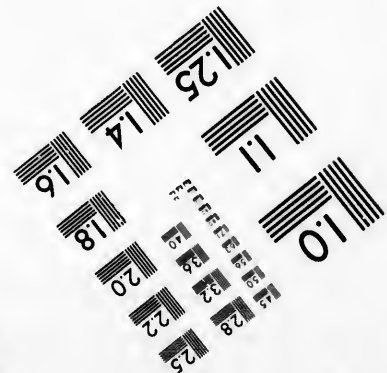
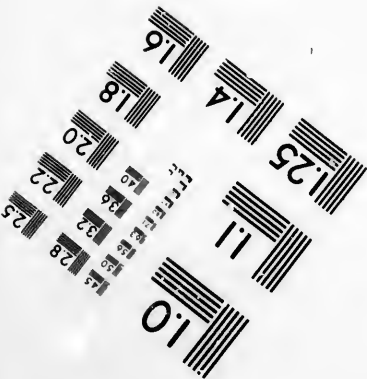
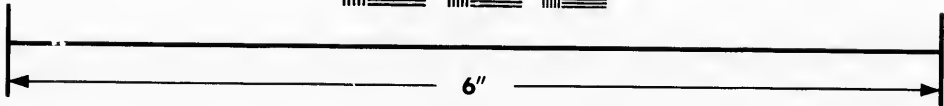
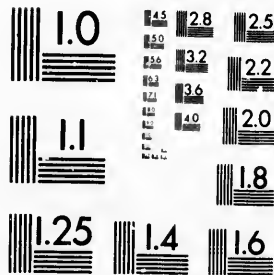


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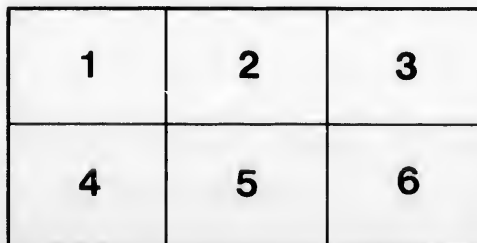
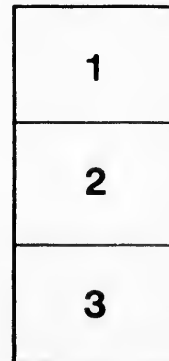
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SURGERY AMONG THE INSANE IN CANADA

BY

R. M. BUCKE, M. D.

President of the Medico-Psychological Association

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SURGERY AMONG THE INSANE IN CANADA.¹

By R. M. BUCKE, M. D.,

President of the Medico-Psychological Association.

In addressing you as I have the honor to do to-day as president of this old and honorable association, I desire to avoid mere theory and speculation, to which, as you well know, I am too much addicted, and speak on some subject of practical interest. And I shall endeavor, as far as in me lies, not only to be practical, but to present such thoughts and facts as may have a direct bearing and influence upon that which we all have at heart—the relief of suffering and cure of disease.

As to the precise subject chosen for my address, I am not sure that I should not offer you some apology for it, and that for two reasons: First, because I read a very brief paper upon it two years ago in Boston, and secondly, because it does not seem, as far as I can judge, a popular topic. My answer to the first objection is that my experience of the subject has more than trebled in the last two years and that what I have to say now will be based on so much broader an induction as to make it greatly more worthy of attention. To the second objection my reply is that, if to the members of the association the subject is unpalatable that is all the more reason for insisting upon the consideration of it, since, to my mind at least, it is certain that either we or our

¹ Presidential address before the American Medico-Psychological Association at St. Louis, May 10, 1898.

immediate successors will have to deal with it practically; that we shall not be able long to ignore it; and that for the sake of our own good name, as well as for the sake of our patients, the sooner we take it up and seriously consider it the better.

Before entering upon my own experience I shall refer for a few minutes to that of three other men, namely, Dr. Hall of Victoria, B. C., Dr. Burgess, of the Protestant Hospital for the Insane, Montreal, Q., and Dr. Holmes of Chatham, Ont.

