Original Articles.

THE RÔLE OF THE OVARY.¹

BY SYMINGTON BROWN, M.D.

I ASSURE you, gentlemen, that I thought twice before adopting this title, — one which exposes me to a double cross-fire of criticism, and may possibly end in depriving me of the chance to perform any rôle myself in this learned Society. Let me hasten to explain that I do not mean anything disrespectful to the ovary. If this important organ only acts a part, what then? Do we do any more? And as I believe that it plays a leading part in the great drama of Life, — a part which men are only too glad to support in a subordinate rôle, — of course there can be no disrespect intended. This comes of introducing metaphysics into a gynæcological society.

The minute studies of pathologists are often useful. I do not decry them; but it seems to me that pathological minutiae are like the scaffolding put up for the workmen during the erection of a building, intended to be removed when the building is finished. In fact, we cannot see the building in its fair proportions until the scaffolding has been removed.

In other words, I think that we have depended too much on morbid phenomena, and too little on the experiments which Nature kindly performs for us. More can be learned by careful observation of natural processes and guarded deductions therefrom, than from the twisted facts which disease presents us with. Naturally we cry up disease, for that is our business; but, I am happy to say, that the tendency in our day is to place more stress on the investigation of natural processes, so that we may be better able to recognize them when they become abnormal. We have hitherto put the cart before the horse, and our partial progress has been attained by pushing instead of drawing. It is on this account that I attach comparatively little importance to vivisections as a means of discovery. Experiments on living animals may corroborate or test a great disclosure; they seldom or never find one out. It is the recollection of what we have previously observed, passed through our mental alembic, which enables us to discriminate differences and recognize agreements. While I despise the senseless, sentimental outcry now being raised against vivisections, I think it is our duty not to overestimate them, and to make such experiments the exception, not the rule. Sir Charles Bell, in his classical work on the "Nervous System," asserts that if he had commenced with experiments, they would have misled him. He made his great discovery by means of dissections and clinical observations.

The extreme period during which the ovaries are active may be set down as forty years, say from twelve to fifty-two years of age. In the great majority of women, this period is limited to thirty years, say from sixteen to forty-six years of age. Before twelve and after fifty-two the possession of procreative power in women rarely exists; although a few recorded cases point to its possibility. Men may retain their virile power to extreme old age.

In childhood, the ovaries only contain microscopic ova; and after the menopause these organs become

atrophied, and all traces of germs finally disappear. In reproductive processes, nature seems to be ultra generous. The number of ova in each ovary is out of proportion to the number of possible children. Many of these ova, no doubt, remain undeveloped; but even of those which reach the surface, and are capable of impregnation, how small a portion ever fulfil their function! Then, again, during each month there is a period during which the ovary is quiescent, and another period during which it is active. These may be called the cycles of involution and evolution. When the latter attains its maximum force, the ovary becomes nearly twice as large as at the close of involution, and is so sensitive to pressure that a tyro might conclude that it was inflamed.

Strictly speaking, the ovary is a gland which secretes free cells. It maintains an intimate connection with many other glands — a relationship more marked during pregnancy, but also noticeable during menstruation. More unsolved problems are probably connected with this relationship than is generally supposed. Jaundice, albuminuria, salivation, and mastodynia, may all be connected with, or dependent on, changes in the ovary. One reason why robust women (corresponding to the peasant class in Europe) recover more readily from puerperal diseases than pampered ladies, is the greater activity of the glandular system in that sort of patients. If we take puerperal albuminuria as an illustration, I think there need be no doubt that the affection does not arise from organic disease of the kidney, but is simply a functional disorder, following sympathetic changes in one or more of the reproductive organs. Anything which interferes with a single link of the chain affects the whole.

If we except syphilis, perhaps no other disease pursues a more insidious course, or fathers so many obscure symptoms, as gonorrhœa. Dr. Noeggerath, of New York, long ago directed our attention to this subject, and his assertions were generally met by the profession with almost scornful scepticism. I think that the sweeping verdict he passes upon commercial travellers is exaggerated; but the longer I live I meet with more and more cases which can only be satisfactorily explained on his theory — the existence of latent gonorrhœa.

