exercised, and if, instead of a ball, a metal ring fitted with steel springs be used, this also could be carried about, and the fingers could then be exercised quietly in the coat pockets while walking about town or in trams, etc., as well as having the regular exercises before and after business hours.

In stammering we must give the patient regular exercises of his speech muscles quietly by himself, as Demosthenes is reported to have done, under surroundings different from those which are apt to induce the spasm. In other cases, such as those of spasms of the laryngeal muscles, where exercises are less available, it may be necessary to resort to hypnotic suggestion in order to break the habit, but I have not yet seen such a case myself, and, on general principles, I should not resort to hypnotism unless I had failed to devise curative measures of a less dangerous kind.

In all these cases a careful study of the morbid habit acquired will give us the clue as to the best way of counteracting that habit, and so curing, or, at all events, greatly relieving, our patient.

THE EDUCATIONAL ASPECT OF THE CANCER QUESTION.

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THOUGH all attempts to elucidate the origin of cancer have hitherto ended in disappointment, yet it cannot be contended that effort, whether clinical, pathological, experimental, or, lastly, surgical, has, during the last quarter of a century, been barren of result. It has been devoid, it is true, of any discovery startling enough to arrest the attention of either the medical profession or the public. It has been one of plodding—we may say almost unconscious—progress, and it is only by a retrospect of the past and a contrast with the present that it becomes manifest that a gap exists between our views of cancer and our means of combating this terrible disease then and now. In cancer of the breast, for instance, Sir Benjamin Brodie, after an operative trial of some 600 cases, came to the conclusion that life was rather shortened than prolonged by surgical procedure, and decided never to remove another breast for cancer without explaining to the patient his experience of its results. Benedikt of Breslau, during the last seventeen years of his career as a surgeon, gave up operating in this disease altogether. Sir James Paget, in his *Lectures on Surgical Pathology*, writes:

I will not say that such a thing as cure is impossible, but it is so highly improbable that a hope of this occurring in any single instance cannot be reasonably entertained.

Like statements pervade the writings of all surgeons of the last century, and, wherever are recorded their experiences, the same universal note of despondency is apparent. Cancer of the tongue was removed by methods which in the light of modern knowledge were hopelessly inadequate attempts to eradicate it, and was invariably followed by rapid recurrence. In cancer of the uterus the most that was undertaken was a scraping or cauterizing of the foul and ulcerating surface. Cancer of the stomach and intestine was inoperable.

Melancholy enough as is the picture in our treatment of cancer at the present time, it must be admitted that it forms a forcible contrast with that just portrayed. Cure in a certain proportion of cases in all regions of the body where it occurs, in the sense that the patient lives on from year to year and oftentimes reaches the normal span of life without any manifestation of recurrence; and a considerably greater prolongation of life than formerly in a certain other large proportion of cases constitute the improvement in the prospect of the present sufferer from cancer, if he applies in time to render surgical interference at all hopeful. Again, while formerly, owing to its invariable recurrence after removal, the weight of professional opinion pronounced the disease to be primarily a blood dyscrasia, of which the tumour was the local manifestation, few are not now convinced that, however the soil may be prepared in the individual, the disease itself is primarily a local one. All recent evidence—clinical, microscopical, and experimental—points to this conclusion, and it seems to be verified in practice by its non-recurrence after local

removal in a certain proportion of cases. The paths of its embolic lymphatic dissemination have in many regions been accurately defined, and in the breast its lymphatic permeation along the planes of the deep fascia has been recently conclusively demonstrated. On clinical grounds there is ample reason for the supposition that in other regions a similar insidious centrifugal spread occurs. Improved microscopes and improved microscopists have shed light on its distinctive microscopical characters, and are able to furnish a more accurate and earlier diagnosis. Clinical determination, on which formerly chief reliance was placed, by signs which are now known to be those of advanced and usually hopeless cancer, has been superseded by expert microscopical examination. There is no longer any reasonable argument in favour of saturating a patient having a suspicious ulcer on the tongue for weeks with iodide of potassium, to see whether it will disappear, because he happens to give a history of previous syphilis. It is not necessary to labour examples further. Wherever we turn, it is manifest that, in all departments of research into this disease as well as in the science of its treatment, there has been advance, though falling short of the grand discovery of its cause, and indicating thereby the lines on which we should seek its prevention or cure.

