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COURSE
OF
CLINICAL LECTURES,
DELIVERED AT
THE MIDDLESEX HOSPITAL.
BY DR. WATSON.
Session 1842-3.

GENTLEMEN,—As your hospital studies have now recommenced with the return of the medical season, I feel assured that you came here not only with increased desire for improvement, but prepared to benefit by the instruction placed within your reach, I do not deem it necessary to dwell at any length on the importance and necessity of close clinical observation. It is a necessary part of medical education, and does not terminate with even the close of the student's probationary career. Every practitioner is in effect a clinical student. To survey and investigate disease at the bed-side, to examine the patient and interrogate him, from the result of those inquiries to compare and deduce facts, and to act on those results, are the daily duties of the practitioner as well as of the lecturer. The knowledge of the practitioner is, to a very great extent, the accumulated experience of his observation. It does not always follow that the experience attained is proportioned to the opportunities presented for its acquisition; and this is a truth which I would strongly impress on your minds. It is quite possible for students to see too much—that is, to see more than they can well observe. Against this mistaken eagerness I think it advisable to caution you; for, while the student should take care accurately to observe each case to which he approaches, and ascertain what may be learned from it, yet where so many and such various cases are within his reach, the numerous phenomena of disease and their novelty may so distract attention as to render him unable to derive any sound knowledge or permanent advantage. Hence the knowledge acquired by the student is too often confused and obscure, the very abundance of opportunities for acquiring it having operated injuriously through injudicious observation. The same remark may be applied to some practitioners, who, in the later periods of their practice, are found to have added comparatively little to their stock of experience; they have had an extensive private practice, without acquiring additional knowledge or reaping experience proportioned to the opportunities which that extensive practice afforded to them.

In the results of clinical instruction something will, undoubtedly, depend on the diversity of talent for observation, and much on the mode and degree in which each student comes prepared to benefit by such investigation. I have every reason to hope that my present auditors came fully and properly prepared, by previous instruction and study, to see and investigate

with advantage. The preliminary course through which you have passed is judicious and indispensable; for it is impossible to form an accurate diagnosis of disease, to observe its effects and progress, unless, by a previous study of anatomy and physiology, you have become familiar with the structure, the functions, and relations of the several organs of the human body. Physiology points out the various ways in which those organs are affected, and their functions perverted by disease; it also performs another very important service—it classifies and gives names to diseases, and thus facilitates study. It is of the highest importance to learn as early as possible the best mode of clinical investigation, and of recording its results; and at a future period it shall be my care to direct your attention to this particular subject, and to impart to you my advice on it. At present I shall do no more than earnestly exhort you to devote yourselves to close and systematic observation of disease, while the opportunities are abundant, and you yourselves are not responsible for the treatment, so that when called on to act independently, and, as practitioners, to incur responsibility, you may be enabled to combat disease with a just confidence, having gathered from past labors the treasure of experience.

Your observation should be searching and accurate, not discontinued until you have fully satisfied yourselves of the identity of each case which may come before you with those of which you have acquired a previous knowledge from books or oral discourses. You must not trust to the names on the cards appended to the bed-head, nor be by them satisfied that the disease of the patient has been accurately and properly described. These names are often misnomers, for it cannot be reasonably expected that in every instance a disease can be accurately diagnosed from the first examination in the taking-in room. Besides, there are many instances in which the medical attendant is baffled or misled by appearances, and in which cases are at first classified under wrong names. Were the students to depend implicitly on those cards, they would be calculated to do him a great disservice, in inducing remissness and neglect of personal examination. Anything else than a true diagnosis of disease is not only uninformative, but absolutely injurious, for it leaves false impressions, and is calculated to lead to improper treatment. But when the exact nature of each case has been ascertained, the observer is sure to draw from it some precept that will prove useful in subsequent practice. I cannot, then, too earnestly impress on you the necessity of acquiring a habit of systematic observation; this is quickly matured into prompt and accurate discrimination, and will prevent hereafter the doubt and indecision which too frequently occur, to the painful experience of many practitioners, and to many a patient's peril. You will have no card to guide or aid you when you

come to practise independently; and while abundant opportunity of observation is afforded you without the incurring of responsibility, those advantages should be wisely used, to forewarn you for the time when responsibility must come.

