

## URGENCY OF THE PROBLEM.

With all care, and with every precaution, the premature infant will often fail to survive birth. This is very specially the case when the prematurity is due to some active or chronic malady of the mother, or to a disease or deformity of the infant himself. The ideal management of the premature infant is, of course, prevention; and, no doubt, much is possible in this direction. But even if we could banish syphilis and alcoholism and lead poisoning, and the many other causes of the premature ending of pregnancy, there would still remain the infants born as a result of the therapeutic induction of premature labour. If this obstetric operation, which has always been a favourite in British practice, is to hold its own against symphysiotomy and the Caesarean section, it is essential that the infantile mortality and morbidity be greatly reduced. The problem of the premature infant is on this account a very real and a very pressing one. Further, the steady fall in the birth-rate in the British Isles as well as in some foreign countries and in our own colonies, has, so to say, caused an appreciation in the value, economic as well as sentimental, of the premature infant. When it is borne in mind that in England and Wales in 1871 the birth-rate was nearly 35 per 1,000 (34.7 was the exact figure), that it had fallen to 29.3 in 1899, to 28.9 in 1900, and that it was as low as 28.5 in 1901, it is evident that there is a pressing need to conserve the lives of the infants that are actually born, even although they are prematurely born. It may not be possible exactly to define their value to the State and the community, but manifestly it is greater now than it was when the birth-rate was 35 per 1,000. The problem of the premature infant is urgent.

AN ANALYSIS OF FORTY-SIX CASES OF  
CANCER OF THE BREAST WHICH HAVE BEEN  
OPERATED UPON AND SURVIVED THE  
OPERATION FROM 5 TO 32 YEARS,

WITH REMARKS UPON THE TREATMENT OF RECURRENT GROWTHS,  
INCLUDING THE DISEASE OF THE SECOND BREAST,  
OPERATIVE AND OTHERWISE,\*

By THOMAS BRYANT, M.Ch., F.R.C.S.,  
Consulting Surgeon to Guy's Hospital.

THE paper I ask your attention to this evening should be regarded as a sequel to a communication made by Mr. Marmaduke Sheild on January 25th, 1898, to this Society, when I had the honour to occupy the presidential chair; as it was from the interesting collection of facts which he had gathered from varied sources and analysed that I was led to search my own notebooks and to extract from them such material as might throw some light upon (1) the prospects of life after primary operations for cancer of the breast; (2) the question of recurrence of the disease at the seat of the primary operation and second breast; and (3) the nature and effects of operation upon the progress of the disease.

It must, however, be steadily borne in mind by the readers of this paper, that the cases tabulated include only such examples of cancer of the breast as have been under my care and have been operated upon, and have survived the primary operation five years and upwards; for I have always felt that the three years' freedom from recurrent disease after a primary operation, which has been so dogmatically laid down as a significant indication of a cure of cancerous disease, was not only unreliable but misleading.

In my book on *Diseases of the Breast*, published in 1887, I satisfactorily showed (page 152) the inaccuracy of such a view, and pointed out that if, after the primary operation for cancer of the breast, 40 patients out of 60 there tabulated died within this three years' limit, there were at least 20 patients who had survived the primary operation from five to ten years, for 4 of these 20 instances lived for eight or nine years, and 6 for ten years.

In the tables I now bring before you, many instances of much longer survival after the primary operation will be found recorded, and likewise many instances of recurrence of

disease after prolonged periods of immunity which are very striking.

## Group I.

This includes 17 cases of cancer of the breast relieved by operation which are now alive, or have died without evidence of recurrent disease, five or more years after operation; 4 have died, and 13 are living and in good health. Of the 4 which died—

Case 15 died from an accident, aged 62, five years after the primary operation.

Case 16 from old age, aged 80, twenty years after operation.

Case 14 from acute jaundice, aged 63, fourteen years after operation; and

Case 13 from intestinal obstruction due to gall stones, aged 70, thirteen years after operation. In both of these cases a necropsy was performed, and no evidence of recurrent disease was found.