Dr. Hall has operated in two cases only;² he reports them as follows: A. B., married woman, aet. 38, youngest child eight years old. At time of operation she had been insane three and a half years. She had been two years and eight months of that time in an asylum in Victoria. She was considered to be a hopeless case. The right ovary was cystic and the left prolapsed; there were tubal adhesions. He removed tubes and ovaries 7th Jan., 1898. Thirteen days after operation she began to improve, thirty-five days after she went home well. She has remained well since. She is at present as well as ever she was and manages her house as before she was insane.

C. D., married woman, aet. 61, several children, a case of delusional mania, was in an asylum eight months. On examination he found erosion of cervix, laceration of perineum, both ovaries cystic. He removed both ovaries and did what was needed besides. The patient at once improved and remained so. So far, however, she is not perfectly well mentally.

Dr. Burgess reports the following three cases:

L. M., admitted July, 1890; hysterical mania of over a year's standing; had frequent epileptiform convulsions, was violent, noisy and destructive; examined by Dr. Gardiner, who found intense irritation of both ovaries. These were removed in October, 1891 (patient had been insane about two years at that time). She improved at once and by the middle of December was well. She was last heard from October, 1892, was then in England; was quite well.

E. H. B., admitted December, 1891, aet. 34, married, three children. A case of suicidal melancholia of fourteen months' standing; examined by Dr. Gardiner in January, 1892. He

² See "Canadian Pract.," April, 1898.

found endometritis, laceration of cervix, and disease of right ovary. She was operated on in March, 1892. Cured, cervix repaired, right ovary removed. Recovery both mental and physical at once set in. She was discharged recovered and at last accounts was keeping well.

M. A. C., aet. 40, married, seven children. A case of mania of six months' standing, both suicidal and homicidal. Examined in July, 1894, a month after her admission, by Dr. Alloway. He found retroversion of uterus and endocervicitis; patient operated on same month and diseased conditions removed. Improvement both mental and physical set in at once. She was not perfectly well until the end of 1895, that is, sixteen months after operation. She has remained quite well since that date.

Dr. Holmes is an ex-president of the Canadian Medical Association and one of the best general practitioners that I know. Years ago he came to the conclusion that puerperal insanity is nearly always dependent upon some lesion of the generative organs. As early as 1867 he (apparently) cured a case of puerperal mania which had resisted other treatment and threatened to become permanent by relieving surgically a lacerated cervix uteri. I say "apparently" cured because the woman recovered after having been operated upon and the recovery seemed to be due to the operation. Since 1867 Dr. Holmes has operated with a similar result twenty-three times, that is, he has had altogether twenty-four recoveries in puerperal insanity following in every case the removal, by operation, of surgical lesions. Later I shall refer to one of his cases which seems to be particularly instructive on the point of the causation of the insanity by the lesion.

I wish to say further that many of the best men in the profession have, rightly or wrongly, come to think to-day that there is a much closer relation between organic disease of the uterus and its adnexa and insanity than is generally recognized by alienists. I may especially mention in this connection Robert Barnes, who in discussing before the British Gynecological Society a case of mental recovery following operation said: "If the present case had got into any asylum I believe she would have remained there, for I think it a great fault in the organization of our asylums that there is no provision for the examina-

tion of such cases." And he goes on to say: "There is no reason why a woman in an asylum who is suffering from a uterine complaint should not be attended to whether or not it makes any difference in her mental state." And More Madden gives it as his opinion: "That many women are needlessly and improperly confined in asylums suffering from reflex cerebro-nervous disturbances consequent upon peri-uterine irritation or disease," who might be cured by operative or other local treatment. So Skene in his *Medical Gynecology*, writing from his point of view, tells us: "How sadly the condition of the reproductive system has been neglected" by asylum physicians, and cites cases of insanity in women in which uterine disease co-existed but had not been looked for or suspected by the alienist. This author, while teaching the probable frequency of utero-ovarian disease in insane women is needlessly troubled about the alleged difficulty in diagnosing it.

I will add in this connection that I was rejoiced to note that Dr. Kellogg, almost alone among the systematic writers on insanity, in his recent exhaustive treatise, fully recognizes the relation existing between utero-ovarian disease and mental alienation and tells us that the result of gynecological treatment within the past few years fully confirms the theory that pelvic disease in women may be and at times is a cause of insanity; and that the removal of the pelvic disease by operation is often followed by relief or cure of the mental alienation. In this declaration of Dr. Kellogg's I discern, or think I do, the dawn of a better day in the writing of text-books on insanity.