The remarks which I purpose addressing to you, in the series of lectures now commenced, I can scarcely dignify with the name of lectures; they will merely consist in plain and familiar observations on such cases occurring in the course of the ordinary clinical attendance as may appear particularly deserving of attention. And here I may be asked why I depart from the ordinary course—why not give those lectures in the wards—why not make them literally what they profess to be, clinical or bed-side lectures? But a little reflection must convince you that the latter is not always and in every instance the best and most desirable mode of conveying instruction. There are many reasons why it is not so; amongst others, I may particularise the fact that the time devoted to walking the wards each day, being necessarily limited, both by the convenience of student and lecturer, as well as by the other pressing demands on the latter, is not sufficiently long to admit of everything being said on each case which might be noticed with propriety and benefit. Nearly the full extent of what the clinical teacher can do when walking the wards with his class is to act the part of demonstrator; he can say, observe that tongue, feel that pulse, examine that tumid abdomen; but, if he were to attempt expressing, day after day, all that passed in his own mind while observing each case, not only would much more time be consumed than was practically available for the purpose, but he would run the risk of wearying, by constant repetition of the same remarks in the same or similar cases, those who were punctual in daily attendance on those exercises, or would disappoint the expectations of some who were less regular in attendance. Besides, there are many things which render such a mode of instruction impracticable; it would be needlessly cruel to say, in the hearing of a patient, much which the lecturer must feel desirous of saying to the student. Thus, suppose a case where there was a strong probability that death would ensue, were we to announce that probability in the patient's hearing, the effect produced on his mind may convert probability into reality; the teacher's words may become a self-fulfilling prophecy, and he become the agent of the patient's death. Again, in a case necessarily mortal, although by declaring in the patient's hearing the inevitability of dissolution, the lecturer would not incur the weight of agency in his death, yet his words would be calculated to cause much injurious and unnecessary pain. In short, there are very many cases which must occur to your own minds in which it would be very difficult and indelicate to say, at the patient's bed-side, and in the patient's hearing, everything one might feel desirous of communicating to the pupil. You must, however, bear in mind that the present course of clinical observations in this theatre are only supplementary to, and by no means a substitute for, those strictly clinical instructions given in the ordinary course. And of the series now commenced, I can promise that they shall not be tedious from their length. My intention is simply to

avail myself of the means of conveniently and profitably communicating such remarks as I may be prevented from making with equally good effect in the wards, and to close each day's work with observations applied to the principal cases which has attracted our attention during the visit. On the present occasion I shall confine myself to one of those cases which appear deserving of especial notice, and, as it terminated fatally, offered the opportunity of verifying, by examination after death, the diagnosis of the disease during life.

