THE LETTSOMIAN LECTURES

BEING

PRACTICAL OBSERVATIONS ON CANCER OF THE BREAST.

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LECTURE I.

EXPERIENCE AND STATISTICS IN MEDICINE.

WHEN a man has to prepare an address the choice of a subject is generally a most difficult matter. If he has nothing of a very distinctly novel character to offer his hearers, it is probably best for him to give them his experiences on the subject with which he is most acquainted. If he has any judgment and discretion in him he may do something useful in this way, because in our profession advances are so rapid that they are apt to become bewildering. The record of a long personal experience under such circumstances may be of service as a kind of steadying medium. Moreover, these lectures, although nominally delivered to you, do really reach the majority of the medical public, and one of their prime uses is to present to that public at given periods a synoptical view of all that is known of the subjects they embrace up to the moment.

I will endeavour, then, to put into them my experiences of cancer of the breast during the past thirty-three years in which I have been engaged in surgical practice. It is true that, in the absence of statistics, experience can only produce "impressions and recollections," and the professional statistician holds all "impressions and recollections" in the greatest contempt. He holds that figures can never lie. On the other hand, it has long been painfully manifest that nothing can be more lying and delusive than statistics if not properly used. In the first place their collection must be made with the utmost accuracy, and with perfect purity of heart and calmness of mind. With medical statistics the temptation to gloss over and soften down unfavourable figures is very great, and requires that a man shall summon to his aid all his integrity. Again, when a man presents to you a vast mass of statistics, compiled at the expense of much time and labour, it is practically impossible to go over them with him, and you have no choice but to accept them. As a result many errors have been long handed down from book to book, until some disagreeable doubter has arisen who has exposed them. Finally, even when the statistics are absolutely correct, the most erroneous deductions may be drawn from them, and from the same figures two men may extract the most opposite conclusions. If anybody wants to know how statistics may be manipulated and applied, let him consult the literature of the anticontagious diseases, antivivisectionist, and antivaccinationist propaganda—all prepared by persons of the most superior virtue. Nobody wishes to deny to statistics their great value and their proper place, but one must also stand up for the value of those views which many successes and many failures have engrained on the mind of any man endowed with an average amount of good sense and judgment. If, then, a man be not a waverer blown every way by the wind of opinion, he ought, at the end of an experience extending over the life of a generation, to have come to certain firm and definite conclusions about many things; and if he proposes making these views public, he must express them in a firm and definite fashion. This necessarily exposes him to the charge of egotism and dogmatism. The former I shall endeavour to avoid as far as in me lies, but should I occasionally become dogmatic, I pray you put it down to the exigencies of the situation, compelling me as they do to give my own particular views about cancer of the breast, while freely according to every other surgeon the liberty to advocate his views and declare mine entirely wrong.

THE INCREASE OF CANCEROUS DISEASE AND ITS CAUSE.

Before coming to cancer as it specially manifests itself in the female breast, I should like to say something on certain points on the general question of malignant disease, which

