intestine would have remained free from that opening, which served in some de-

gree as an artificial anus, and took off a great deal of the distress attendant upon the difficult and imperfect action of the stomach and intestines, which he, like all the others, had experienced before that event occurred.

When there is no effusion into the cavity of the abdomen, and when the accretion of its viscera is complete, there can scarcely be any difficulty in ascertaining this affection. The touch alone, without attending to any of the other strongly marked symptoms, will seldom deceive. The belly is generally protuberant, hard, and unyielding, and communicates the sensation which grasping a solid tumour would give.

But it must never be forgotten, that by far the most important and characteristic symptoms arise from the alimentary canal and the mesentery being involved in the disease. The peritonæal lining of the abdomen and the omentum, and portions, too, of the intestines and mesentery, may be affected; but unless this affection is so considerable as to interfere with the peristaltic motion of the intestines, and with the functions of digestion and assimilation, the disease will not appear in its most mark-

ed and alarming characters. It has been already mentioned, how I was for a short time rendered doubtful about the nature of the case of Bullock, from this very cause ; and in Haynes's, likewise, there were difficulties of the same description.

There are tumefactions of the abdomen, arising from enlargement of particular viscera, which may sometimes be mistaken for this disease. But if its peculiar symptoms are well attended to, I do not think that this mistake can easily happen. Some diseases of the liver, as well as of the ovaries and uterus, have, as has been shown, a strong affinity to the one under consideration ; and so have many of the disorganizations of the other viscera. They of course have the specific symptoms which they derive from the impaired functions of the part that they attack. An attention to this circumstance, is the foundation of every rational diagnosis ; and in the instance under examination, it is almost infallible.

CHAPTER V.

PROGNOSIS.

WHOEVER has read the history of this disease, and attended to the morbid appearances which it affords, must at once be convinced that life cannot long be continued, when the very source of all nutrition is stopped. It is impossible to say how much or how little of the alimentary canal may be affected with this malady; but it is one of its worst peculiarities to spread itself over every portion of the serous surfaces, to insinuate itself between every fold of the peritonæum, and to impair, and ultimately to destroy, every function that is necessary for the support of the frame. This being the case, the physician is justified in giving the most unfavourable prognosis, when he has really satisfied himself that the disease exists; and he may frequently establish his character as an accurate observer, by predicting the succession of

symptoms which generally is observable in the progress of the complaint, to its fatal termination.

To remove change of structure by exciting the natural powers of the system through the agency of medicines, is always a difficult, frequently a hopeless undertaking. How much more so, therefore, must it be, in a situation where we are denied the use of many of the aids which we can apply to disease in other parts. The medium through which our remedies are made to influence the system is diseased; we are stopped at the very commencement of our efforts, by a barrier which we cannot pass, and what would, under less untoward circumstances, afford relief, too often is a source of suffering.

In the ensuing chapter will be found a few hints respecting such methods of treatment as are suggested by our knowledge of the animal economy, and of this particular complaint. Possibly, in its early stages, its progress may be checked; but when it has really proceeded so far as in the cases already detailed, there is nothing favourable to be looked for till our knowledge is further advanced. Some patients live longer under it than others;

but (unless where some unusual occurrence takes place) its duration seems to be determined by the time required to bring it to that state wherein absorption from the alimentary canal is obliterated, or nearly so. After that period, the patient lives as long as the body can feed upon itself.

CHAPTER VI.

METHOD OF TREATMENT.

THE treatment of this deplorable malady, when it is fully established, affords nothing on which the mind of the physician can dwell with any satisfaction. The most powerful resources of his art fail him, and he sees his patients pining in wretchedness, bereft even of the power of affording them temporary relief.

Whatever benefit may be expected from medicine, must be obtained in the earliest stages of the disorder. We know of no means that can certainly remove the altered structure, when it has been formed. Greater disorganizations may be got rid of, by the powers of the body, in other situations; but this can scarcely be looked for, when the medium through which the most important of our agents act is itself the seat of the complaint. The facts detailed in the first chapter, amply confirm this

statement, and it appears to receive illustration from the reasoning contained in the other parts of this work.

Bleeding, both general and topical, and blistering, I have employed freely; but the relief obtained was very transient—not more than arose from the temporary suspension of those pains which occur from accessions of inflammation, during the progress of the disease. That progress, it has been seen, is not dependent altogether upon the sanguiferous system; consequently remedies which act merely upon that system cannot succeed.

Without free alvine evacuations, the distress becomes quite insupportable. But when great quantities of purgative medicines are given, the patient is frequently made very uncomfortable by their exciting attacks of nausea and vomiting, which the disease itself has a strong enough tendency to induce. When the vomiting is very frequent, it is generally preceded and accompanied by the “broiling heat” at the stomach. This most distressing symptom it is very difficult to mitigate. I have at times found benefit from the solutions of potass and soda: at other times I think I have

seen advantage from the employment of the mineral acids ; and the gastrodynia, I think, I have relieved by the oxyde of bismuth.

The purgative medicines best suited to the patient, must be found out by particular observation. Mercurial preparations now and then do good ; but I do not imagine that they afford any relief but what proceeds from their evacuant properties. The reader has seen that mercury was used in this disease, so as to produce its full constitutional effects ; but certainly the complaint was not thereby abated : on the contrary, it was rather augmented. In another part of this work it will appear that in certain states of disease of membranes, the remedy in question manifestly and speedily aggravates the symptoms ; and that greater caution is necessary in its administration than is usually observed.

Guided by the reports of the subtle influence and deobstruent virtues of the nitro-muriatic-acid bath, it was tried in one instance, but with no advantage. The patient certainly was sensible to its effects, and compared, as was already mentioned, the sensation which it produces in the

mouth, to that which is occasioned by the extrication of the galvanic fluid. The acids were likewise administered internally, but with little benefit.

Anodynes I have employed in almost every shape, but with very little relief to the patient. They cannot altogether stay the nausea and vomiting, nor obviate the distress which the disease occasions; and they frequently augment the already interrupted functions of the bowels.

In one case of physconia, connected apparently with a disease of the ovary, I found the swelling altogether removed by a solution of elaterium. It induced great and long continued nausea and vomiting. In another case, I think there was decided benefit obtained by the use of the muriate of lime. Some other facts, shewing the disappearance of morbid growths under the influence of nausea, whether caused by medicine or other means, will hereafter be mentioned.

It is unnecessary to be more minute, in referring to such means of relief as the peculiar circumstances of each individual case suggested. They are detailed as fully as seemed proper, in the first chapter. Let us leave, therefore, this part of the

subject, and make a few reflections arising naturally from the doctrines hinted at in the preceding pages.

The disorders dependant upon the nutritive system, are those to which all organized beings are liable by the constitution of their nature. Individuals may, and often do, escape acute diseases, but their progress toward dissolution is nevertheless inevitable, either by gradual decay, or by disorders of that class which we are now contemplating. Acute diseases may, therefore, be considered as the accidents, rather than as the necessary accompaniments, of life; and we must look to that part of the constitution, on which the growth and support of the body depends, for an explanation of all those slower and more obscure changes, which often terminate in frightful and irremediable disorganizations.

This mode of considering the subject, arising, as it does, from what has been already said, forms a proper introduction to the few observations that are to follow. That their practical application may be more apparent, let us take a rapid view of some of the premonitory symptoms of the most preva-

lent chronic disorders. What at such times do we see,—a person perhaps not very ill, but decidedly not well, moving about, and endeavouring, by resolute efforts, to conceal from himself and others that he is not in perfect health. He carries on his usual occupations, or he thinks himself capable of using efforts, which formerly he made with ease. But in this he finds his mistake. He is fatigued by slight exertions, his circulation is hurried, his respiration is quickened, and he is agitated by circumstances that formerly did not at all excite him. His sleep is disturbed; his appetite is bad, or it is irregular; he is oppressed or drowsy, or feels himself flushed after eating; his bowels are uncertain in their action, and his urine is very often thick and turbid.

Many or all of the foregoing symptoms may frequently be discovered in young persons, anterior to their falling into a much worse condition. Unless when they occur from the intervention of accidental causes, these symptoms denote a great proneness to more serious maladies; and such maladies assuredly will follow, unless by some means they are obviated. Defects in the

nutritive system, may be traced in all that has been said. There is a want of due vigour of frame ; there is not a just balance between its various parts ; and it is at such times that those morbid changes are most apt to occur, which engender tubercles in the lungs or elsewhere, and lay the foundation of many of the most fatal cachectic diseases.

A similar disposition in the system is sometimes announced by other symptoms. The skin perhaps is dry and scaly, or it may be covered with eruptions of various kinds. The eyelids look red ; the lips, especially the upper, is thicker than natural ; the nose and mouth are surrounded by scabby blotches ; the belly is tumid ; and glandular swellings may probably be detected in the neck or other parts. These are the outward and visible signs of imperfect nutrition. They are daily seen among the ill-nourished children of the poor, and frequently too in the families of the rich, when a scrofulous tendency exists. In the one case, there may be a positive deficiency of nutriment ; in the other, there is a defect in the organs by which the nutriment is transmitted and assimilated. They may be obstructed altogether ; or they may be gorged, and unable

to dispose of properly the chyle which has been formed. In this case, overfeeding and pampering may produce many of the disorders that are incident to an opposite state.

Let us turn from this view of the question, to notice what is seen in the vegetable kingdom. When trees grow languidly,—when they are covered with parasitic plants and animals,—when their bark is rough,—when they imperfectly put forth their flowers and their fruits,—what do we infer, but that soil or situation, or the conduits through which the plant is nourished, are at fault. Under such circumstances, how does the skilful gardener act? He clears out the roots, supplies manure, removes the parasitic plants and animals that have fastened upon the epidermis; and, if the disease has not proceeded too far, he is rewarded by a healthful and vigorous growth.

The analogy between animals and vegetables and their diseases, as far as they depend upon that part of their system which they have in common, is very complete. The comparison which has been instituted may seem somewhat coarse, and not quite applicable to the complicated pathology of

man and the higher animals ; but this prejudice will vanish when it is closely examined. It may contribute to this end, to give our attention for a moment to such facts as the experience of our stable discipline affords. Examine a horse out of condition. Observe his harsh scaly hide, closely binding his flesh,—his cracked heels,—his poor emaciated appearance,—his feebleness, his bad wind, and his unfitness for labour. See him sweating easily and drying with difficulty ; and his food passing from him in an undigested state. Look at the same animal, after the extreme vessels on both the surfaces have been set free, and brought into a healthy state,—the internal by purging, and the external by the well applied labour of the groom. See how quickly and steadily goes on the processes of digestion and assimilation,—how the skin becomes soft and pliant,—how the animal acquires flesh, and strength, and spirit, and energy, greater far than he ever attains in his natural state of existence ;—how all appearances of disease vanish ; and how he becomes master of those wonderful powers, which astonish us in the hunter or the race horse.

From what may be observed in our stable, we may advert to what we witness in those men who are trained either as prize-fighters, or for other extraordinary feats of strength or activity. Their preparations for training, and all that they do in that state, correspond in every respect with what has been described, and well establishes the doctrine which these remarks are meant to illustrate. All impurities are eliminated; all the viscera and their emunctories are as it were purged by an attenuating diet, and laxatives, and sweating. Then by judicious and nutritious feeding, and exercise, and friction, the body is brought into a state capable of enduring the most extraordinary exertions.

We ought not to despise such facts. The principles which directed the practice may have been overlooked; but consistent as they are with the most enlightened views of the animal economy, we may fairly avail ourselves of them; and surely any physician might derive credit, from bringing a poor emaciated patient, having many bad symptoms, and threatened with many more, into a state of vigorous health, even should he be guided in

the application of his remedies by such homely analogies as I have attempted to establish.

By keeping the alimentary canal in a healthy condition,—by freeing the mouths of the lacteals from obstructions,—by apportioning the diet, both in quantity and quality, to the wants and powers of the system,—by avoiding every thing whereby these powers may be either too much excited or exhausted,—by applying suitable means to subdue such local affections as may either have existed, or may arise, in the course of the complaint,—by attending closely to the state of the skin,—by promoting the healthy action of its extreme vessels, by bathing of various kinds, by frictions, and well regulated and well timed exercise,—we may often witness the most gratifying results, in such persons as I have alluded to, instead of being compelled to watch the progress of fatal disorganizations, which probably would have arisen, had less rational and comprehensive views directed our practice.

I have endeavoured to make them useful in my own practice; and I am happy to say, that in many instances, success has been the result, when

perhaps I might have been disappointed, had I directed my mind to one particular organ as the cause of the indisposition. It is by such views as I have attempted to enforce, that we are to explain the benefits arising from the constitutional treatment of local disease; and (what is of more consequence) it is to the same source that we must look for the means of preventing many of the most fatal affections, both of external and internal parts.

But with all the caution, all the vigilance, and all the skill that our present state of knowledge can command, how much is yet to be learnt; how insufficient are our resources, how deplorable is our ignorance! If, hitherto, I have mentioned nothing that can materially extend our power over disease, I trust nothing has been said that can mislead. The subject on which I have entered, is a very interesting and very comprehensive one. Other opportunities of illustrating some parts of it may occur; but should I be disappointed in this expectation, I may perhaps be permitted to hope, that such facts as I have faithfully recorded, may assist the researches of more fortunate inquirers.

I have already alluded to the effects of long continued nausea in exciting the action of the lymphatics, to the removal of morbid growths in various situations; and the reader will also bear in mind what has been said respecting the origin of such complaints. I now return to this part of the subject, happy in having it in my power to illustrate it still further by the following valuable communication from Dr. Jenner :

“ A gentleman whose lymphatic system was in a state of great derangement, and who was affected with schirrous tumours, was sent to a warm climate with the hope, though a faint one, of his deriving that advantage from its influence which the remedies in general denied him. He set sail; but the ship encountered such a series of tempestuous weather, that it was three months before she reached her destined port. The invalid was *sea-sick* the whole time, and arrived, enfeebled and emaciated; but when the disease which occasioned the voyage was sought for, it was gone—the schirrous bodies were absorbed.

“ A lady who resided at Cheltenham, about forty years of age, and who possessed that acute-

ness and amiability of mind which is so often interwoven with a strumous habit, received accidentally a blow on the right breast, from the head of a playful child. It was followed by some uneasiness, but not sufficient, as she supposed, to call for any particular attention. However, some time after, a hard lump was discovered on the superior part; another and another succeeded it; till three-fourths of the breast assumed the characteristic marks of complete schirrosity. In this state it was submitted to my inspection; and as it had resisted the means employed for its discussion, I did not hesitate in giving an opinion that its removal was the best chance Miss B. had for her security. Unwilling to submit to the operation, she went to London, and consulted a surgeon, who at that time had not long been a resident there, but who had acquired much reputation at Bath previously to his quitting that city. He recommended her to try the effects of a medicine which might perhaps supersede the necessity of the operation; at the same time informing her, it would require some fortitude, for this medicine would keep her stomach constantly sick. She readily consented;

and took emetic tartar in nauseating doses repeatedly during the day, so as to be not only sensibly, but distressingly felt ; however, rarely, and never by design, so as to excite vomiting. She grew thin and somewhat weak ; but as it was manifest an amendment had taken place in the state of the breast, she persevered, till, to my astonishment, the absorbents had entirely removed the disease. She gradually desisted from the use of the emetic tartar, and enjoyed good health for many years after, her breast remaining quite sound. The length of time the curative process occupied, I cannot now exactly recollect, but it certainly was not to be considered as tedious.

“ Miss F. a young woman about 22 years of age, had quitted the country in good health, and been a resident some time in London. Her situation, that of a ladies' dress-maker, required confinement, and deprived her of her accustomed exercise. A cough gradually stole upon her ; and in the course of some months increased to that degree, that the air of her native place, Cheltenham, was thought adviseable. I saw her soon after her arrival ; and no human being could present a more correct pic-

ture of a person in an advanced stage of phthisis pulmonalis than was exhibited in Miss F. I am aware of the difficulty, in some instances, of distinguishing between this disease and bronchitis, when severe and of long standing. But from the general account of the previous symptoms, their rise and progress, I could not hesitate in considering this as unequivocally a tuberculous case, and not one of inflamed mucous membranes. She recovered, under the *sickenings* plan, which she went through with great resolution. The medicines employed for this purpose were tincture of squills and the tincture of digitalis, three parts of the former and two of the latter. She began with twenty drops, generally thrice in twenty-four hours; but her stomach became so extremely irritable, that, as she proceeded, five drops was as large a dose as she could bear. When I left Cheltenham, about six months after, in the year 1815, she had commenced business as a ladies' dress-maker; and I understand she is since married.

“As we have been for ages in total darkness respecting the means of removing tubercles from an internal organ, when formed to any extent, may

we not hope, that the little glimmering which this seems to let in upon us, may lead to something beneficial to humanity? And without putting theory to the rack, may it not be supposed that the stomach and intestines, being thus deranged in their ordinary functions, and the supplies for the absorbents becoming scanty and deteriorated, they the more readily seize on such bodies, not those only that are absolutely extraneous, but which come so near that point, as tubercles.

“ If we take a retrospective view of the most popular remedies hitherto employed in these pitiable maladies, shall we not find that they consist of such things as produce a nauseating effect on the stomach, either from immediate contact, or secondarily, through their influence on the brain? One might name a great variety; for example, foxglove, squill, nitrate of potass, sulphate of zinc, sulphate of copper, conium maculatum, sailing, swinging, &c. &c. Remedies of this description have all in their turn risen to high reputation, and again sunk into disrepute. All of them seem to have done some good, and to have given a little flattering check to the progress, probably by in-

ducing sickness ; but the mode of exhibition, if we may be allowed to draw an inference from the preceding cases, was too limited ; the interval of freedom from nausea was too long. In the case of the gentleman who was so long kept sick by being tossed upon the seas, the respites must have been very short ; they were equally so in those of Miss B. and Miss F. Although in these cases, it appears that the derangement excited in the digestive organs occasioned the absorption of these bodies, yet in other instances it would *appear*, from experiments made on quadrupeds, as if the opposite change in the constitution produced similar results ; that is, by raising it from a state of extreme debility to a state of the highest vigour. You will recollect, that the rabbits taken in a state of health and put upon poor innutritious diet, soon began to be diseased, and that hydatids sprung up upon the surface of the liver. These were thrown off, even when advanced to the incipient stages of tubercles, by restoring the animals to health by means of plenty of the most invigorating food. This, I think, is mentioned in the observations already before you respecting the origin of tubercles. But let me

here remark, that there was a very material difference in the operation of the lymphatics in one case and the other. In that of the ill-fed rabbits, no absorption of the tubercles themselves had taken place. They were dislodged from the cavities in which they were imbedded, after having acquired a size from that of a vetch to that of a small bean, by the new formation of a portion of the peritonæal coat, which expanded itself beneath, and gradually destroyed the adhesion between them and the surface of the liver, till they dropped into the cavity of the abdomen. I have sometimes seen this process half finished; and again so nearly accomplished, that the little tubercle has been hanging by a single filament."