The case to which I allude was that of William Bedford, a man thirty-three years old, but looking much older, a farm labourer. He entered the hospital on the 30th of August, and many of the present auditory must remember him as a patient. At the period of his admission he was very thin and very feeble. His own statement, in reply to inquiries, was that he was affected with frequent vomiting—that he could retain nothing on his stomach—that no solid food could pass beyond a particular spot, which he pointed out at the lower part of the sternum—that the matter rejected at times appeared like phlegm, and subsequently had become a clear liquid like water—that some time antecedent to his admission he had been able occasionally to get a small morsel of solid food into the stomach—that those occasions became gradually fewer, then altogether ceased—and that, for some time immediately prior to his coming to the hospital, he had been wholly unable to make the smallest morsel pass beyond the spot which he indicated—and that even the liquids to which he was compelled to resort for sustenance began to be rejected. At this time his bowels were sufficiently regular, his urine free, and not discolored. It was very remarkable in this case that the difficulty of retaining food on the stomach, or of even admitting it, had commenced at a very early age. The man was thirty-three years old when admitted to the hospital, and, from his statements, it had been ascertained that the difficulty had commenced full seven years before, when he was twenty-six years of age. The cancer, therefore—for such the disease was—had at that early period made such progress as to create the difficulty, which was experienced only occasionally at first; but, as the disease extended, the difficulty became more frequent, until finally ingestion of solid food into the stomach was utterly impossible, and everything taken for sustenance was instantly rejected. When I examined the patient, on the day after his admission into hospital, I found a sensible, defined hardness across the epigastrium, which was very distinct on the left portion of that region. This resisting hard substance was somewhat tender when pressed upon. Slight pressure on the tumor occasionally caused a crepitating sound, produced by the displacement of flatus. This showed that it could not be formed by a solid mass—the liver, for example, or by the enlarged head of the pancreas, which I have known to occasion a prominent tumor in this situation. It was not an aneurism, for there was no pulsation, nor could we detect any trace of the whizzing sound which generally accompanies aneurism of the abdominal aorta. We concluded, in short, that the patient labored under scirrhus of the stomach. Moreover, as the food never seemed to enter the stomach, and was

rejected almost immediately on being taken, I set the case down as one of cancer affecting the cardiac orifice of that organ. When the pyloric orifice is implicated in any disease which diminishes the *outlet* of the stomach, or impedes the passage of food onwards into the duodenum, while the cardiac opening or *inlet* remains free, then the food enters the stomach readily enough, and is retained there for some time, undergoing digestion more or less perfectly; and it is after this—some time after a meal—when the digested aliment fails to find its way through the natural channel, that it is rejected by vomiting.

Nothing administered was found to do the man any good—that is, any sensible permanent good; nor, indeed, from the diagnosis was any expectation of good to be indulged in. On the 19th of September the patient complained of a good deal of pain just above the navel, and on pressing the finger suddenly downwards in this part of the abdomen, it came in contact with a hard and tender substance. Four days afterwards I could find no trace of hardness or tumor; the epigastrium, however, was more prominent, and was resonant on percussion; indeed, the abdomen was altogether fuller than it had been. On the 5th of October I again searched for the tumor and hardness, but in vain. By this time the man had become extremely emaciated; he was sinking rapidly, and on the 7th of October he died. As I before remarked to you, nothing made any favorable impression on him; he took the liquor potassæ at one time, then hydrocyanic acid, and, as he was unable to get down any solid nutriment, I allowed him some wine and porter, and egg-flip; these he sipped by teaspoonfuls. I also endeavoured to support him by nutritive enemata, and for a few days immediately previous to his decease enemata of beef-tea were thrown up; but this was found to cause so much distress and pain, without the possibility of effecting any good, that it was abandoned. For the few days before his death his appearance was remarkable; the face and neck were of a livid red, the tongue red and foul.

The diagnosis in this case was not very difficult, and was justified by what we found on examination after death. The cavity of the peritoneum contained a considerable quantity of a brownish colored transparent fluid, of a very disagreeable odor. To the effusion of this liquid I attribute the fact that the tumor, which was partly formed by the stomach and partly by omentum, ceased to be palpable at one time, though it was easily detected some time before. The lesson you may draw from this fact is, that negative signs, if I may so call them, are of less value than those which are positive. The absence of any apparent tumor was deceitful, but we were sure that it was there, because we had previously felt it. The tumor detected on the day of the patient's admission into hospital, and for three weeks subsequently, was formed by the indurated portion of the stomach; the second tumor, discovered on pressing the finger firmly above the umbilicus, was the omentum, which was rolled and matted together, and full of small masses of cancerous deposit. The stomach was small, and exhibited a fine specimen of scirrhus affecting both the cardiac and pyloric orifices of the organ. The lower part of the œsophagus and the upper portion of the duodenum were likewise involved in the disease.

