Goodell (Wm)

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EXTIRPATION OF THE OVARIES

FOR SOME OF THE

DISORDERS OF MENSTRUAL LIFE.

BY

WILLIAM GOODELL, A.M., M.D.

EXTRACTED FROM THE TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

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There are certain forms of diseases of women peculiar to the menstrual period of life. These lesions are found either in the reproductive organs themselves or outside of them in remote organs, but with such monthly exacerbations as show their participation in the catamenial excitement. They are always very hard to cure, and often prove to be wholly unmanageable until the climacteric has become established.

In this category may be classed fibroid tumors of the womb, chronic pelvic peritonitis, chronic ovaritis and ovaralgia, ovarian epilepsy, ovarian insanity, and, in short, all those phenomena or those lesions which are embraced under the heading of pernicious menstruation.

Fibroid tumors of the womb are fortunately pretty manageable, usually the womb like a generous host hospitably entertains them, but once in a while an unwelcome one presents itself which arouses all the resentment of the womb. If then it stubbornly resist all treatment, it slowly but surely destroys life, by the pain which it evokes, and the loss of blood which it occasions. What physician here present has not seen such cases?—cases in which the patient is virtually bed-ridden from her floodings and her sufferings; cases which the physician is wholly powerless to remedy; cases in which the sufferer looks forward to the climacteric as her only hope. But the change of life in these cases is always postponed beyond the natural term, oftentimes so much so as to be overtaken by the death of the woman.

Then, again, there are those cases in which, despite all treatment, the ovaries remain turgid with blood, acutely neuralgic and sensitive to the last degree. A women with such a lesion is usually a bed-ridden invalid, racked with pains, and wholly unable to fulfil her duties as wife or as mother. Usually she seeks relief in anodynes and becomes a confirmed opium-eater.

There are, also, many distressing cases of pelvic peritonitis and pelvic cellulitis, which cripple a woman past all hope because of monthly exasperations. Such cases are unfortunately by no means rare, and five years ago I saw a poor woman reduced to skin and bone, and finally die, because in spite of all treatment the inflammation was rekindled at every monthly period.

Who has not met with cases of epilepsy which seem to come wholly from the sexual organs—cases with an ovarian aura, so to speak? The fits begin at puberty, generally last through life, and end in impairment of the mind. Often the first convulsion is ushered in by the first menstruation, and ever afterwards it is around ovulation as a storm-centre that future eclamptic attacks revolve. Such an epileptic is the terror of her family and a valueless member of society. Generally she dies insane or with an enfeebled mind, and, if she marry, she is also too likely to transmit her infirmities to her children, either in the same form as her own or in kind. It is, indeed, a remarkable fact, as Dr. Parvin has shown in his late inaugural address before the American Medical Association, "that of all the maladies which proceed from immediate progenitors, or which, having affected anterior generations, may be transmitted by a second generation, those which are the most certain of continuance, the most inevitable, are not those involving structural changes—not cancer nor tubercle, for example—but the neuroses, such as hysteria and epilepsy, diseases that present no appreciable organic alteration."

Finally, what insane asylum does not hold incurable women, whose mental infirmities seem to depend wholly upon the act of ovulation, or at least to become greatly exasperated by its recurrence? "Dr. Sutherland," writes Lawson Tait, "has carefully examined into the menstrual history of upwards of five hundred of the inmates of the Wakefield Asylum, and has tabulated the following general conclusions:—

"That in epileptic insanity the fits are generally increased in number, and that the patient frequently becomes excited at the catamenial period. That in mania, exacerbations of excitement usually occur at the menstrual period, and that a state of intense excitement is almost continuous in patients suffering from menorrhagia."[1] He further states, "that Esquirol and Morel have estimated that derangements of menstruation form the source of origin of one-sixth of the cases of insanity due to physical causes."

Now when we meet with such cases as the foregoing, and we are

[1] Obstetrical Journal of Great Britain, etc., June, 1873, p. 175.

constantly doing so, we have hitherto stood by with folded hands, dooming the sufferer to hopeless invalidism, or to an untimely end.

Fortunately, however, there is a remedy which promises much—one first proposed by Dr. Battey. This original surgeon reasoned that, since these disorders are kept up by the monthly afflux of blood, and therefore incurable during menstrual life, the only chance of immediate relief lies in the establishment of an artificial menopause. This change of life he effected by the removal of both ovaries, and he called the operation *normal ovariotomy*. Fault has, however, been found with this name, because the ovaries are sometimes themselves diseased, and not in a "normal" condition. I have, therefore, ventured to resort to the old English word of *spaying*—which, though an inelegant term, as technically defines the character of the operation as castration defines the analogous operation in the male—and I am glad to find myself upheld in the use of this word by so ripe a scholar as Dr. Aveling, of London.

