REMARKS ON BATTEY'S OPERATION.

By J. MARION SIMS, M.D.

I.—INTRODUCTORY: DR. BATTEY'S CASES.

DR. EDWARD J. TILT was the first to call our attention specially to ovaritis, to point out its influence on the general health, and to lay down rules for its treatment. But, notwithstanding the additions he made to our knowledge on this subject, we constantly see cases of ovaritis, so-called, which baffle our best efforts and are hopelessly incurable. In some cases, we find continued ovarian pain and exacerbations of suffering at the menstrual epoch that are almost unbearable. Now and then, this ovarian trouble produces such violent disturbance of the vascular and nervous systems, that life is jeopardised. Occasionally, it terminates in epilepsy or insanity, and ultimately in death.

To my countryman, Dr. Robert Battey of Georgia, we are indebted for what light we now have on the serious consequences of what he terms an unrelieved menstrual molimen. In 1872, he first called our attention to it, pointed out its complications and dangers, and demonstrated a method of relief for it when otherwise incurable.

It is curious and interesting to trace the steps by which important discoveries have at different times been made in medicine. Now and then, the truth is stumbled upon; again it is reached empirically; but sometimes we reason it out. As an illustration of the latter process, the discovery of chloral by Liebreich is an excellent example. The investigations of Battey in connection with the question under consideration were pursued according to the inductive method, and his conclusions were arrived at by the careful study of a single case.

In 1865, Dr. Battey had under his professional care an unmarried lady twenty-one years old, who suffered most intensely during the menstrual epoch. She had complete amenorrhœa. She could not menstruate, simply because she had no uterus. Notwithstanding the absence of the uterus, each monthly effort was attended with such agony, with such vascular and nervous excitement, that she was, as it were, worn out with suffering, and she eventually died of mere nervous exhaustion. She died, as Battey thought, from the immediate effects of an unrelieved menstrual molimen.

With the history and termination of this case fresh in his mind, he began to reason thus: "I have never seen or heard of a death like this in a woman after the menopause. It seems that the sufferings and unfortunate termination of this case were due to an unrelieved menstrual molimen. There can be no menstrual molimen without ovulation. There is no ovulation after the menopause. Cannot the menopause be produced artificially? The removal of the ovaries will, of course, arrest ovulation, stop the menstrual molimen, and bring about the menopause. In other words, extirpation of the ovaries will produce artificial change of life, and this will cure the patient."

Such was his reasoning. The more he thought of it, the more logical it appeared to him, and he determined to put his theory to the test of experiment as soon as a suitable case presented itself. Some time after this, he saw another unmarried lady, aged 30, who had been a confirmed invalid for sixteen years, or during her whole menstrual life. She suffered from complete amenorrhœa, having had her menses but twice during all this time. Notwithstanding the non-appearance of the menses, the menstrual molimen was very severe, accompanied by headache, suffused face, and often with epileptiform convulsions that left her in a comatose state. During these paroxysms, she had repeated attacks of pulmonary congestion, followed by protracted cough. Ordinarily, these paroxysms were relieved in a measure by vicarious hæmorrhages, sometimes from the stomach, sometimes from the lungs, most frequently from the rectum, and occasionally from the nose.

She had repeatedly had pelvic cellulitis, terminating in abscess, and, on several occasions, in hæmatocele. Her attacks, recurring at intervals of five, six, and eight weeks, were always violent, and often seemed to threaten life.

Dr. Battey had this patient under observation and treatment for more than six years, and he exhausted the resources of his art without relieving her in the least degree. Coming to the conclusion at last that there was no hope of curing her, and that she must soon die un-

less he could arrest the menstrual molimen, he determined to remove the ovaries, with the view of bringing about change of life. His patient readily consented to the operation, fully understanding all its dangers. But he had no precedent for it. He then wrote to many of the leading obstetricians and gynecologists of the country, stating his views, and asking their opinions on the subject. But he received no encouragement whatever from any of them. His patient was anxious, nay clamorous, for the operation, and he was obliged to perform it on his own responsibility, without a word of approval from any of his brethren. Indeed, the voice of the profession was against the operation then, is opposed to it now, and is likely to be so for many years to come.

In August 1872, Dr. Battey performed the operation of extirpating both ovaries in this case by the abdominal section. The pedicles were tied with silk ligatures cut short and dropped in the peritoneal cavity. Each ovary presented a recently ruptured Graafian vesicle, in one of which the blood had not yet coagulated, looking as if the ovum had just escaped. The progress of the case was slow. Septicæmia supervened, but was successfully combated with intraperitoneal antiseptic injections after the method of Peaslee. Convalescence was tedious, but the cure was complete. All the nervous phenomena, the convulsions and the cough, the pelvic inflammations, the abscesses, the hæmatoceles, etc., disappeared with the cessation of the menstrual molimen; then she rapidly gained flesh and strength, and she is now in good health.