legitimately forms part of our present subject. Most medical men are of opinion that the number of persons who die from cancer in proportion to the number of the population has been steadily increasing. Very voluminous statistics from the Registrar-General's returns and from the returns of deaths in individual towns and countries seem to prove this very emphatically. My own "impression," apart from any knowledge gained from statistics, is strongly to the same effect. It is true that the "impression" of a surgeon who sees a great deal of cancer must be received with care, for it is doubtless the fact that, as a man's practice increases, he may see more of certain cases than he used to do, because his friends, knowing that he is interested in them, send them to him. Thus he may come to think that the same thing is happening in the practice of everybody, and that there is a general increase in those diseases all round, whereas the increase is in reality only in his own sphere of observation. In order to protect myself from falling into this mistake, I have summoned up my recollection of the year 1861-2, when I was a dresser in the wards of Mr. Syme in the Edinburgh Royal Infirmary. Mr. Syme had a reputation then as indisputably the first surgeon in Scotland. So that I am sure my old fellow-students of the period I mention will bear me out in saying that the pick of the surgical cases in the south of Scotland were sent to him. I have a very vivid recollection of the run of cases I saw, and possess a notebook to-day containing many of them. Now, cases of cancer, although not uncommon, were rare compared with the numbers in the practice of my colleagues at the Liverpool Royal Infirmary and myself at this moment. They were objects of curiosity and interest to us students. I can only remember once seeing a case of cancer of the rectum, so that I am able quite clearly, after an interval of eight-and-thirty years, to assert that the number of cases in the wards of any one of the surgeons of the Liverpool Royal Infirmary at this day is much larger than I can remember in the wards of so distinguished a man as Mr. Syme, who drew his patients from a great area. This is more than a mere impression; this is a fact. The arguments used against the alleged increase of cancer are that it is more apparent than real, on account of the improved diagnosis of modern days producing greater accuracy in death certificates, and on account of necropsies being formerly the exception in hospital, whereas they are now the rule. In his very able article in the *Practitioner* for April, 1899, Dr. Arthur Newsholme advocates these views with much ability. On these points I will with your permission, gentlemen, once more revert to my student experience. I think it may be fairly admitted that the character of the medical teaching at any given epoch is a barometer which gives the level of the knowledge of the mass of practitioners at that same period. In 1861, Miller, Syme, Spence, and Patrick Watson were the chief surgical teachers in Edinburgh. I assert that their knowledge of surgical cancer on the surface of the body and in the ends of the intestinal tract was as accurate as that of any surgeon of the present day. Bennett, Laycock, Begbie, Gairdner, and Sanders taught medicine, and I am unable to see any notable difference between their ideas of internal cancer and their methods of diagnosing it as compared with now. If mention be made of the brain, spinal cord, and nervous system generally, then, at the time I speak of, absolutely nothing was known about them, and the improvements in the diagnosis of them can only be appreciated by one who has witnessed the change; but this is not the case with the diagnosis of cancer.

I do not like to say much about the increase in the number of necropsies at hospitals, because I cannot make a positive statement on the question beyond this, that in my student days at Edinburgh (and I imagine the same holds good of all the great London hospitals) every effort was made to secure *post-mortem* examinations when possible. One would too gladly wish that Dr. Newsholme were right, but immediately following his paper is one by Professor Roswell Bark (Buffalo), who states that in England and Wales the cancer death-rate has risen from 1 out of 5,646 of population in 1840 to 1 out of every 1,306 of population in 1890; that is to say, that in 50 years the death-rate has increased between four and five times, and he makes this astonishing statement; "A careful study of all these tables permits one to make the following startling prophecy. If for the next ten years the relative death-rates are maintained, we shall find that ten years from

now, namely, in 1909, there will be more deaths in New York State from cancer than from consumption, small-pox, and typhoid fever combined." With every wish, then, to give a good deal to the theory of better diagnosis and more numerous necropsies, I cannot bring myself to believe that they account for more than a moderate amount in the increase of cancer mortality.

LOCAL DISTRIBUTION.

Has locality anything to do with cancer? This is a matter upon which a great deal hinges, but from personal experience I cannot give any information. It is unlikely that any hospital surgeon will be able to do so, for he who has obtained any reputation for the operative treatment of cancer draws his patients from such varied sources that the question of locality as affecting them is void. On this subject information of any moment can only be obtained by collecting great masses of statistics, and even then the deductions therefrom will have to be made very cautiously and judiciously. The first attempt in this direction was made by Mr. Moore, of the Middlesex Hospital, in 1865, and to him is also due the merit of being the first who boldly drew the attention of the profession to the inefficient operations for cancer which were performed in his day. To his courageous protest is owing the modern principle of free removal. But, as we all know, Mr. Haviland's labours have been those of a lifetime, and his tables of statistics are a marvel. In 1868, to the Medical Society in this very room, he read his first paper, On the Geographical Distribution of Cancer among Females throughout England and Wales during the Decennial Period 1851-60. He found that 4.33 cases of cancer occurred in every 10,000 females, and 1.94 in every 10,000 males. Leaving untouched the decennial periods 1861-70 and 1871-80, he has investigated 1881-90. He then found 7.30 cases in 10,000 females, and 4.30 in 10,000 males—that is, 0.42 more than double among males and 1.28 less than double among females. Admitting these statistics as true, two things are clear: (1) That there has been a great general increase of cancer all round; (2) that this increase is much more marked in males than in females. The following are Mr. Haviland's "last words":

1. That the districts having the highest death-rates from cancer among females were invariably associated with seasonally-flooded areas traversed by, or in close proximity to, seasonally-flooded rivers.
2. That geologically these high-mortality districts were characterised by alluvium and subsols of clays of every variety of age and formation.
3. That the districts having the lowest death-rates from cancer were situated on elevated land, where the drainage was good and the physical features of the country such as to preclude the possibility of floods; where rivers derived their sources, and where, in fact, they were not fully formed.
4. That geologically these low mortality districts were characterised by the oldest palaeozoic rocks, especially those of the carboniferous limestone period—the liassic, oolitic, and cretaceous limestones.