With these preliminary remarks I wish to give the result of my own experience in the removal of the ovaries for diseases not in them, but dependent on them.

Case I.—My first case was that of a maiden lady, aged 33, who had for many years been a great sufferer. She was never wholly free from pain; but one week before each monthly period this pain began to increase, and steadily to grow worse, until it became unbearable. The menstrual flux then appeared, but with no abatement of her sufferings. It lasted fully a week, and was always profuse, sometimes alarmingly so. Then followed a week of gradual lessening of all these distressing symptoms. Thus three weeks out of every four were virtually spent by her in bed, and the remaining time was not long enough for her to recruit her powers and husband her strength for the next encounter with her monthly foe.

Worn out by loss of blood and by her acute pains, which were deemed nervous, she consulted Dr. S. Weir Mitchell. He at once discovered an abdominal tumor and asked me to see her.

The lady was pale, thin, and bloodless, with a face furrowed by acute suffering. I found a virginal cervix lodged on the symphysis pubis, and a sharply ante-flexed womb imbedded in the hilus of a large and kidney-shaped fibroid tumor. Although the sound gave a measurement of but three inches, the tumor dipped down to the bottom of Douglas's pouch, and reached up to a point two fingers' breadth above the navel and to its left. The fibroid was plainly subperitoneal, and not amenable to treatment per vaginam.

Thereafter, Dr. Mitchell and I met frequently and did all that we could to alleviate the pain and lessen the bleeding, but without any

success whatever. She grew rapidly worse, and it was finally decided to extirpate the womb. While waiting for the hot weather to pass by, I came across a successful case of the same nature cured by Trenholme, of Montreal, by the removal of both ovaries; we, therefore, determined to try this operation before resorting to the major one, and she gave us no peace until the day was fixed upon. Accordingly, on October 4, 1877, with the aid of Drs. S. Weir Mitchell, John Ashhurst, Charles T. Hunter, B. F. Baer, and W. H. Heath, I removed both ovaries by the vaginal incision. Very trifling was the hemorrhage during the operation; no vessel needed tying, and not a suture was put into the vaginal wound. The right ovary looked healthy, but the left contained a small cyst.

The immediate effect on the lady was most remarkable. From that day, she lost all those pains and aches which had embittered her menstrual and intermenstrual life, and they have never returned. The large fibroid tumor also rapidly lessened in size, until, six months later, it was no larger than a horse-chestnut. At that size it has since remained, but is giving her no trouble whatever. From being a bed-ridden invalid she now takes charge of her mother's house, and is able to do many other things beside. Last evening, Dr. John Ashhurst casually informed me that she and a friend of his had, a few days ago, walked four miles into the country after wild flowers. Her menses have never returned, but their absence has not made any appreciable effect upon her appearance or upon her character. She is just the same in these respects as she was before the operation.

In addition to this case I have collected in my work on Gynæcology,[1] eleven others, making twelve in all, in which the operation of spaying was performed for fibroid tumor of the womb. Of these, three proved fatal, but in each of them the ovaries were removed by the more hazardous abdominal incision. In one, operated upon by Hegar, of Freiburg, the tumor grew smaller for five months, and the menstrual flux was absent; then a hemorrhage took place, and an increase in the growth was observed, but unfortunately the patient was soon after lost sight of. In the remaining eight, including my own case, convalescence was uninterrupted, the menopause was established, the tumor became smaller, and the women were virtually cured.

Now I do not by any manner of means propose the removal of the ovaries as the sole means of curing a troublesome fibroid tumor of the womb. Whenever one so bulges into the cavity of the womb as

[1] Lessons in Gynæcology, p. 275.

to be reachable, it ought to be enucleated. In this manner I have removed several interstitial fibroid tumors—one of them weighing twenty ounces. Then again, we must not forget the incision of the capsule, the hypodermic use of ergotine, and other means devised for the treatment of these growths. But whenever the tumor is irremediable by such means, I believe spaying to be a perfectly legitimate operation, and one which will be found very successful.