In so far as concerns the subject matter of this paper, our present knowledge, it would seem, justifies us in making the following categorical statements in reference to cancer:

1. That for all practical purposes it is a disease confined to the last half of life.
2. That, while not denying there may be unknown hereditary or acquired constitutional conditions favourable to its existence and growth, the development of the disease is primarily local.
3. That its further development consists in an insidious centrifugal spread from its original local site, both by lymphatic permeation and by embolism along the channels of lymph and blood vessels.
4. That usually this centrifugal extension takes place early in the disease, but that this factor is inconstant for different varieties of cancer as well as for individual cases of the same variety.
5. That early cancer has no symptoms.
6. That early cancer has no clinical signs or naked-eye appearances by which it can certainly be distinguished.
7. That the symptoms and clinical signs usually recognized as characteristic of cancer, such, for instance, as pain, wasting, fixity, lymphatic enlargement, etc., are those of advanced cancer only, and are worthless from the point of the essential condition of its successful treatment, early diagnosis.
8. That the microscopical finding is the only reliable means of diagnosis.
9. That in a certain proportion of cases the disease does not recur after removal by modern methods, and that in those in which it does recur there is generally a longer period of immunity than formerly.
10. That such freedom from recurrence is presumably due to the local operation having been successful in eradicating every cancer cell, or, in default of this, that the natural powers of the patient are capable of destroying any which have escaped removal.
11. That recurrences are due to failure in eradicating every cancer cell, and that the natural powers of the patient are insufficient to deal with those which have been left behind; in other words, that every recurrence is owing to omission on the part of the surgeon to overtake the centrifugally-spreading disease.

If the truth of the above statements be admitted—and they do not, I think, go further than we are reasonably warranted in doing—the possible means of improvement in the treatment of cancer, within the limits of our present knowledge of it, are only two. It is certain, in the first place, that its paths of extension will be still more accurately defined, as has recently been done by Cheate in cancer of the tongue and Handley in cancer of the breast. But it is evident that not much further progress in dealing surgically with cancer will accrue from this source, and for the following reason: It has already been largely discounted by the wide local removals which constitute the radical operation, having for their object the reaching into healthy tissues in every direction beyond the disease, irrespective of our know-

ledge of the exact paths of its spread. The scope of these operations is not capable of much modification or extension. In cancer of the breast, for instance, a wide excision of skin fascia and muscle in every direction from the primary growth, and a complete dissection of the axilla, and the removal of its contents in one piece with the breast, coupled with that of the fat and lymphatics in the supraclavicular fossa, are, from anatomical reasons, about as far as we can go. The extensive excisions of the tongue and the contents of the neck, and of the whole uterus with its adnexa, as well as the cellular tissue and glands of the pelvis, constitute a practical limit to our efforts in dealing with cancer in these regions. The conclusion, therefore, is that, though possibly we may attain some minor modifications in point of accuracy, these operations must remain substantially as they are—our means for the eradication of the disease in question. If, however, we direct our attention along a different line in our endeavours to better the results in the operative treatment of cancer, the possibilities of improvement are enormous. It is not my intention to burden this paper with figures such as every surgeon can readily supply from his own records. I propose merely to submit in the briefest terms, as illustrative of the point for which I am contending, a few examples of the interval which usually exists between the first appearance of the signs of cancer and the operation for its attempted eradication. All of the cases here submitted were considered operable, and were actually operated upon. The word "operable" is used in the sense in which it is interpreted by most surgeons in dealing with cancer, that is, it appeared possible to remove the disease locally, and there were no signs of distant metastatic invasion.

(a) Cancer of the Breast.

An analysis of the histories of twenty-five consecutive cases of cancer of the female breast, on which I have recently operated, gives the following result. Six had noticed swellings in their breasts for periods ranging from two and a half to five years. They eventually came into my hands because the swellings were found to be rapidly enlarging, or because some other symptom, for example, pain, discharge from the nipple, oedema of the arm, etc., had intruded itself on the patient's attention. Whether the subjects of these very long histories had actually suffered from carcinoma from the beginning, or whether the disease had supervened on some precancerous condition, it is impossible to say. In the averages given below the most favourable interpretation is placed upon them. They are calculated to have had cancer for only such time as one of the later symptoms had been evident. For instance, one patient had been cognizant of a hard lump in her breast for three years; previously stationary, in the last three months it had doubled its size. The duration of her cancer is reckoned as three months, though it was almost certainly much longer, possibly three years. The delay is therefore reduced to a minimum; it is exhibited in the most favourable light. Reckoning on this basis, the average duration of delay between the patient first noticing the disquieting sign and the submission to operation was eight months five days.