But the point I wish to accentuate is that many leading practitioners and gynecologists either strongly suspect or think they know that there exists in insane women a great deal of unrecognized and therefore neglected pelvic disease and that that disease has more or less to do with the causation of the insanity in many if not all of these cases. And they further think that from the point of view of both physical and mental health these utero-ovarian diseases ought to be diagnosed and where possible removed.

But it is, I think, a still more important fact that not only do many of the leading members of the profession think thus and strongly condemn those alienists who do not give their patients

this chance of recovery. I say it is a still more important fact that the same opinions are becoming common, not to say universal, in the profession at large, and it looks as if those of us who will not move in this matter may expect very shortly to be condemned by the profession of which we are members, and to which we stand in one special and important department of practice as consultants. These are strong words and should not be used unless they are true, and I will lose no time in explaining to you why I believe that they are so and why I have thought it my duty to use them in this place.

Over three years ago we began at London Asylum the special work about which I am to speak to you to-day. We had no infirmary, and in order to do the work at all we had to fit up a couple of rooms on a fourth floor. We had not there sufficient space for our work and having no elevator the constant use of these rooms so high up involved much labor. As soon as I became satisfied that the work was going to be successful and would go on I began asking the Government for an infirmary. It was not granted, largely because the Government was advised by certain doctors that the work was unnecessary and in fact undesirable. I was questioned by the Government on this point. It was said to me that the profession at large would not endorse this work, and it was intimated that the Government could not promote a work of so serious a nature unless the general sense of the profession was behind it. In order to find out what the profession of my district of western Ontario thought on the point (for they are the men to whom I stand in the relation of a consultant, and it is they who constitute, as far as I am concerned, the court of final appeal)—in order then to find out their opinion and wishes in the premises, I issued to them a circular-letter dated 16th of November last. In it I stated what we at the asylum had done and were doing and asked each man individually to give me his frank opinion of the work, whether it ought to go on, and whether or not it was the duty of the Government to encourage the work by providing suitable buildings, instruments and appliances for doing it?

There are in my asylum district some three hundred and fifty practitioners. They were all asked the above questions. From them I had two hundred and fifty-five answers which remain on

file at London Asylum and which I should be happy to show any one who would like to examine them. I have made it my business to carefully read and analyze these answers, as upon them was based a deputation to the Government on the fifteenth of December urging upon them that they should build the infirmary in question and otherwise support and encourage the work. The answers received to my circular-letter surprised me and will perhaps surprise you. They were in brief as follows:

2 Opposed the work,

3 Were non-committal,

10 Expressed moderate approval,

35 Expressed strong approval, while

205 Expressed very strong approval and said it was the duty of the asylum staff to carry on the work.

I will read a few extracts from these letters to show the tone of them:

1. "I consider that this work should be done in every case and that it is your duty to see that it is done."

2. "The work should certainly be done."

3. "The work ought to be done."

4. "There is not a shadow of doubt that in all the cases operated upon, the mental and physical condition of the patients were aggravated by disease which could only be remedied by operations similar to those performed."

5. "Many cases of insanity in females arise from uterine diseases; operation should in all cases be done."

6. "I unhesitatingly say that this work should go on."

7. "Having been present at many of the gynecological operations at your asylum during the years '96 and '97, I am sure that the operations performed in each case were necessary for the physical welfare of the patient."

8. "I am in favor of the work done at your institution. I have witnessed some of the work and can state positively that in the cases where I was present the disease justified the operation."

9. "This work should receive the consideration, the respect, the encouragement and the hearty co-operation of all."

10. "I think it is the duty of asylum authorities to examine patients to find out if there may be some local cause of the insanity. I consider you have done good work and should be

encouraged in it. I would be quite satisfied to accept the work done at your asylum on behalf of any patient I might send."

11. "The Government should provide proper facilities for the work, especially in the matter of improved hospital accommodation."