SEROUS MEMBRANES.

PART SECOND.

PLEURA.

CHAPTER I.

TUBERCULATED ACCRETION OF THE PLEURA.

ALTERED TEXTURE OF THE LUNGS.

CONSIDERING the importance of the function of respiration, we cannot but be surprised at the extent of disease which dissection frequently shows among the thoracic viscera, even when the signs generally supposed to denote its presence had been scarcely observable. The facts which I am about to record, amply verify this point.

Adhesions of the pleura were observed to be so common, that it became a question whether they were to be looked upon as morbid, and they even got the name of *ligamenta pulmonis*. Haller and Boerhaave took different sides of this question, the one contending that they did not impair respiration; the other, that they did, especially when they are broad and occupy a large portion of the thoracic cavity.

The first doctrine was perhaps supported more by speculative physiological opinions, than by pathological observations. That the adhesions alluded to are proofs of disease, seems pretty certain; that they may exist to a considerable extent without producing much inconvenience, is equally so; but that they never exist to a great degree without both distress and danger, I think will be made manifest.

But here it is necessary to make a distinction between simple adhesion, and the granular or tuberculated disease of the membranes. The former probably may succeed an inflammatory attack, which being speedily subdued, leaves no trace of its existence but such as simple adhesive inflammation affords. It has been shewn, that the other affection is connected with a disorder of a much more serious and extensive nature; that it is not a simple result of a local disease, but probably associated with a predisposition to changes of structure, not only in the membranes, but in other parts.

It is necessary to keep in mind what has been said in the preceding pages, illustrative of this

subject; changes of structure in all respects coinciding with those which were found in the abdomen being discoverable likewise within the thorax. Sometimes, dense tuberculated accretions unite the whole of its contents together. Sometimes the surfaces of the membranes are tuberculated without accretions. In this case, as in the abdomen, fluid will generally be found to be effused. The tubercles, too, are often pendulous, and vary much in size. They acquire at times a very great magnitude; and, as in instances already mentioned, their contents are of different degrees of consistency and of different textures. Occasionally they are found embedded in the lungs, retaining their well-defined tuberculous character. With this change, I have found a consolidation of the lungs, from the accretion apparently of innumerable smaller tubercles, as was before observed to have happened in other organs.* One case of a very remarkable conversion of this kind, will be recorded, but the lungs were not the only parts involved in the disease; for it extended to the pleura, to the clavicles and sternum, and to the textures external to the latter.

* *Vide* p. 96, 128.

The disease within the thorax, like that in the abdomen, frequently comes on in a very gradual and unobserved manner ; and one case which I shall record, will prove that the greatest possible degree of the tuberculated accretion may be found uniting the thoracic viscera together, although the patient never had been confined to the house, and even walked about a few hours before he expired. Being at that time unacquainted with the disease, I did not anticipate such change of structure as I found.

The symptoms attendant upon such affections as I have alluded to, seem, as far as I have been able to ascertain them, to be of the following nature. There is for the most part a dull obtuse pain, or rather a sense of weight or tightness about the chest. I have known the patients also complain of severe pain about the scapulæ and clavicles. The respiration is quick ; and there is a short cough without expectoration. When the disease advances, and where the accretions of the pleura are very complete, the countenance becomes anxious and sallow, the shoulders are drawn forwards, the ribs do not move as in the natural state,

but the whole chest heaves apparently at once; and to perform this office, most of the muscles on the trunk of the body seem to be called into action. The state of the pulse varies considerably. In some instances, it is always quick; in others, it remains nearly natural when the patient is quiet; but in all, it is accelerated by very slight exertions.

When the disease has proceeded far, when the membranes are much affected, or when there is much alteration in the texture of the lungs themselves, a dissolution somewhat sudden may be looked for. This at least occurred in three instances which will be noted; and it will not appear remarkable, when the morbid appearances are considered.

The effusions which take place in this disease, are probably of the same nature with those which are sometimes met with in the abdomen, when the peritonæum is affected. They are not to be considered as necessary concomitants; and I believe in both cases they are occasioned by inflammatory attacks, which (in some instances at least) have been proved to have come on long after the tuberculous disease had been in existence.

The state of the effused fluid, and the character of the adhesions, very strongly mark the nature of the complaint in which they occur. Unfortunately the signs of each variety are not so clearly made out as could be wished. Some of the facts about to be detailed, may perhaps assist a little in this important part of professional enquiry.

Leonard Edwards, æt. 15, is affected with a frequent troublesome dry cough, quick and laborious respiration, and a sense of tightness and oppression at the epigastrium. His nights are restless, and he sweats in the morning. Tongue white, appetite impaired. Stools and urine reported to be natural. Pulse 100. Countenance sallow; and he feels very weak and languid. The shoulders are prominent, the body is rather bent forward, and he cannot elevate his chest, nor throw the body into an erect position, without much augmenting his distress and oppression.

Has been complaining about five weeks. At first he had pains about the thorax, but they were not so severe as to attract much attention, and no remedies were used.

A blister was applied to the chest. The bowels were opened with the decoction of aloes; and half an ounce of the compound mixture of iron was ordered to be given twice a day.

Three days afterwards it was reported that the cough and difficulty of breathing had been so much relieved, that he had walked up and down stairs, and in the yard of the Infirmary that morning. He complained still of sleeping very ill, and an anodyne draught was ordered at bed time.

He took his supper, and went to bed as usual the next night. About one o'clock in the morning, he was heard to breathe with great difficulty, and he shortly after expired.

The body was opened about fourteen hours after death. On cutting into the belly, the peritonæum, where it covers the diaphragm, the sides of the abdomen, and the convex surface of the liver, instead of being smooth and shining, was much thickened, and had a rough granulated appearance. The liver, stomach, and other organs, were sound.

After elevating the sternum, all the thoracic viscera seemed to be united into one mass, with-

out distinction of parts. The pleura costalis and pulmonalis adhered together throughout their whole extent, and were converted into a dense rough cartilaginous-looking substance, which, at those parts that are contiguous to the diaphragm, was nearly half an inch in thickness. It was easily separated into layers, and numberless small tubercles were seen between each. These layers were with little difficulty peeled, both from the lungs and the surface of the cavity of the chest. The lungs themselves were turgid with blood, but were not unhealthy in any other respect. The outer surface of the pericardium, partook strongly of the disease of the pleura. The inner was perfectly free from all marks of disease. Nothing was found remarkable in the heart but a great dilatation of the right auricle, which was quite distended with blood. The brain, and its membranes, were sound.

The foregoing case is important, as illustrating some of the positions already laid down with regard to the character of affections of the pleura, and shews how much disease may exist, even in parts connected intimately with vital organs, without affording the well-marked symptoms that sys-

tematic works teach us to expect. It is not, perhaps, to be considered as a matter of wonder, that smaller degrees of adhesion, or thickening of the pleura, should exist, without occasioning much uneasiness; and consequently that it should have been doubted whether they are always to be considered as proofs of the influence of previous disease.

There is considerable presumption in defending the negative of this question, merely because the usual signs by which we judge of existence of disease have not all been observed. Every person accustomed to the examination of morbid bodies, must have found change of structure where he did not expect it; and there is scarcely a viscus, however important in the animal economy, that has not at times been found almost entirely disorganized, when there was little apparent reason to suspect before hand that this was the case. I say apparent, because probably when our observations have embraced all the phenomena of disease, we shall discover aids for the formation of our diagnostics, which at present we overlook.

I have not met with any other case of so pure and unmixed a nature as that of Edwards, nor do

I find any recorded in the writings of practical or pathological writers, where the symptoms of the disorder, and the appearances on dissection so well illustrate each other. I certainly did not anticipate so much altered structure as I found; but this was more owing to my own ignorance, than to the real nature of the complaint.

The two following cases shew the extension of the disease from the pleura to the lungs, with remarkable change of structure of the latter, as well as of other contiguous parts.

Thomas Wingate, æt. 50. This man has a pale emaciated appearance, his countenance denoting much distress. The shape of his thorax has recently undergone a change. The upper part of the sternum seems to be elevated into an oval-shaped tumour. It extends in an oblique direction to the left clavicle, which is likewise considerably altered from its natural appearance. This tumour does not appear to arise from the surface of the bones, for they themselves seem involved in the disease. The skin over it is of a brownish colour, and the superficial veins are a little varicose. The swelling itself feels

solid and unyielding; but he has no pain in it from pressure, nor at any other time. He coughs a great deal, but he does not expectorate at all. His respiration is uniformly laborious; and on moving quickly, it becomes extremely so. He complains principally of his cough, and of pains about his back and the upper part of the left shoulder. There is an evident pulsation at the epigastrium, but there is none perceptible in the tumour. He starts sometimes in his sleep, and has occasionally complained of pain and fluttering about the heart. The pain he said extended to the left side of the neck.

His appetite is impaired; but the tongue is clean; and the alvine evacuations, as well as the urinary, are natural. Pulse about 90. It is feeble, but perfectly regular.

The first symptoms of this disease are said to have commenced about eighteen months ago. They are described as those which characterize our common winter catarrhs. He had uneasiness and tightness about the chest; but the only pains he complained of were those mentioned about the back and shoulders. He continued his labour as a plasterer

for many months after these symptoms commenced, and for several, after the change on the sternum had begun to take place. The swelling gradually increased, and with it the cough and dyspnœa. Then he lost his flesh and strength, and desisted from his employment. But he was able to walk about till within a few days of his death.

Mr. Drayton, surgeon, of this place, assisted me in the examination of the body. The integuments were carefully dissected from the tumour. The cartilages of the ribs were then divided, and an attempt was made to elevate the sternum in the usual way. This was found to be impossible, for sternum, pleura, lungs, and all the contents of the chest, seemed to be consolidated into one uniform mass of disease. It was then determined to carry the incisions completely through the mass, so that the disease on the sternum, and all the subjacent parts, might be removed at once. While doing this, the knife felt as if it were passing through a piece of cheese. The texture of the lungs was almost utterly destroyed, there being only a very small portion of the left lobe that could serve either for the transmission of blood or air.

We directed the incisions in such a way as to remove, with the parts already noticed, the pericardium and heart, together with a portion of the contents of the posterior mediastinum.

On examining the morbid appearances, all distinction of textures seemed to be lost, the swelling on the sternum, the pleura and the lungs, being amalgamated into a substance of uniform structure and properties. The whole, when minutely examined, had a granulated appearance, and seemed to be formed by the accretion of innumerable tubercles, after the manner that has been already mentioned.* Both the clavicles and the sternum itself were diseased. The former were soft, and the knife went through them like a piece of cartilage. The sternum, at its upper part, had a honeycomb sort of texture, ossific spiculæ shooting from its surface, in the same manner as they are seen in certain varieties of the spina ventosa.

Two of the engravings represent the appearances of the preparation, as it now is preserved in our Infirmary. On examining a portion of the substance which was cut from the right side of the

* *Vide* p. 96, 128.

diseased structure, I found an appearance which I have referred to in another part of this volume.* All the rest of the texture was dense, granulated, solid; but here there was a body embedded in it, of a well defined oval shape, of about the size of a walnut. When cut into, it exhibited a series of concentric laminae, of a brownish colour and friable texture. There can, I think, be little doubt that this had been originally a larger hydatid than the rest of the disease was composed of; and its having been found in such a situation, and in such a state, affords (in conjunction with facts already detailed) something to direct us in our opinions respecting the probable origin of this remarkable disease.

After all that has been said in the former division of this work, I can entertain no doubt on this subject; and I flatter myself that the reader also will be inclined to admit, that there is at least strong presumptive evidence in support of the doctrine which has been advanced.

The state of the bones, in the case just recorded, is not an immaterial circumstance. The diseases

* *Vide* p. 95.

of these parts are still involved in very great obscurity. Were this a proper occasion, it might not be difficult to shew, that some part of the reasoning which has been already applied to cachectic disorders in general, might be safely extended to those which have just been named. But I leave this for the present, and proceed to detail another interesting case.

E. W. æt. 16.—This young gentleman is emaciated to the greatest degree. He is almost constantly affected with a short cough, but he does not expectorate any thing. His breathing is very quick and laborious, and performed with much effort, the whole chest heaving, and the abdominal muscles being in strong action. The slightest exertion induces such inordinate action of the heart, and so much disturbs the breathing, that he dreads suffocation. He can walk a little on a level surface, but he is obliged to be carried up stairs. The pulse is so rapid that it cannot be numbered. His sleep is much disturbed, and whole nights are frequently passed in a restless and anxious state. The bowels are rather confined, but the evacuations are healthy.

This complaint is said to have come on about five months ago. He was unwell, but it does not appear that he had any strongly marked symptoms. He returned from school to his father's house, and in so doing walked a distance of about a mile and a half. His breathing had been oppressed, and he had occasional dull pains about his chest, from the commencement of the attack. After the exertion just mentioned, these symptoms appear to have been encreased. He was bled and blistered, and had some suitable remedies. They relieved some of the urgent symptoms, but seem to have had little effect in checking the progress of the complaint, for it went on; and I found him in the state already described.

On examining this patient minutely, I ventured to deliver it as my opinion, that he laboured under an affection of the same class with those just described; and I added, that the termination of the complaint, like Edwards's, would probably be sudden. He was ordered a draught, with compound spirits of æther, camphor mixture, and extract of hyoscyamus. The effects were beneficial, to a degree much greater than could have been

looked for. They tranquillized him much, abated the velocity of the pulse, so that it was reduced to 120 in the minute, gave him quiet nights, and relieved the dyspnœa. His appetite also improved, his cough diminished, and his anxious and emaciated countenance became fuller and more cheerful.

This change induced me, at my second visit, to imagine that my first view of the complaint had been more unfavourable than it ought to have been; and a hope was expressed, that the diseased structure had not proceeded so far as to render recovery impossible.

This was on the 15th of April. He was ordered to continue his medicine, to avoid every thing that could hurry or agitate him, to take such a diet as might be nutritive, without proving stimulating.

He continued much in the state already described, and was able occasionally to be moved about in the open air in a wheel-chair, or a carriage, till the morning of the 28th of this month, when he expired.

The dissection was performed by Dr. Darke, of Stroud, in presence of Dr. Snowden. The former gentleman has favoured me with the following account of the appearances which were observed:

“ On the left side there was scarcely a vestige of the lungs; indeed, so altered was its structure, that I would defy any one to have known that it had ever been pervious to air. In reality, by its adhesion to the mediastinum, it seemed to be identified with it, forming a thickened left side of the mediastinum. The cavity of the thorax on this side might very properly be so called, for it was in reality a cavity, without any effusion either of blood, lymph or pus. The pleura costalis exhibited on this side a very dark coloured appearance, with white streaks in parts which I conceive to be coagulable lymph.

“ You will observe by this, that no adhesion had taken place between the lungs on this side and the pleura costalis. The pericardium, heart, and blood-vessels within the pericardium, appeared sufficiently natural: and the liquor pericardii, not amounting to more than two ounces by measure, of the colour of whey and pellucid.

“ The lungs on the right side adhered closely to the pleura costalis, and in a great measure to the anterior side of the mediastinum, but was also obliterated for any purpose of respiration. Upon cutting into a portion of this altered mass, we could discover that it was a remnant of lung.”

As I had not an opportunity of examining the morbid texture of the lung and pleura, I cannot speak positively of its nature ; but enough, I think, has been said to prove the similarity of the three cases, and to justify me for thus bringing them together before the reader.

Some time after having seen the cases just recorded, I read the history “ *Atrocis Rarissimique Morbi,*” which is given by Boerhaave. After strongly bespeaking the attention of his reader by various pertinent and judicious observations, he proceeds to the recital of the medical history of his patient. It is too diffuse to be quoted at length, but an abstract of some of the most prominent and instructive passages will be necessary, to enable us to derive any benefit from its perusal.

The gentleman in whom the disease occurred, was of illustrious birth and in the prime of life.

“Corpus quidem huic natura formaverat firmum valde, mireque agile in omne motuum genus prorsus aptum natum, pulchraque membrorum symmetria concinnum.” “Immunis ergo atque fortis, hæreditario tantum malo plures per annos discruiatum se sensit. Hæmorrhoidum scilicet tumidissimarum singulari valde enato malo.”—
“Consuluit itaque tunc temporis me super hoc malo, quod victu leni, pacantibus remediis externis, internisque, perfecte ablatum, corpus dein reliquit vegetum, perfectissime sanum, neque vel minime culpandum, integri sesquianni spatio.”

“Et quidem animadversione dignissimum imprimis hoc habetur, quod integro sesquianni spatii decursu nihil quidquam in voce mutatum fuerit. Quum enim naturæ beneficio vere masculam barytonam hanc haberet, eandemque ad modulos musicos sedulo, diuque, ad perfectionem usque excoluisset, hinc cantandi suavissimus esset peritissimusque artifex, absque ullo impedimento, sine incommodi sensu lente, parceque, sustentatum spiritum, ultra quod credibile producere valebat, atque in longam plane moram extendere. Remansitque inculpata hæc, et plane singularis, facultas per omne hoc

tempus, donec ipsum lethale malum primo se manifestare inciperet.