(b) Cancer of the Tongue and Floor of the Mouth.

In a consecutive series of 19 cases of epithelioma in this region in my own practice the average delay works out at five months five days.

(c) Cancer of the Cervix Uteri.

In a consecutive series of 51 cases of cancer of the cervix which were operated upon (most of them at St. Mary's Hospital, Manchester) and information with regard to which was kindly supplied to me by Dr. de Ville Mather, of Owens College, Manchester, the average delay between the patient first noticing a deviation from the normal menstrual discharge (usually irregular bleeding) and submission to operation was eight months. In conclusion I submit the figures of Winter of Königsberg, as they may not be familiar to English readers. He analysed a very large number of cases of uterine cancer, 1,062 in all. It is not stated what percentage of these were operable. The patients, after noticing a deviation from the normal menstrual function, had waited before seeking surgical advice—

Longer than 1 month.	Longer than 2 months.	Longer than 3 months.	Longer than 6 months.	Longer than 9 months.	Longer than 1 year.	Total.
135	319	283	118	126	81	1062

Commenting on this table, Winter aptly remarks: "If the operation is too late the fault lies with the patient, not with the cancer." Figures such as these are not exceptional. They could be published from the case records of any operating surgeon. They indicate—what, indeed, is common knowledge—how real a part delay plays in the rôle of this disease, and furnish a direct measure of the possibilities of improvement in its operative treatment. So long as early eradication remains our only possible means of curing cancer, it is a truism to say that along the line of elimination of delay our chief hopes of improvement lie. Education, both medical and lay, furnishes the key to the problem. Valuable as are the advances in our knowledge of the paths of dissemination of cancer, they must go hand in hand with education, if they are to lead to tangible results. It is useless to define the paths of its centrifugal spread, and to practise scientific methods for its eradication so long as most patients, when they present themselves for surgical treatment, have delayed till the disease has extended beyond the circle of possible local removal. The majority of cases are inoperable at all, or inoperable from the point of view of cure, when they first come into the hands of the surgeon, and they will remain so in spite of any advances in operative technique, till delay, the *fons et origo mali*, is seriously dealt with. Looking now to the ways and means of improvement in this direction, delays may be divided into two classes, each contributing its share to the result: (a) That for which the medical practitioner is responsible; (b) that for which the patient is responsible. In the first class various causes are at work, most of them easily remediable. They may, I think, be fairly stated thus:

1. An attachment to antiquated teaching, which indeed appears even in modern surgical textbooks, leading the practitioner to look for and to wait for typical clinical signs of cancer, which are in reality those of the advanced and usually hopeless stage, instead of the universal recognition of the fact that the microscope can furnish the diagnosis long before any of these manifest themselves. In the descriptions of cancer in textbooks the disease should be divided into two distinct stages—first, the early and hopeful stage, in which the only suspicious sign is the age of the patient, and the only reliable sign the microscopical finding; and, secondly, the late and usually hopeless stage, the signs of which are the ordinary textbook ones, such as pain, wasting, fixity of growth, adhesion to skin, lymphatic enlargement, *et hoc genus omne inutile*.

2. An unwillingness on the part of the practitioner to frighten his patient, and possibly earn the reputation of being an alarmist. He is, therefore, tempted to allay his patient's fears, to wait and watch. He sees him in a fortnight; he is just as uncertain as at the first visit. A month is wasted. Still the clinical signs he is waiting for to make him certain are absent. Further delay is invoked, and it may be many months before he dare hint the word "cancer." All the while the insidious lymphatic permeation and embolic dissemination has been steadily going on, and when he feels sure enough of his ground to make a definite pronouncement the opportunity of cure has long since slipped away. Now, however natural the dislike of alarming the patient may be, obviously it should not, in the light of our conviction of the only possible method of curing cancer, have any weight at all. If it is possible to cure cancer—as it is possible, should it be radically removed early enough—then to let the opportunity escape for such a paltry reason as dislike of alarming the patient is nothing less than criminal. It is, like the last, an attachment to antiquated notions. When cancer was always incurable, the practice of postponing the death sentence on the patient as long as possible was defensible. I recollect my old friend and teacher, the late Mr. Henry Smith, saying to me twenty years ago, "I never use the word 'cancer' to my patient." This was sound advice then. It is equally unsound now. Viewing the question from the least altruistic point, if a mistake is to be made, how