12. "I have watched with considerable interest the work done at the London Asylum, although not taking any particular interest in mental disease. Visits to various asylums have led me to the conclusion that there is little fear of meddling gynecology being practiced in them, in most the tendency being in an entirely opposite direction, namely, not to interfere at all. I trust you will continue the work and urge upon the Government the necessity of providing ways and means for carrying it on in the most modern and scientific manner."

It is needless to pursue this branch of the subject. These extracts give a perfectly fair representation, in petto, of the two hundred and fifty-five letters from twelve of which they are taken. Not picked out, but as they came to hand. It may be that western Ontario is, in this matter, an exceptional district, though I do not see why it should be so; but if it is not, the answers to this circular throw a flood of light on the feeling of the profession at large on the question of gynecology in the asylum.

Now I am not here to say that we should for one moment accept the dictum of the outside profession on any matter relating to our own special work about which we should be and are the best and final judges. But I do say this: That if we find a widespread, almost universal belief of this kind in the mind of the general profession, we should not be wise to conclude that it is unfounded until we have taken pains to satisfy ourselves of the truth or untruth of it. To say, as I have heard superintendents say, that there is little or no pelvic disease among their female patients, and declare in the next breath that they had never looked for such disease because they did not think it right to make the necessary examination without evidence in the first place of such lesion as would justify it, is, I venture to think, rash.

I suppose it is not impossible that there might be in a given asylum eighty or ninety per cent of pelvic disease in the female patients and a hundred miles away another asylum in which the female patients (drawn from an identical population) were free

from that class of maladies. But could you expect that any one would believe it as long as the investigation which revealed the disease in the one asylum had been totally unpracticed in the other?

I have said, and shown, that there is a feeling in the mind of the general profession that there is a good deal of pelvic disease among female lunatics; also that such disease has often a causative relation to the mental alienation existing; further, that it is the duty of asylum physicians to make sure whether such disease exists in any given case and to remove it if it does; also, that great benefit will on the whole, result to such female patients from the removal of such disease. If this feeling is well founded it is surely most important that in all asylums it should be heeded and acted upon; if it is not it is almost as important to asylum superintendents to show that it is based on a misapprehension of the facts.

I want now to tell you something of our experience on the subject in London Asylum during the last three years. I cannot possibly go into details of cases, many of which have been given in a prior paper and in my last three annual reports. Each case is of course kept in a special book at the asylum; this and the cases themselves are freely offered for inspection by any person who feels a scientific interest in the subject.

It must not be supposed that I desire or expect any particular credit to be given to me personally for this work; if credit is due to any one it is payable in the first place to Dr. Hobbs, my third assistant, who operates, and in the second to Dr. Meek, a London gynecologist, who has been from the beginning his principal assistant. This being the case, it cannot be claimed by any one that I am led away by desire or expectation of notoriety, as none could redound to me under any circumstances. I am simply a more or less intelligent, and, I trust, impartial spectator, witness and reporter.

And now to show the frequency of pelvic disease among female patients, at least in my asylum at London, I must give you the results of our examinations down to date. They are as follows: We have examined altogether 132 patients and found organic disease in 122 of them; only ten patients of the entire number being free from such disease. Of the 122 cases of

organic disease, we have operated on 109; there remain 8 others to be operated upon, and there were 5 cases which, although the subjects of organic disease, were not suitable cases for operation.

I do not, of course, claim or suppose that these figures indicate the percentage of organic pelvic disease in all insane women. We have naturally examined those cases in which there seemed the greatest likelihood of finding disease. But after making all allowance for that fact the result of our examinations remains sufficiently startling.

It has been charged against us that we imagine disease exists and then look for it and (even if it is not there) find it. The answer to this friendly suggestion is that we never operate on our own diagnosis; this is always either made for us or confirmed by at least one outside, thoroughly competent man, who is entirely independent of all members of the asylum staff. I myself never take part in making the diagnosis, but am always present at the operations and am always satisfied by actual observation that the disease which I had been told was diagnosed is actually present.

In every operation, as well as in every diagnosis, we are assisted by at least one expert gynecologist as well as other good surgeons who are all entirely unconnected with the asylum, and the diagnosis previously made is verified by them as well as by myself. It is simply impossible (the way our work is done) that we could diagnose and operate for a diseased condition that did not exist.