In this instance, Dr. Battey fortunately proved the truth of his theory, and established a rule that may be followed in similar hopeless cases.

When Dr. Battey published his operation, I wondered that he selected the abdominal instead of the vaginal route for the removal of the ovaries. He has now performed this operation twelve times, twice by the abdominal and ten times by the vaginal section. He gives the following reasons for preferring the latter method.

1. The tissues cut through in the incision are thinner and less important than those of the abdominal wall.
2. With judicious management, air need not, and generally is not, admitted to the cavity of the abdomen, which is inevitable in the abdominal method.
3. A peritonitis set up in the pelvic membrane is much less likely to become general, and is much less grave in its consequences.
4. The drainage of serum from the *cul-de-sac* is prompt and continuous.
5. With care, there is no interference with the mass of the intestines.
6. With properly educated touch, the ovaries are reached with greater facility, and they are brought into view with less strain upon the broad ligaments.
7. These combined advantages render the vaginal method less dangerous to the life of the patient.

As Battey's experience forms the basis of all I have to say on this subject, it will be appropriate to give here a brief synopsis of his cases and results. As his first case has already been detailed, I shall begin with his second, and give the remainder *seriatim*.

CASE II, aged 35, married; had one child five years old. She had bad health ever since her confinement five years ago. There was persistent neuralgia of the left ovary. The ovary was somewhat enlarged and always painful. The pain was aggravated by touch. All treatment was unavailing. Life was miserable. The left ovary was removed by vaginal incision (1873); the pedicle was tied, the ligature hanging from the vagina; there was cystic degeneration of the ovary. Recovery from operation was rapid, and there was great relief for a time. But soon the left ovary began to enlarge, and became as painful as was the right before its removal. The result was, that she was not improved. She was to undergo a second operation for the removal of the remaining ovary.

CASE III, aged 38, married; three children, the youngest nine years old. She had been an invalid ever since her last labour. She had endometritis and continuous ovaralgia. Insanity was threatened. Both ovaries were removed (1874) by vaginal incision. The *craseur* was used; no ligature was applied; no suture. Recovery was rapid. The cure was perfect and permanent.

CASE IV, aged 24, married two years; sterile; had been bedridden two years. She had excessive ovaralgia, aggravated by menstruation or exertion. She took morphine in large quantities to relieve the ovarian pains. The left ovary was removed (May 1875) by vaginal incision. The ovary was bound down by adhesions, which were broken down with the finger-nail and removed piecemeal. Recovery was tedious. She was somewhat relieved, but not cured. She still suffered so much that the operation was to be repeated for the removal of the remaining ovary. Result: not improved.

CASE V, aged 35, married; sterile. She had been invalid and bedridden for many years, and had dysmenorrhœa. Ovarian pains were unceasing. The right ovary was very tender on pressure. Coccygodynia was present. The right ovary was removed (May 1875) by the vaginal incision. The pedicle was ligated. Recovery from the operation was rapid. Improvement was slight. The pain recurred in the left ovary, which was removed by a subsequent operation. The result was unsatisfactory; not improved.

CASE VI, aged 30, married; four children, the youngest six years old. She had been invalid ever since her last confinement. She had ovarian dysmenorrhœa and constant ovarian pains for six years, and was the subject of morphinism. The mind was unbalanced, threatening insanity. Both ovaries were removed (1875) by the vaginal incision; the pedicles were ligated, and the ligatures brought out by the vagina. All went on well till the ninth day, when she was taken suddenly with pain in the abdomen, and she died of peritonitis in twenty-four hours afterwards. *Post mortem* examination discovered an abscess round the stump of the right ligament (and ligature), which, bursting into the peritoneal cavity, produced the peritonitis.

CASE VII, aged 25, single, had severe dysmenorrhœa from her first menstruation at the age of 14. She had had ovarian pains all the time. She had been bedridden for four months. Her nervous system was completely shattered. She took morphia daily in large quantities, also sixty grains of chloral every night. Both ovaries were removed (1875) by the vaginal incision. The pedicles were treated by the *écraseur*. Convalescence was rapid. The cure was complete and permanent.

CASE VIII, aged 28, married; one child eleven years old. She had been invalid eleven years, ever since the birth of her child. She had metritis, pelvic cellulitis, and pelvic abscesses. The uterus was irritable, hypertrophied, fixed in the pelvis by effused organised lymph. She had continued ovarian pains. The left ovary was enlarged and very tender on pressure. Both ovaries were removed (1875) by the vaginal incision. A small hæmatocele in Douglas's *cul-de-sac* was opened and cut through. The ovaries were found to be bound down by adhesions, and were removed with great difficulty. The *écraseur* was used. The ovaries were not removed in their entirety. The operation was unsatisfactory. Convalescence was very slow, and was accompanied with pelvic inflammation and pelvic abscesses. The result was no improvement whatever.