much better to make it, even for our own reputation's sake, on the side of suspecting and boldly facing the possibility of cancer when it is not present, than of pooch-pooching the possibility when it is. The former is an error at all events on the right side; the latter not only means almost certain death to the patient, but it will ere long involve a serious reflection on the practitioner, when the public becomes alive—as it inevitably must become alive—to the possibility of cure in early cancer. It will then be generally recognized that a medical man who watches a cancer for weeks or months has been guilty of a grave dereliction of duty to his patient, and he will thereby damage his reputation to a far greater degree than he would have done by calling attention to its possibility early, even though his fears should prove unfounded, and he may have occasioned an unnecessary alarm. The days are passing away among educated communities when the medical man is credited with omniscience, and the omission of the announcement of the nature of his patient's illness is ascribed to an unwillingness on his part to alarm him or the family. The public is coming to a shrewd suspicion that possibly he did not know. A frank avowal of the impossibility of knowing will seldom find the patient unreasonable or unsympathetic. Any stick to beat the doctor with is, on the other hand, only too readily seized should an error be subsequently detected.

3. An adherence to the practice of giving potassium iodide in doubtful cases. This most frequently occurs in cancer of the mouth. The grafting of cancer on syphilis in this region is well recognized. Iodide of potassium is likely to produce, and does produce, apparent improvement. There is inducement to persist in the treatment for many weeks. When later it is manifest that the case is one of cancer, the uncomfortable reflection arises that the microscope could have revealed its presence from the very first.

Having passed in review the causes of delay, after the patient has consulted the doctor, attention may be riveted on the points which should come uppermost in the practitioner's mind when a patient consults him with symptoms referable to a region where cancer primarily occurs.

1. The possibility of cure in early cancer.
2. The age of the patient. If he be in the latter half of life, the disease which it is all-important to exclude or confirm is cancer.
3. The dismissing from his mind of all the generally recognized clinical signs of cancer, which are those of the advanced stage of the disease only.
4. The determination in any case of doubt to put frankly before the patient the possibility of cancer, and the urgent necessity of clearing up the doubt without delay. From the patient's point of view this is obviously the only safe course, and from that of the medical attendant it is to be commended, for it relieves him from the outset of a great responsibility.
5. The method of clearing up the doubt by expert microscopical examination which should be recognized as the only reliable means, and should supersede every other in the determination of cancer. In its practical application, this fortunately presents no difficulty in the majority of instances. Take the disease in its most common situations—the skin, external orifices of the body, mouth, cervix uteri, breast, and intestinal tract. In the first four, the removal of a fragment for microscopical examination does not involve any operative procedure worthy the name, and should form the essential part of the routine examination in every case of possible cancer in these situations. In the case of the breast, so large a majority of the tumours occurring in the last half of life are carcinoma, and the difficulties in diagnosis in some instances are so great that the rule of advising the immediate removal of every breast tumour after 35 years of age should be universal, however innocent it appears from its clinical signs. I do not think that the *pros* and *cons* of cancer should be considered at all. A tumour is present. It should be removed. Operations in this region are nowadays so entirely devoid of danger that operative risks which were rightly put in the scale a quarter of a century ago during the consideration of any operation have no weight at all; and objections to removing a tumour of the breast, which if left behind might cause no

harm, have disappeared. Added to this the possibility of the occurrence of malignant disease as a sequel to some innocent condition cannot be ignored, and the relief to the patient's mind from the assurance that can be given her after the operation that the disease was not cancer is well worth the sacrifice of the tumour. It need hardly be insisted that the surgeon should obtain the patient's consent to act according to the finding in operating in this region on a doubtful case. In five out of six, therefore, of the most usual situations of cancer the course which will lead to its certain detection if present, without delay, is clear. In the case of the intestinal tract (excluding the rectum) the difficulties are, I fear, at present insuperable. A careful investigation into the case will have been made, including an examination of the vomit and faeces, and of the abdomen and rectum, under an anaesthetic, for a tumour. These may be negative, and yet suspicion may point to carcinoma. There remains the exploratory laparotomy. Though undoubtedly defensible from a surgical standpoint, inasmuch as it involves very little risk, and is the only method we possess for the further elucidation of a suspected cancer in this region; yet it will not usually appeal to the patient, and the medical man cannot help feeling the weakness of his position when putting the suggestion before him. Some people may be reasonable enough to submit to it, but the majority do not see the force of being cut open to see whether there is anything serious inside them. The doctor is supposed to know that. Still, as it is the only course open, it should be frankly placed before the patient and the onus of the decision be left to him. The medical attendant is comforted by the reflection that a suggestion which, under the circumstances, is surgically sound has been made to the patient, and that he has been relieved of a load of responsibility should his fears prove well founded. At the same time, should the patient consent to it and the exploration prove negative, the practitioner will not derive much kudos from having advised it. Such a suggestion had better perhaps come from a consultant, one of whose numerous privileges is to bear the responsibility of unpleasant and dubious situations.