Case II.—This was an unmarried lady of 27, who had great hemorrhage at her menstrual periods, and exquisite suffering not only at these times but for a week before and after. Her physician, my friend Dr. C. A. McCall, called me in to see her several times, but I was powerless to do any good whatever. Her troubles seemed to start from turgid and neuralgic ovaries, for the womb showed no lesion whatever, and the pains radiated from each ovarian region. She had violent headaches, great emaciation, weighing sixty-seven pounds only, and exhibited mental disturbances which threatened insanity. I finally recommended the rest cure, but this did her very little good, although she was under the skilful supervision of Dr. S. Weir Mitchell, and fattened up to eighty-three pounds. It was the worst case but one of pernicious menstruation that I have ever seen. Finally, after due deliberation, the removal of the ovaries was decided upon by us and proposed to her. She at once consented, and I performed the operation *per vaginam*, being aided by Dr. McCall and by two other medical friends. One stalk was tied with silk, the other with gut, which broke, and it was then crushed off with the écraseur. Her recovery was a slow one, being retarded by a small pelvic abscess, which burst through the incision, and discharged the knot of the silk ligature. Menstruation did not return, and she became wonderfully better, so much so as to astonish her friends, who were all ignorant of the nature of the operation. The secret has been well kept; her father, the other members of her family, and the servants in the house are to this day unaware of what took place. Besides her mother and the physicians present no other soul knows that she is without ovaries. Nor is the slightest change of voice, of appearance, or of character perceptible. She mingles in society, and is just as womanly and as womanish as she was before the operation. She has simply reached the climacteric somewhat abruptly; as Kœberlé calls it. Not long ago, Dr. McCall informed me that "she deemed herself perfectly well, and had told him that he need never call again as a physician, but as a friend." She has a large circle of friends, many of whom have complimented me on the successful issue of my treatment, and have asked questions so hard to

parry, that I trust the Recording Angel has dropped a tear over each entry of my answers.

CASE III.—This was a married lady, aged 37, and the mother of three children, the youngest ten years old. She must have sustained some injury from the birth of this last child, for she never conceived again and was never well afterwards. Agonizing pelvic pains at first ushered in the monthly periods, then kept up for some time afterwards and finally never left her. She now became bed-ridden and an opium-eater. Early in May, 1878, I was called in to see her by her physician, Dr. A. C. Deakyne, who had faithfully attended her for two years and had exhausted every means known to medicine. A more wretched creature I never saw. She was reduced to skin and bones, and bore on her face the lines and furrows of the keenest anguish. The womb was in its place, and presented no other lesion than a slight enlargement. After a careful examination I was forced to the conviction that it was a typical case of neuralgic ovaries, with nerve-storms radiating from them and breaking upon every other organ in the body. It was by far the worst case of pernicious menstruation that I have ever seen. Dr. Deakyne himself had come to the conclusion that no relief short of spaying would do her good, and he had, therefore, called me in. I agreed with him in this opinion, and we received the hearty concurrence of the poor woman, who was willing to face death in any shape for a promise of relief. The operation was performed on May 26, just after she had passed through a catamenial tempest of unusual severity. Drs. Deakyne, T. M. Drysdale, E. L. Duer, L. A. Dix, and Henry F. Baxter kindly helped me on the occasion. There was no difficulty whatever in catching the ovaries through the vaginal incision and in removing them, but the hemorrhage was freer than usual. Both ovaries seemed congested, and one bore a beautiful false corpus luteum. For four and twenty hours great relief was experienced and everything looked promising, but on the next day a slight peritonitis set in. It was limited to the pelvic regions, but, having no strength, she died on the fourth day.

While deeply deploring the result, I do not look back upon this case with any misgivings as to the propriety of the course pursued, for I do not believe that anything short of the extirpation of her ovaries would have cured her. But I do not wish to be understood as recommending this operation for every case of ovaralgia, for I have seen too many cases cured by rest, by a milk-diet, by massage, and by electricity. And this is the treatment that I would recommend as a very efficacious one in the milder forms of this very stubborn disease.