“ Quin etiam in deambulatione, cursu, atque saltatione, non modo post hanc curationem membra flexilia, molliaque expertus est brachia, sed et animam adeo constantem, fortemque, ut nec fatigationis appareret quidquam, nec *thoracis, pulmonisque*, ullum vitium; imo vero vix erat videre alium qui de facilitate *respirandi, pectorisque* vi, cum eo certare potuisset,

“ Incepit igitur Illustris Marchio persentiscere imminui primo integritatem optimæ valetudinis decem mensium et dimidiati spatio, antequam violentiâ morbi interiret. Etenim exquisitissimus plane, et perpetuus dolor occupabat primo illam corporis plagam, quæ ab ægro *sub læva indicabatur scapula versus thoracis interiora*; hinc vero per sinistram pectoris partem deinde se diffundens pari sævitie increescebat. Quum vero acerbitas horum cruciatuum quotidie intenderetur acrius, simul tota lateris hujus regio in sede sua interna imprimis torquebatur. Quodque augebat magis doloris vehementiam, tussis accedebat molesta non modo assiduo irritatu, quieti adversa, sed distentu laterum quas-

satorum intolerabilem in illo loco dilacerationis sensum perpetuo incutiens. Consulti super malo medici sapientes rheumaticos vocabant dolores, atque iis quidem aggrediebantur remediis, quæ ipsa ars ad hanc mali speciem quam fidissima dictitat. At frustra penitus ! quum tantum abesset ut mitterent ad data hæc subsidia, ut contra insurgeret malum curando, semperque quo magis augebatur, eo simul sub dimidiata thoracis sinistra parte imprimis se figebat immobile plane, nec arte ulla loco movendum occupato, nec leniendum unquam. Ergo nec levare misso aliquoties sanguine, nec datis ex aperientium classe remediis lectissimis, quin et olea eludere, ipsa soporiferorum sopimenta spernere. Ubi aliquandiu, et omni quidem hora gravius, luctatus fuerat cum hisce doloribus, infestior longe, atque crudelissima tortura sævior interna pectoris sub mammilla sinistra, exercuit ; ejus sane violentiam adeo abnormem esse, atque intolerabilem omnino, testabatur, ut ferendo se haud esse, palam clamaret. Ita Nobilissimus æger noctes, diesque, extortus, gemitu et ejulatu se, præsentisque fatigans, vix poterat ullam dare corpori lassato requiem, ullam fere positionem tolerabilem ; quare

neque somnum ullum oculis videre valebat, neque refici blanda quiete. Tandemque eò pervenit tristissima morbi facies, ut in lecto sedere cogeretur, corpore quidem utcumque erecto, sed antrorsum tamen trochi instar incurvato, cubitisque ita pulvinari femoribus imposito innixus, ut miserrimam omnino speciem exprimeret. Attamen naturæ omnino adversus hiece corporis positus id subin concedebat solatii, ut paucissimo tempore requiescens doloris excessus spatium daret parcissimo somno; quum interea paulo post dira cum anxietate turbatus excitaretur in easdem prorsus miserias relapsus."

"Tussis molestissima succedebat, noctes diesque, conquassans ægrum, nihil tamen, nisi magna vi expressum tandem gluten, in ipsa aqua tenacissime cohærens, excreans; neque hæc vel demulcebatur oleis, nec expectorantibus levabatur, Opio quidem sopiri visa pro tempore, assurgebat ilico violentior. Quin et exoriebatur sæpe instantis suffocationis funestissimus sensus, quo jamjam quasi enectus ubi erat, nec animam ducere compos, tandem summo inspirandi molimine reflexo capite, retracta cervice, thorace elevato, aërem vi trahebat in pulmones cum sono tremendo, atque rauci

gutturis clangore, haud aliter, quam si sonitum intensissimum audivisses ardeæ stellaris, quem Butorium vocant, quo sane nihil aliud ingratius, magisque terribile quid percipere potuisses; tum momento postea longe liberior iterum aderat spirandi facultas. Ita tamen, ut, quo tempore deinceps usque ad mortem, intervalla lenissima haberet, nunquam vel exiguo spatio temporis posset decumbere vel in dorsum, vel in alterum latus, neque et jacere pronus: quoniam ad minimam corporis inflexum ilico præsentissima urgebat suffocatio, adstantes intentata morte territans; cogeatur ergo continenter sedere, noctes diesque, corpore erecto, extenso collo levato capite, cujus dormituriens vel levis mutatio tandem evadebat prorsus intolerabilis. Interea lassum corpus si fessus de sedili levare conaretur, mox ad levissimum hunc conatum luridæ faciei subnigrescens color, venarum per vultum tumentem elatio, protuberantes oculi, anhelitus ad ima ilia, morientem pingebant hominem. Nec nisi sedenti per raucum sonitum reddebatur aliquo requies. Quando vero animosior paulo impetu capto passus binos, ternos, progredi nitebatur, tum vero omnia descripta prius mala longe violentius insurgere:

Denique dolumus videndo, quod paucularum vocalium pronunciatio similis evaderet tragœdiæ causa. Quod stupendum inter hæc nobis videbatur, per omnia hæc calamitosissima, quæ distorquebant corpus, arteriarum pulsus fortis erat, *constans, neque celeritate præceps, neque deficiens*, sed sufficiens, qui universum corpus æquabili perfunderet calore, atque satis idoneo nutrimento, reficeret sustentaret. Paucis modo ante obitum diebus vacillare subin deprehensa fuit hæc cordis actio, atque pulsus deficere, vel intermittere. Usque ad Julii nonam miserrimam traxit vitam, cum diris quotidie et funestis colluctatus symptomatibus, itaque integro fere mensis spatio enectus, absque ullo interpolato levamine, nisi quandoque unicâ interdiu horulâ. Quotidie interim crebriores atque violentiores simul insultis suffocantes, qui in vigore vultum jam semper reddebant, qualem supra descriptum dedimus horrendum. Clyisma simplex brevis solatii speciem adferebat. Quin etiam summæ præcordiorum angustiae jam dudum effecerant, ut crederet ille, flatus esse, qui hypochondria obsiderent, distenderentque, urgebatque inprimis Medicos, ut cogitarent serio de remediis, quæ dissipandis illis

propria noscuntur: ita se curari posse, si origo, unde assiduo, absque fine, repullularent, auferretur. Magis quidem id credebat, quoniam fame ingenti, et assidua, agitabatur ad capienda alimenta, quæ nactus avidissime ingerebat, et nisi præsentibus omnimodo cohibere conati fuissent, ingenti devorasset copia: quamvis ab ingestis quam dirissime angere-tur postea. Octiduum agebatur ante fatalem horam, quando incredibili cum gaudio experiebatur hæmorrhoidum fluxum sanguineum: hinc enim sanationem mali exspectabat; voluerat semper, ut medici has arte excitarent, qui et id fomentis appo-sitis jam tentaverant prius; accusabat tamen semper negligentiam Medicos, quod ab initio mali in-cepti non omni ope vasa hæc in plenum fluxum solvissent. Septimo Julii magnam satis cruoris copiam alvo demisit, qui coactus in magna frustra apparuit. Sequenti die rursus multum sanguinis eadem evacuabat viâ; solito se alacriorem sensit, ut sustentatus per cubiculum aliquot progressus fuerit passus, quod sane diu ante haud potuerat fecisse. Sed fames simul illâ die insatiabilis adeo, ut aliquoties comederet de variis esculentis, deglutiens jam absque suffocationis metu, atque angustiae ad

præcordia sensu; ita et large cœnabat, hilaris satis, quum experiretur jam facere sibi fas esse, quod à pluribus septimanis vetitum fuerat; quum nec unciam juris carnum potuisset deglutire, absque imminentis mortis à strangulatu metu."

After this detail our author proceeds to give an account of the appearances on dissection, in these words: "Percisa tunica pingui, carneque, dein commissuris ossium et cartilaginum costarum solutis, qua potui prudentia transcidi membranam hoc in loco, quæ thoracem succingit. Quo vix exiguâ plagâ in uno loco perfecto, obstupui statim, quum viderem ex elata hac supini corporis parte sursum exilire cum impetu, pressam quasi lympham tenuem, flavam, inodoram, copiosam. Meditabar paululum quid hoc rei foret, anque forte suffocans pectoris hydrops origo fuisset malorum? Postquam prosiliens primo latex spongiis absorptus non turbabat amplius visum, perrexi membranam pectoris juxta decursum modo descriptum persecare, vidique continenter effluere, sed sine impetu jam, aquam: quum jam proprio tantum pondere dilaberetur, prius compressu ambientium partium acta urgere-tur. Quantum dein per angusti vulneris hujus

inflicti rimam introspecti poterat, ante partium à se invicem divulsionem, apparebat pectus aqua velut plenum. Verum immisso dein digito per vulnus sentiebatur pulmo dexter in suo loco, ad superiorem thoracis membranam circa costas superiores, harumque cartilagines quam firmissime accretus, atque affixus immobiliter. Verum nolui ulterius hoc latus pectoris destruere, priusquam alterum pari modo fuisset aggressus. Itaque sinistro in latere omnia eadem simplici sectione perficiens, quæ prius huc usque in dextro non offendo aquam; sed in loco antea descripto in hac læva parte sub synchodrosi costarum nunc inveni pulmonem sinistram membranæ succingenti continuata accretione affixum, à supremâ nempe thoracis parte, usque ad ipsum diaphragma quin etiam ad septem medium ipsum; ut à jugulo juxta costas, ad convexum diaphragmatis pulmo undique à digito inserto exploraretur affixus.

“ Hæc igitur hac arte aggressus mirabar statim quod ad membranam succingentem, qua parte cartilagineis costarum segmentis subjacet, inveniretur moles ingens, firmiter accreta; quæ quum à natura pulmonum penitus aliena appareret, qui hic

loci liberi semper fluctuant, primum fecit, ut præsentes admonerem mirabilis quid, et insueti plane se prodere, conjicere necdum posse, quid foret. Immisso digito per inflicto prius vulnus, lente divello membranam; cujus ope quidquid illud foret corporis accreverat cartilaginum involucris et sterni. Atque ubi hanc separationem ab utroque latere, hac ratione, peregeram quousque potui, tunc sterni infima sectione à diaphragmate divello, do illud prudenter parte infima elevandum sursum, interim membranam ipsi cellulosum sterno succretam discindo, atque ita tandem totum sterni os, una cum cartilagineis costarum segmentis sursum retrorsum in faciem obvelatum reclino. Patebat tum aspectus in thoracem, atque aperti pectoris apprensas facies à jugulo ad septum medium plena omnino erat corpore, coloris albi, satisque sani; nisi quod in medio hujus superficiei vomica exigua, quæ sub medio hæserat sterno, se offeret, in qua materies liquida, lactei coloris, atque etiam fere tenacitatis utique purulenta non erat. Ostendi mirum hoc portentum adstantibus, nec erat qui divinare posset quidnam esset rei? igitur digitis undique superficiem attrecto, dumque palpo undequaque re-

perio massam consistentem satis duram, fere ubique sibi similem. Oriebatur quidem ex supremo omnino cavi thoraces fastigio, ubi ex ipsa membrana ibidem pectus cavum succingente adeo lato sane principio originem ducebat, ut supra jugulo, anterieus sterno, retro ope mediastini totius vertebris thoracis, accreta, totum illum spatium oppleret, ad latera vero utrimque versus costarum media in quatuor quidem uncias pedis Rhenolandici, et ultra, se extenderet. Decurrebat corpus hoc pari forma, sed versus inferiora sensim dilatatum, cæterum toto suo decursu vertebris manens accretum sternoque, usque ad ipsum diaphragma cui dein lato expanso massæ suæ anterieus se affixerat ita, ut primo appareret totum septum occupare; sed in postremo examine constitit, pericardium cum corde, suisque vasis majoribus retro deorsum pulsum, ibidem septi partem reliquisse liberam. Refecti paululum, ulterius idem, propiusque explorare aggressi invenimus, quod in sinistro thoracis cavo, longe major moles hujus tumoris quam in dextro, erat. Namque in lævam hanc pectoris cameram adeo se diffuderat, ut hanc totum fere solus imple-ret; unde et pulmonis lobos huic cubiculo natu-

raliter inclusus ita arctaverat, compresseratque contra membranam succingentem, ut eosdem et aëri reddiderit, et sanguini penitus impervios; quinimo eodem appressu effecerat, ut horum compressorum loborum membrana penitus, nec separabiliter, concreverit cum ipsa superficie hujus tumoris, cum tota membrana costas succingente ubi lobos hos contingere poterat pulmonum, atque inferius cum diaphragmate, qua parte et hoc potuerat attingere depressus pulmo. Apparuit sic satis, primam sedem mali, unde se deinde extenderat, in læva parte pectoris sub scapula alta fuisse, unde expansu suo acerrimi sensus membranas distorserat, dolores enormes pepererat."

This most formidable disease differs in several respects from that of Wingate. But I think it is impossible to read the accounts of both, and attend to the other facts which have been mentioned in this work, without admitting the affinity that subsists between them. The structure of the tumours was not alike; but if what has been already advanced is founded in truth, this circumstance does not at all impugn the probable identity of their origin: for it has been demonstrated, that

substances and textures of very different properties may be found even within the same cyst. But on a subject of so much obscurity and intricacy, it becomes us to be diffident. The evidence which has been brought forward may be insufficient to lead to an accurate judgment. It may be hoped, nevertheless, that something has been done to prepare the way for the attainment of that very desirable object.

I have met with one other case which corresponds in almost every essential point with that quoted from Boerhaave. The patient was under the care of Messrs. Lawrence and Warner, of Cirencester; and with these gentlemen I had the honour of seeing him. He was of a robust frame, and had enjoyed good health. He was about the age of 40, and of sober and industrious habits. His complaint began with very severe pains about the back and chest. After they had continued for some time, a tumour appeared above the right clavicle. Its base, as seen during life, extended several inches in the direction of the clavicle, and its apex rose high up in the neck. There was great turgescence of the face and neck, œdema of both

arms, impeded deglutition, a deep harsh tone of voice, and a manifest obstruction to the free return of the blood from the head and upper extremities, indicated by the fulness of the veins. He could not lie on the back from feelings which threatened suffocation. Pains about the shoulders were felt during the greater part of the disease; and towards its conclusion they were frequently severe in the legs and thighs. He coughed sometimes rather violently. The respiration was heavy and laborious, and the pulse ranged from 100 to 120. It was for the most part regular, but it was now and then intermittent.

The functions of the stomach were tolerably natural; but the fœculent discharges were usually unhealthy. His extremities were very often cold. The duration of the disease occupied about five months.

When I saw this patient, I suggested it as my opinion that there was either accretion of the thoracic viscera, and altered texture of the lungs and contiguous parts, as in the case of Wingate; or that there was a disease of a nature similar to that described by Boerhaave. Mr. Warner has

kindly favoured me with the following account of the morbid appearances; and the reader will thus be enabled to judge of the accuracy of the diagnosis.

“ There was a general thickening of the pleura and of the pericardium, with a rough granular surface, and great effusion of serum, principally in the right cavity of the thorax, but to some degree in the pericardium. There was no change of texture of the lungs nor adhesion to the pleura. The tumour, whose apex was seen rising high above the clavicle, and up the side of the neck, had its basis near the root of the lungs. The structure of this large mass resembled that of conglobate glands, but somewhat softer perhaps, and was of an uniform delicate white colour.”

The situation of this tumour sufficiently explains all the most marked symptoms of the case. I therefore leave it, and the facts formerly stated, to the consideration of the reader without further comment.

I have received the accounts of another example of altered texture of the lungs, which I think was probably of the same nature with those already

mentioned. The symptoms corresponded pretty closely with what were met with in the case of E. W. There was much difficulty of breathing, especially on slight exertions; there was cough too, with a mucous expectoration. The pulse, when not hurried by exertion, was generally about 80, and very regular.

In this case, a great portion of the lungs, particularly of the posterior part, was found condensed, hard, and converted into a substance like liver.* The bronchial glands were enlarged. The pleura was free from disease. On the anterior surface of the lungs, a number of vesicles were found, which are said to have been formed by a dilatation of the air cells of the lungs.

I feel very diffident in delivering any opinion respecting the origin of the changes which have

* Dr. Baillie mentions this change in his *Morbid Anatomy*. But if the example given in the text accorded with that described by him, it probably does not belong to the same class of diseases of which I am treating. The only instance he saw, was in a preparation; and he believes that it was "produced by a wide extended inflammation, in which a large quantity of coagulable lymph had been extravasated into the substance of the lungs."†

† *Vide Morbid Anatomy*, p. 75.

been mentioned, because I have not seen the morbid parts, and the description is somewhat less explicit than could have been wished. It is nevertheless an interesting case; and I am induced to believe, that the hardening and condensation of the lungs, and the enlargement of the bronchial glands, may perhaps receive some elucidation from the facts and reasoning contained in various parts of this enquiry.

In the third volume of Dr. Lettsom's Life and Correspondence, there is a case recorded which is entitled "Hydrothorax, with certain anomalous affections." It is a very instructive document; and I quote it with peculiar satisfaction, because I hope, what was anomalous to the ingenious writer may appear somewhat less so to those who may peruse this enquiry.

"I. Toms, aged 41, long resident in Miles' lane, Cannon-street, was a well-formed middle-size man; rather thin than full made, of amiable moral character, of sedulous industry, and undeviating temperance, exercising activity, and long enjoying health.

"Early in June 1814, he first intimated that he found little or no nourishment from his food, and

particularly from his breakfast. This sensation gradually increased; he grew weaker, and experienced oppression and difficulty of breathing, with pain about the præcordia, and anterior insertion of the diaphragm, shooting laterally, and backwards, and more lancinating on the right side. These sufferings became so considerable as to induce him to seek the medical assistance of Mr. Atkinson, of Nicholas-lane, early in July, under whose attendance the means which judgment and experience suggested, were directed, but with no obvious benefit. He recommended removal into the air, but a fortnight's trial afforded no relief, and he returned to his usual residence, rather more indisposed. On the 3d of August I visited the patient with Mr. Atkinson.

“ Although feeble, he was able to walk about his room. In his frame he had been lately more and more extenuated, except about the præcordia, and on the right side, which were full and tense: his pulse was rapid, and had been usually so since the commencement of illness; rarely, though occasionally, intermitting; sometimes feverish, and generally labouring under some degree of difficulty

of breathing, with slight cough, and a little expectoration of mucus; he could lay recumbent and low in bed; his urine was spare in quantity, and rather high-coloured; he slept tolerably well, and in general composedly; he was disposed to be constive, which was carefully obviated by mercurial or saline purgatives.