From the foregoing considerations it is evident that, in the usual situations of cancer, if the knowledge of the fallaciousness of its early signs were fully recognized and acted upon, and if the means at our disposal for its early detection were universally adopted, there should be no such thing as delay emanating from the medical man—unless the patient go contrary to the advice tendered him, and this is only likely to occur in those cases of suspected cancer in the stomach or intestine, where the diagnosis cannot be arrived at without an exploratory laparotomy.

Turning our attention next to the delay for which the patient is responsible—that which occurs prior to his seeking medical advice—the causes of this are not far to seek. Just as the delay emanating from the medical man has been shown to be due to an attachment to old watchwords, that in question has its origin in similar conservatism. Formerly cancer was invariably a fatal disease; this is the light in which the public still regard it. Though probably every modern operating surgeon could produce individual cases of cure from his own practice—that is, cases in which many years had elapsed without any sign of recurrence after removal, which, after all, whether this can scientifically be called a cure or not, is the blissful state in which the patient desires to find himself—these bear such an infinitesimal proportion to the total number of fatal cases that there is no convincing evidence before the public of the possibility of cure. The ordinary sequence of events, the long and painful illness terminating, either without or in spite of operation, eventually in death, naturally determines the public verdict on cancer. If a sufferer here and there lives on without recurrence after operation, such solitary evidence of the possibility of cure is swallowed up in the sea of fatal cases. It is soon forgotten, and teaches no lesson. Consequently dread of the confirmation of what the public regards as an inevitably fatal disease generally keeps the unfortunate sufferer away from the doctor, until he is driven—as eventually, of course, he is driven *volens nolens*—to seek advice. In addition, he knows that operation will almost certainly be the offer made him, and that without the guarantee of cure; whereas there

ever looms before his vision the seductive stock-in-trade of the advertising quack, which invariably contains a certain cure without the knife. The medical man, therefore, becomes in a large number of cases the *dernier ressort* of the cancer-stricken patient. The circle is maintained in all its viciousness, ignorance of the possibility of cure and of the conditions governing it and fear of receiving a sentence of death, leading to procrastination, which itself is the cause of the impossibility of cure. In addition, the early manifestations of cancer are apparently so harmless that the sufferer has every inducement to believe what he hopes, and what his friends, if he consults them, are sure to tell him: that his ailment must be a trivial one.

These are the chief causes of delay among educated people who know something of cancer and its common situations. Among the poorer and less educated classes unadulterated ignorance plays the greater share. They do not commonly regard anything which causes no pain or feeling of illness as of any consequence whatever, and these symptoms are conspicuous by their absence in early cancer. The everyday reply of the poor at hospital, with advanced cancer of the breast, uterus, and even tongue, to the question, "Why did you not apply sooner?" is, "As I felt well and suffered no pain, I did not think it could be anything serious," "I thought it was only a cold," or something equally absurd. It is manifest that such a state of affairs can only be dealt with by improved education, and by this is understood not an attempt to make of the public amateur doctors, judges of their own complaints and of their own symptoms, but a dissemination of knowledge in the following two particulars: first, in that of the possibility of cure in early cancer; and, secondly, in that of the fact that early cancer produces no symptoms of pain or ill-health, and that in the latter half of life any deviation from normal health in certain organs—to wit, the mouth, digestive tract, uterus, and breast, must carry with it the determination to immediately exclude or confirm cancer, if the patient means to make a bid for his life. It is very little to know. In the case of other diseases, such, for instance, as typhoid fever, tubercle, etc., plain facts, requiring no medical training, have become common property, and are acted upon to their advantage by the educated public. There does not seem to be any *a priori* reason why similar and just as simple knowledge should not be disseminated with regard to cancer. In my recent book, *The Control of a Scourge; or, How Cancer is Curable*, I have endeavoured to instil into the public mind in regard to this disease a view more hopeful and more consonant with the generally accepted opinion among modern surgeons of the possibility of cure in early cancer than exists to-day; and I have adduced evidence to show that this opinion has a convincing foundation in actual practice. I have indicated there some of the lines on which education in this matter might, in my opinion, be put a step further. The general practitioner, who is constantly in touch with the public, has the largest opportunity of helping education forward, and he should lose no occasion of impressing upon his patients the cause of the generally fatal character of cancerous disease, and of the possibility of securing vastly better results in its treatment than do actually obtain at the present time. Then it is obvious that medical and surgical nurses might easily be equipped with the knowledge of these elementary facts about cancer. They are almost as ignorant as lay women. Not only have I witnessed the experience of nurses themselves applying with advanced and inoperable cancer, but conversations with them in hospital have demonstrated that they regard cancer as inevitably fatal. This is not to be wondered at when we consider the numbers they see who perish of it in our hospital wards, and that those in whom the disease does not recur after removal escape their subsequent cognizance. Owing to its sites of election in women, nurses are no doubt frequently consulted by their own sex about early cancer, when from readily intelligible motives the patient hesitates to approach a medical man. It is essential, therefore, that their knowledge should be accurate, and the necessary information could be easily imparted to them by including in their syllabus of lectures one on the elementary facts of this disease. Midwives might be similarly instructed. They are brought daily into close contact with the ignorant classes, the most difficult of all to