Thus at the end of this brief sketch of the medical geography of cancer we find ourselves asking the same question that rose to the lips of my audience in November, 1868: How is it that limestones are always associated in England and Wales with the lowest mortality from cancer, and flooded clays with the highest? This question still remains unanswered, and will still so remain until the subject is taken up in earnest by the medical profession, for it is a field, I find after thirty years of working in it, that cannot be made to produce fruit without the toil of many labourers. When the above question is answered light will begin to fall on the cause of cancer.

It is a most refreshing thing to find this veteran statistician placing his figures at the disposal of his fellow practitioners, modestly admitting his inability to draw sure and certain conclusions from them and encouraging other workers to supplement his labours, so that some determination on a most important question may be reached.

Let us turn to Mr. W. Roger Williams's most interesting work on *Diseases of the Breast*, published in 1894, a work evincing an infinity of statistical learning. It is a model of how research by statistics should be employed, in which figures are fairly handled and deductions prudently made. Furthermore, it is a mine for all those to dig in who are interested in the question of cancer. Mr. Williams thinks there is much to be said in favour of the opinion that in this country cancer is specially prevalent in flat, low-lying, fenny districts, noting especially Cambridgeshire and the adjacent counties of Northamptonshire, Huntingdonshire, and Bedfordshire. He observes, however (taking his figures from the Registrar-General's forty-seventh report), that all low-lying and seasonally flooded districts have not a high cancer mortality. The very large area drained by the Severn and its tributaries, for instance, has throughout a low average

mortality from this disease. In fact, as we shall see presently, his view of the cause of the increased cancer mortality is very different and is not geological at all.

One would very much like to enter into the question of cancer houses, but it is, perhaps, digressing too far from my subject, which really has relation to the disease as it occurs in the breast. Mr. Haviland, Mr. D'Arcy Power, and Mr. Law Webb, of Ironbridge, in this country, as well as certain French and German surgeons, have written papers on the subject of profound interest, indeed almost terrible interest. Still more evidence, however, will have to be forthcoming to make a clear case; for the liability to fallacious deduction in such a subject is so serious that a great mass and weight of testimony in its favour will yet have to be produced.

CAUSE OF THE INCREASED CANCER DEATH-RATE.

Up to the present time, while statistics have already cleared and are at this moment rapidly clearing up many points about cancer, nothing definite has as yet been furnished by them as to the reason of its increase. That being so, there is a fair and reasonable ground for the employment of the "impressions" begotten of experience. For many years, the more I have thought over this matter the more forcibly does the idea present itself to me that it may be due to the great increase in the amount of food consumed by the people of this country during the past half-century. At all events, this view is worthy of being argued. I think it was first put into my head a long time ago by Sir James Paget. I took to him a lady with incurable cancer. He gave her some directions, and one was that she was to eat as little as possible; to try and starve herself, in fact. His long experience had taught him that to starve the body as a whole probably meant starving the cancer locally. *Per contra*, if that be a correct notion, then cancer ought to be connected with well-nourished bodies. Certain it is that the disease has not appeared to me to affect the weakling, the tea-shriveled, mummy-like old maid, or the ill-fed, more than half-starved drunkard who never has any money to spend on good food. Its most numerous victims are well-nourished persons, with plenty of beef and fat about them, and often with a fine, healthy colour in their cheeks. In summing up the many operations I have done for cancer of the tongue, my recollection of the patients is for the most part of biggish, powerful men, with large, strong jaws which were hard to saw through when sawing had to be done. The better the nutrition and the younger the patient, the more deadly and rapidly growing is the cancer. Take what is termed a fine, "buxom" woman of 30 or 35, with cancer of the breast, and her chance of permanent cure, even by the most extensive of operations, is almost *nil*. It is true that cancer is uncommon in the young during the period of development of the body and of the functional activity of organs, so that in one sense it is a disease of "degeneration;" but this has nothing to do with the good nourishment and muscular development of the body in middle life.