“ During our attendance, various remedies were given; sometimes salts, squills, or digitalis, to promote the increase of urine; as alteratives or deobstruents, he took small doses of mercury, and the parts most prominent, hard, and pained, were rubbed with mercurial ointment, after a fomentation of poppies. Where the pain was most oppressive, either cupping or leeches were applied, and occasionally blisters were recommended. To relieve the difficulty of breathing, a solution of gum ammoniacum, aided by the camphor julep and æther, were administered.

“ The continuance and increase of disease gradually reduced the powers of life, and on the 17th of August he expired. On the 19th the body was examined, in company with Mr. Atkinson.

“ After laying aside the integuments of the thorax, the moment the first cartilage of a rib was divided, a large portion of water gushed forth, which, with the quantity afterwards taken out of the cavity, was supposed to exceed three quarts ; indeed it was so completely filled, including the pericardium, that the action of the heart must have been in such a deluge of water, as sufficient to have occasioned, for many preceding weeks, instantaneous death.

“ After removing this great accumulation of water, the heart was examined, which bore no degree of analogy with the morbid state of the contents of the thorax ; it might appear small, but without disease in its structure and vessels ; and the same might apply to the pericardium.

“ In order to command a more complete view of the thorax, after dividing the cartilages of the ribs, the sternum was thrown back, and afforded appearances of unusual morbid affection, in the contents of the thorax. The inner surface of the sternum was studded with numerous considerable eminences, or tubercular excrescences, of a white steatomatous substance, from half an inch to an inch in diame-

ter, and branching out, or rising to eminences, of equal magnitude, resembling so many icicles clustering over the whole surface; and on each side of the internal surface of the thorax, the same state of disease, though less general, was also presented. The like steatomatous projections, of various sizes, from that of a pea to a filbert nut, and even larger, studded the membrane of the lungs. The left lobe, in particular, which seemed nearly transmuted into this species of substance, was more shrivelled and extenuated than the other, and in a state of suppuration.

“ The diaphragm was somewhat thickened, firm, and hard from inflammation, but more particularly of the portion connected with that of the liver. The first external view of this viscus presented no appearance of morbid affection; but on opening it, in the right lobe, a cavity was exposed, capable of containing about six ounces of fluid. It was lined by a thick firm membrane, and contained innumerable hydatids of various diameters, from a quarter of an inch to a full inch. Besides these hydatids, were observed some disengaged membranes, not unlike the tunic of hydatids, pressing among them.

“ The gall bladder, though small, contained a due portion of bile. The intestines, and other abdominal viscera, were apparently sound.

“ With the thorax so completely filled with fluid, its internal surface, with the lungs, so generally studded with steatomatous tumours, and the parenchyma suppurative ; it afforded surprise that the patient could possibly breathe with a considerable degree of freedom, in a recumbent position ; with a pulse, though quick, rarely intermittent ; and with the abdominal functions and excretions approaching their natural states. Here the heart must have exercised a wonderful agency of accommodation to have performed its functions ; and not less so the lungs, to admit breathing with a degree of facility, under such general disease ; and the liver performing its secretions, whilst its substance afforded an asylum to innumerable hydatids.”

Had not the first part of this volume contained cases illustrative of the connexion between hydatids and tubercles, as well as of the other opinions which have been advanced, I could not have had one better suited to my purpose in every respect, than that which I have now presented to the reader. It

contains in itself examples of most of the gradations of morbid structure, which are generally met with separately ; and when they are thus brought together by nature, it adds a force and weight to the evidence which has been heretofore collected, that appears to me altogether irresistible. By bearing that evidence in mind, I cannot avoid hoping, that some points in pathology which have occasioned surprise, and did not well accord with our commonly received doctrines, may now be better understood,

I have already given one case to shew the effect of accretions of the pleura ; I subjoin another from De Haen, which will be found instructive. He is one of those writers, who affirmed that such affections did not much injure respiration, and that they often occur without affording any reason to suspect their existence. This assuredly could not have been the case in the instance which I am to quote ; for though the patient had most clearly the symptoms of unsubdued disease of the pleura to the last, he marvels as if some very inexplicable phenomenon had been presented to him,

The man died at the age of 43. In his early days he had been liable to spina ventosa. Latterly, in consequence of external injury, he had an abcess about the hip joint, &c. This abcess was opened, and four days afterwards, "*subita eum peripneumonia prehendit, pure quamvis rite ex ulcere fluente: hanc iterata missio sanguinis, penitus phlogistici, et idonea remedia, ad quartum diem egregie solverunt: ita ut cum respiratione non impedita, semper dein miti febre continua remittente laboraret, et appetitu perpetuo bono gauderet; donec demum colliquante diarrhæa, ichoris ex ulcere efflexu, immobilitate affecti cruris, urinis denique tum colore, tum crassamento, fuscis, difficilique respiratione prægressis, moreretur.*"

I pass over what is said of the appearances found on examining the hip joint, the abdomen, &c. &c. and proceed to what is said about the thorax.

"*Thoracem rimatus, pulmones ita nexos inveni, ut simile quid nec viderim, nec legerim unquam. Nam non fuit in toto thorace, universoque pulmonum in ambitu, vel unicum punctum a cohæsione liberum. Quippe cohærebat pulmo cum tota pleura, cum universo diaphragmate, integro cum*

pericardio, sternoque. Modus autem coherentiæ adeo firmus erat, ut nemo nostrum, citra dilacerationem, vel minimam solvere portionem posset. Connectebat enim eosdem tenacissima, non dilatibilis, et ubi vi partes a se invicem distrahebantur, vix semilineam crassa, cellulosa membrana. Imo toto sinistro in latere, tenacitatis cellulosæ loco, vera reperta sarcosis; veluti si pleura degenerasset in crassissimam carnem rubram, insertam alte in pulmonum substantiam, ab eaque inseparabilem lobi quoque omnes inter sese eadem tenacissima cellulositatem coivere.

“Sed nihil mirabilius contemplatione cordis. Ut enim pericardium omni in puncto arctissimæ unitum cum pulmonibus erat, ut jam dixi, ita interno pariete suo, ope ejusdem tenacissimæ texturæ cellulosæ, tam firmiter cum corde, ejusque auriculis, sinibus, ac vasis majoribus omnibus concreverat, ut solvere nemo, nisi lacerando, posset. Præterquam quod crassus saccus, ceu nova genitura, aortæ ad pollicem latum undique, firmiterque, circumeretus, et intime connatus, reperiretur.” &c.

The only reflections of De Haen on this case which I shall notice, are the following:

“ Porro nemo nostrum vidit hominem hunc laboriose respirantem, cum 4. Martii hujus, quem vivimus, anni, circiter 50. gradus concenderet, concilium cum cæteris adventantibus pauperibus, petiturus. Nec vitiose respiravit quatuor primis diebus, uti neque post peripneumoniam curatam, nisi sub mortem. Respiratio tantum fuit naturali brevior, pulsusque naturali paulo celerior ac debiliior, vix tamen inæqualis.

“ Homo ergo hic cohæSIONEM habuit, cui forte similis non visa unquam: attamen non subita, sed lenta morte, cujus causæ aliunde notæ, periit.”

I cannot help suspecting, that De Haen's desire to controvert the opinion of Boerhaave*, that diseases of the pleura are causes of sudden death, had warped his judgment in detailing this case. He affirms, that the respiration was not laborious, though he immediately afterwards admits that it was “ naturali brevior;” and we have already seen, that Edwards walked about, although he had a degree of disease, nearly as great as that mentioned in the present case. Moreover, we are not informed of the time which elapsed from the attack

* Institut. § 835.

of the peripneumony, as he calls it, till the death of the patient. This attack doubtless increased all the other maladies under which he laboured ; but the writer himself affords evidence sufficient to prove, that the pulmonary affection had a greater influence upon the event of the disease than he is willing to admit. I am fully convinced that this would have been more apparent than it is, had all the symptoms been noted with accuracy, instead of being mentioned with studied brevity and inconsistency. In that event we should probably have found confirmation of all that I have observed in the case of Edwards.

CHAPTER II.

FURTHER OBSERVATIONS ILLUSTRATING THE CONNEXION BETWEEN HYDATIDS AND TU- BERCLES.—FORMATION OF TUMOURS.

WE are now prepared to apply the facts which have been already collected, to explain the formation of certain tumours. To prevent misconception respecting the meaning which I affix to the terms tubercle and tumour, it is proper to observe, that I would employ the word tubercle, to denote those disorganizations that are composed of one cyst, whatever may be its magnitude, or the nature of its contents; and that by tumour, I would understand those morbid structures that appear to be composed of more than one *tubercle*, after the manner that I am now to attempt to explain. I wish the reader to remember, that I do not bring forward this distinction as applicable to all diseases

of this class, (though it may afterwards be found to be so,) but at present, it will be convenient for the purposes of illustration; and I wish it, therefore, to be considered merely as an artificial arrangement, intended to prevent confusion in the subsequent detail. I must likewise again advert to some of the facts contained in the first part of this volume. Such a recapitulation will be useful in itself, and very necessary for the due understanding of what is to follow.

It is probable that all tubercles, wherever situated, and of whatever substance composed, were at their commencement small vesicular bodies with fluid contents. It is impossible to say how minute they may have been at their origin, nor how large they may grow before their transformations begin; nor are we acquainted with the circumstances which occasion such transformations. But that they do take place, has, I conceive, been demonstrated beyond the possibility of doubt.

The bodies which are generally found in the lungs, and spread over the serous membranes, are for the most part tubercles according to the definition given above. Though the contents of dif-

ferent tubercles vary very much,* it is not usual to find a variety of textures and substances in the same tubercle, yet this is an occurrence which is perpetually met with in tumours; and this very striking and instructive circumstance must be well considered, while we are endeavouring to explain the growth of such bodies.

It is not known how the changes in hydatids are effected; but to these *changes*, certain tubercles owe their existence, and on the *size* and *relative position* and *structure* of the *tubercles* which are so *formed*, depend the *characters* of many of the most *formidable disorganizations* to which the human body is exposed. Let us endeavour to give further illustrations of these most important facts.

A single hydatid, when it is transformed, will give rise to one tubercle. It may be pendulous†

* *Vide* p. 93, 94.

† On some occasions tubercles are disengaged from their attachment and found loose within the cavities. Probably it is in this way, that the bodies which are sometimes discovered within the capsular ligaments of the joints are formed. I remember to have seen between 30 and 40 oval-shaped substances of this kind, about the size of grains of boiled rice, which were cut from under the ligament of the carpus, by my late colleague, Mr Trye, in our Infirmary.

or embedded in any soft part, or it may be found between the layers of membranes, and wherever the textures are of such a nature as to admit of its growth. It may be so small as to be scarcely visible, or it may acquire a very great magnitude. Single tubercles are often seen in a viscus, while all the rest of the organ is free from disease, and its functions are performed in an uninterrupted manner. But it is evident that the same state of the system, (whatever that may be,) which calls one tubercle into existence, may generate an indefinite number. They may be diffused through the whole of a viscus, leaving nothing of its original texture;* or they may occupy any proportion of it, or extend to the contiguous parts, and involve them in the same form of disease.

If the doctrines advanced in this enquiry are correct, it is probable that the morbid appearances referred to by Dr. Baillie, in different parts of his work, may receive some explanation. I allude par-

* When this happens, all the original organic character of the part or viscus where the disease takes place seems to be completely removed, and a morbid structure is substituted, whose properties depend upon many causes, some of which may perhaps be accounted for in this chapter.

ticularly to what is mentioned of scrofulous matter adhering to the peritonæum, and of cancerous, cartilaginous, and steatomatous tumours growing from the same membrane.* The reader may also compare what is said respecting tubercles in the lungs and elsewhere, with the observations and reasoning in different parts of this volume.

The contents of tubercles differ exceedingly, as has been already shewn, but the time at which they may happen to be examined, must have a considerable effect upon the nature of the substance that may be found within them. This was proved in the first part of this enquiry. Other facts evincing their progress to a solid state, and in some instances, the ultimate loss of their tuberculous character altogether, will be brought forward.

Hydatids occasionally grow in clusters, and hang within the cavities. When the transmutations are effected, the morbid appearances of course must correspond in some degree with the original distribution of the parts. I have seen tubercles attached in this form to the choroid plexuses, to the valves of the heart, to the fimbriated extremities of the

* *Vide Morbid Anatomy, p. 130.*

fallopian tubes, and to the omentum and the convolutions of the intestines. In the latter instance, they were very minute, the largest not being bigger than the head of a pin, and their number defied all calculation. They had the appearance of fringes.

It was this variety of disease, I suspect, which took possession of the omentum in the case of Mr. Shrapnell; but the tubercles were larger, and the traces of their original character were more completely obliterated than in the instance just mentioned.

Other varieties in the arrangement of the elementary parts of morbid growths, will of course cause corresponding varieties in their appearance. Thus, when hydatids are enclosed the one within the other, and are transmuted into solid substances, a section of these substances will exhibit a series of concentric laminae. An example of this kind was found in the case of Wingate, amid another variety of the same disease.

This variety happens when an immense number of very small tubercles are generated in juxtaposition, and unite together. Wherever such

an event occurs, the original texture of the part is entirely lost, and a mass of varying degrees of density and firmness formed. In the earlier stages of its growth, a granulated appearance may be distinctly traced; but in process of time, this disappears, the consolidation becomes more complete, and substances of a gristly, or cartilaginous, or schirrous texture may be found. I have traced the whole of these gradations in the liver, the lungs, the pleura, the omentum, the peritonæum, and in tumours in other parts.

In the omentum of Haynes, and in the pleura of Edwards, these gradations were remarkably distinct; and they doubtless occasioned those solid and thick accretions, which united together the convolutions of the intestines, and the rest of the abdominal viscera, in the other cases which are described in the first part of this work.

Sometimes small hydatids grow from the outer or inner surface of large ones, or float within them. I have seen from a source of this kind, the uterus and its appendages converted into an enormous mis-shapen mass, tubercles of the size of the fist growing from it, while these again were surmount-

ed by smaller ones in many gradations. Some had glairy contents, others were in a state of schirrosity, and others were but little changed, having thin delicate cysts, and containing a transparent fluid.

But perhaps the most important variety of all, is when tubercles, originally distinct from each other, approximate as they increase in size, ultimately unite, and form tumours, which have received different designations, according to the predominant character of their contents and internal structure. It was chiefly to elucidate this part of the subject, that I made the distinction between the words tumour and tubercle, that is to be met with at the commencement of this chapter; and for this purpose it will be found very convenient.

The three principal varieties of structure which have been mentioned above, may be easily comprehended by the aid of the following diagrams;



The first represents the hydatids in clusters; the second shews the minute tubercles forming a

dense granulated texture ; and the third explains what is constantly seen, when tubercles, which may at first have been distinct, unite together.

All these varieties may occur in one person, or even in one morbid structure ; or they may be combined in many ways, and thus produce all those peculiarities in the appearance and structure of this class of diseases, that we so often meet with.

I do not bring this forward as a complete enumeration, but it comprises the most essential varieties that we have had to contemplate. The last in particular is an important one, and demands further illustration.

Let the reader call to mind what has been said respecting the contents of tubercles. Next, let him suppose, that the lines in the third diagram represent bodies of that kind ; that each of these bodies may have a different structure ; that one may be schirrous or cartilaginous, another may contain a pulpy matter, a third a fluid like cream, and that a fourth may possess its original character of an hydatid ; or that any of the other varieties of substances or fluids, which are detected in such bodies, may be there. Again, let him suppose

that each tubercle was at first separate the one from the other; but that as they increased in size, their distances from each other of course diminished, and that ultimately they came in contact and united. What would be the result of such an event? A tumour would be formed divided by septa, and containing substances of various descriptions. But suppose that the tubercles had proceeded simultaneously in their changes, and that they did not differ in their structure. In that case, the tumour formed by their union, would of course have a greater uniformity of appearance. The original divisions might in some places be visible, and the tuberculous character likewise; but both may be obliterated, and instead of a structure marking the boundaries and arrangement of the elementary parts of the diseased mass, we may find the whole transmuted and condensed into a solid substance, with little or no variety of texture.

In this way, various tumours are formed; and the facts which have been brought forward, to elucidate the different steps of this process, seem to throw light upon many of the most puzzling parts of a very obscure branch of pathology. But while

endeavouring to trace the origin of tubercles and the growth of tumours, and while attempting to shew that other parts of the system, besides the sanguiferous, are engaged in these changes, I must again beg the reader not to imagine that I overlook the great and constant agency of the blood-vessels in every healthy function, and in most of the morbid actions of the body. My object has been to shew, that there are disorganizations, which in the first instance are allied to another part of our structure, whatever influence may be exerted by the sanguiferous system in their subsequent stages. I wish not to extend the doctrine contained in this discussion beyond its due limits; for possibly there may be examples of diseases of this class, to which it does not apply. But let it, at the same time, be remembered, that we are not *at present* treating of any speculative question; and I wish it to be entirely kept separate from all doubts or reasonings, which may be entertained as to the *origin of hydatids, and their conversion into tubercles*. That such tubercles, as I have described, do exist, and that they grow and unite in such forms as I have represented, admits of a

demonstration far more complete than we can in general look for in our profession.

I might very confidently rest this assertion on the proofs which have been already given in these pages. But there is no writer, (how different soever his opinions may be from those which I entertain,) who has treated of this subject, and described the morbid appearances with any degree of fidelity, who does not thereby bear testimony to the accuracy of what I have recorded. Authority of this kind is quite unexceptionable, and as such it will be received by the reader. I think it right to introduce it with an account of the following cases, which I recently examined in our Infirmary. The first was Mr. Fletcher's patient; the second was under the care of Mr. Cother.

Mr. F.'s patient was a man about thirty years of age. He had a large solid tumour which occupied the situation of the thyroid gland, and extended up the neck in the right side, nearly to the angle of the jaw. In size it fully equalled a very large orange; and it forcibly compressed the trachea, and occasioned at times the greatest difficulty of respiration. There was another tumour about

the size of a large walnut, which was situated about an inch below the right clavicle. But the most formidable part of his disorder, in appearance at least, was in the right thigh. An immense solid but moveable tumour occupied its anterior part. It was about nine inches in length, and a section of it gave a depth of about six inches ; its breadth must have been considerably more. On its upper surface, it was rendered uneven, by various protuberances. Some were nearly conical, others were circular. Between this mass and the anterior spinous process of the ilium, lay another tumour. It was quite distinct from the contiguous disease. The glands in the groin were all enlarged. In short, this man's case had all the characters of those diseases that are ranked under the head of *Fungus Hæmatodes*.