get at, and they no doubt are consulted frequently on matters outside their immediate calling, amongst others on early cancer. Their information, therefore, should also be accurate, and in like manner there would be no difficulty in including in their repertoire a little elementary knowledge of cancer. We might reasonably go even a step further in our endeavours to lighten the load of cancer mortality. Lectures might easily be provided for clergymen, clergymen's wives, district visitors, and those generally who are constantly in touch with the poor and ignorant classes on this subject as well as on others in which the possession of accurate knowledge would furnish the means of rendering valuable assistance in the saving of human life. Such lectures have long been in vogue to provide for surgical emergencies where skilled assistance is not immediately to hand. We might anticipate far more tangible results from a similar spread of information in regard to those diseases in which ignorance of the most elementary facts leads to disastrous and irremediable consequences. Among such none plays a more conspicuous part than cancer. The above are some of the means whereby might be substituted sound knowledge for the despair and ignorance which hold the public in their grip, and it cannot be questioned that there would result an appreciable control of the ravages of this deadly disease. Until education has been tapped our present means, and at present our only means, of dealing with cancer have not been exhausted. In conclusion, it may be safely asserted that the early recognition of cancer will not be a matter of indifference whenever, if ever, the cause of this disease is discovered and methods more scientific than eradication by the knife are found for dealing with it; for it is not to be supposed that whatever means the future may have in store for combating this disease, it will be a matter of no importance whether, for instance, a woman suffering from cancer of the breast presents herself for treatment when the disease is early and limited or when she is the victim of its later stages, with secondary deposits in the thorax and liver. At all events, there are abundant reasons now for an endeavour to bring the lay knowledge of cancer into line with present surgical views of it, and to convince the public that a considerable share in the possibility of cure rests with them, and that it varies inversely with the delay in seeking advice.

A CASE THAT SEEMS TO SUGGEST A CLUE TO THE POSSIBLE SOLUTION OF THE CANCER PROBLEM.*

By CHARLES GORDON MACKAY, M.B., C.M.

THERE can be little doubt that occasionally a true cancerous tumour comes to a pause in its growth, when it seems in fact to have lost its power of further attack on healthy tissue, and then a cure, more or less complete, is said to have taken place. When this has happened it is reasonable to suppose that some agent must have been at work either as aiding the body tissues in their resistance to attack or acting in antagonism to the cancer cell and so diminishing its invasive vigour. If there be such an active agent, what is it? Is there possibly elaborated in the body of the patient a something which can act in this way and so effect a spontaneous cure? A case has been recently under my care which seems to suggest an answer to this question.

Miss X. Y., aged 37, had a typical mammary scirrhus in the autumn of 1904. I first saw the case early in October and diagnosed carcinoma. Some weeks later the case was seen by my friend Dr. Bruce, Dingwall, who was of the same opinion. She immediately went to Edinburgh and entered the Deaconess Hospital, where the tumour was removed by Mr. Alexis Thomson. Thirteen months after the disease recurred and in such a form as to render a second operation inadmissible and x-ray treatment was recommended and used for some time. The other breast became involved, a troublesome cough came on, and later pleurisy, first in one side and then in the other.

Since this paper was read I have received, by the kindness of Mr. Thomson, a copy of the hospital report, from which I have extracted the following:

* Read to the Northern Counties of Scotland Branch on March 1st, 1907.