Being assured in one's own mind that well-nourished, well-developed, healthy people are the most numerous victims of cancer, the question at once arises, Is the increase of cancer in any way synchronous with an increase of nutrient material—that is, of food—throughout the country, and are people in consequence better nourished? There cannot be a doubt of it. Ever since the passing of the Corn Laws bread has been cheap and plentiful, while during the last twenty years the importation of animal food from other countries has been enormous. The increased wages and emoluments of all classes in this country have enabled them to purchase freely of the best there is to be had in the whole world of things to eat and drink. Our working classes fare admirably. Our better classes eat infinitely too much, especially of animal food partaken of at breakfast, lunch, and dinner. But for the athletic tendency of the age and the general passion for games and exercises which pervades all classes, this over-stuffing must have proved very dangerous. I am pretty well convinced that, when a man is over 45, excess in food is perhaps worse for him than excess in drink.

Apparently one of the results of too much nourishing food is the production of a widely-spread, second-rate kind of gout of a different type from the acute and furious attacks produced in former days by the copious drinking of beer and port wine. Moreover, I think distinctly that it has also to

do with the production of the cancerous diathesis. This is also the opinion of Mr. Roger Williams, who, while admitting Mr. Haviland's topographical statistics, cannot agree with him in his geological views, but inclines to think that cancer areas are also the areas where the people are best nourished.

The stock answer to what may be called the over-nutrition theory is that vegetarians and rice eaters are just as subject to cancer as gross feeders and flesh eaters, and this statement goes on being very steadily repeated from one book to another. I am not prepared to admit this. Cancer is not so rife in Ireland, where feeding has been poor and very largely of a vegetable character, and where improvement in the living of the people has not proceeded *pari passu* with that in England. The Registrar-General's report for the decade 1881-90 shows that in 1881 in England 1 death in 36 was due to cancer, and in Ireland 1 in 47, while in 1890, in England there was 1 in 28 and in Ireland 1 in 40. Ireland, therefore, does not rise to the level of England. Mr. Roger Williams has a most interesting chapter of facts in this connection. He tells that Billings of the United States showed that among the whites there were 2 cases to 1 among the blacks. From what can be learnt of the whole continent of Africa, that vast country enjoys a remarkable immunity from the disease, especially the Egyptian area and the northern parts. At the Cape cancer is common among the whites, but very rare among the natives. All through the tropics the disease is distinctly rare. In India the general opinion is that it is not common, and that when it does occur neither the rice eaters nor the meat eaters are exempt. It is true that certain surgeons (McLeod, Hendley, and Lawrie notably) hold the opposite opinion, but I notice that their experiences are drawn from hospital work almost entirely, and refer chiefly to the number of operations occurring in large hospitals. This seems hardly a sound argument. All that it proves is that a number of cases of cancer come into large hospitals, and consequently that in a huge country there must be many cases of cancer. But if statistics are to be of any avail, the proportion of cases to the actual population is absolutely necessary to make any fair deduction. It is like the death-rate from snakebite. To an Englishman who never sees such a thing, the sum total of these seems appalling. It is not till one takes the proportion to the astounding population of India that the insignificance of the loss of life becomes apparent. If there were no knowledge of the exact population of Lancashire, and if a person were to walk round the wards of the Liverpool Royal Infirmary and estimate the cancer mortality of the country from the number of cases found in these wards, his view of the prevalence of the disease would be a most alarming one.

At this moment the Massachusetts State Board of Health is instituting an inquiry into this question. Its circular states that every year there is an increase in the reports to the State of the number of deaths from cancer, even when allowance is made for age and greater population. By some it is alleged that this is due to an increase of the disease itself, by others that better diagnosis and more careful registration will account for it. Furthermore the infectious nature of this disease, caused by a possible parasite, and its contagiousness, have been strongly urged.

I believe that the great general increase of cancer is for the most part admitted, and that Dr. Newsholme's idea that it is not a real, but only an apparent, increase, due to better knowledge and more accurate registration of the disease, is entirely erroneous; but even were we to admit his views, it would not account for the fact that during the past thirty years the comparative cancer mortality of the sexes has altered in a most singular manner, so that whereas the disease was formerly more prevalent among females, it has now become more prevalent among males, and is becoming increasingly so.