Of the 13 cases which are now alive, 1 has remained free from recurrence for five years, 1 for six years, 3 for eight years, 3 for nine years, 2 for ten years, 2 for fourteen years, and 1 for sixteen years. Taking the whole group of 17 cases together, there was an absence of any evidence of recurrent disease from five to ten years after the primary operation in 9 cases, and from ten to 20 years in 8 cases, 13 of these patients being now alive and apparently well.

I should like here to say that the operation I now do, and have done for many years, is neither the one I was originally taught and have seen practised by my senior colleagues—which was certainly inadequate—where lymphatic glands were rarely removed, or anything more than the diseased breast itself, with the skin covering it when involved; nor is it the more modern operation known as "Halsted's," and made public in 1894, but which should be known as "Moore's" or Banks's, who advocated the principle of free removal in 1882, not only of the diseased breast with the fat and skin over it in every case, but also of the pectoral muscle, fascia, and lymphoid tissue from the axillary vessels, and which is now known as the complete or adequate operation. My operation is something between the two, but nearer the latter than the former, and I hold with the results before me that it is a complete and adequate measure under the most favourable conditions.

## The Operation Adopted.

My routine operation is to remove the whole gland that is diseased with the skin and fat over the diseased area; when the axillary glands are enlarged to dissect out the axilla and subpectoral spaces, and in every case, for examination purposes, to cut into the axilla, and to take away glands or lymphoid tissue which appears to be suspicious, but otherwise not to dissect it out, my incision into the axilla skirting the axillary border of the pectoral muscle. I invariably drain the wound through the axilla for the first two or three days.

The pectoral muscle I dissect clean, but do not remove it, although should disease be found to have invaded the muscle, the diseased muscle must be freely taken away. I regard the removal of the muscle as a routine measure to be unnecessary, and the facts I now bring before you tend to support this view, for I am more impressed by accumulating experience that successful results in operations for cancer are more certainly to be secured by an early operation than by "performing tremendous operations upon practically hopeless cases."<sup>1</sup>

I may say at once that it was from the careful study of Moore's memorable paper on Inadequate Operations on Cancer, published in 1867 in the fiftieth volume of the *Transactions* of this Society, that I was led to deviate from the practice I had been taught, and to follow, as far as I thought right, in the lines of Moore's suggestions, which have been, without question, the basis of all recent operative procedures.

In more recent times the principle of free removal of cancerous disease has been well brought before the profession by Sir W. Mitchell Banks in papers of great importance published in 1877, 1882, and 1900 in the *BRITISH MEDICAL JOURNAL*, and it is to him more than to any other writer that Moore's views have become established.

What I regard as a point of more importance than so-called complete or adequate operations is early interference, and in my sanguine hours I have imagined, with Sir Mitchell Banks, what the results would be if all cancers were thoroughly

\* Read before the Royal Medical and Chirurgical Society.

excised when they were no bigger than peas, or, as I would prefer to say, when the disease is in its very early stage.

Indeed, I am fairly sure that it has been from my acting upon this principle that I am enabled to bring before you today the satisfactory results of treatment which my tables indicate, for in Group I, in which there are 17 cases tabulated, the disease was in most of them in an early stage of development when submitted to operation. The disease appeared, when I first saw the cases, as a lump in the breast without skin implication or lymphatic glandular enlargement, and in which the question arose as to the lump being due either to the presence of a cyst or early cancerous infiltration, for at this stage of the tumour's growth the question could only be settled by an exploratory incision.

Under such circumstances an exploratory incision was made into the lump, and when cancer was recognized the gland was removed. Under these circumstances the good results which have been recorded are to be explained, and they are certainly satisfactory. They are, moreover, what I expected they would be when I operated, for in 1900 I wrote a paper for a sister Society<sup>2</sup> on Cysts of the Breast: their Relation, Frequency, Diagnosis, and Treatment, and in composing it I analysed 242 consecutive cases of breast disease, as they had recently appeared before me in private practice; 163 of these cases were registered as solid tumours or examples of cancer or sarcoma, and 67 as cases of cystic disease.