Our surgical work is divisible into two main sections:

- I. Gynecological work, and
- II. Ordinary surgery.

In the first division there are 109, and in the second, 32 cases.

The 109 gynecological cases presented the following pathological conditions, often several in one case:

In 14 cases there was dysmenorrhœa or menorrhagia; in 62 cases there was disease of the endometrium; in 63 cases there was subinvolution of the uterus; in 25 cases there were hypertrophied cervixes; in 34 cases there were lacerated cervixes; in 19 cases there were cystic cervixes; in 3 cases there were polypi of the cervix; in 7 cases there was fibroid tumor of uterus; in 1 case there was epithelioma of uterus; in 1 case there was sarcoma of

uterus; in 33 cases there was retroversion of the uterus; in 5 cases there was complete procidentia of the uterus; in 18 cases there was ovarian tumor, often with disease of the tubes; in 22 cases there were perineal injuries with their sequential diseases; in 1 case there was recto-vaginal fistula; in 1 case there was an ischio-rectal fistula. A total of 309 diseased conditions in the 109 cases.

The operations performed (often several in one case) were the following:

Curettage and divulsion	83	times.
Operations on cervix	38	"
Suspension of displaced uteri	26	"
Ovariectomies	12	"
Hysterectomies	16	"
Perineorrhaphies	17	"
Laparotomies for tubercular peritonitis	2	"
Operation for hematoma of ovarian ligament..	1	"
—		
Total	195	"

The result of these one hundred and ninety-five operations performed on one hundred and nine patients have been, so far, as follows:

First as regards bodily health: In three cases the patient died as a result of the operation. In nearly all the rest of the cases where there has been time enough for any result to follow, the physical health of the patient has been restored or greatly improved.

Then as regards mental health:

In 39 cases the patient recovered from her insanity.

In 32 other cases there has been improvement, often very marked, in the mental health of the patient.

In 35 cases there has been no improvement in the patient's mental condition.

So that seventy-one out of the one hundred and six patients who survived the operation, either recovered their mental health or this was improved.

The length of time that the seventy-one patients who either recovered or improved had been insane at the time of the operation was as follows:

Under one year	21
Between one and two years	14
Between two and three years	10
Between three and four years.....	5
Between four and five years	2
Between five and ten years.....	11
Over ten years.....	8
	—
Total.....	71

It is my conviction that very few of these patients would have either recovered or greatly improved if they had not been operated upon; it is quite certain that many who did recover or improve would have done neither had their physical disease not been removed. Some of those who did well must have very soon died had no operation been done.

In order to show clearly that at least sometimes the removal of the physical disease was the cause of the mental recovery I will cite a few cases, and before giving any of my own I will instance one already referred to which was treated and reported by Dr. Holmes. The woman, named E. R., had a good family history, had always enjoyed good health, was married at the age of twenty-four and remained in perfect health during the first two years of her married life. She then began to suffer from mental depression, which gradually increased until her husband feared she might attempt to take her life and he provided her with a companion as a precaution. While in this condition she became pregnant for the first time. When labor came on it was found that the child could not be delivered alive on account of a large hard tumor occupying the posterior wall of the cervix. Delivery was effected by craniotomy. The mental condition of the woman grew steadily worse. A month after confinement Dr. Holmes removed the tumor by enucleation. Her mental health then began at once to improve, and within two months after the operation her bodily health was excellent and she was perfectly sane. Two years from that time she was delivered naturally of a living child. Her health remained good for nine years. Then she again became melancholy and gradually sank into her old suicidal condition. She was again brought to Dr. Holmes for treat-

ment. He examined her and found a fibroid tumor as large as a small lemon about the site of that formerly removed. This tumor was enucleated as had been the first years before. In three weeks she left the hospital, but her mental condition did not improve as hoped and a few weeks later another examination revealed the existence of a third tumor about the size of the second occupying the posterior lower segment of the uterine wall and encroaching on the cervical tissue. The removal of this third tumor was followed by prompt improvement in her mental condition and she has since remained quite well. It seems to me impossible to doubt that in this case the tumors were the true cause of the attacks of insanity.