Case IV.—This was a married lady, 38 years old, whose brain gave way from over-anxiety, and from over-nursing a sick child during the summer of 1875. The first token of insanity was night-terrors which began to afflict her for two or three days before the appearance of her catamenia. These steadily grew worse until I saw her in September, 1878. At that time she presented the following symptoms: Several days before the appearance of her menses, to use the language of her husband, who is a clergyman, "hallucinations on every subject take complete possession of her, and she becomes so violent as to need locking up." These attacks last during the continuance of the menses and for a week afterwards. The remaining part of the inter-menstrual period, which lasts from a week to ten days, "she eats and sleeps enormously, like a ploughman," and exhibits mere traces of her hallucinations. She has been an in mate of several insane asylums without benefit. Two distinguished alienists, however, held out hopes to her husband, that with the change of life reason would return. Deeply impressed with this opinion, and with the conviction that the climacteric could alone cure his wife, and having heard of one of my cases of spaying, he brought his wife to me, for the sole purpose, if I deemed it best, to bring on an artificial menopause.

I found a congested and an hypertrophied womb measuring 3.5 inches, and the left ovarian region exquisitely tender; the ovaries, however, could not be outlined. These were all the discoverable lesions, but in view of the history of the case and of the opinion of the two experts, who had had her for several months under their charge, I consented to remove her ovaries.

This was accordingly done by a vaginal incision on November 23d, and I was aided in the operation by Dr. Joseph Parrish, Dr. Charles H. Thomas, Dr. B. F. Baer, and Dr. Angle. She did not have a single bad symptom following the operation, although she twice jumped out of bed and had to be forcibly put back and held down. Her pulse and temperature never rose above the normal. On the eighth day, by dint of a little coaxing, I succeeded in persuading her to let me remove a single stitch that had been put in. After that she could not be kept in bed without undue violence, and I thought it best, as the less of the two evils, to let her get up. No harm whatever followed, but I am sorry to say that, although she has not to my knowledge menstruated since, her mental condition has not been improved. She is now in the skilful hands of Dr. Curwen, who will I hope tell us something about her present condition.

Now, although this case was a failure, I cannot but think that the

principles which governed my conduct are sound ones, and should I meet with a case of insanity limited to the catamenial periods, I should not hesitate to remove the ovaries. So impressed, indeed, am I with the soundness of these views, that it is my intention in the course of a few days to remove the ovaries from an epileptic young lady, whose first fit began at her first menstruation, and whose present fits pivot around the monthly flux as a centre.

How shall the operation of spaying be performed? By the abdominal incision the ovaries can always be removed; by the vaginal one, very generally. Each operation has its advocates, but I am a warm upholder of the latter, because it is the safer. I have, elsewhere,[1] collected and tabulated fifty-one cases of spaying, with fifteen deaths. In thirty-one cases the abdominal incision was employed, and was followed by eleven deaths; while, out of twenty cases in which the ovaries were removed through a vaginal incision, only four died. This smaller rate of mortality is attributable to the greatly lessened exposure of the peritoneum, and to the dependent drainage opening. By this operation, however, the ovaries cannot always be caught and removed. They may be carried up by a large fibroid tumor and lie beyond the reach of the finger. Or they may be, as Sims[2] and Thomas[3] found them, so bound down by firm adhesions as not to be dislodged. In my four cases, I had no difficulty whatever in reaching the ovaries and of removing them per vaginam. So impressed, indeed, am I with the greater safety of this mode of operation, that I shall always attempt it. Should it fail, the abdomen can afterwards be opened, and the abandoned vaginal incision be utilized, if needful, as a drainage opening. The abdominal operation should be performed under the spray, and every detail of Lister's should be scrupulously carried out. Of the great value of antiseptic surgery in cases needing the exposure of the peritoneal cavity there can be no question whatever. The wonderful successes of Keith and Thornton amply prove it. Not quite three weeks ago I removed, from a lady sent to me by Dr. A. H. Sheaffer, of Lewistown, a large fibro-cystic tumor of the womb through an incision extending from near the ensiform cartilage to the symphysis pubis, and needing twenty-three sutures to close. The tumor had no stalk, but, springing directly from the womb, had to be enucleated from its peritoneal capsule. Yet, thanks to the spray, the patient recovered without a single bad symptom, and with less constitutional

[1] Goodell's Lessons in Gynæcology, p. 277.

[2] Transactions American Gynæcological Society, vol. i. p. 352.

[3] British Medical Journal, December, 1877.

disturbance than that which usually follows the removal of a small surface growth like an adipose tumor.[1]

In the vaginal operation I have not yet tried the spray, but I intend to do so, although Sims found that the constringing action of the carbolic acid incommodiously narrowed the calibre of the vagina.