Of these 163 diagnosed as solid tumours, 126 were operated upon, and out of the 67 examples of cyst disease 44 were operated upon, the percentage of cyst disease to cancerous disease being 25 to 74; the conclusion becoming clear that out of every four cases of breast disease, more or less simulating cancer, one will prove to be an example of cyst disease.

I went, however, much further, and was able to show that if we eliminate from our consideration all such examples of cancerous tumours of the breast as are so well marked as to forbid an error in diagnosis being made, and apply our argument to those alone in which there is only a lump in the breast gland without any collateral symptoms to support a diagnosis of cancer, it would not be wrong to conclude that in every two cases of this kind one will be cystic and the other cancerous.

In these cases of early cancer an exploratory operation was undertaken, and when the tumour was found to be cancerous the gland was removed by the mode of operation I have described, the operation having been undertaken at the period of the tumour's growth, after which the most favourable result might be expected. In all of these the axilla was explored, but not dissected, the incision I adopt allowing the finger to explore the subpectoral spaces.

In all of these cases the whole gland was removed with the fat over it and integument. In all of these the pectoral muscle was well cleaned, but not removed. In a few of these only were enlarged lymphatic glands found. In all of those early cases microscopic evidence was sought and found to correspond with that which the naked-eye appearances had suggested. In fact, in the majority of the cases of this group, as well as in many in Group II, the same remarks are applicable. The disease in all was palpably cancer, and the success recorded is due to its complete and early removal.

#### Group II.

This group includes 19 cases of cancer of the breast relieved by operation, and followed by recurrence in the seat of the primary operation.

In 3 of the cases (Nos. 12, 17, 18) recurrence took place in the scar of the primary operation, and a second operation was performed one year after the primary; 2 of these 3 cases were well and in good health four years later, and in the third case ten years later.

In 9 cases recurrence occurred from three to seven years after the primary operation. In 3 of these no second operation was called for.

In one of the 3 cases (Case 4) the recurrent disease appeared as tubercles in the flaps three years after the primary operation, and spread slowly for nine years, when bladder disease appeared. In another (Case 1) the recurrence showed itself as a sternal growth six years after operation. In the third case (No. 2) chest symptoms appeared seven years after operation.

In the 6 other cases second operations were undertaken three, three, four, five, five, and seven years respectively after the primary. In one (19), three years after the first operation, a tumour was removed from the axilla, and the patient died six years later from lung disease, aged 65, having survived the first operation nine years. In Case 14, where a second operation was called for three years after the first, the patient was well six years later. In Case 15, where an interval of four years had passed between the first and second operation, the patient was well six years later. In a fourth case (6), where a second operation was called for five years after the first, a recurrence took place after a second five years, when chest symptoms appeared. In the fifth case (13), where a second operation was performed five years after the first, and a third small one two years after the second, the patient was active and in good health twelve years after the first operation and five after the last. In the sixth case (16), where a second operation in the scar was performed seven years after the first operation, the patient was well in all ways five years later, or twelve years after the breast was removed.

Of the 7 other cases of this section of the group the intervals between the first operation and a recurrence were from ten to thirty years.

In Case 10 a woman aged 52 was operated upon, and had no recurrence for ten years, when it appeared in the scar, and as the local disease gave her no pain and was of slow growth it was left alone.

In Case 8, where a woman of 50 was operated upon, a recurrence took place eleven years afterwards, when a second operation was performed upon the scar, and she was well two years later.

In Case 3 a woman, aged 60, had been operated upon, and a recurrence was suggested twelve years later by abdominal symptoms.

In Case 7, a woman, aged 30, a recurrence of disease in the flaps took place thirteen years after the primary operation. A second operation and small third were performed, and one year after the last she was well.