Now do drunken habits account for more cancer? I am certain that confirmed drunkards are not more liable to it than other people; besides, drunken habits are rather diminishing than increasing. Does syphilis account for it? I have never been able to trace any connection between that disease and cancer whatever. It is true that leukoplakial bald patches and specific surface ulcers of the tongue and mouth are places where epithelial cancers arise, but they do so, not in virtue of any special syphilitic taint, but just as they arise from irritation of any kind, as from a sharp-edged tooth. Mr. Williams, out of 165 female breast cancer patients,

did not find a single one of immoral character. Do bad water, bad housing, and bad sanitary arrangements account for it? This is impossible, for in nothing have we improved so much as in improved sanitation, in improved water supply, drainage, housing, and clothing. Will increased nervous tension from our rapid existence, due to the development of steam and electricity, account for it? It would seem reasonable to suppose this likely to produce all sorts of nervous trouble and arterial or cardiac degenerations, but not cancer. Is it due to the fact that there is a great saving in the early periods of life, and that more people live into what may be called the cancerous age? The Registrar-General's statistics show that the number of persons of 25 years of age and upwards, out of every million living persons was just the same in the decade 1881-90 as in the decade 1871-80. There has, therefore, been no increase in the proportion of persons who live into the cancerous age.

What great change, then, has taken place in the national life? Richer and more abundant food. You will note particularly that it is the male who eats the heavy food in ever-increasing quantities; while the female remains much as before in her eating, and note along with this that it is men now who suffer most severely from cancer and not women as formerly. Again, in all England the most tainted places are London, the Thames Valley, and the counties adjoining the metropolis, where the most luxurious habits and the best living prevail, and it has been pointed out, that even in the capital itself, the parts where those in easy, comfortable circumstances live, who are supplied with more than the necessities of life abide, show the highest mortality. It is curious to note that amongst the very highest mortality rates for occupations are those which include commercial travellers, coachmen and grooms, merchant seamen, maltsters, brewers, innkeepers, butchers and plumbers. Most of these certainly are persons likely to eat and drink abundantly, and not take too much exercise; persons who live well and do not work off their spare products. Singularly enough doctors figure low in the list. In conclusion, let me quote Mr. Moore's statement, made many years ago, that "cancer is eminently a disease of persons whose previous life has been healthy, and whose nutritive vigour gives them otherwise a prospect of long life."

THE PARAMOUNT IMPORTANCE OF EARLY DIAGNOSIS.

As one goes on seeing case after case with gentlemen in general practice, one gets to find out that, even with the highest standard of modern education, a great many errors are still being committed by doctors in the matter of the early diagnosis of mammary cancer. Now, seeing that in the matter of its cure we have nothing but free removal to fall back upon, the smaller the amount of disease the better the chance of cure. Early diagnosis is, therefore, of paramount importance. If this can only be steadily crammed into the minds of students and practitioners, a remarkable increase in the number of permanently successful operations will ere long result. This is the real line of improvement at the present moment, not in devising extravagant operations for cases that are past praying for. It is true that in the very early stages of a mammary cancer a certain and positive diagnosis cannot be made, even by the most skilled and experienced surgeon. Nobody, however, expects that of the general practitioner. But I have found that when the patient comes and shows her doctor a small lump in the breast, if it does not seem anything very formidable he is unwilling to frighten her, talks vaguely about a "swollen gland," and generally is apt rather to make light of the matter. There is a phrase I know well which must have cost a great many people their lives, "If it doesn't bother you, don't bother it." It is a most destructive axiom. Then the patient goes home, the lump grows and she sees it growing, but she buries her head in the sand, and repeats to herself that the doctor did not attach any importance to it and so nothing can be going wrong. In due time she becomes terrified and repairs to the doctor. There is a distressing scene, and then they repair to the surgeon, who says he thinks he can get the disease out but he is not sure.

Now, what I would implore my brethren in general practice to do is to cease regarding any lump in the breast, however small, as harmless or unworthy of the utmost attention. No man can tell what is going to become of a small