Another case almost as pointed is that of M. B., who was admitted into London Asylum 16th November, 1897, suffering from subacute mania of eighteen months' standing. She was nineteen years of age; her insanity was more pronounced at each menstrual period. She was examined in December; it was found that the uterus was acutely anteflexed; there was endometritis and both ovaries were enlarged. The cervical canal was almost occluded by the anteflexion. She was operated on at once. The uterus was curetted and the canal straightened by Dudley's operation. Relief was thus given to the irritated endometrium. She became sane immediately after the operation; was, in fact, quite well the very next day. She remained well two months, then in February she gradually passed into her former insane condition and remained so steadily until early in April. She was then re-examined and it was found that, although the first operation was successful as far as straightening the canal and relieving the endometritis went, yet the ovaries remained enlarged. At the time of the first operation we, not realizing the true nature of the ovarian enlargement, hoped that the uterine irritation being removed it would subside. As it had not done so, we now (early in April) removed the enlarged ovaries per vaginam. They were found to be both cystic and almost void of ovarian tissue proper. After this operation M. B. made a good physical recovery and in the course of a week began to improve mentally. During the second week after the operation she recovered mentally and has been quite well since and is to-day.

I will give briefly eight more of my own cases to illustrate this point—the point, namely, that the removal of the physical disease sometimes, at all events, is the actual efficient cause of the mental recovery which follows thereafter.

S. Q.—A case of chronic mania with erotic delusions of three and a half years' standing at date of operation. The case seemed hopeless. Two cystic ovaries were removed; improvement set in almost at once. In a year after the operation the patient was much better and she steadily improved until in 1895, two years after the operation, she was well and has been so ever since.

A. S.—A case of chronic mania of two years' standing at the time of the operation. There was apparently no prospect of recovery. In April, 1895, a lacerated cervix was repaired and curettage performed. She began to improve at once. By the end of 1895 she was well and has remained so ever since.

M. M.—A case of chronic mania of over seven years' standing at the time of the operation. A cystic ovary was removed, a lacerated cervix repaired, and the uterus curetted, in October, 1896. Improvement set in at once; by the end of the year she was well enough to go home and has lived at home since. Her husband says she is well.

C. S.—Became gradually insane from puberty, being always much upset mentally at each menstrual period. She became steadily worse as she grew older. At the age of twenty-six she had been a declared lunatic (a case of destructive mania) for five years and had been in an asylum for the last four of those years. The case was absolutely hopeless and was pronounced so by the superintendent of the asylum from which she was removed to London. She was taken to London Asylum for special examination and (if thought well) treatment. Examination revealed that one ovary was converted into a multilocular cyst as large as an orange, the other was adherent to the intestine and either atrophied or had never developed. Both ovaries were removed. For two months after the operation, which was performed in December, 1896, she remained unchanged mentally. Then, after a final outburst of violence in February, 1897, she became almost instantaneously perfectly sane and has remained so ever since. A marked feature of this case is that ever since her mental recovery, now fifteen months ago, she has menstruated regularly and without either mental or bodily discomfort.

A. F.—Picked up insane in streets of London and could give no account of herself. We found out later that she had been in an asylum in Buffalo. She had been about three years insane. When she came to us it was a case of incomplete psychocoma. She would answer questions but had no idea what she said. She would answer the same question differently a dozen times in a dozen minutes. We examined her almost at once for pelvic disease. We found the uterus retroverted and the ovaries cystic. Uterus and ovaries were bound down in a mass on the floor of the pelvis. Ovariectomy and ventral fixation of the uterus were performed. On the third day after the operation the woman became suddenly sane. She was kept at the asylum (as she had no friends in Canada) for six months after the operation. During that time she remained well. She was discharged well and sent to a sister in Pennsylvania in June, 1897. I have not heard from her since. I suppose she keeps well.

L. S.—A case of chronic mania of sixteen years' standing. For last eight months worse; admitted to asylum in December, 1897; examined on admission. The ovaries were enlarged and cystic. Ovaries, tubes and uterus were adherent one to the other and massed in the cul-de-sac. 11th January abdominal section and removal of uterus, tubes and ovaries. Within a few days after the operation, as soon as she was sufficiently recovered to converse, she appeared to be perfectly well mentally and she has continued quite well to the present.