If the abdominal incision be performed, the incision should extend from near the navel to a point as low down as is compatible with the safety of the bladder, and then each stalk should be tied with gut and dropped within the cavity. In the vaginal operation, the patient should be placed on her back and not on her side. I am satisfied that it was the lateral posture that helped to kill my third patient, for as soon as the peritoneum was opened the air rushed out and in during every inspiration and expiration—an untoward circumstance which cannot happen in the dorsal posture. A duck-bill speculum is introduced, and the perineum pulled downwards. The post-cervical mucous membrane is next caught up by a uterine tenaculum, and it and the under-lying peritoneum snipped open for about one inch, with a pair of scissors, of which I have found Küchenmeister's to be the best. The index finger of the left hand is then passed in, the womb pushed down from above by the right hand, and each ovary brought down to the incision by the finger, hooked into the sling made by the oviduct. The ovary is now seized by a fenestrated forceps and brought into the vagina. The stalk is transfixed by passing a needle, armed with a double gut thread, between the ovarian ligament and the oviduct, and each half securely tied. The ovary is then removed, the ligatures cut off at the knot, and the stumps returned into the pelvic cavity. In order to hinder the chance of the protrusion of a bowel-loop I have in three instances closed the vaginal opening with one suture—and that either of silver or of gut. But in the case with the incision left unclosed, no protrusion took place. The hemorrhage during the operation was in

[1] In further proof of the advantages of an antiseptic treatment, let me add that on May 31st, nine days after reading this paper, I removed under the spray, a colloid polycyst of right ovary, weighing forty-five pounds. Although there were many adhesions, Dr. J. E. Bauman, of Telford, Montgomery Co., whose patient the lady was, wrote me that she recovered promptly "without a ripple of trouble." Again, on June 15th, I removed, with every antiseptic precaution, a very large polycyst from a patient of Drs. R. Horner and J. M. Radebaugh. The parietal and omental adhesions were so numerous and strong, and so much oozing followed their rupture, that a glass drainage tube was put in. It, however, proved wholly needless, for the temperature after the second day never reached 100°, and the recovery was without a drawback.

only one of my cases quite free, but it was venous and needed no ligature.

There is one drawback to this operation. For some reason the removal of both ovaries does not always bring about the cessation of the menses. From a careful collection of all the published cases of double ovariotomy occurring during menstrual life, I find that, out of 132 cases, there were 15 in which regular monthly fluxes kept on, and 9 in which such fluxes were either irregular or lessened in amount. The cause of this unexpected continuance of the menses has been attributed by Kœberlé to a portion of ovarian stroma unwittingly left behind, but I think it is often owing to the existence of a third or accessory ovary. Kocks found a third ovary attached to a womb removed by him for cancer.[1] The specimen was exhibited at the Medical Congress held last year at Cassel, and verified by Dr. A. R. Simpson, who happened to be present.[2] Puech has collected several such cases.[3] Winckel lighted upon one such case, and has given a beautiful wood-cut of it.[4] While the lamented Beigel, in 350 post-mortem examinations, found 8 women with a third or accessory ovary, containing true ovarian stroma.[5] These accessory ovaries range in size from a hemp-seed to that of a cherry, and are usually attached by a slender stalk. They very generally lie on the boundary line separating the peritoneum from the serous covering of the ovary. Beigel found three attached to one ovary, and Waldeyer as many as six. "On microscopic examination they were found to consist of normal ovarian tissues, and to contain Graafian follicles in every degree of development, as well as relics of corpora lutea, and follicles which had dwindled without rupturing. The author concludes that both conception and also the pathological changes of normal ovaries may originate in these bodies. They may also have a bearing on the recurrence of menstruation after the complete removal of the ovaries." I cannot but think that this is the explanation of Atlee's two remarkable cases, in which, one ovary having been removed, the other became so diseased as to need repeated tappings, and yet each woman not only menstruated, but gave birth to a child.[6]

[1] Centralblatt für Chirurgie, No. 49, p. 839.

[2] Edinburgh Medical Journal, January, 1879, p. 512.

[3] Annales de Gynécologie, January, 1879, p. 74.

[4] Die Pathologie der weiblichen Sexual-Organe; Leipzig, erste Lieferung, Tafel xxxiv.

[5] Obstetrical Journal of Great Britain, July, 1877, p. 286, from Wiener Medizinische Wochenschrift, May 26, 1877.

[6] Ovarian Tumors, pp. 38 and 39.