lump in the breast. All strangulated herniæ are now operated upon without delay if they will not go back; so all lumps in the breast ought to be cut out if they will not speedily disappear. As to frightening the patient, there is no necessity for alarming her; but, even if it were so, how much better that she should get a needless fright in the beginning than be ultimately terrified by the dreadful intimation that her doom is sealed, and that a brief period of agony is all of life that is left to her! My advice to a general practitioner would be that, when a patient comes to him with the smallest lump in the breast, he should at once send her to a surgeon. If she be a poor person, he will surely have a surgical friend who will see her gratuitously for him. If an absolutely certain diagnosis cannot be made on the moment, the point is to get the patient to visit the doctor month by month to let him see what is happening to the lump. It seems hardly credible, but on several occasions I have seen a patient in consultation with her own medical man about an early mammary swelling. It has been impossible just then to give a certain opinion about it; treatment has been suggested, and a strong recommendation made that the swelling should be carefully watched. And yet, after a year or more has elapsed, they have so muddled up matters between them that the patient has been brought back with a pronounced cancer. This is a statement of fact and not an ideal picture. We have just been considering various conditions relating to cancer upon which have been brought to bear ingenious speculations, supported by statistical researches involving years and years of labour. All these researches are not of the faintest consequence (considering the nature of the solitary method of treating cancer of the breast which we possess), compared with efficient early recognition of the disease. Every effort should be made by teachers to inculcate the doctrine of early recognition upon students for, if there is a hopeful day to come for the sufferers from cancer of the breast, it will be when women have been taught by the medical profession to present themselves on the slightest symptom of anything being found wrong with the mammary gland. Too often at present they hug their distressing secret, and only part with it when it cannot be concealed; and small wonder it is, when one reflects that the present generation are still under the influence of the distressing tales told them by their mothers about the horrors of cancers of the breast, and the terrible and useless operations performed for its relief. I hope my medical brethren will forgive my speaking in this very forcible manner about what appears to be a very simple thing. It is a very simple thing, but, simple as it is, it is the real secret of the future of the operative surgery of cancer, and we are not getting what we ought out of it.

Let me not be supposed to reproach my profession with ignorance (for I trust I can recognise the many mistakes I have made myself), but to expect omniscience from the general practitioner is absurd. I consider that the range and extent of his knowledge is astonishing, but the early diagnosis of many mammary enlargements will defy the most experienced surgeon. It is only by the early co-operation of the two that the patient's chances can be saved to her; were I a younger man I would not dare to say this.

CONSTITUTION AND HEREDITY.

One of the terrible mistakes of former days, which gave cancer the character of being even more hopeless than it is, was the idea that it was purely a constitutional disease. To remove it in one place was useless, for it would just break out in another. Now the modern scientific inquirer, whose first consideration is too often to sweep contemptuously aside all that his predecessors have excothetized, asserts that there is nothing constitutional whatever about cancer; that it is a purely local disease, and that it is certainly an infective one. It seems odd why there should be any difficulty about the question. It is a long time since Laycock first described the diathetic tendencies of the body, and how they influenced all the illnesses which attacked that body on its way through life and often so modified them that they were almost unrecognisable, so changed were they from their usual types. Paget used to draw our attention very vividly to the remarkable way in which the gouty diathesis affected surgical disease. We know, nevertheless, that it does not necessarily

follow that, because a man has a diathetic tendency, it need ever become obviously manifest. He may go through a long life and never show it until some *contretemps* brings it to the surface. An old friend of mine, whose male relatives to a man were all full of gout, lived to over 70 without a trace of it. He drank champagne and port most days, but he was small and thin and a passionate sportsman, so that he staved off the gout by great physical exercise. But at last one day he fell off his shooting pony and hurt his ribs. While lying in bed recovering from the injury he had a serious attack of gout in the foot. For the next two or three years of his life it never left him, and it killed him with acute cerebral trouble at the last. If in place of "gout" we were to put "cancer" into this little case there would be really no difference. But that cancer should in some way be set agoing in a particular spot of a perfectly healthy man's body by the process of infection and should then produce a constitutional state—apart from mere spreading by lymphatic channels—is with our present knowledge difficult to realise. If you were to take a fine, wholesome, clean-blooded man, the descendant of a race who had for generations been free from all morbid diathesis and put tubercle into him, you could not make it spread. It would die out locally. It requires a distempered constitution, like a sour, impoverished soil, to give the appropriate pabulum for pathological weeds, which seed and spread through it and ruin it. We know now how the tubercle weed gets sown. The cancer weed may yet be caught and bottled too. When we think what an absolute revolution has taken place in our views about tuberculous disease, we must not despair about cancer. It is a curious thing, however, to remember that while the North Italian peasants regarded phthisis with the greatest dread as an infectious disease, scientific medical men were the very persons who scouted the idea. Long-continued experiences are worth something after all.