In Case 5 the woman, when 38, had her breast removed for cancer; twenty-five years later she had a recurrence in the skin over the seat of operation, which spread, but she was alive five years later.

In Case 9, where a woman, aged 46, was operated upon, no return took place for thirty-one years, when it appeared as a sternal growth, and five years later this patient was 82 and in good health.

In Case 11 the patient had been operated upon when 46 years of age, and 32 years later, when 78 years of age, she had a recurrence upon the sternum, but was otherwise well.

#### Group III.

This group includes 10 cases of recurrent disease after operation in which the second breast was involved, and 4 cases in which the breast disease was associated with cancer of other parts of the body.

In 4 of the 10 cases (Nos. 22, 24, 26, 29) the second breast was attacked about two years after the first had been removed. In 1 (No. 27) of the 6 other cases the second breast became diseased three years after the primary operation. In 2 others (25 and 28) ten years elapsed before the recurrence appeared, and in the 2 other cases (Nos. 21 and 23) the interval between the primary operation and the appearance of the disease in the second breast was respectively twenty-three and twenty-four years, the recurrent disease having in both these cases involved at the same time the scar of the first operation, this fact suggesting to the sceptical mind the truth of the view that the primary disease had been cancerous.

In 4 of these 10 cases the second breast was not removed, the local disease having been extensive and inoperable. In Case 21 the patient was 67 years of age, in Case 23 80 years of age, in Case 29 48 years of age, and in Case 27 only 38 years of age.

In the remaining 6 cases the second breast was removed. In 1 (20) no signs of return were to be traced six years later; in Case 24 no signs of return existed five years later; in Case 26 the patient was well two years later, and in Case 28 three years later. In Case 25 there was no recent history.

The four remaining cases in Group III have been added as cases of interest, but they do not form any part of my tables.

In Case 30 a woman, aged 60, had her breast removed for cancer, and came under care fourteen years later, when 74 years of age, for cancer of her hand, which was treated by amputation.

In Case 31 a patient who was treated for epithelioma of the nose at the age of 68 with success, returned for treatment five years later, when 73 years of age, with an acute cancerous affection of her breast, lymphatics, and skin, which was inoperable.

In Case 32 a woman, who came under treatment when 72 years of age with atrophic breast cancer of twenty years' standing, reappeared six years later with an epithelial cancer of her nose.

The last case (33) is one in which an annular cancerous stricture of the rectum coexisted with an extensive cancerous affection of the left breast of four years' growth.

I regard these cases as illustrative of coincidences in the history of cancer, and record them as such.

I propose now, in order to make the questions respecting these Groups II and III of recurrent cases clearer, to analyse them further, and to subdivide them into tables to show:

First, the length of the interval that existed between the first operation and the recurrence of the disease.

Secondly, as to the seat of the recurrence.  
And thirdly, as to the duration of life after operative interference.

TABLE I, GROUP II.—Duration, including Eight Cases of Recurrence not Requiring Operation.

No. of Case in Group II.	Length of Interval between First Operation and Recurrence.	Age of Patient at Time of Recurrence.	Seat of Recurrence.	Subsequent History.
4	3 years	55	About scar	Spread slowly for 9 years, when bladder symptoms appeared. In good health.
1	6 years	56	Sternum	—
2	7 years	61	About scar; chest symptoms	—
10	10 years	62	About scar	Very slow growth.
3	12 years	72	Abdominal symptoms	—
5	25 years	63	In scar	Atrophic cancer, alive 5 years later.
9	31 years	77	Sternum	Alive 5 years later, aged 82.
11	32 years	78	Sternum	In good health.

In this group of 8 cases 5 had survived the primary operation from six to thirty-six years, 1 had died from lung disease nine years after operation, 1 was evidently suffering from bladder disease twelve years after operation, and a third sinking with chest disease ten years after operation—all, it may be assumed, of a cancerous nature, the 8 cases having respectively survived the first operation six, nine, ten, ten, twelve, thirty, thirty-two, and thirty-six years, and 5 of these having apparently some years of life before them.