E. W. I.—A case of delusional mania of five years' standing. There had been no improvement and the case was apparently hopeless. She developed a papillomatous cyst of the right ovary which, upon being removed, weighed fifteen pounds. The operation was performed in September, 1897. It consisted in the removal of both ovaries (the left was also cystic) and the uterus, which was also diseased and massed with the right ovary. She improved almost at once after the operation and left the asylum in December. She has continued well ever since.

E. E.—A case of delusional mania of over two years' standing. No apparent hope of recovery. She had subinvolution of uterus and a lacerated cervix. In July, 1895, curettage and trachelorrhaphy were performed. She began to improve both mentally and physically almost immediately after the operation. She

was discharged recovered, after three months' probation, in March, 1896. She has not since been heard from and I suppose she keeps well.

The last eight of these cases are selected as being, before the operation and without it, apparently hopeless and yet as all making good recoveries. We have many recoveries, among the thirty-seven who got well, as striking as these; but perhaps not many which on a cursory view would seem, before the operation, so absolutely hopeless.

The ten cases given seem to me to afford conclusive evidence that in some cases, at least, the insanity rests upon the uterovarian disease and may be cured by the removal of this.

In estimating the proportion of recoveries and improvements in the total number, it must not be forgotten that there are probably quite a few among those cases which have been recently operated on who are present only improved, or not even improved, yet who will improve or even recover when they have had time enough. For though many cases begin to improve within a few days of the operation and are soon almost or quite well, there are many others which show little or no change for weeks or months after the operation, yet who after a time either improve or make perfect recoveries.

Now as to the thirty-two non-gynecological cases: Twenty-one of these were Bassini's operation for the radical cure of hernia; two were operations for the removal of cancer; one was for appendicitis; one trephining; and seven were minor operations. The result in this group of cases was markedly different from the result in the first group. The physical health of the patients was in every case improved. There was no death. The patient was made more comfortable and, as a result of that, apparently, he often became markedly less irritable, more amenable to management, often very much more useful about the asylum; but in no single instance was there such a change in the patient as could by the most sanguine be called mental recovery or even marked mental improvement.

It seems plain, then, that it is not simply the operation that cures the insanity in any case, but it is something in the kind of operation performed, or rather in the kind of disease which is removed, which decides whether or not the surgical procedure

is going to effect a radical change in the patient's mental condition. Let us look into this a little closer. We have seen that in thirty-two cases of ordinary surgery no cure or marked improvement was effected in the mental state of any of the patients; but that in one hundred and nine cases of gynecological surgery there was either cure or marked improvement of the insanity seventy-one times. But these gynecological operations were very various. For the sake of illustrating the point I am now discussing I shall divide the one hundred and nine cases into six groups as follows:

1. Hysterectomies, 16.
 2. Removal of diseased ovaries and tubes, 12.
 3. Operations for replacing and retaining uterus in normal position, 22.
 4. Operations on the cervix, 30.
 5. Operations for minor uterine diseases, 21.
 6. Operations for vaginal lesions, etc., 8.
- Total, 109.

The relative effect of these different classes of operations seems to me most interesting and instructive and I will ask you to consider it attentively.

1. Of the sixteen hysterectomies, four recovered and three improved, about 44 p. c.
2. Of the twelve ovariectomies, seven recovered and four improved, or leaving out the patient who died, 100 p. c.
3. Out of twenty-two cases of replacement of the uterus there were four recoveries and eleven improvements, 68 p. c.
4. Out of thirty operations on the cervix (mostly amputations) there were twelve recoveries and nine improvements, 70 p. c.
5. Out of twenty-one operations for minor uterine diseases (mostly curettage and divulsion) there were twelve recoveries and two improvements, 66 p. c.
6. While out of eight operations for vaginal lesions, etc., there were no recoveries and only three improvements, 37 p. c.