When I was a medical student, in 1841, I asked our professors of anatomy and obstetrics, separately, this question, Why do prostitutes so seldom conceive? The answer from both was substantially the same; they said, they are driven beyond conception by their mode of life. For many years, I could get no better answer than this from anybody. But modern gynæcology has demonstrated that the gonorrhœal discharge passes from the vagina through the uterus and Fallopian tubes to the ovaries, and, exciting periuterine inflammation, is the true cause of sterility in prostitutes, and also, I am sorry to say, in many virtuous married women. Among the latter class especially this is not always preceded by an acute attack. The affection may be communicated by a mild, concealed gleet, which the husband himself is not cognizant of. As Dr. Noeggerath has pointed out, poisonous mucus may lie in a shallow cul-de-sac, near the bladder, and be discharged along with the semen, during coition, months or even years after the patient has seen any discharge at the meatus.

I suppose that bacteriologists, if they admit the premises, would explain the infection by the presence of

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a specific germ, which the attending physician had failed to dislodge. I do not express any opinion on that head. As the accommodating showman says: "You pays your money and you takes your choice." But whether caused by wicked germs or more ancient pathological processes, there can be no doubt about the widespread mischief resulting. The fibrous ovarian sheath becomes thickened, the Fallopian tubes are filled with muco-pus or closed, and it is highly probable that the ova themselves never become fully developed. If this happens to both ovaries or both oviducts, sterility is inevitable. We should also recollect that in many cases where the epididymis has been inflamed, spermatozoa are not to be found in the so-called semen, and the male is also sterile.

This brings us to the absorbing question, Should the ovaries ever be removed on account of metrorrhagia, salpingitis, long-continued agonizing pain or intractable pelvic disease? I refer, of course, to Battey's and Lawson Tait's operations. Many conservative physicians aver that removal of the ovaries unsexes a woman, changes her soft voice to a harsh, masculine tone, produces a beard and mustache, and takes away her sexual appetite. I believe that all, or nearly all, of these charges are baseless. We have good reason to conclude that sexual desire is not annulled within a period of at least four years after either operation. The only thing they annul is the ability to conceive; and, in our day, that is not reckoned much of a curse by many women. I am inclined to think that both the advocates and the opponents of female castration have been guilty of exaggeration. It is too true that the modern surgeon, like the American base-ballist, is apt to go to extremes. I have no doubt that some ovaries have been sacrificed which might and should have been saved, and I am also quite sure that many women have been left to drag out a miserable existence for years,—an opprobrium to the healing art, and a terror to their relatives,—who might have been spared untold mental and bodily suffering by a simple surgical operation, if the medical attendants had not been befogged by the ancient dogma of unsexing their patients. For sex is not lodged in either ovary or testicle: if in one part more than another, it is in the brain.

A long series of observations has convinced me that insanity in women often depends on sexual disorders, and, in such cases, can only be cured by treatment applied to the reproductive organs. The first case which impressed this conclusion on me occurred in Blackstone, Mass., in 1852. The patient was a young married woman, of Irish extraction, under the care of the late Dr. Kimball. She manifested signs of melancholic insanity, and attempted to commit suicide by striking her head with a dull hatchet in more than twenty places. We dressed her wounds, and got a neighbor to watch her, but on the second night she got out while the watcher dozed and drowned herself in the river. As it was a case for the coroner, we were allowed to make a post-mortem examination, and found inflammatory disease in the left ovary, with pus in the corresponding oviduct.

In cases of hystero-epilepsy, where the fits are prolonged and the mental powers are beginning to deteriorate, in consequence of ovarian disease, the best treatment is to perform Battey's operation. This is one of the grounds where even the most conservative gynecologists admit that the operation is justifiable.

It seems to me that in cases of long-continued severe pain, after the usual remedies have failed, we would be blameless if we removed the offending organs. There are other kinds of work besides childbearing which women can acceptably perform.