TABLE II, GROUP II.—Including 11 Cases of Recurrence with Second and Third Operation.

No.	Interval between First and Second Operation.	Age.	Seat of Return.	History.
12	1 year	51	In scar	10 years later well.
17	1 year	42	In scar	4 years later well.
18	1 year	48	In scar	4 years later well.
19	3 years	60	In axilla and scar	5 years later died of lung disease, 9 years after first operation.
14	3 years	55	In scar	6 years later well, or 9 years after first operation.
15	4 years	56	In scar	Third operation 2 years later; 6 years later was well, or 12 years after first operation.
6	5 years	52	In scar	5 years later another recurrence, with chest symptoms, 10 years after first operation.
13	5 years	42	In scar	Also third operation, after which was well 5 years later, or 12 years after first operation.
16	7 years	57	In scar	5 years later well.
8	10 years	61	In scar	2 years later well.
7	13 years	43	Also third operation in scar	1 year later well.

In this group of eleven cases—  
Two had lived five years after the primary operation, and were in good health four years after a second operation. One had lived eleven years after the primary operation, and one was well ten years after the second. One had lived nine years after the first operation, and was well six years after the second. One had lived twelve years after the first operation, and was in good health five years after the second. A second had survived the first operation twelve years, and was well two years after the second. A third had survived the first operation twelve years, a second and a third operation, and six years later had no signs of return. One survived the first operation fourteen years, and was well one year after the third. One case had survived the first operation seven years, had endured a second three years after the first, and four years later died from chest symptoms. One case had no signs

of recurrence for twelve years, when, at the age of 72, symptoms appeared suggestive of abdominal disease. One case had lived twelve years after the first operation, and, five years after the second, had some suspicious chest symptoms.

In three of the eleven cases death had taken place or was near at hand seven, twelve, and twelve years respectively after the primary operation. And in eight others there was every prospect of continuous health five, five, nine, eleven, twelve, twelve, twelve, and fourteen years respectively after the breast had been originally removed.

GROUP III.—Seat of Recurrence, including Ten Cases in which the Second Breast became involved in the Disease.

Case.	Interval between First Operation and Recurrence.	Operation.	History.
22	2 years	Yes, aged 55	1 year later recurrence in scar of last operation.
24	2 years	Yes, aged 57	5 years after second operation in good health.
26	2 years	Yes, aged 52	5 years after second operation in good health.
29	2 years	No, aged 50	Open cancer of scar of first operation, with disease of second breast.
27	3 years	No, aged 37	Open cancer of scar of first operation, with disease of second breast.
20	4 years	Yes, aged 54	6 years later no signs of recurrence.
28	10 years	Yes, aged 48	Breast and glands removed; 3 years later well.
25	10 years	Yes, aged 50	Did well after operation, but no recent report.
21	24 years	No, aged 66	Open cancer of second breast.
23	23 years	No, aged 80	Open cancer of original scar and second breast.

In 5 of these cases no second operation was performed, as in all of them an open cancerous ulcer existed, and it was evident that the sands of life's hourglass had nearly run out. In these cases, two, two, three, twenty-three, and twenty-four years respectively had passed before a recurrence of the disease had appeared, and the patients were, when seen with the disease of the second breast, 37, 50, 55, 66, and 80 years of age.

In the second 5 cases the second breast was removed. In 2 of these the interval between the removal of the first breast and the recurrence of the disease in the second breast was two years, and both patients, who were at the second operation 52 and 57 years of age, were well and free from disease five years later.

In Case 20, where the interval between the first operation and the recurrence in the second breast was four years, and the patient was aged 54, there were no signs of recurrence six years later.