A consideration of this analysis will show that in our experience neither the removal of a diseased uterus, nor the fixation of a displaced uterus, nor the cure of a vaginal lesion, has much effect in the relief of insanity; but that when this last results from an operation it is nearly always if not always due to either the

removal of diseased ovaries, the amputation of a diseased cervix or to the cure of some diseased condition of the endometrium. For it is after these last that recovery or improvement is oftenest observed and when recovery or improvement follows other operations it is when some of these last have been done at the same time.

Diseases of the ovaries, of the cervix and of the mucous lining of the uterus then seem to have more effect in inducing insanity than have uterine tumors and uterine displacements, though these may cause more distress than the former, and the small percentage of recoveries in our sixteen cases of hysterectomy seems to me an answer to the contention that it is the shock of the operation and the careful after-attention to which very largely are due the good effects of these operations. For in our gynecological work, I need hardly say, the shock of the operation is greater and the after-attendance more strict and prolonged in hysterectomies than in and after any other of our operations.

It seems, then, from what little experience we have had, that an ordinary operation, such as a Bassini for hernia, or an operation upon the vagina, has no curative effect upon a co-existing insanity; that the removal of diseased ovaries has an enormous effect, and that curettage, where there is endometritis, and amputation of a diseased cervix, had an effect about intermediate between these extremes. I am at present inclined to believe that the curative effect in all our operative work is due to one or other of three things: Either to the removal of diseased ovaries, to the cure of disease or injury of the cervix, or to the restoration to a healthy condition of the inflamed or otherwise diseased endometrium. For where (with us) recovery has taken place after hysterectomy, diseased ovaries have often been removed at the same time. So the few recoveries that have taken place after replacing the uterus in position might very likely have been due to the curettage and divulsion simultaneously practiced. In fact, it would be almost absolute truth to say that we have had no recoveries apparently due to operations in cases in which the removal of a diseased ovary, operation upon the cervix or curettage have not, one or other of them, been practiced.

Now you will not fail to notice that these three, the ovary, the endometrium and the cervix are the most vital, are indeed the

creative organs of the female sexual system. In them, in fact, centres the life of the woman as such, and serious disease or even functional disturbance of them does, we know, in cases in which there is no question of insanity, always produce a profound effect upon the woman's mental state.

But is it not possible to go a little deeper than this general statement and give a more specific reason for the probable beneficial effects of the removal of diseased ovaries at least? I think it is. It seems to me that the recent physiological theory of so-called internal secretion will furnish the clue that we want. According to this theory, there is a "normal and constant contribution of specific material by the reproductive glands to the blood or lymph and thus to the whole body."³ This contribution may be supplied or increased artificially, as by the daily injection of testicular juice, with very marked effect. But in case of disease of the organ that supplies it, it is not only liable to be cut off as, of course it must be upon removal of that organ, but (what is perhaps far more serious) the physiological is liable to be changed to a pathological contribution and the internal secretion which was a source of health and energy to the whole economy to become a toxic agent of unknown but probably great virulence. The removal of the diseased ovaries would of course cut short this poisoning process and enable the vis medicatrix to re-establish the health of the individual.

Thus much at least may with reasonable probability be said as to the good effects seen to follow the removal of diseased ovaries. Something of the same kind may be and I dare say is true of the endometrium and the cervix; but I will not tax your patience by prolonging the argument.

In conclusion, I want to point out what I think will be the most important outcome of the operative work of which I have been speaking. Should it once be conceded by those who have charge of the insane, by those men to whom the general profession looks for guidance in these matters, that utero-ovarian diseases are capable of acting as a cause of insanity and that removal of these will in some cases result in the disappearance of the mental disturbance, almost at once it would happen that

³ American Text Book of Physiology, 1896, p. 901.

many insane women instead of being sent to an asylum would be operated upon and relieved at home. More than that, if the connection in question were admitted, these women would not be allowed to remain insane at home for months and often years as happens now, but would be examined, operated upon and relieved within a few weeks of the appearance of the insanity. More even than that, when the eyes of the general profession are fully opened upon this subject, symptoms of subinvolution, endometritis, or laceration of cervix, will be watched for after child-birth, and if present, will be at once relieved and the woman who might have become insane in consequence of one or other of these lesions will remain sane.