I will state first, what was seen on examining the thigh. An incision was made through the long diameter of the tumour. Its colour was chiefly of a greyish white, and it was almost of a cartilaginous firmness, but the texture was not uniform. In various places something like septa or striæ could be detected, and between them were inters-

persed irregular masses of a bright yellow fatty looking matter. Such were the appearances in the centre and upper portion of this mass. In the lower portion, things were different; the tumour had a lobulated appearance and tubercles were seen in gradations, some retaining their well-defined circular character, and others in succession losing that peculiarity, till they became completely involved in the great mass of disease which I first described*. The tubercle situated between this diseased structure and the ilium was next examined. It was of an oval shape, and was as large as a hen's egg. It was easily separated from the muscle in which it was imbedded. It was included within its own capsule; and, when cut through the middle, it exhibited a greater uniformity of appearance than the larger mass; and had almost the density of cartilage. This, according to the definition already given, was probably a tubercle. But be this as it may, it is quite apparent, if this man

* It was doubtless owing to the original tuberculous character of the disease, that the inequalities on its surface were occasioned; and the same circumstance completely accounts for the lobulated appearances which sections of such diseases present.

had lived longer, and the disease had proceeded at its usual rate of increase, that the two portions of it which I have just described would soon have been in union, and the tuberculous character would probably have been ultimately lost in the latter instance as it was in some of the others.

The texture of the tumour in the neck, corresponded in appearance with that which was found in the central part of the large one in the thigh. The tubercle under the clavicle, was imbedded in the pectoral muscle, and resembled exactly the one under the crest of the ilium.

There was one tubercle found in the left lobe of the lungs, about the size of a horse bean, and several were studded over the peritonæal covering of the psoas muscle. These tubercles had not proceeded so far as the others; their contents were softer, and had a bright straw colour, and entirely resembled the disorganizations which I have described in some of the cases in the first part of this volume.*

* See, in particular, the cases of Bullock, Haynes, and Mr. Shrapnell, as well as those of Tandy and Aldridge.

In this case, it appears that some tubercles were distinct and independent, others *were coalescing* and were losing their tuberculous character, while others *had coalesced, and had lost it altogether*. It is quite manifest, that an examination of this morbid structure, in its earlier stages, would have shown its tuberculous origin in a more extensive, but not in a more convincing degree. At that time, too, it is probable that the contents of the tubercles would have been found to be different from what they were in their more advanced stages. Analogy favours this supposition, and it receives strong support from the state of the tubercles in the lungs and in the peritonæum. Proofs and illustrations of this opinion, may be drawn from the works of every author who has written on this class of diseases. They differ as much about their origin, as they do about their names; but neither of these circumstances can affect this discussion. Cases of Cancer, of Tuberculated Sarcoma, of Fungus Hermatodes, and many other varieties of morbid growth, may be demonstrated, by the very descriptions which the authors themselves, give to have been formed as I have described.

At one time I felt doubtful whether the observations which I have made were applicable to fatty tumours; but the facts which have lately been presented to me, convince me that they are. I cannot better elucidate this subject, than by detailing the following case. It occurred, as I have already mentioned, in the practice of Mr. Cother, in our Infirmary.

The patient is a married woman, about forty-five years of age. Fifteen years ago, she first observed a small moveable tumour in the left axilla, about the size of a marble. It remained of that size for many years; within the last five months, its growth has been very rapid; it is now as large as a turkey's egg, and very much of the same shape. She has occasionally pain in it, especially after it is handled. To the touch, it has a soft and uneven feel; that is to say, it does not give the sensation that a body of uniform texture would afford. At its upper extremity, and more deeply embedded in the axilla, a chain or cluster of bodies can be felt. They seem to have a tuberculous character; at least they are not in contact with the larger mass, nor do they seem to be so with each other.

No part of the morbid structure seems to have formed adhesions with the surrounding muscles, as it is very moveable, and the fingers can almost be pushed round it in every direction.

An incision was made through the long diameter of the morbid growth; and Mr. Cother was afterwards able to dislodge it from the surrounding fat and cellular substance, almost without the use of the knife, except at one place, where it had formed an adhesion with the skin. It was a tumour smooth and shining, but not perfectly regular in its surface, there being undulations which marked the boundaries of its component parts, each of which was enveloped in its own delicate cyst.

On examining the tumour, after it was removed from the body, the unevenness in its texture, which was before felt, became still more sensible; and any one on grasping it would have affirmed, that it was a body of soft consistence, enveloping round bodies of a more solid structure. This circumstance is explained by attending to the arrangement of the parts, as exhibited by an incision through the tumour. Its contents were of a fatty nature; but its original tuberculous character was most clearly

demonstrated. Every cyst was apparent, and the delicate septa were seen dividing the adipose mass; and it was the rolling of these tubercles* upon one another, in a medium which admitted of such a motion, that communicated to the fingers the sensation of inequality of texture that I have mentioned above.

This is a fact which ought to be well attended to, during the examination of diseases of this kind. We know how many mistakes have been made by experienced men, relative to the contents of tumours, and especially in those that are of a malignant nature. The circumstance just recorded explains one cause of ambiguity; and another, and more frequent one, arises from the variety of contents which may actually be found within the same tumour. Hence obscure sense of fluctuation may be found in one part, while another feels solid. It is in that disease which has been denominated *Fungus Hæmatodes*, that such varieties have been in an especial manner observed; and from that

* One of the tubercles was passing on to another stage; for in it was found a quantity of gritty or osseous matter.

disease, the reader may hereafter find further illustrations of what I have now advanced.

But to return from this digression. We next examined the morbid growths, which were situated higher up in the axilla. They were, as I said before, distinct from the large tumour. Some were circular, and about the size of peas; others had an oblong shape, but their limits and boundaries, and their tuberculous character, according to the meaning that I attach to that expression, were most perfectly traced. Some were coalescing; and had they been permitted to grow a little longer, this must have been the case with the whole morbid structure.

As on a subject of this kind, it is impossible to accumulate too much evidence, I must again resort to the writings of my professional brethren.

Let the reader therefore attend to the following quotations: I begin with some from a paper published in the ninth volume of the Medico-Chirurgical Transactions, by Mr. Langstaff. The first is from a case entitled "Fungus Hæmatodes affecting the external parts of the body, also most of the abdominal and thoracic viscera."

"The tumour above the clavicle, and that in

the axilla, were examined first; the integuments covering them were neither discoloured nor diseased; each tumour had acquired the magnitude of a hen's egg; they possessed cellular capsules, and appeared to have their seat in that tissue.

“ A section of the morbid growths shewed a semi-cartilaginous structure, with a white pulpy substance, mixed with a small quantity of grumous blood; the absorbent glands in the axillæ, also those concatenated in the neck, being perfectly healthy.

“ The stomach and intestines were greatly distended with air; and it was remarked that the stomach, spleen, and liver were depressed considerably lower into the abdominal cavity than is natural, by the contents of the chest having been pushed downwards, and the diaphragm yielding.

“ There was not the least sign of disease in the liver. The spleen was rather firm, not unlike liver; and there were three small white pulpy tumours, each about the size of a garden pea, near its right edge, immediately beneath the peritonæal covering.

“ The stomach and intestinal canal were healthy, except a few tumours exactly similar to those on the spleen, found beneath the serous coat of the ilium.

“There was not any appearance of disease in the mesenteric glands, nor in the absorbent ones beneath the peritonæum ; but there were two small tumours on the anterior surface of the right kidney, of the same character as those just described.

“On removing the sternum, a quantity of bloody fluid flowed from the left side of the thorax. This side of the chest appeared filled (except the small cavity produced by the fluid which escaped,) with broken down coagulated blood, and a pulpy mass, in consistence and appearance so exactly like the cerebrum, that I think an anatomist would have been deceived and led to imagine it to be brain, if he had been asked to give his opinion from the structure, without knowing the place in which it was formed.

“This pulpy mass had accumulated in such an enormous quantity on the pleura pulmonalis, as to push the heart considerably beyond its usual situation into the right side of the chest, besides having, as I before mentioned, encroached on the abdominal cavity. A perpendicular section of the disease proved it to be principally formed of a congeries

of various sized tumours, some as large as a small lemon, and all possessing delicate cysts. The consistence of those tumours was chiefly a brain-like mass, mixed with coagulated blood; but the largest kind were not unlike those described in the axilla and above the clavicle.

“ In the section the lung was recognized, but so much condensed by the surrounding disease, that it must have been completely useless in respiration, for a considerable time previous to the boy's death. This appearance also proved that the tumours had grown more from the surface than the substance of the lung; and this opinion was corroborated by the state of the lung on the right side, the tumours there occupying chiefly the surface beneath the pleura, many of which had by their growth occasioned absorption of that membrane, which allowed of their growing into the cavity of the chest, and would have produced, if the child could have lived much longer, a morbid growth like that on the left side.

“ Some of the tumours on the external part of the lung were as large as a walnut; there was also a progressive series of them, from the size of a

pepper-corn to the magnitude above mentioned. They projected considerably from the lungs; their external appearance was delicately white, as if possessed of low vascularity; figure roundish, without any central depression; and each had its cyst. Their internal arrangement, more especially the larger kind, was a blended admixture of a semi-cartilaginous and pulpy matter, with small coagula of blood, but the smallest were exactly like the medullary part of the cerebrum; but none of them were divided by cellular septa or coagulated lymph."

The next is from a case of "Fungus Hæmatodes on the external part of the body, and in the lungs."

"The tumour presented, to use the words of Mr. Pott, a strangely distempered mass. The external sloughy surface had a fibrous appearance; the internal structure was composed of masses of coagulated blood, firm, gelatinous, and medullary matter, and several distinct white tumours of a semi-cartilaginous density; the whole seeming to have had their seat in the adipose membrane.

"There was not the least appearance of disease in any of the abdominal viscera. But the lungs

were nearly filled with tumours, many as large as a small apple. Most of the tumours felt extremely firm and elastic; when cut into, some appeared composed of a substance not unlike blanchmange; others had more of the medullary character, and some were similar to the semi-cartilaginous parts of the external tumour, only not quite so firm. The capsules were rather thick, and many of the veins were plugged with pulpy matter."

What is said respecting the "Case of Carcinoma in the breast, with pulpy tumours in the lungs, liver, &c." is particularly worthy of attention.

"None of the tumours on the external part of the body had acquired a bulk larger than a small marble, except those in the axillæ and groins, and they were each as big as a walnut. Although the skin covering most of them had a morbid bluish colour, yet there was not the least sign of beginning ulceration. Sections of those productions presented a brownish red-coloured structure, which was very compact; but when scraped with the edge of a knife, it looked like broken down liver and coagulated blood. The diseased breast seemed formed by an aggregation of those tumours,

which had obtained considerable schirrosity; but there were not any ligamentous bands observable, nor could any portion of the natural structure be detected.

“ There were a great number of various sized tumours, similar to those on the external part of the body, on the omentum, mesentery, and dispersed over the peritonæum and liver.

“ The uterus was healthy, but the ovaria were schirrous, and when divided, appeared like the section of the diseased breast. Most of the absorbent glands in the groin, pelvis, and abdomen, were enlarged, and had the internal appearance above described. The absorbent glands in the chest and neck were similarly affected, and there were a great number of tumours in the lungs, only larger than in any other part, some of which were in consistence like firm brain.”

I terminate these valuable extracts with the account of what the Author found in his first case of Tuberculated Sarcoma.

“ The external tumours presented different stages of the diseased growths; some of the lumps, the small ones, were almost as hard as those of the

carcinomatous kind, yet by violent pressure were made pulpy; some were partly of that firm structure, mixed with white pulpy matter and blood, similar to foetal brain; others contained both the latter, with the addition of a blackish pigment.

“The liver was rather small. There were a great number of tumours in its substance and beneath its serous covering, from the size of a small cherry to a full-grown peach. Most of those near the surface of the liver projected considerably, and were merely covered with its membrane, which was extremely vascular in those parts. A few of the tumours had central depressions, from the peritoneal covering having become cartilaginous. The external colour was of a reddish white; those which projected the farthest from the liver had a pulpy elastic feel; the others were much firmer, and their internal consistence corresponded exactly with the tumours on the surface of the body, only on a larger scale.

“On the omentum, which was nearly void of fat, tumours of the same kind were found in considerable number growing from its surfaces, the largest not exceeding the size of a large green pea.

“ The small intestines, particularly the jejunum, were affected with this disease between the muscular and mucous coats. There were likewise several small growths of the kind in the kidneys and renal capsules.

“ In the pancreas, which is a viscus seldom affected by disease of any kind, there were several of those tumours.

“ There were not any adhesions on either side of the chest; the lungs were studded with small tumours, most of which were extremely hard, some rather soft, but all contained an inky fluid similar to what is generally seen in the bronchial glands.

“ The disease was disseminated on the inner surface of the pericardium as well as over its reflection, and there were a great number of small tumours in the substance of the ventricles of the heart, on its auricles, likewise on some parts of the lining of its cavities. There were also some growing to the edge of the valve of the coronary vein, and many in the internal surface of the vein.

“ The spleen was the only viscus not affected with this disease.”

For reasons already given, I have quoted largely from the paper of Mr. Langstaff. The facts are recorded with great accuracy and minuteness. Let the reader compare them with the history of hydatids, as given in the foregoing pages; let him remember what has been said respecting the probable origin of these bodies, but more especially let him bear in mind what has been demonstrated to be their condition in the different stages of their transmutation; next let him recollect how tumours have been proved to be formed by their union, and he will find a chain of facts leading him, in the most direct manner, to the conclusions which it has been my object to establish.

It can but rarely happen, that we have an opportunity in the human subject, of seeing the first step in the morbid phenomena which I have attempted to trace; because the tubercles are generally formed, and the hydatical character, of course, is in a considerable degree lost, before death permits us to make enquiries respecting morbid structure. But the lower animals present us with the means of removing all ambiguities which such causes occasion. There all the changes may be

distinctly seen. From such sources, the descriptions given in the first part of this work were chiefly derived; and the best proof of their accuracy is their perfect accordance with all the morbid appearances which different observers have detected in tubercles and in tumours. These disorganizations were, in the first instance, pursued through their various changes, from hydatid up to their highest state of density and consolidation; the descending series has been nearly as complete. We have seen the obliteration of the tuberculous character altogether; then its partial, and finally its perfect appearance in the same morbid mass. Next we have tubercles with contents of various degrees of consistency, and of various characters, till we arrive at the perfect hydatid.

While treating of this subject, in the first part of this enquiry, I did not make mention of the valuable paper of Dr. John Hunter, which is contained in the first volume of the Medical and Chirurgical Transactions, because he was more occupied with the natural history of hydatids, than with their morbid changes. It can only, I conceive, have arisen from this cause, that he did not

pursue a subject, which was very fairly laid open to him by his own observations. A few extracts from his Essay will make this apparent; and, at the same time, afford valuable testimony in favour of the pathological opinions which I have espoused.

I have before observed, that in reference to these opinions, the question touching the origin of hydatids is of infinitely smaller importance than the consideration of the varieties of diseased structure, which are the results of their transformations. I repeat this remark, lest the theories which have divided men's minds, on the first branch of the subject, should now, as heretofore, induce them to overlook what has been demonstrated as to the other.

The Author whose name I have mentioned, observes, in one part of his paper, that "the hydatids, in their growth and decay, appear to pass through various stages; they are first found floating in the fluid that fills the hydatid, and afterwards attached to its coats. The hydatid thus pregnant with young, if the expression may be allowed, adheres to the neighbouring parts, increases in size, and becomes itself a sac, containing numerous small hydatids. These, after a certain time,

decay, and the skins or empty bags are squeezed together into a substance like isinglass. It is probable they still undergo a further change; two small bodies, of the size of the common bean, of a cheese-like consistence, and covered with a skin, were taken notice of adhering to the bladder near its neck; it may be a question whether those were not the remains of hydatids? but that must be determined by future observations."

Again, in the Supplement to his paper, he mentions other transformations, which will be found to accord completely with those which I have already enumerated. "The sac became thicker and stronger, and at the same time diminished in size, and compressed the coat of the hydatid into a substance like isinglass. In the last stage this substance became like a mixture of chalk and water, and the side of the sac hardened, and appeared in some degree petrified; for the hardness was more like that of a stone, than of a bone."

But the following account of morbid appearances, which is given by the Author at the beginning of his Essay, is so peculiarly striking, that I cannot refrain from laying it before the reader.

“The belly was very tumid, which, on removing the common integuments, was found to proceed from the immense size of the bladder. It was distended enormously, and reached fully eight inches above the *pubis*; its fundus was within two inches of the arch of the *colon*. Upon letting out the water, which amounted to five or six pints, it appeared that there was a large tumour between the neck of the bladder and the *rectum*, which completely filled the pelvis, and thrust the bladder forwards and upwards. On cutting into the tumour much water rushed out, and along with it many hydatids of various sizes; the largest was about an inch and an half in diameter, and the smallest not larger than a pin's head. The tumour was entirely filled with hydatids and the water that surrounded them, and both together they were more in quantity than a pint and an half. There were besides two or three smaller tumours near the neck of the bladder, also containing hydatids; and there were two bodies, not larger than common beans, adhering to the bladder, containing a soft cheese-like substance.

“Between the stomach and the spleen, and over one end of the pancreas, there was a large tumour,

to which the three above parts adhered—the stomach and pancreas slightly by cellular membrane; the spleen more intimately, so as to make a part of the tumour: with the spleen it was about ten inches in diameter. It was irregularly shaped, and made up of several smaller tumours. There was considerable variety in the contents of those tumours; in one there were hydatids of various sizes, like those mentioned above; in another there was a substance like isinglass, a little softened in water; in a third there was clear water in a considerable quantity, with very minute particles, like small grains, adhering slightly to the sides; and in a fourth there were hydatids, some full, others burst, and with their coats compressed together, and forming the isinglass-like substance. The tumours or sacs had all thick coats, endowed with a strong contractile power, that forcibly protruded their contents through any opening made into them. They had two coats; an outer, which was strongest and thickest, and an inner, which was tender, soft, and pulpy.”