In addition to this, there was a growth of matter apparently cancerous from the internal membrane of the stomach itself.

The mode of death in this case was particularly worthy of notice. It is not often that an opportunity occurs of observing a case of actual starvation, of death from total want of food, a gradual sinking under its effects. Such a phenomenon this case presented. During more than six weeks of his residence in this hospital the patient scarcely swallowed a morsel of solid food; he certainly retained none on the stomach; during the whole of the time he was kept alive by liquids, but he gradually wasted away; his heart acted with less and less vigor, and at length, while his intellectual faculties remained unimpaired, the pulse ceased to be felt at the wrists, and he expired from asthenia and syncope conjointly. One of the morbid symptoms of starvation is unusual fulness of the gall-bladder. That symptom was here developed; the fluid in the gall-bladder reached to the very edges of the orifice, and the bile was prevented from escaping, probably only by the pressure of the diseased and hardened parts on the excretory duct of the liver. Whether in analogous cases the bile is confined by some such mechanical cause or not, has not satisfactorily been ascertained. With all this quantity of bile, and the tendency to absorption that existed, there was no appearance of jaundice.

The case of William Bedford, then, was one of cancer; but on looking at the diseased parts now before you, you will see a false appearance of cancer, arising from hypertrophy of the muscular fibres which propel the digested food through the pyloric orifice of the stomach. Like all muscles impeded in action, they have been excited to extraordinary efforts; and the increase of functional effort, according to a well known law, leads to an increase of growth.

Cancer is a very obscure disease, and one of the most important subjects for the consideration of the pathologist. Its fatality and frequent occurrence, the acute pain by which it is generally attended, and its hereditary character, combine to render it of extreme interest. But another interest attaches to it, from the obscure nature of the organic element of the disease, and from its peculiar mode of growth. Recently much light had been thrown on the subject, and it is to be hoped that still greater light is about to be thrown on it, for all pathologists looked with anxiety to the result of Mr. Kiernan's investigations, which I believe will shortly be placed before the profession. In the "Lancet," Dr. William Budd, of Bristol, has published two very interesting papers, to which I would direct your particular attention. They were published in two consecutive numbers of that journal for May last, and they are written, as everything from the pen of Dr. William Budd, extremely well. Whatever may be the causes of cancer, it appears to be clearly ascertained that, however numerous or distant from each other the parts affected by it, the infection proceeds from one original tumor. It often occurs that the disease manifests itself in different parts of the body, sometimes contemporaneously, sometimes at different periods. But all those are but branches of the same malady. Generally speaking, the internal parts are affected at a period subsequent to the appearance of the disease externally.