In Case 28, where the interval of recurrence was ten years, and the second operation was performed when the patient was 48, the breast and enlarged axillary glands being cleared away, there were no signs of a return of the disease three years later; and

In Case 25, where the same period of ten years had passed before the second breast was removed, when the patient was 50, a good recovery followed the operation, but there is no later history.

Taking the 10 cases, however, as a whole, it appears that whilst in 3 instances where recurrence took place in the second breast within three years of the operation upon the first, surgical interference could do but little, as in 2 other cases where the subjects were 66 and 80 years of age.

It must be recorded that in 2 others where recurrence took place in less than three years, the patients respectively being 52 and 57 years, there were no indications of recurrence when last seen five years subsequently, or eight years after the primary operation. In Case 20, where the second breast was removed four years after the first, the patient was well six years later, or ten years after the primary operation; and in Case 28, where the interval between the removal of the first breast and the second was ten years, the patient was known to be well three years later, or thirteen years after the first operation.

#### Conclusions.

If we look at these tables as a whole it will be evident that

the interval which may take place between the primary amputation of a breast for cancer and its recurrence in the scar or second breast, when such occurs, is most uncertain. That whilst in half the cases tabulated recurrence took place in five years or less, in the second half the interval before recurrence appeared varied from six to thirty-two years; and that in at least two-thirds of these cases it occurred after ten years; and also that when second or third operations were undertaken the prospects of life were not bad (Table II, Group II and Group III).

With respect to the seat of the recurrence, it seems that such appeared in or about the scar of the original operation in 14 cases; in the scar and axilla in only one case; in the sternum in 3 cases; in the second breast in 10 cases, and in 5 of this 10 the scar of the first operation was likewise involved.

I would here ask the surgeons who advocate the clearing out of the axilla of all lymphoid tissue as a rule of practice in every case to consider the fact given above; in only 1 case was the axilla cleared out in an operation for a recurrent affection, and, as already described, it is not my custom to clear it out in all; and yet these results do not suggest an inadequate operation.

I bring this paper before the profession with no little pleasure, for it shows that operations for cancer of the breast, when undertaken at an early period of the disease, are not so unsatisfactory in their ultimate results as we have been led to believe. To have been able to tabulate in Group I 17 cases of operation without evidence of recurrence in 9 cases from five to ten years, and in 8 cases from ten to twenty years after the primary operation, and to add that 13 out of these 17 cases are now alive and well, with probably some years of enjoyable life before them, is somewhat startling.

To add to these conclusions the assurance that should recurrence of disease appear after the primary operation, the prospects of prolonged life without second or third operations, as shown in Table I, Group II, are neither unreasonable nor unsatisfactory; for only 2 of the 8 cases so tabulated had survived the first operation less than ten years, and 6 had survived from ten to thirty-six years, and 5 of these had apparently some years of life before them.

To show, moreover, as in Table II, Group II, when recurrence of disease takes place and has been treated by second or third operations much benefit may be conferred, is likewise encouraging, for the study of this table which I ask you to make will suggest that second, and even third, operations undertaken as soon as recurrences appear are often followed by fairly long periods of enjoyable life, for in five or six of the cases tabulated the patients were well and in good health five or six years after these operations.

Where the second breast has become involved a like principle of practice is also suggested. In 4 out of the 10 cases tabulated no operation was justifiable, but in 6 cases the second breast was removed, and in 4 of these cases there were no indications of recurrent disease five years, six years, two years, and three years respectively; so that it may fairly be said that operations on the second breast are not only justifiable, but conducive to prolonged life. For my own part, I am so much more satisfied with the results of my own practice since I have put together the materials embodied in the paper I have just read, and brought out the results of its analysis, that I do not feel disposed to deviate from it in any great degree unless the advocates of what I must describe as an over-zealous practice can prove to me that I am wrong and that they are right by the publication of material facts better than those I have now recorded.