With the knowledge of all these facts, it is somewhat surprising, that the ingenious author did not

push them to their obvious conclusions, and expose more decidedly to the mind of his readers that great field of pathological investigation, of which we have attempted to give an outline.

I must now turn to a distinguished Author, whose work I have already had to mention in this enquiry; for although he has expressed an opinion quite at variance with that which I have embraced, I am forced, by the result of all my observations, to believe that the facts which the learned Baronet* himself affords, materially elucidate the doctrine contained in these pages. At all events, by resorting to such evidence, I give the best security against any undue bias in the mind of the witness; and for this very reason, it is better than any that I myself could bring forward.

In his work on Cancer, Sir Everard Home devotes one chapter to the consideration of "Cases of Hydatid in the breast, the symptoms of which exactly resemble those of tumours that become cancerous." In this chapter, two cases are given. In both, the disease was occasioned by an hydatid. The contents of the first were a bloody serum, and

* Sir Everard Home.

the coat a thin membrane embedded in the gland of the breast. In the other, the hydatid was larger; it contained a clear fluid, and its cyst was not thicker than the finest cambric. The following reflexions are delivered by the author on these cases :

“ These two cases of simple hydatid in the breast, unconnected with any other diseased alteration of structure, have led me to consider those hydatids which are sometimes met with in the breast, after that gland has taken on a cancerous disease ; and I am led, from every consideration I can give the subject, to believe, that such hydatids are no part of the poisonous disease, but accidental complaints superadded to it ; and, since such hydatids do occur in a natural and healthy state of the gland, they are much more likely to do so when it is under the influence of another disease.

“ There are preparations in the Hunterian Museum, of small cysts of this kind, in great number, in a schirrous breast ; and there is one of the size of a pullet's egg, into which a portion of a fungous excrescence is seen to project ; but the surface of the projecting tumour is quite smooth. It is therefore probable, that the tumour made progress in the

direction in which there was the least resistance, but had nothing to do with the formation of the hydatid.

“ Until I was furnished with the facts that have been adduced, I believed such cysts to contain the cancerous secretion thrown out from the different parts of the tumour with which they were connected; and therefore that they were not only subsequent to the formation of the tumour, but an incontestible proof of its virulence, and of the advanced stage of the disease.”*

I very reluctantly differ from so high an authority; but as this is a question which is altogether to be determined by an appeal to facts, I hope I shall escape the charge of being presumptuous, because I have already stated my belief in those on which my opinion rests. Should they be found to be correct, it is quite manifest, that the views which Sir Everard has distinctly announced, as well as those which are implied in some of the expressions in the last paragraph, cannot be maintained. The incipient changes in the hydatids, which are preserved in the Hunterian Museum,

* *Vide* Home on Cancer, p. 108.

lead me of course to a different conclusion from what he has adopted, and seem to establish in a very satisfactory manner the intimate connexion between hydatid and cancer. The evidence is before the reader; and it is for him to determine, whether the facts just stated afford additional illustration of the notions which I have adopted, or are so much at variance with them, as to destroy their authority altogether.

But I have other facts from the same author to bring forward, which bear still more closely upon this most interesting question. They prove the manner in which some diseases of this class are propagated, and seem to lead us back, by an uninterrupted and impressive chain of evidence, to the lymphatic system, as the prolific source of the greater number of the most formidable disorganizations.

A cancer of the testicle was induced by external violence. The patient died, the disease being too far gone to admit of an operation when Mr. Hunter saw it.

“ Upon examining the body after death, the testicles were wholly destroyed, as well as the sper-

matic chord of the left side, up to the pubes; and, on the right side, there was a small tumour, projecting from the os pubis, which, most probably, was the diseased termination of the spermatic chord on that side.

“ The lymphatic glands upon the os pubis, and towards the groin, were contaminated, forming two rather large tumours on the sides of the pubes.

“ On examining the progress of the disease, within the cavity of the abdomen, the lymphatic glands, lying upon the inside of the ossa pubis, and the chain running along the edge of the psoas muscle, between it and the spine, on both sides of the body, were diseased, those nearest the pubes having matter in them, while those higher up along the spine had not arrived at suppuration.

“ On the right side of the spine, the glands were affected as high as the receptaculum chyli: none in these higher parts were considerably enlarged; but on the left side there was a large tumour, just below the pancreas, to which the epiploon and duodenum adhered, which was evidently an enlarged lymphatic gland of the back, projecting forwards.

“ On cutting into these glands, those which had not arrived at suppuration contained a soft substance, not unlike soft cream-cheese : those further advanced appeared to be only a bag, containing a whitish matter, tinged with blood ; and some nearer the pubes consisted of a white thin matter, like cream, with no tinge of red whatever.”*

In another case of cancer of the tunica vaginalis testis, we find facts of a still more convincing nature recorded. The tumour was removed by Mr. Hunter.

“ The immediate result of this operation was, that the parts healed up readily ; but, some months after, a swelling on the lower and left side of the abdomen was observed, which seemed almost to fill the left side. He was sent to the sea, but it appeared to be of no service to him. The swelling increased, and he became weak, hectic, and died.

“ On examining the body, there were found large masses of swellings, which were not much firmer than strong coagulated milk, with the whey in it. These masses extended up the left side, along the back, as high as the diaphragm. The epiploon

* *Ibid*, p. 117.

appeared to have a large mass in it, connecting the colon, stomach, and other viscera, together.

“The liver was studded full of small tumours, about the size of a bean, of the same structure; and the spermatic chord, out of the belly, was become thickened in the same way.”*

Mr. Hunter's observations on the “uniting medium in inflammations,” have, there is reason to suspect, been made use of to explain changes of structure and morbid formations, which were not in the contemplation of the illustrious author. His “notion” respecting the “power” which a “coagulum, or coagulating lymph, has of becoming vascular, where it can be supplied with blood,” has been recently illustrated in the most beautiful manner, by the interesting experiments of Sir Everard Home.† And it is to the train of actions which are concerned in this process, that authors have referred the origin as well as the peculiarities which are observable in the growth and structure of tumours. I have already brought forward many arguments against this opinion; and with the same

* *Ibid*, p. 128.

† *Vide* Philosophical Transactions, 1818.

intention I am now to adduce the authority of Mr. Hunter himself. With the wonted discrimination of his powerful and original mind, he has spoken very explicitly on this subject. But this has been forgotten. The limitations which he affixed to his own doctrine have been overlooked, and it has been injudiciously extended to phenomena, to which he was evidently aware that it was not applicable. A few extracts from his great work will put this matter beyond a doubt.

He remarks, that no suppuration takes place which is not preceded by inflammation, and that "although we find collections of extraneous matter something like pus in different parts of the body, yet such extraneous matter is not pus."* Again he observes, "Many indolent tumours, slow swellings in joints, swellings of the lymphatic glands, tubercles in the lungs, and swellings in many parts of the body, are diseased thickenings, without visible inflammation; and the contents of some kinds of encysted tumour; the matter of many scrofulous suppurations, as in the lymphatic glands; the suppuration of many joints, viz. those scrofulous

* *Vide* Hunter on the Blood, p. 372.

suppurations in the joints of the foot and hand ; in the knee, called white swellings ; the joint of the thigh, commonly called hip-cases ; the loins, called lumber abscesses ; the discharge of the above-mentioned tubercles in the lungs, as well as in many other parts of the body, are all matter formed without any previous visible inflammation, and are therefore, in this one respect, all very similar to one another. They come on insensibly ; the first symptom being commonly the swellings, in consequence of the thickening, which is not the case with inflammation, for there the sensation is the first symptom.”*

Now it is not so much my purpose to examine what Mr. Hunter thought of such disorganizations as are enumerated above, as to prove, that he clearly saw that they were not to be accounted for, by any of the varieties of inflammation. I am not stating his opinion on this point too strongly. For he expressly affirms his belief, that all those formations not “preceded by inflammation, nor a consequence of it, are similar to each other, having in this respect one *common principle very different from inflamma-*

* *Ibid*, p. 391.

tion.* Under diseases of this denomination he seems, from the context, obviously to include both cancer and scrofula, and all other kindred affections. It is likewise of importance to remark, that this eminent writer, while enumerating the consequences or terminations of inflammation, excludes one termination, which systematic authors, I believe, to this day retain in their works—I mean *schirrus*. The very striking passage which I have quoted last, shews what he believed on this subject; and I see it with much satisfaction, as justifying one of the most important of the conclusions which have resulted from the present investigation.

The progress which I have attempted to describe in the formation of tubercles and tumours, is sometimes presented to our observation in a very satisfactory manner on the outward parts of the body. Small circular vesicles are often seen growing on the edge of the eyelids. Their contents at first are quite limpid. After a time a change takes place, and a melicerous, or atheromatous, or cartilaginous tubercle may be formed. On the same eyelid, at the same time, these facts may be exempli-

* *Ibid*, p. 392.

fied. One tubercle may have a watery fluid within a thickened cyst. In another the cyst may be unchanged, while the matter contained in it is very much so. Ultimately, a complete destruction of the hydatical character may be observed, and a hard tubercle substituted in its stead.

When ulceration is by any means induced in parts where tubercles exist, the ulcer in general assumes that appearance which is termed cancerous, as it is the peculiar arrangement of the elementary parts of the morbid structure which occasions the characteristic marks of the ulcer in question. What I refer to, is very well seen when it attacks the lip. As the ulceration proceeds, the unequal granulated surface is more and more visible, and the tuberculous structure of the affection may be demonstrated by the appearance of distinct circular bodies projecting from the diseased surface. The examination of this complaint by the touch, as well as by dissection, very plainly proves what I have described; and the ulcerative process taking place in parts whose structure is altered by disease, cannot lead to a healthful termination, till the diseased part is removed.

It is not my intention, at present, to say any thing of the classification of tumours. It is manifest, nevertheless, that they may be distributed in a manner more consonant with the laws of a scientific arrangement, than has hitherto been adopted, should the facts and reasonings already before the reader be substantiated by further observation. The great variety in the contents and structure of the same tumour, as well as the changes which these bodies undergo, in different stages of their existence, ought to make us very vigilant in tracing the progress of such changes, and in fixing their characters, when they have taken place, before we make them the basis of our systematic divisions. The confusion which has arisen from want of due consideration of these points, has been very great. In this branch of pathology, we seem to have begun at the wrong end. Instead of tracing the disorganizations through all their gradations up to their last, and perhaps fatal change, we have inverted the order of nature, and endeavoured to find specific and elementary characters, after the wide spreading devastations of the morbid actions have confounded both the original na-

nature of the disorder and the peculiarities of the contiguous parts.

I have endeavoured to follow a different course—to unravel some of the perplexing intricacies of an important class of diseases, not without hope that juster views of their nature may be thereby obtained, and greater power ultimately given to us, both for their relief and their prevention.

In this pursuit, I have arrived at conclusions which are at variance with those that are entertained by men who are deservedly eminent in their profession. Among those whose names I have already specified, I am now to mention that of Mr. Abernethy. I unwillingly dissent from his authority. I am nevertheless compelled so to do by powerful reasons. These have been already stated; and it is not unimportant in this matter to remember, that if I have rightly interpreted Mr. Hunter's doctrines, he too stands decidedly opposed to the opinions, which are taught, relative to the disorganizations that form the subject of this discussion. But should it appear that I am mistaken on this point, I have to direct the reader's attention to a few passages in Mr. Abernethy's work on

Tumours, which seem quite confirmatory of the opinions delivered in this and the preceding chapters.

In cystic sarcoma, he observes, that cells or cysts are found; that their size is that of currants or grapes.* These cysts sometimes enclose “a watery yet coagulable fluid;” not unfrequently they “contain a kind of caseous substance,” which “resembles cheese in consistence and colour.”†

Next, let us advert to what is said of tuberculated sarcoma. “It consists of an aggregation of small roundish tumours of different sizes and colours, connected together by a kind of cellular substance. The size of the tubercles is from that of a pea to that of a horse-bean, or sometimes larger.”‡

Of carcinomatous sarcoma it is observed, after giving the characteristic marks of that affection, and describing the usual direction of the whitish bands which divide the structure, that “they sometimes intersect it irregularly, having interposed between them a firm brownish substance, which may

* *Vide* Abernethy on Tumours, p. 45.

† *Ibid*, p. 46.

‡ *Ibid*, p. 51.

be scraped out with the finger. Sometimes they form cells containing a pulpy matter of various colours and consistence; and sometimes these bands form an arborescent arrangement, ramifying through the diseased substance.”*

Of encysted tumours, the Author remarks, that the “discriminating characters are a regularity of surface and shape, and a pulpy feel. Yet most surgeons will, I believe, acknowledge, that they have seen tumours dispersed which they have taken for wens; and have even, when they removed them under that belief, discovered the disease to have been a soft regularly shaped sarcoma, and not a cyst containing a pulpy substance.”†

It is difficult to conceive how the word *encysted* should have been restricted to one genus of tumours, since it has been rendered apparent, that it may in truth be applied to all. That is to say, the elementary parts of such disorganizations are made up of cysts, and the number and size and contents of these cysts, and their arrangement in the morbid mass, give it its characteristic properties. I refer

* *Vide* Abernethy on Tumours, p. 78.

† *Ibid.* p. 108.

to the statements delivered at the commencement of this chapter, for the explanation of these assertions, and I now appeal to the evidence which I have since submitted to the reader, confident that it very sufficiently establishes these statements in every essential point.

When treating of encysted tumours, Mr. Abernethy observes, "that some notions have of late been entertained that these cysts may be of the nature of hydatids:" but he declines delivering an opinion on this subject, leaving the reader to form his own judgment from the facts which he brings forward. I have already shown, that this notion is not a recent one; and I hope I have almost proved that it is a well founded one, and that it sheds a ray of light on the most obscure and deplorable order of diseases.

Among these diseases I have mentioned the Fungus Hæmatodes. This name, it has been justly remarked, is calculated to mislead. Mr. Hey, when he applied it to the formidable case of that description which came first under his observation, was guided by an appearance, which, perhaps, ought to be considered rather as an occasional than

a constant symptom ; a symptom which is only seen in parts previously diseased, whose morbid texture and condition have been altered by external violence or other causes.

These things must be kept in remembrance, otherwise it may be supposed that I have been pursuing unfounded analogies and incautiously drawing inferences from diseases which are at variance with the doctrines advanced. It is, comparatively speaking, of little consequence what name we assign to disorders, provided that name be well defined ; and the reader will perceive, that I have been much less anxious to establish uniformity on that point, than to gain a true knowledge of morbid appearances, without which all attempts at amending our nosology must be useless, if not pernicious.

When, therefore, the disease in question gets into that state which accords with and justifies its name, the fungus is to be looked upon, not as a specific and essential symptom, but an accidental one, determinable altogether by something peculiar in the course of individual cases. Thus, if we trace their progress, we in general find tubercles or tumours, at first small and distinct, advanc-

ing with different degrees of acceleration, and communicating to the touch different sensations, according to the predominant character of their contents. These, and all other tumours, during their growth, must have a great effect upon the surrounding parts; and while they are in a diseased state, should the skin give way in consequence of external violence or any other cause, we sometimes see those frightful bloody fungated sores, which first suggested the name of the disease.

This progress will be best illustrated by attending to the course of the first case described by Mr. Hey. The disease commenced in the form of a small moveable swelling on the inside of the right knee, not far from the patella. It does not appear to have been occasioned by external injury, but external injury much modified its subsequent nature. The man, half a year after its appearance, fell against a stone and hurt his knee; then the tumour encreased till it became the size of an egg. It remained in that state, till two months before he was admitted into the Leeds Infirmary. He then fell from a piece of wood, and violently bent the diseased knee, but did not strike it against

any thing. "The tumour began immediately to enlarge; and, within a few hours extended half way up his thigh, on the inner side of the limb. About a fortnight after this last accident, the skin burst at the lowest part of the tumour, and discharged some blood. A dark-coloured fungus, about the size of a pigeon's egg, appeared and remained at this part. A few weeks after the appearance of this fungus, the skin burst in another part of the large tumour, and discharged some blood. From the fissure arose another fungus, which had increased, in the course of the last week, to the size of a small melon; and now measured eight inches over, between the opposite parts of its base. Blood frequently issued from the base of this fungus, chiefly when the man hung down his leg."

Now let us attend to the morbid appearances of this disease, before it has proceeded so far as in this case, or its nature been changed by violence or other means; and I think it will incontestibly appear, that the remains of the hydatical character may be more distinctly traced in it, than in almost any other affection.

Mr. Hey's third case was a tumour in the mamma. "It was perfectly distinct from the surrounding adipose membrane; having no other connexion with it than by that cellular substance, which universally connects the contiguous parts of the body. When divided by the knife, it had the appearance of a diseased glandular substance, intermixed with small cavities containing a viscid or gelatinous serous fluid."*

The fourth case was of the same description. "The tumour adhered in part to the mamma, and had the appearance, when divided, of a diseased glandular substance, interspersed with three or four cysts, containing a viscid serous fluid."†

It were easy to multiply examples of this description. Without detailing the cases at length, I may select a few illustrative passages from some of the other writers on this disease; and the reader will perceive that the character which I have described, may be detected even after it had proceeded beyond that stage in which the original distribution of parts is usually found.

* *Vide* Hey's Surgery, p. 267.

† *Ibid.* p. 271.

Mr. Wardrop, in his first case of Fungus Hæmatodes, after removing the eye-ball, and making a vertical section through it, so as to divide it and the optic nerve into two equal portions, observes, "that the posterior chamber, instead of containing its humours, was completely filled with a solid mass, which had very much the general appearance of a portion of brain. Some parts were pulpy, and easily washed away in water, leaving behind a filamentous substance, like loose cellular membrane. On tearing the mass, some parts were much harder and firmer than others, and towards one part of it there was a great quantity of particles of a gritty osseous matter."* The portion of the disease which formed the external fungus "had more the appearance of a soft mucous polypus, and was as easily torn as a piece of jelly."†

It can scarcely be necessary to repeat, that the appearance of the fungus, or the condition of the surrounding parts, has little to do with our present object. Keeping this in mind, let us attend to what was found in the case just noticed, on dissection after death. "At the place where the optic

* *Vide* Wardrop on Fungus Hæmatodes, p. 33. † P. 33.

nerves unite in the *sella turcica*, a tumour was formed about the bulk of a chesnut. This tumour was nearly globular, its surface a little unequal but smooth, and its colour rather more yellow than common medullary matter. On removing a delicate transparent membrane which surrounded the tumour, the parts within were found to be a pulpy-looking matter, of a very white colour, and of an equal consistence." "Having sawn off the orbiter plate of the frontal bone, the contents of the orbit were removed. The optic nerve could be traced a little way, and suddenly expanded, forming, as it were, the nucleus of a mass of diseased structure, composed of muscles, blood, adipose substance, and a number of rounded masses, which had a pretty firm, cellular, external covering, but contained a substance exactly resembling that of the tumour in the *sella turcica*, and in the posterior chamber of the eye-ball.