As to heredity, it behoves us to be very careful how much importance we are to give to this in a difficult case of diagnosis of a breast tumour, where side issues have to be taken into account. By the public without doubt too much value has been always attached to it. The patient consoles herself with the belief that hers cannot be a cancerous tumour because nobody in the family was ever known to have such a thing. Unfortunately we can only put the matter in this way: While the want of history of a cancerous tendency inherited from her progenitors is no proof that the patient's disease is not cancer, the existence of it among several near relations is distinct evidence in the direction that it is so. There have been attempts made on certain abstruse developmental grounds to overthrow the possibility of the hereditability of acquired (diseased) variations, notably by the philosophic teaching of Weismann, but nothing has come of them. A great deal of philosophic froth has been beaten up and much learned verbiage has been poured about, but I have never seen abstract philosophy do much in disease. Our knowledge—our most useful knowledge—has been gained empirically; and so patient collectors of facts have told appalling histories of whole families who have died from cancer and have disseminated it among their descendants, which are now so numerous and well authenticated as to leave no doubt in the mind of any surgeon (not a philosopher) as to the existence of heredity, and what we have to do is to attach to it its appropriate value clinically, and by no means to consider that the absence of heredity is proof of non-malignancy in a tumour. It is true that, as a general rule, cancer in a family seems very erratic in its visitations, and appears to jump over a generation, but we may take a simple view of the question thus as explaining these irregularities. What figures seem to show is that the inherited infectivity of cancer is not strong, and dies out most likely at the end of a couple of generations. In the midst of a family among whom cancer was never known, a healthy man develops (catches?) cancer, and throws the gloomy pall of hereditary diathesis over his children and grandchildren. A son shows it, but his children escape, and his niece—the originator's grandchild—shows it. The rest escape because the match has not been applied to the tinder, just like my friend who escaped hereditary gout till he met with an accident towards the end of a long life which set it ablaze in him. It is impossible to resist coming again and again to ask What is the match? Meantime, until a very clear answer is given to this, I see no

occasion for throwing overboard what knowledge we already possess.

Dr. Roswell Park, in his chapter on the frequency and nature of cancer in the *Practitioner*, already alluded to, writes as follows:

Next, with regard to the actual nature of this disease. First of all, it is possible to sweep aside, with one or two possible exceptions, everything that has been brought forward until recent years as an explanation of this disease. The old theories of irritation, of perverted nerve centres, of heredity, etc., cannot for a moment stand in view of the searching scientific methods of to-day. We have gotten as far as this at present, that we know that cells act as they do in producing the disease either as the result of some external or of some internal stimulus. The exact character of this stimulus is not yet certainly demonstrated, though things point more and more towards its parasitic—that is, its potent living—influence.

To the first part of this statement I entirely demur, because I am so old-fashioned as not to have got far enough to sweep aside all that experience has accumulated until I have something to put in its place. With regard to the second part, it seems to involve on the part of Dr. Park what an old Scotch judge called “a plain perception of the obvious.” What we all want to know is: What is the match? and there is no certain answer to that as yet.

TRAUMATISM.

We are all very prone to produce some distinct reason why a disease should have come to us. That it should come spontaneously is a stigma upon the soundness of the constitution, and so we wish to find out a cause. But the natural liveliness of the female imagination makes it very difficult to apportion with anything like accuracy the exact amount of credence to be placed in their statements. I must say that I have never been able to make out that milk abscesses or the scars of incision for them have ever been the starting points of cancer; and, curiously enough, although the patients have mentioned the existence of these things, I do not remember having heard them distinctly and directly attribute their growths to them. After all, if cancer ever develop in inflammatory products, it is in those of a very chronic and not in those of an acute nature. I never heard, furthermore, any statements from the patients that pressure from corsets or that irritation of the nipple by suckling had produced their complaints. On the other hand I have very often heard most clear and circumstantial histories narrated, in which blows were asserted to have been the primal cause of the trouble. It has been held as an argument against the effect of traumatism that men are very much more liable to blows on the breast than women, and most rarely have breast cancer. I very much doubt this. Take a number of men at 50, and an equal number of matronly, full-bosomed women of the same age, and it stands to reason that the latter will get more knocks on the mammae than the men. Moreover, they are always in the way of getting knocks from young children or from articles of furniture, such as cribs and bedposts, among which they are always working. Besides, what is a man's breast after all? A little mass of fibrous tissue with some rudimentary gland stuff in it, whose small size would save it from many blows which a big, soft, vascular female breast must encounter. Moreover, it is contended that if blows caused mammary cancer, the lesions would be multiple, but this just shows how things appear differently to different people, for I do not suppose that if a woman gets an injury to her breast, she gets it in the form of a series of thumps all round, so as to produce multiple cancers. I have received very succinct accounts from intelligent women of blows from pieces of furniture or kicks from young children, in which there was pain immediately afterwards sufficiently severe to fix the exact place in the breast in the memory. Then the pain has gone away, and they have almost forgotten the circumstance, until some day a lump is found at the old site of injury. Were the allegation true that the injury directs the woman's attention to a tumour which is lying concealed in her breast already, then she would discover it at once on receipt of the injury, but this is not the history of these cases. The history is that of an interval, after which the lump comes painlessly. Many of the patients whose histories I have ascertained were far too intelligent to have invented the story after finding the lump.