By way of summary I should like to express my conviction that the results of operations for cancer, whether of the breast or elsewhere, would be much better than they now are if they could always be undertaken during the early development of the disease, as illustrated by the majority of the cases in my tables—Groups I and II; that every breast tumour, neither clearly inflammatory nor encapsuled, which seems to involve gland tissue, and may therefore be cancerous, should be at once explored and removed, if found to be cancerous, with the whole gland; and that recurrent growths when localized should be similarly treated.

In advanced and neglected cases, where the lymphatic glands and covering integument are involved, Moore's, Banks's, Halsted's, or Gould's so-called complete operation may be called

for, but its results are not by any means so likely to be as favourable as those I have reported. Lastly, in cases of recurrence not favourable for operation, unless the removal of the ovaries can be shown in the future to be successful, the x rays should be employed, for the benefit which has been derived by this treatment when judiciously applied by men of understanding has, in my own experience, been so successful as to raise hopes which I hardly like fully to express, and at the same time seems to be free from danger or serious consequences when utilized by those who know the dangers of penetrating rays carelessly employed, and the difficulties with which the practice bristles. I must, however, add that the influence of the rays, to make them effective, must be maintained for several months after it has seemed to be beneficial; a three-months course, with about three applications a week, appears to be the shortest from which any permanent good is to be expected, and this treatment is full of hope.

## REFERENCES.

- <sup>1</sup> BRITISH MEDICAL JOURNAL, JANUARY 4th, 1902, p. 9. <sup>2</sup> *Transactions*, Medical Society of London, vol. xxiii; *Lancet*, April 28th, 1900.

### A NOTE ON THE OPERATION FOR REMOVAL OF MALIGNANT DISEASE OF THE BREAST.

By DOUGLAS DREW, B.S., M.D., F.R.C.S.ENG.,  
Surgeon to the Hospital for Women, Soho, and to the North-Eastern Hospital for Children.

MUCH has been written on this subject, but still considerable differences in practice appear to exist among surgeons who are in the habit of performing what has been termed the "complete operation" for removal of malignant disease of the breast.

While some authorities are strongly opposed to the removal of more than the fascia, with perhaps a thin layer of the fibres of the pectoralis major—on account, it is urged, of the subsequent impairment of the movements of the arm—others recommend that the sternal portion of the muscle should in all cases be removed, while they carefully preserve the pectoralis minor, or occasionally divide the latter muscle in order to more fully expose the axilla. Others, again, make a practice of removing both pectorals with the breast as a routine procedure. It is to the removal of the pectoralis minor that I wish to draw attention.

If it be considered necessary to remove the sternal portion of the pectoralis major (and this, I believe, is the practice most general at the present time) a great advantage is gained by removing with it the whole of the pectoralis minor; by so doing the operation becomes more thorough in that the clearing of the axilla from the clavicle downwards is greatly facilitated. Other advantages of the procedure may also be mentioned: (1) At all times it is difficult to close the wound owing to the extensive removal of the skin; this is rendered considerably easier in the absence of the pectorals. (2) When the pectoralis minor is left, the lower border of it is apt to form a prominent cord of indurated tissue which overhangs the axilla, and this at times is a cause of considerable discomfort to the patient.

During the last two years I have in almost all cases removed the sternal portion of the pectoralis major, and in the more recent cases it has been my practice to remove both pectoral muscles, but it is too early at present to note what improvement there is in immunity from recurrence.

The chief disadvantage that can be urged against it is that it renders an already extensive operation more extensive, but this is more than compensated for by the shortening of the time occupied in clearing the axilla, for instead of working in a limited space, the whole of it is laid open, and the fat and fascia cleared from the axillary vessels with greater precision and rapidity.

From the point of view of the subsequent movements of the arm, the pectoralis minor has practically no influence, owing to its insertion into the coracoid process, so that in this connexion there does not appear to be any reason for preserving it; and, for the same reason, the division of it and subsequent suture has little to recommend it.

It is important to inquire what the after-condition of these patients is when both pectorals have been removed. I have