Does the extirpation of both ovaries, after puberty has been established, unsex a woman? Further than the inevitable induction of sterility, and the probable absence of menstruation, the deprivation of both ovaries no more unsexes a woman, than castration after puberty unsexes a man. In the one the ability to inseminate is lost; in the other, the capability of being inseminated; but in both the sexual feelings remain pretty much the same. The physical and psychological influence of the ovaries upon woman has been greatly over-rated. In the popular mind, a woman without ovaries is no woman. Even Virchow has gone so far as to say that "on these two organs depend all the specific properties of her body and her mind, all her nutrition and her nervous sensibility, the delicacy and roundness of her figure, and in fact all other womanly characteristics."[1] Kœberlé, who had the large experience of eighteen cases of double ovariotomy, has written so fully on this subject that I cannot do better than to quote him at length.[2] "They go so far," he says, "as to assert that castration, which takes from man his muscular vigor, the deepness of his voice, and the growth of his beard, has precisely the opposite effect upon woman. The truth is, that the absence of the ovaries causes in general simply the same changes which attend the menopause; but these changes are not always so marked, and they never so wholly modify the body and mind as has been asserted. As regards cases of congenital deficiency of the ovaries attested by autopsy, Puech has collected a sufficient number to warrant the following conclusions: 'The absence of the ovaries does not necessarily entail the absence of the characteristics of puberty. At the usual time, the *mons veneris* becomes covered with hair, the pelvic basin enlarges, the haunches spread, the limbs grow plump, and the breasts develop, as if menstruation was about to be established. Further, absence of the sexual impulse, and indifference to persons of the other sex are by no means inherent to this anomaly. The rebutting testimony brought forward by Pears and Lancereaux are based upon exceptional cases, explainable by their surroundings and by their physical sufferings. Contrary facts are far more numerous, and amply show that sexual desire does not necessarily depend upon the normal development of the ovaries. This position is still further strengthened by the fact that sexual desire is present in women who have passed the change of life, and that some young girls long before the age of puberty are addicted

[1] Maladies des Ovaires, par E. Kœberlé; Extrait du Nouveau Dictionnaire de Médecine et de Chirurgie Pratiques, tome xxv. p. 487.

[2] Ibid.

to masturbation. The plain inference therefore is, that the sexual appetite is, up to a certain point, independent of the capability of procreation, and can fully exist even when the sexual glands are absent.' In my own experience, the extirpation of both ovaries causes no marked change in the general condition of those who have been operated upon. They are women who may be considered as having abruptly reached the climacteric. Their instincts and affections remain the same; their sexual organs continue excitable, and their breasts do not wither up. These women do not grow fat unless there is a previous tendency to stoutness. Abnormal growths of hair do not take place, and the tone and quality of their voices are not changed."[1]

In confirmation of these views Battey notes, in his cases of spaying, the persistence of aphrodisiac power. Nor in any of them was "there a loss of the womanly graces, but, on the contrary, the patient gains flesh and becomes more attractive."[2] Analogous opinions are expressed by Hegar[3] and by Wells. The latter, indeed, reports the case of a teacher of singing, who wrote to him three months after the operation: "My voice is stronger; I can sing the upper notes with greater facility than formerly. I can sing from A up to C natural."[4] Peaslee writes: "Double ovariotomy as a rule is not followed by any loss of the special characteristics of woman; the only decided physiological change being a final cessation of menstruation, as well as of ovulation. Three of my own patients, married and highly educated ladies, after recovery, again became splendid examples of womanhood, enjoying the most perfect health, and retaining all their former attributes of mind, as well as of body, and with undiminished sensory capacities in their matrimonial relations."[5] Atlee reports a case of double ovariotomy, in which marriage took place after the operation, as "the sexual feelings were normal."[6] Six months after an analogous operation, Verneuil found his patient with well-developed breasts and decidedly fatter. "She, in fact, seemed far more of a woman than before the operation."[7] These opinions are amply confirmed by the history of my own patients, who are not conscious of any physical or psychological changes whatever.

[1] Loc. cit.
[2] Transactions American Gynæcological Society, 1876, p. 119.
[3] Castration der Frauen, von A. Hegar.
[4] Diseases of Ovaries, New York, 1873, p. 448.
[5] Diseases of the Ovary, p. 530.
[6] Ovarian Tumors, p. 35.
[7] Annales de Gynécologie, Août, 1877, p. 146.

The operation of spaying is yet in its infancy, and time is needed to develop its resources. But I cannot help feeling that in carefully selected cases, it will prove the sole means for curing many mental and physical disorders of menstrual life, which have hitherto baffled our science, and are a standing opprobrium to our profession.