Mr. Roger Williams says that in examining the cases of 137 women 1 out of 4 made statements as to previous traumata. I should hardly have thought so many would have done so,

for, supposing we put one half of them out of count at once as imaginary, it would leave 1 case in 8 in which there was not improbably some truth in the patient's statements. After the way in which the vulgar but rooted belief in the infectiousness of phthisis of the Italian peasant has, in the light of modern discovery, triumphed over the contemptuous disbelief of the whole world of medicine, I am not disposed to abandon all belief in the statements of women, whom we will even admit to be anxious to find a cause for their malady. Constant repetition from different sources strengthens even a weak tale, provided the evidence be steadily in the same direction. I have investigated these stories too often not to feel that, stripped of all exaggeration, there is a distinct element of truth in them. Remember I do not make any attempt to assert that cancers of traumatic origin are at all frequent, but I believe in the possibility and, indeed, in the strong probability of their occurrence. I cannot see anything irreconcilable with our pathological knowledge in the idea of a blow leaving behind it a certain limited area of chronic inflammation in which the gland epithelium should begin to grow and then burst its bounds, just as I am certain it does in chronic mastitis. Dr. Roswell Park says: “The supposed intimate relation which injury bears to cancer is of no more importance than that upon which the clinicians and even the pathologists used to place so much stress in tuberculosis. There are still those who claim that the predisposing cause of most tuberculous joint diseases is previous injury of some character, and there are still those who look for a similar mechanical cause of cancer in virtually every case.” I am not one of those who look for a mechanical cause of cancer in virtually every case, but I venture to say that there is no practising surgeon in this country who has much to do with joint disease who does not recognise the immense importance of wrenches, blows, and sprains in the production of the early inflammatory changes in and about joints, which ultimately end in what is known as articular tuberculous disease. I was educated in exactly the opposite view—namely, that the tales which mothers told about injuries to their children's joints were all nonsense, and I was forced out of this belief by the irresistible arguments of experience.

One feels the more inclined to this view from the knowledge that acute traumatic malignancy is a well-recognised disease. Scattered throughout the medical journals are so many cases of its occurrence that no possible doubt can be entertained about its existence. In the *BRITISH MEDICAL JOURNAL* for 1882 are two short but very interesting papers on the subject by Messrs. Barwell and Harrison Cripps, also a third by my friend Mr. Puzey, of Liverpool, detailing in a most interesting manner the history of a man who was struck over the sternum, and in whom there was developed at the spot a sarcoma. It is true that, in all the cases I have read about, sarcomata and not carcinomata supervened, and therefore the disease is rightly named “acute.” But if injury will, so to speak, on the spot start into existence the swift-growing tumour of the connective tissue, why should it not at a longer interval give rise to the slow-growing tumour of glandular lining epithelium?

SYPHILIS IN FINLAND.—Almost all cases of syphilis in Finland are treated within hospitals. Treatment is free, and the community has power to compel any suspected individual to be medically examined. It is quite an exception, however, when the examination is not voluntary. Hence the extent and intensity of venereal diseases can be mapped out for each town, province, and year. From a vast amount of statistical matter, Leontjeff (*Finska Läkare-handlingar*, p. 1, 1900) concludes that in a twenty years' period (1877-97) syphilis in Finland has much diminished, but gonorrhoea has increased. In males the prevailing age has been 20 to 50 years; in females 10 to 20 years. In towns the frequency was three times more than in the country. To 5 cases of condylomata there was only one of gumma. A marked increase occurred in 1891-5. Smaller augmentations occurred in 1879 and 1883—the intensity affecting males in one and females in the other outbreak. Since 1895 the number of cases has much diminished. Congenital syphilis gradually became less frequent, and in later years both adult and hereditary forms were of much milder type. Possibly both the isolation and the treatment played their part in this result.