"The tumour on the cheek, anterior to the ear, had no adhesion to the integuments, or parts surrounding it, and had every external character of an enlarged lymphatic gland. An incision was made into its substance, and it was found to con-

tain a pulpy matter, similar in every respect to that of the tumour of the brain. One of the glands below the lower jaw was carefully dissected out. When removed, it had all the general appearances of a common enlarged gland; but when its external covering of firm cellular membrane was cut into, the substance of the tumour was found to be composed of a matter exactly resembling that which was found in the other swellings.”*

In his second case, Mr. Wardrop states, that almost over the whole surface of the brain there were numerous white spots scattered in an irregular manner, varying from the size of a pin's head to that of a large pea. “When cut into, they were found to be small bags, or abscesses, containing a viscid white fluid, something like cream.”† “The *plexus choroides* was much thickened, and that part of it which is vascular, and has been regarded as hydatids, was considerably swelled, and converted into a greyish white substance like *brain*. On removing some of the cerebral substance contiguous to the thalamus of the optic nerve of the right side, a cavity was brought into view, containing a consi-

* *Ibid.* p. 34. † P. 39.

derable quantity of black blood; and a tumour could be felt in this cavity, composed of a firm substance, about the bulk of a hen's egg, the upper surface of which formed the bottom of the cavity. As this tumour appeared firmly connected with the tumour in the orbit, the bones were sawn through, so that the whole parts could be removed in one mass."

If we restrict the word abscess to its usual signification, it will probably be found, that the small bodies, mentioned as being diffused over the brain, had a different origin from what that word implies. They probably fall under the class which Mr. Hunter has alluded to, in the quotations which are given above, and which I have described in different parts of these pages. Other observations on this subject will be found in the next chapter.

Mr. Wardrop's sixteenth case, is a singularly illustrative one. The disease appeared first in the eye-ball. "The contents of the eye-ball were chiefly composed of a medullary-looking pulpy substance, variously tinged in different places by the dark brown colouring matter. The tumour, projecting beyond the sclerotic coat, appeared to be composed of a similar structure, and from the ma-

ceration numerous white striæ, and in some places spots, appeared throughout the substance of the diseased mass.”*

On dissection after death, it was found, that “the liver contained some tumours of a similar consistence with the contents of the eye-ball. There was also a cyst in the substance of the liver, filled with a great quantity of grumous-looking purulent matter.

“Above the kidneys, there were similar tumours, of pretty considerable size; and the uterus was of a cartilaginous density. The urinary bladder was enormously distended, with a turbid bloody-looking fluid; but otherwise, in so far as this viscus was examined, its structure appeared healthy.”†

The twenty-first case which Mr. Wardrop gives, had been under the care of Mr. Newbigging, one of the Surgeons of the Royal Infirmary of Edinburgh. The disease shewed itself first in the testicle. It was extirpated, but the man died. “On examining the testicle after extirpation, it exhibited the following structure: It was elastic, though soft, and of a dark brownish colour. A number of small sacs, containing a transparent, and somewhat glairy

* *Ibid.* p. 77.

† P. 79.

fluid, were in various parts of its substance, and a small quantity of coagulated lymph was found in the cellular membrane, betwixt the vaginal coat and scrotum.

“ On opening the abdomen after death, the spermatic cord of the affected testicle appeared indurated, and several swelled glands were observed adjacent to it, and stretching in a chain to the very large mass of disease, which had been felt during life through the abdominal parietes. This mass seemed to be chiefly composed of a cluster of diseased glands. It was soft when cut into, had a dark-brown colour, and in some parts of it was formed a quantity of thickened grumous blood. This tumour surrounded the aorta and vena cava, the coats of the latter being evidently diseased, and its canal apparently somewhat lessened.

“ In the *liver*, there were many tubercles, containing a thick blackish fluid.

“ In the pelvis of the *kidney* a quantity of purulent matter was formed.

“ The *lungs* were tuberculous, some of the tubercles being also filled with a thick blackish fluid.”*

* *Ibid.* p. 135.

By the facts that have just been adduced, I consider the position which I have advanced to be very sufficiently established; and any one may find other proofs, by consulting the cases which have been detailed by other authors. In this part of the enquiry, I do not at present feel it at all necessary to contend for any thing but the tuberculous and encysted character of the elementary parts of this disease; and that here, as in other instances, the morbid appearances depend upon the “number and size and contents of these cysts, and their arrangement in the morbid mass.”

I consider it a strong confirmation of the view which I have delivered respecting this disorder, to refer to the valuable observations of Mr. Abernethy, respecting the danger of irritating these cysts, should this happen either from their bursting spontaneously or other means. It is then that the bleeding fungus shews itself, with all its alarming characters. The connexion between cysts and fungus hæmatodes has been noticed by Mr. Hey, and referred to by Mr. Abernethy. But both these gentlemen seem to consider them as only one of the sources of this destructive complaint. I

am not prepared to speak decidedly upon this point, nor indeed does it at all affect the main object of this discussion. It is very easy to conceive that a bleeding fungus may arise from any diseased surface, and that the state of the parts which occasions this appearance, may be induced by many causes. It is to be considered *as the disease of a disease*, if such an expression may be allowed. That it is occasionally the disease of a cyst, is demonstrable; but the other conditions of morbid parts from which it may spring have not been ascertained.

It was not till I had advanced thus far in my work, that I had an opportunity of seeing "Observations on the Cancerous Breast, by Dr. Adams." This writer, taking for his basis the valuable paper of Dr. John Hunter upon hydatids, and having remarked the existence of them in cancer, appears to have done little more than announce or confirm that fact. It might have been well if he had attempted nothing further; for the confused manner in which he has stated his opinions, and mingled false notions with observations founded in truth, is calculated rather to involve than extricate the

subject, and to render what he has brought forward little available to the purposes of true science.

He has bewildered himself in the outset with theoretical discussion, as to the peculiar life and quality of the hydatid. He then refers carcinoma to the *living* state of it, and to its growth and multiplication. In order to account for its various appearances, he has divided it into a number of species—*lymphatica*, *cruenta*, and *carcinomatosa*, and suspects that there may be others.* These, he affirms, are lodged in different cavities, or enclosed in a fungus which is occasioned by the death of any individual or numbers, stimulating the surrounding parts to generate it, for the purpose of dividing the dead from the living. This fungus is a nidus formed altogether for the protection of another generation; by means of it the living families are separated from the dead, and their preservation is secured.† They die, he says, without otherwise affecting the body in which they existed, but by their local stimulus;‡ and he broadly announces the importance which he attaches to such con-

* Vide "Observations on the Cancerous Breast," p. 77.

† P. 68.

‡ P. 75.

tures, by unequivocally declaring that it is his main object to prove by their means the animalcular existence of carcinoma.*

These are some of the leading points of his hypothesis. It is a singular fact, that the master whom he has followed, should have advanced so near to the discovery of the truth without actually penetrating the veil. So far as the writer in question has trodden in the steps of Dr. J. Hunter, he has gone on safely; sometimes† he seems to have caught a glimpse of the right track, but we soon find him deviating again into speculative obscurity.

I would by no means be understood to depreciate the whole of his observations; though I cannot look upon him as having rendered essential service to this branch of enquiry. It can only be owing to his repulsive assumptions that some of his remarks have been so much overlooked.

But, after all, his main position, as above stated, is the fundamental error of his book. In no rational nor legitimate point of view may cancer be said to have an *animalcular existence*; because, admitting, for the sake of argument, that hydatids

* *Ibid.* p. 38, Letter to Doctor Baillie,

† P. 75.

are animalcules, it has, I trust, been shewn, that it is to the loss of the hydatical character altogether, and the transformations of these bodies, that the morbid appearances in this and many other diseases are to be referred.

This is the broad ground upon which I wish to rest my view of the subject. My design has been to prove that such transformations do take place, and occasion a great variety of disorganizations in the animal frame; and I consider that the question, so far as pathology is concerned, has nothing to do with the speculations respecting the origin and vitality of the hydatids. It was expedient in the progress of this disquisition that something should be said of the natural history of these bodies. I have not pretended to give a complete account of them, for it was not necessary to my argument that it should be so: though it is a subject which may well excite more accurate investigation.

The present, like every other branch of enquiry, strikingly announces the slow progress of the human understanding, and how many difficulties and obscurities must be gradually cleared away before truth, in her simple and commanding attitude, re-

wards human labour. The injudicious adoption of terms is a fertile source of error: it has frequently thrown difficulties in the way by establishing inaccurate impressions, which, trifling as they may appear, may require a fortunate combination of circumstances, and the strongest efforts of the mind to remove. This I conceive in some degree to have been the case with respect to the word *hydatid*. The etymology of that word, and the ideas which are naturally associated with it, have restricted its meaning and our enquiries too; inso-much, that we have scarcely ever meditated on these bodies in any other character, but in that which their name designates. The power of that name seems almost to have prevailed in opposition to the testimony of our senses. For, though the transformations of the *hydatids* had been seen going on by different observers,—though the same tumour had been found to contain all the gradations of substances, from the simple watery vesicle up to the schirrous or cartilaginous texture,—though Boerhaave and others had referred distinctly to these transformations,—though Dr. John Hunter supposed that they might occur, and Dr. Jenner

had proved that they actually did occur, and thereby formed tubercles in the lungs,—it is remarkable, that such facts have neither influenced the opinions nor reasonings of professional men. The attempt of Dr. Adams has not been attended with success, and for the causes already named. He seems to have left the simple and direct path to follow after unprofitable conjectures; and it may be, that his untenable and unphilosophical propositions have thrown us back a little in our progress in this branch of pathology. He would speculate, when he ought to have stated facts; and the nature of his speculations obviously led him astray, and prevented him from seeing the only course that could extricate him from the labyrinth in which he had involved himself.

CHAPTER III.

ON SOME OTHER DISORGANIZATIONS OF THE THORACIC AND ABDOMINAL VISCERA, WITH REMARKS ON VOMICA.

THE following cases are sufficiently connected with the main subject of this investigation, to induce me to lay them before the reader. They all had a tuberculous origin, but the situation and functions of the parts affected, produced a combination of symptoms, which it is not unimportant to note.

In the first, there was accretion of the aorta and œsophagus, with ulceration and stricture of the latter, and disease of the cardia. In the second, there was accretion of the aorta to a diseased pancreas, with tubercles in the liver; and in the third, there were tubercles hanging in clusters from the valves in the left side of the heart.

R. V. æt. 49, complains of a constant sense of weight and oppression at the epigastrium, with evident and very distressing pulsation towards the left side, under the false ribs. He has a soreness and huskiness in the œsophagus, which renders the swallowing of solid food impossible, and the passage of liquids can only be effected in small quantities, and with much difficulty. These symptoms are conjoined with a constant attempt to spit up a quantity of brownish matter, which collects in the throat, but this at times occasions very great effort and inconvenience. There is total loss of appetite; and after swallowing with pain and distress a small quantity of any fluid, it is almost immediately brought up again by vomiting. The emaciation is very great. The pulse about 90, and very feeble; and the extremities at times are cold. The bowels are very costive, as he has no evacuations without the aid of medicine. Urine small in quantity, and turbid. Pressure about the epigastrium gives pain: but no change of structure can be observed on very attentive examinations.

The loss of appetite, and uneasiness about the throat and stomach, came on twelve months ago.

The vomiting and difficulty of swallowing soon followed ; but at present, he is more distressed by the pulsation than almost any of his other symptoms. It keeps him in a state of perpetual uneasiness ; and although he feels less of it in a recumbent position than at other times, it nevertheless very much interferes with his rest. He can assign no cause for this attack. I find, however, that he was occasionally a hard drinker, and that some years ago he was much bruised about the stomach and sides.

The disease of the œsophagus and stomach became more and more apparent. The power of taking any sustenance was gradually lost, and for weeks before he died, he was supported entirely by nutritive glysters ; and during this period milk and water baths were employed.

The pulsation at the epigastrium, as I have already mentioned, was his most troublesome symptom ; it impressed him with a degree of fear and uneasiness, greater than such a symptom generally occasions, and the slightest motion increased it, so as to make him dread immediate dissolution. The cause of this symptom had been a subject of

doubt with his professional attendants. Its origin will be well explained by the account of the dissection. He died on the 26th of March, 1811. Before death, the pulsation of the arteries in the extremities could scarcely for some days be felt.

This patient lived in Herefordshire. I examined his body in company with Mr. George Aveline, surgeon, of Ross; the dissection afforded a very satisfactory elucidation of all the symptoms of the disease.

We found a schirrous cardia, a thickened, ulcerated and contracted œsophagus, and a strong and remarkable accretion which the latter had formed with the aorta just below its arch.

The appearances observed on the examination of the body, very satisfactorily explain the symptoms. The cardia had the tuberculated structure, the whole of the œsophagus was thickened and diseased; and in consequence of the accretion to the aorta, the pulsations of the latter were distinctly transmitted to the epigastrium. At the point where the accretion was greatest, the ulceration was proceeding very rapidly; and had the patient lived much longer, it might have made its way both

through the œsophagus and aorta. I have heard of one case where this actually occurred.

T. P. æt. 53. March 15. The liver is felt enlarged and hard, extending considerably beyond the false ribs. Below the scrobiculus cordis, there is a violent pulsation, which is synchronous with that of the arteries. He has a sense of weight and pain about the right side, great uneasiness and soreness about the shoulders, clavicle, neck, and back, with extreme and most distressing restlessness. He lies chiefly on the left side and back. The tunica albuginea is yellow, and the skin slightly so. Tongue clean. Appetite much impaired. Pulse 80. Urine remarkably high coloured and clear, staining linen, but depositing no sediment. Bowels costive.

This disease began early in last October, with symptoms of dyspepsia. By taking the ordinary remedies suited to such attacks, he got relief. In November he was obliged to see a good deal of company, and lived rather incautiously for some days in succession. He became worse. At this time, he was directed to take the blue pill and an aloetic one alternately every night. He continued this plan for many

weeks, and while under it, was so well on the 11th of January, that he was able to use violent exercise in dancing, for a whole evening. This exertion, however, fatigued him much. About six weeks ago he came to Cheltenham. Mercury both externally and internally, has been constantly employed. His bowels have been well purged at proper times, but the disease has increased. The enlargement of the liver has only been decidedly felt about three weeks. He has lost flesh and strength rapidly, and gets no rest but by large doses of opium. The quantity consumed, when I first saw him, was about 14 grains in twenty-four hours.

The feelings which rendered so large a quantity necessary, were not those of pain, but an indescribable uneasiness about his system, which nothing could completely subdue. The "beating" at the epigastrium attracted a great deal of his own notice, and that, with other painful feelings near the same part, were a frequent subject of his complaints. Among these, a sense of heat at the stomach was the most distressing. On one occasion, he said he felt as if all the fires of Cheltenham were

burning within him. This sensation was effectually relieved by the oxyde of bismuth.

The disease resisted every remedy, and proved fatal on the 15th of April. Mercurey was pushed to the utmost extent, in every way that it could be employed; but it never seemed to affect his system, as no signs of its absorption ever were afforded. The pulse on the 25th of March was 90; on the 31st, it rose to 100; and it continued about that rate till the death. I find it mentioned in my reports, that the pulsation at the epigastrium had been less observed by the patient, and less troublesome for a short time before the conclusion of the disease.

On examining the body after death, the skin was found to be universally of a very deep yellow colour. The liver was much enlarged. The outer membrane was in parts diseased, and marked the situation of irregular shaped tubercles which penetrated into the substance of the liver. Some of them were hard and almost cartilaginous. They were of various sizes, and disposed in different situations throughout the whole of the viscus. The interstitial substance seemed perfectly free from

disease, and not to have lost any of its natural characters. The gall bladder was empty. Its ducts were thickened, and compressed between the hard and dense parts of the diseased liver and an enlarged and tuberculated pancreas. The latter had formed a close and strong adhesion with the abdominal aorta; and its pulsations were, as in the former instance, transmitted through the medium of the diseased mass to the epigastrium.

Mary Merrick, æt. 29. This woman became an out-patient of our Infirmary early in 1815. She laboured under amenorrhea, and complained of pain and uneasiness about the head, shortness of breath, fluttering of the heart, costive bowels, and great languor and depression. She seemed a stout large woman, and had borne several children; but there was, nevertheless, an appearance of anxiety and distress in her countenance, which none of the symptoms enumerated could well account for.

She was treated at first with purgatives and tonics. Her symptoms were somewhat relieved, but by no means effectually. On the 15th of March, she was seized with purpura. It attacked chiefly the left leg and thigh, and these parts were also af-

fectured with the hard œdema, which so frequently is seen in certain diseases of the thoracic and abdominal viscera, or their membranes. The pulse was 100, and moved with a full, regular, and bounding sort of action.

She was ordered to be bled, and to take a purgative with calomel and extract of colocynth. She was bled again on the 22d, and the purgatives were regularly and assiduously employed.

By these remedies she was considerably relieved, and the purpura and the œdema were diminished, as well as the uneasiness about the chest and the head. About the middle of April, she became worse, and on the 17th of that month she was admitted into the Infirmary. At that time the purpura and œdema had attacked both lower extremities; and the pulse, which continued to beat as already described, had risen to 108.—She was bled again, and was directed to take an electuary with supertartrate of potass and jalap.

On the 19th, it is reported that the purple spots, as well as the swellings, were diminished, and that the blood was buffy. She was bled again this day, and on the 25th. The last drawn blood

was not buffy. The purpura had almost entirely disappeared, but the swelling and hardness of the lower extremities continued, and towards night they became very painful. At this time, too, she began to be very much troubled with cough without any expectoration, and she complained more of pain in the left side, and oppression about the chest. The pulse was as high as 112. The tongue was clean, the appetite good, and the functions of the alimentary canal were natural.