Dr. Budd has directed attention to the progress of cancer under some of its ordinary phases. Let us state an example: a small, hard knot is detected in the female breast, lying loose in that organ; this tumor enlarges, grows, fastens on the parts around, no longer lies loose in the cellular tissue, but contracts adhesions with the surrounding parts, spreads out its claws, as it were, like a crab (hence the name cancer), seizes on the glands of the axilla, and disseminates small tumors through the viscera. On examination after death, cancerous matter is detected in the viscera and lymphatic glands, and is frequently found in the lungs, the liver, and peritoneum. From these facts, and from the circumstance that the veins are found charged with the same cancerous matter, Dr. Budd infers (and a most important inference it is, if drawn from a sufficient number of authenticated facts) that the secondary tumors discovered in the viscera, and other parts so diseased, are derived from the first tumor—are caused by seeds from the primary or parent growth, conveyed by the blood to those localities, and form themselves new centres for the further dissemination of the complaint. Some curious results of the microscopic investigation of cancerous matter are adduced in aid of this hypothesis. The labors of Müller, who has investigated the minute anatomy of cancer by the help of the microscope show that the substance of cancerous tumors is a soft kind of pulp, held loosely together by a fibrous web. The pulpy matter presents an organised form of an extremely interesting kind, being found to be almost entirely composed of minute globular cells, containing within their cavities a vast number of very minute granules. Similar cells are found in the organisation of portions of the vegetable kingdom. Those granules are supposed to be what are called cysto-blasts, or germs of new cells, and becoming detached from their parent cells, are carried about until deposited in some place where, from their size, they are unable to pass through the smaller capillary vessels, and there they become parent cells, and engender new growths. This is a consideration of immense practical importance, as if, fully established, it would of itself demonstrate the necessity of immediate removal of the first cancerous tumor by the knife, and of its complete removal. The timely extirpation of cancerous growths is thus indispensable. In very many cases removal by the knife has proved fully successful in wholly eradicating the disease; in many cases it had not been successful. But in the latter it is inferred that the removal of the cancerous matter had not been complete—that either the operation had been deferred until the germs had been disseminated, or that the knife had not removed the whole of the diseased matter. So very minute are those germs, that it is altogether impossible to detect them unless by means of microscopic power; and Dr. Budd recommends that the cut surface should be subjected to microscopic examination, as if on that surface be found any of those cells, the clear inference is, that others have been left behind, and consequently that the removal has been incomplete. In those operations the surgeon should cut away not only enough, but what may be called more than enough.

This subject, Gentlemen, is altogether most interesting; but it requires further examination. What

the exact nature, and what the origin of those minute cells, are as yet uncertain; they may be termed a sort of hydatids. They appear, like plants, gifted with an independent vitality, possessing the power of generation, increasing and multiplying prodigiously, and capable of being conveyed to remote distances from the parent growth, without losing their character or powers; they might indeed be appropriately called a sort of parasitic animal. What is the origin of the primary or parent growth, it is, at least as yet, impossible to say. Some authors contended that cancer is infectious and contagious. Dr. Budd states that Langenbeck injected cancerous pulp from a living body into the veins of a dog; the animal after some time wasted away and died, and on examination several cancerous tumors were found in his lungs. Soot is supposed to be a cause of cancer, and one species of that disease is known as chimney-sweeper's cancer. Dr. Budd has alluded to cases of cancer of the penis in men, whose wives labored under cancer of the uterus, which would tend to establish the doctrine of its being contagious. The germs of cancer clearly possess an independent vitality, and are like parasitic animals, or a kind of fungous growth, perhaps somewhat resembling the disease known as scald head, which is now held to depend on a sort of cryptogamic plant, the *habitat* or one of the *habitats* of which is the human head. As I totally disbelieve the doctrine of spontaneous generation, I cannot yield to the suggestion that these germs originate in the body, but am of opinion that they are introduced by some yet unascertained mode. The introduction of insects into the human frame by unknown means is familiar to us all, and from all that is known I am induced to believe that cancerous matter is similarly introduced. In conclusion, I would again impress on the student the necessity of pursuing this important investigation, and again strongly recommend to him a careful perusal of the whole essay of Dr. Budd, as most interesting and instructive. Our familiar conversation on this day must now close. The portion of the intestines of Bedford, to which I wished to draw your particular attention, lie on the table for closer inspection, and from that inspection you will find the diagnosis fully verified. At our next meeting I shall address to you some observations on the modes of conducting clinical investigation, and recording its results.

COURSE
OF
LECTURES ON ORGANIC CHEMISTRY,
AS APPLIED TO
MANUFACTURES AND AGRICULTURE.

By M. PAYEN, Member of the Institute.

LECTURE II.

PRESERVATION OF WOOD.

Alterations of Wood—Chief Causes—Attacks of Insects—Mode of Detecting Albumen—Various Modes of Preservation.

GENTLEMEN,—The subject of the preservation of wood is one of the utmost importance in various points of view. The use of this material is daily becoming more necessary, while the progress of civilisation is gradually exhausting the source from which it is ob-