I have only seen one case where I thought that their removal was vindicable. The patient was an unmarried lady, about thirty years of age, who had suffered for several years from pelvic neuralgia so agonizing that latterly she had to give up work entirely. She was attended by Dr. Barss, of Malden, who called me in consultation. The operation was performed while I was absent in Europe, more than two years ago, and has proved successful. I learned recently that, although both ovaries were removed, she has menstruated regularly since the operation.

General practitioners are more interested in another class of patients, in whom the symptoms arise from suddenly-arrested menstruation, and there is no good ground for believing that the ovaries are seriously diseased; and yet, in the great majority of such patients, sterility results. A brief description of a typical case will illustrate what I mean. Five years ago I attended an unmarried lady, nineteen years of age, in whom menstruation was suddenly arrested by sea-bathing. Severe pelvic pain, sympathetic vertex headache, and a sense of constriction near the diaphragm, continued at intervals for a year, notwithstanding active treatment. Finally, she recovered, got married six months later, but has never become pregnant. To this day the diaphragmatic constriction remains, and the menstrual flow is gradually becoming scantier. Whether a sufficient degree of low-grade inflammation occurred to close the fimbriated extremities of both tubes, or, what is more probable, the nervous shock arrested the development of ova, I cannot say. Only this, that in all such cases I feel warranted in telling near relatives that sterility is highly probable.

I have only time left to state several questions relating to my subject, without attempting to discuss them. Is menstruation inseparably connected with ovulation? To give a correct answer, we should bear in mind that rare instances have occurred where three ovaries existed in one person; and also, that single ovisacs may be abnormally implanted in the human parovarium, following the type of certain lower animals. In most cases, removal of the ovaries arrests menstruation within a few months. In Dr. H. R. Storer's celebrated Malden case, where he removed everything except an inch of the cervix uteri, the menses appeared eighteen days after the operation, lasting thirty hours, and were attended by the usual feeling of lassitude, backache, etc. The patient was forty-seven years old, unmarried, and had never conceived. The explanation seems to be, that the original menstrual impetus, in some cases, continues for a time after removal of the ovaries.

Negrier believes that the ovaries act alternately, one ovary active one month, perfecting ova, while the other is quiescent; the latter active next month. This somewhat fanciful theory receives a slight support from the circumstance that, when only one ovary is diseased, the pain sometimes returns every alternate month. Ovariectomy has decided one problem for us: it has proved that the sex of the foetus does not depend on the particular ovary which furnishes the germ; that is, that the right ovary does not furnish males, and the left females, exclusively, or *vice versa*.

Sir Spencer Wells tells us that ten patients, from each of whom he removed one ovary, afterwards conceived and bore children of both sexes. A woman with one ovary may even have twins of opposite sexes.

The proportion of male and female children born all over the world is so constant that we cannot help concluding that it must be regulated by a law as yet undiscovered. Here is a promising field for ambitious gynecologists. Whoever does make the discovery is as sure of fame as William Harvey. If I might be allowed to hazard a suggestion, it would be this,—that the determination of sex does not depend on anything done by either father or mother, but occurs long prior to conception in the ovary or testicle. That is to say, I believe that the agency which determines sex depends on peculiarities in the ova or spermatozoa, existing before coition.

One of the most interesting problems waiting solution is the sympathetic or metastatic affections connected with disease of the ovaries or uterus. Thus it is quite common for patients with ovarian disease to be troubled with intolerance of light, double vision, and some other eye-disorders. The same thing is often observed during pregnancy. Have we a correlation of diseases as well as one of forces? The first time that my attention was forcibly directed to this subject, strange to say, was among soldiers. In 1864, we had an epidemic of mumps in the 55th Regiment Massachusetts Volunteers, (colored), followed in eight or ten of the cases, by orchitis. The assistant surgeon thought that it was merely a coincidence, and I was at first inclined to concur with him; but soon became satisfied that the two diseases were more closely related. Dr. Goodell, of Philadelphia, has an article on "Inflammation of the Parotid Glands following Operations on the Female Genital Organs," in Volume X, Transactions of American Gynecological Society, which will amply repay perusal.