She was desired to take a mixture, with infusion of digitalis and tincture of squills, and to continue the electuary.

No remarkable change took place in her symptoms till the 7th of June. She then had a return of the pain of side, with an encrease of the cough, and swelling of the lower extremities. She was bled again, and a blister was applied to the pained part.

It is not necessary to go minutely through all the subsequent reports of this case. The following detail includes all the most important events till the time of her death, which took place on the 6th of September.

She had at intervals rigors, followed by pain of the chest and great difficulty of respiration. The fluttering at the heart became a constant subject of most distressing suffering. The uneasiness about the head also encreased, and the action of the carotids was so violent as to attract a great deal of her own notice. Now and then she fell into a stupor, and awoke from it generally in a state of wildness and amazement, and complaining of severe pain in the back part of the head. The cough continued very violent, but at no time did she expectorate. The pulse was generally about 120, and had the bounding feel to the last. It never was irregular. She continued to take her food with a good appetite, and the bowels acted with little aid.

She had occasional bleedings from the nose. There was a greater discharge the day before she died, than at any former time. On that occasion, too, the purpura covered a larger space, both on the extremities and trunk of the body, than at any former period. On the evening of that day the purple spots were observed to have almost entirely disappeared, and on examining the body after death, the traces of them were scarcely to be discovered.

The night before she died, she complained of great coldness of the extremities. She, nevertheless, went to sleep, and did not awake till seven in the morning. After that, the breathing became extremely laborious, and she expired about eleven.

On examining the body, I found no marks of disease except in the heart. It was of a larger size than natural, and about ten ounces of fluid were found within the pericardium. The right ventricle and auricle contained scarcely any blood, but the capacity of the latter was very much greater than natural. Both the left ventricle and left auricle were quite full of blood, and the mitral valves as well as the semilunar were in a remarkable state of disease. From each, small tuberculated fringes hung into the cavities, and in the ventricle they were likewise attached to the columnæ carneæ. The tubercles were very distinct and were about the size of millet seed, and resembled precisely those which I have seen on the peritonæum, or attached to the omentum.

I am now to deliver a few observations on a subject, which will be found to have a more intimate connection with the questions discussed in

this enquiry, than may at first sight be supposed. Vomica is placed by Dr. Cullen among the phlegmasiæ, as a sequela of pneumonia. Sauvages classes it among the anhelationes; and he makes some striking remarks as to its origin; to which I shall afterwards have occasion to draw the reader's attention.

It has already been attempted to account for the growth and origin of cysts with contents of different kinds, which are found either imbedded in the viscera, or growing within the cavities. When they are in the lungs, the patient is sometimes suddenly cut off by the giving way of the cyst, when no previous symptoms indicated so great a disorder. This fact, and those which may be gathered from the preceding pages, lead me to suspect that Dr. Cullen, and all who have adopted his opinions, are in error respecting the nature of this complaint. I do not mean to affirm, that abscesses do not follow inflammations of the lungs; and if the word vomica be restricted to denote such occurrences, I have no fault to find with it. But this has not been the case: it has been applied to all collections of extraneous matter within the

lungs—to those which are purulent, or *only purulent looking*—to those which proceed from inflammation, and those which depend upon *a principle very different from inflammation*. Here I cannot avoid again expressing my surprise, that Mr. Hunter's very accurate and impressive observations, on this grand distinction in the character of diseases, should have been so much overlooked. He has dwelt at considerable length on the subject; and, with great truth and fidelity, has brought before the minds of his readers, the difference in the symptoms, progress, and consequences of such affections.

In the cases of vomica that I have seen, the following was the condition of the patients. There was a short frequent cough, but little or no expectoration. The respiration on quick motion was very much hurried, and even when at rest this function did not seem to be performed with ease. The pulse was very easily accelerated; and obtuse pain, or a sense of uneasiness, was felt about some part of the thorax. I have known an oppressive head ach an almost constant attendant upon this affection. So much so, that this symptom was for a very considerable time the only one that attracted much attention.

Patients labouring under disorders of this kind are sometimes very unwilling to believe that they are really ill; and to convince themselves and others, that no important disease can exist within the chest, will sometimes talk loudly and breathe deeply, apparently with perfect ease. They generally, however, lose flesh; the face gets of a pale unhealthy hue, and very considerable feelings of languor and distress may be detected in the expression of the countenance.

On some occasions, the dyspnœa comes on in paroxysms, not unlike asthma; and when they go off, no uneasiness about the organ of respiration is felt, the patient complaining only perhaps of head-ach or irregularities, and uneasiness about the stomach and intestines.

After some such symptoms as have been enumerated, the patient is perhaps surprised, after an unusual fit of coughing, by the expectoration of a large quantity of purulent-looking matter. He may either be suffocated at once, or he may linger for some time; but death generally follows soon after such an event. I have, however, known patients exist for years after it. A man is, at this

instant, under my care, who seems clearly to labour under this disorder. The matter accumulates pretty quickly; and he can, by a peculiar sort of effort, bring it up in quantities of half a tea-cup full at a time. This man till lately laboured in the fields, and I have known him many times walk ten miles in a day.

In none of the cases that I have alluded to above, had there been any attack of pneumonia; and every pathological work contains accounts of cases where "*bags of matter*" have been found within the lungs and other viscera, even where no symptom indicating previous inflammation had existed.

The following case, which has been communicated to me by a friend, affords an interesting illustration of this disease:

The gentleman, who was the subject of it, had been a great sufferer from an oppressive headache, for a great many years. He had also uneasiness about the chest, but greater on one side than on the other; and he never could lie comfortably on the side which was most affected. He had also occasional cough, without expectoration. These

symptoms had existed more or less for nearly twenty years. He went from the country to London in his usual health. He was seized with inflammatory symptoms, such as occur in severe catarrh. His throat was much affected, and he had unusual uneasiness from deglutition. The cough increased, and so did the distress about the chest. After a time, a tumour made its appearance between the second and third ribs of the right side. It increased till it acquired the size of an orange. It afforded a sense of fluctuation, and it was determined to have it opened. Before this operation was performed, the parts within gave way, and a full pint of matter was at once discharged from the trachea. This emptied the swelling on the outside of the thorax immediately, but it was distended with air when the patient coughed or breathed deeply. The communication between the sack and the lungs was through two apertures in the intercostal muscles, and by making pressure upon them the escape both of air and matter was prevented. After the events just mentioned, the patient seemed to be getting better, and he determined to go into the country. But he was only able to ad-

vance a little way in his journey. The jolting over the stones brought on very profuse hæmorrhage from the lungs, and the first day he got no further than Brompton. There he was obliged to remain to recruit his strength for a week or ten days. He then advanced a little further, but the bleeding returned. It was again checked; but one day while sitting up in bed, eating a biscuit, a sudden and copious effusion took place, and he expired.

In two cases which I have seen, there was no hæmorrhage as in the last mentioned one. The discharge of matter from the lungs was considerable, and it continued, at intervals, for about a fortnight, when the patients died.

When collections of this kind take place in the liver, the matter sometimes makes its way through the diaphragm, and is expectorated. I know an instance where an occurrence of this kind took place five or six different times. After the contents of the cyst were discharged in this way, the patient got into pretty good health, and remained so till another accumulation induced inflammatory symptoms; these continued till the cause which ex-

cited them was removed by another spontaneous evacuation.

On other occasions, the matter may get vent through the parietes of the abdomen, as it did in the first mentioned case through the intercostal muscles, or it may pass into the intestines and be voided per anum. I have been informed of one instance where this occurred, at the same time that matter was discharged through the trachea. That both discharges had one common source, is proved by a circumstance, to which I beg the reader's particular attention—I mean the existence of hydatids in the matter which came through each passage. This fact not only establishes the point in question, but is very valuable, as leading to an explanation of the nature of disorders of this class.

The occurrences just mentioned took place three several times. Before each, the liver could be distinctly felt much enlarged. It is probable, therefore, that the cyst which contained the hydatids and the matter which escaped with them, was situated in that viscus.

Among the observations of Tulpius I find a description of vomica, which corresponds very satis-

factorily with the account which is given above. “*Latet hoc vitium, inter initia, adeò clanculum : ut vix ulla sui proferat indicia : præter tussiculam, primùm siccam, sed mox humidam. Quâ aliquamdiu continuante, trahitur difficulter spiritus; deficit anima; et emarcescit paulatim corpus: licet interim, nec pus, nec sanguinem præ se ferant sputa. Sed si rumpatur, nec opinanti, vomica: occiditur dictum ac factum homo. Vel si manserit aliquandiu exitio suo superstes: consumitur tamen lentè, à febriculâ; sive ob pus; sive ob sanguinem, per thoracis interiora, effusum.*”*

But the most accurate history of the symptoms, as well as of the origin and progress of this affection, that I have met with, is delivered by Sauvages. “*Vomica dicitur cystis, vel folliculus materiâ puriformi turgidus, nec proinde discrepat ab steatmate nisi paulò majori fluxilitate materiæ contentæ, et quod steatoma vocetur, cum partes externas obsidet; differt verò ab apostemate quod materies sit ab inflammatione oriunda in apostemate, verumque pus; ast in vomicâ et steatmate mucus quidam adiposus, calore liquefactus, qualis*

* *Vide Nicolai Tulpîi Observationes Medicæ, p. 112.*

in vesicis hydatidosis viscerum toties observatur: cum itaque folliculus glandulosus, vel capsula vasis lymphatici dilatatur, vel cellula adiposa turgescit, sensimque crescit, fit vomica, quæ in pulmone genita nullam vel exiguam febrem excitat, parvam, lentèque per annos crescentem dyspnœam creat, cum tussiculâ siccâ usquequo demùm rupto folliculo, vel pus copiosum foras anacatharsi expectoratur, et fit phthisis à vomicâ dicta, vel in cavum pectoris effunditur, unde empyema, vel intervallis costarum protuberans extrorsum aperitur, vel confestim pulmones intus aggravans pure viscido obstruens ægrum subitò enecat.”*

In this quotation, it will be seen that the author has very clearly taken the ground of distinction which is noticed by Mr. Hunter, as forming the specific difference between collections of matter that arise from inflammation, and those which do not proceed from that source. In the first, *verum pus* is found, “ast in vomica et steatmate mucus quidam adiposus, calore liquefactus, qualis in *vesicis hydatidosis viscerum toties observatur.*”

* *Vide Nosologia Methodica, Classis V. Ordo II.*

To confirm the last mentioned point, all my own experience and reasonings tend. It is supported by many facts already mentioned in this volume ; and it is matter of great satisfaction to me to find any part of the doctrine which I have endeavoured to establish, so explicitly supported by the authority of this very accurate and eminent author. I am not at all desirous of contending for his opinion respecting the origin of hydatids ; that, as I have more than once observed, is a separate question.* It is enough for my present purpose, to shew that hydatids, in one of their states of existence, do contain such fluids as are found in vomica ; and that the phenomena of the disease correspond in every point with those which sometimes attend the growth and progress of these bodies.

Notwithstanding these facts, almost all recent writers have no means of explaining the morbid appearances which I have mentioned, but by attributing them to the effects of inflammation. This

* It is a very old opinion, that hydatids arose from the lymphatic system. Many strong analogical facts have been mentioned in confirmation of that opinion, and there is good reason for believing that it will ultimately be proved by direct observation.

error, (for such I cannot avoid believing it to be,) seems now^d to prevail almost universally ; and it is adopted by a recent ingenious writer,* whose work, as appears to me, affords examples quite at variance with that opinion. One I must briefly notice, for the very apt illustrations which it supplies of my views, both with respect to vomica, and some of the other disorganizations that are treated of in this enquiry. He entitles the case " large abscess within an adventitious substance in the chest."

The patient was a gentleman nearly sixty-two years of age. During the two last years of his life, it had been observed that he had become excessively nervous. But he had no feverish symptoms, no local pain ; " in short, the only prominent feature in his complaints was the encreasing degree of nervous distress." The following abstract of the morbid appearance contains the facts most necessary to be attended to in this enquiry :

Nearly the whole of the left side of the chest was filled with an undulating tumour, which adhered very firmly to the surrounding parts. This tumour was opened, and it was found to be an im-

* Mr. Howship.

mense cyst, containing as much as six quarts of "greenish yellow thick purulent matter, of a very offensive odour."

A number of "largish tumours of a pretty firm consistence, and of a whitish colour, were seen protruding through the inner membranes of the pericardium on the left side, and pressing on the heart." In connection with these tubercles, was a large tuberculated mass, which occupied the upper part of the chest. "The texture and appearance of this disease somewhat resembled brain, or even cream; it was intersected with fine, membranous fasciculi. Cutting through a part of the mass, the knife passed at once into the large purulent cyst, and on careful examination of the section, it became clearly evident that the great cyst was in immediate connection with the tuberculated disease, for the surface of contact between the solid disease and the purulent fluid was soft as pap, and evidently acted upon by the contents of the cyst.

"The tuberculated disease was ascertained to reach as high as the superior margin of the chest, at the posterior part of which, most firmly adherent and closely contracted, was found the large

lobe of the left lung ; it was situated in the angular space between the ribs and spine. The whole substance of the lung was distinct from the disease, as proved demonstrably by the appearance of the sections of the parts.

“ There were two small abscesses, about the size of hazel nuts, in the substance of the lung, and a third, which was as large as a chesnut ; but the consistence of the matter in these abscesses was as thick as butter, and in other respects totally unlike to that found in the great cyst.”*

I need not dwell upon the rationale of this disease as given by Mr. Howship, for I have written to little purpose, if the reader is not able to anticipate almost all that I can have to say on that

* *Vide* Howship's Observations in Surgery and Morbid Anatomy, p. 213.

In the same volume from which these extracts are taken, is an account of a “ singular disease of the peritonæum.” It is a well marked example of the affection which forms the subject of enquiry in the first part of this volume. There, I hope, I have established both its generic and specific characters, and of course its affinity with that disease, an account of which I have just presented to the reader. The first part of this enquiry was printed before I had seen Mr. Howship's work, otherwise I would have mentioned his account of the peritonæal affection in its proper place.

subject. From this case alone, even though there were none other, I might obtain facts sufficient to illustrate the greater number of the positions that I have advanced in this enquiry; and I am moreover persuaded, that no competent judge can peruse the well supported train of reasoning which it has been my object to follow, without perceiving how accurately it applies, in every point, to all the peculiarities in this and the other analogous cases which may be found in this volume.

If Mr. Hunter's observations respecting the formation of pus be correct, the matter contained in the great cyst in Mr. Howship's case could not be purulent. The same inference of course follows from other premises. Mr. Hunter evidently would have ranked it with those collections of matter which are formed without inflammation; and, if we are strict in the use of terms, such collections ought not to be included under the name of *abscess*. Mr. Hunter contrasts their effects on the constitution, in a very happy and impressive manner, with those which we witness when inflammation terminates in the formation of pus. "When an abscess in consequence of inflammation is opened, it imme-

diately proceeds towards a cure, and perhaps it may have gone some steps towards a cure before opening, the inflammation still lessens, the suppuration becomes more perfect, granulations begin to form, and all of these steps naturally take place, because inflammation had been the cause; but when a collection of matter, not preceded by inflammation, is opened, a very different process is first to take place, viz. inflammation is now excited over the whole cavity of the abscess, which afterwards produces a perfect matter, similar to that produced in consequence of inflammation, when it is the original disease; and which now produces its constitutional affection, if it is such as to have connexion with the constitution; but this will depend on the size of the abscess, the situation, and the nature of the parts, etc.: however, it sometimes happens that they inflame before they are opened; but this is in consequence of the matter distending the cavity, and thereby acting as an extraneous body.*

It is exactly such a process as is here described, that takes place in vomica. The collection of matter is first formed. It encreases in size, perhaps,

* *Vide* Hunter on the Blood, p. 394.

till its cyst bursts, and the contents make their escape. If death does not immediately follow, there may be successive accumulations and successive discharges of this kind, or inflammation may "set down upon the specific disease;" sympathetic fever is thereby produced, which is commonly "continued into the hectic," and death ensues.

It was my intention to have brought together in one view, the conclusions which seem to have been established by this enquiry. But it is wiser, perhaps, to abstain for the present from this attempt. If I have been fortunate enough to carry the reader along with me in my reasonings, he will not find it necessary; and if I have failed in that object, it could not be gained by such a recapitulation as might now be given. Other facts and observations must accumulate, and confirm or refute what has been brought forward. In either case, the cause of knowledge will be advanced; and out of it something may arise, calculated to mitigate the sufferings of humanity.

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THE END OF THE SECOND VOLUME OF THE
 "ANATOMICAL AND PHYSIOLOGICAL
 RESEARCHES OF THE HUMAN SYSTEM."

EXPLANATION

OF THE

PLATES.

PLATE I.

In this Plate, the tubercles are represented as they appear on the intestine, before accretion has taken place. They are seen extending to the mesentery, the glands of which are enlarged and diseased, and the two upper were divided to shew their texture.—See page 26.

PLATE II.

Represents the disease in a more advanced stage. In this portion of it, were involved six convolutions of the intestines. The tuberculated mass which united the convolutions in many places nearly equalled an inch in thickness. Its granulated texture was distinctly seen in some points; in others, it was nearly obliterated.

PLATE III.

Gives another view of the same part. Here the great thickening of the peritonæum may be more plainly seen, than in the preceding.—These three plates are particularly illustrative of the appearances found in the cases of Tandy and Aldridge.

PLATE IV.

Represents the morbid appearances which were found in the case of Wingate; for an account of which, see page 179.

PLATE V.

Is taken from another section of the same disease. From this side was cut that portion which contained the semi-transformed hydatid. With the exception of the large blood vessels, the trachea, œsophagus, and the pericardium, the consolidation of all the parts, both within the thorax and on the sternum, was complete.—See page 180.

PLATE II.

Represents the disease in a more advanced stage. In this portion of it were involved six convolutions of the intestine. The tuberculated mass which marked the convolutions in many places nearly equalled in such in thickness. Its granulated texture was distinctly seen in some points; in others, it was nearly obliterated.

PLATE III.

Gives another view of the same part. Here the great thickening of the peritoneum may be more plainly seen, than in the preceding.—These three plates are particularly illustrative of the appearances found in the case of Tandy and Abbot.