The only other example of sympathetic reaction I shall allude to to-night, is the increase of sexual desire in young women affected with phthisis. I have only seen one well-marked instance; but experienced medical friends say that they are convinced of its occurrence. What is the cause? Is it an illustration of the tendency of plants to run to seed when debilitated through a deficiency of nourishment? Does the fact throw any light on the greater fecundity of poor families as compared with rich ones? Perhaps some member will be kind enough to solve, or try to solve, these problems for us.

DERMATITIS VENENATA CAUSED BY LEUCANTHEMUM VULGARE.

BY JAMES S. HOWE, M.D.

Leucanthemum vulgare is the name of one of our common plants, which is known in different localities as white weed or field daisy. It is not indigenous in America, but was naturalized from Europe, being accidentally brought to this country by means of its seeds, which were mixed with those of other plants. It is most plentiful in New England, being still abundant in the Middle Atlantic States; and occurs more or less commonly all over the country, including Canada. It is spreading rapidly, and may be expected anywhere in cultivated lands. It is found throughout

the greater part of Europe, excepting in the extreme North and South, extending even to the Ural Mountains and Southwestern Siberia. It is not found in Portugal, Southern Spain, Sicily, Greece, Lapland, or Finland, and only in the southern parts of Norway and Sweden. Botanists say that the same limitations of distribution which exist in Europe will probably govern the spread of the plant in this country. Here in New England it is very abundant in the fields and meadows, being particularly noticeable during the months of June and July, when it is in full bloom. That it is capable of producing a very intense and troublesome form of dermatitis, and that this fact is not generally known to the profession, has induced me to present several cases of poisoning from this source which have come under my care.

My observations thus far have led me to suppose that it will prove harmful only to those who have a decided susceptibility to the poisonous effects of other plants. In fact, I can go so far as to say that I have yet to see a single case where the patient has not already had one or more attacks of dermatitis, caused by some of the well-known plants which produce the same results as the daisy. I am led to record these cases, not that I can add anything to our present knowledge of these forms of dermatitis and their treatment, but in the hopes of pointing out a source of dermatitis venenata, which, I believe, is not yet recognized by the profession at large.

CASE I. Mary B., aged six years. Two brothers and a sister of this little girl went out into the country, in the month of June, to a picnic; and gathered, while there, a large number of white daisies from the fields, and brought them home to their sister, who was confined to the house by some slight ailment. She was playing on the floor, minus her shoes and stockings, when the flowers were given to her; and remained there for half an hour, holding them in her lap and playing with them, as any child naturally would. The following morning her feet, legs, genitals, hands, and face were the seat of a severe dermatitis, with marked oedema of the legs below the knees, and also of the genitals. When I saw the case again, late in the afternoon, vesicles of small size, and closely aggregated, had formed in various-sized groups and patches upon the affected parts. These were accompanied by intense pruritus, and within the next twenty-four hours nearly all the vesicles had ruptured. This was followed by a gradual subsidence of all the troublesome symptoms, and also by excessive exfoliation of the skin; and, in about ten days, all the affected surfaces had returned to a normal condition. This child had been twice before poisoned by *rhhus*, according to the mother's statement, neither attack being very severe; but it is doubtful if the child had handled the ivy so freely as she had the daisies.

CASE II. Willie D., aged five years. I saw this case in July, early one morning. I found a very marked efflorescence on the backs of the hands and between the fingers, with small, closely-aggregated vesicles in the latter position. What particularly attracted my attention was a well-defined band of a decided erythematous character, extending around the forehead and across the tips of the ears. Upon close inspection, I found this same region to be the seat of a very fine, papular rash, with here and there an already-formed vesicle, while the papules all showed a marked tendency to vesiculation. Upon the face and chin were also small patches of a fine, papular eruption, varying