CASE IX, aged 35, married; sterile. This is the same already described as Case V, in which the right ovary was removed by vaginal incision three or four months previously, without improvement. The left was now removed by vaginal incision. The previous operation was followed by pelvic inflammation. The ovary was bound down by adhesions that did not exist at the previous operation. It was broken down by the finger and removed piecemeal. The operation was unsatisfactory. She recovered rapidly from it; but the result was no improvement. Dr. Richardson subsequently performed Nott's operation of exsection of the coccyx for the coccygodynia, which was not at all relieved by the removal of the ovaries.

CASE X, aged 29, single. She had been invalid for many years from functional heart-trouble. She had ovarian dysmenorrhœa. Ovarian pains were persistent. Her mind was impaired by long suffering. Both ovaries were removed by the vaginal incision (1876). The *écraseur* was used. Peritonitis followed, and death occurred on the third day. No *post mortem* examination was made.

CASE XI, aged 34, married; one child, still-born, fourteen years ago. The labour was tedious; the forceps was applied. Sloughing followed, then total atresia of the vagina. She never menstruated since delivery, and had been invalid ever since. She had several operations for atresia, all of which failed. Her general health was completely broken down. She had dreadful suffering every month, with unrelieved menstrual molimen and its attendant symptoms. The operation was performed by abdominal incision, because atresia vaginæ prevented the vaginal. Both ovaries were bound down by adhesions, but were liberated and removed entire. The *écraseur* was used. Both ovaries were of normal size; the left showed a Graafian vesicle recently ruptured. Recovery from the effects of the operation was rapid. She was cured completely and permanently.

CASE XII, aged 22, married four years; sterile. She had had bad health for six or eight years; dysmenorrhœa, pelvic and ovarian pains, worse in the left ovary, and epileptic convulsions. Operation was done by vaginal incision (1877). Both ovaries were bound down by adhesions; the right was partially removed, the left wholly. The *écraseur* was used. The operation was unsatisfactory. She was not improved. Dr. Battey thinks of repeating the operation by abdominal section to remove the remaining portion of the right ovary.

[To be continued.]

THE IMPORTANCE OF PRESERVING A VACUUM IN THE PLEURAL CAVITY AFTER PARACENTESIS OF THE THORAX AND THE INSERTION OF THE DRAINAGE-TUBE;

WITH DESCRIPTION OF A METHOD BY WHICH CONTINUOUS ASPIRATION MAY BE EFFECTED.*

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THERE is one important principle on which, it will be allowed, the successful treatment of empyema and hydrothorax depends in those cases which have required the insertion of the drainage-tube, or where any other plan for preserving an opening into the pleural cavity has been adopted. If we consider the effect of making an opening by which air is admitted into the pleural cavity, we perceive that the expansion of the lung is more or less diminished so long as this opening remains patent. We also perceive that, if the opening be of such dimensions that the air which passes into the pleural cavity is greater in volume than that which passes into the lung in inspiration, there is practically no expansion of the lung and its functions are destroyed. It is evident that, in order to obtain perfect expansion of the healthy lung, there must be no communication between the pleural cavity and the external atmosphere, for the effect produced even by a small opening is very considerable. If we wished to ascertain with accuracy the extent to which the expansion of the lung would be diminished by inserting a tube into the pleural cavity, we should have to consider two important points, in addition to those which would enter into the question if the pleural cavities were independent of one another, and the minute air-tubes were non-elastic. By admitting air into one pleural cavity, we disturb the equilibrium which exists between them when both are closed. We also liberate the force which the tissue of the lung possesses, in virtue of its elastic character, on the side from which atmospheric pressure is removed.

Supposing that the tube which is inserted be very small, in comparison with the aperture of the glottis, the elasticity of the lung will produce such diminution in its volume as to admit a certain quantity of air into the pleural cavity, which must remain, unaffected by the movements of respiration. The resistance offered by a very small tube would be such as to produce but little effect, compared with that which would be produced by a tube of such diameter as that usually employed in cases of paracentesis of the thorax.

When we observe that the tube used for laryngotomy is of sufficient diameter to admit the air necessary for ordinary respiration, it is evident that the drainage-tube will allow such an amount of air to pass through it as almost, if not quite, to annul the forces exerted on the lung by the various muscles of respiration. These considerations enable us to perceive how important it must be to bring the force of atmospheric pressure to bear upon the lung, when it has been compressed by pleural fluid; and we discover the objections which present themselves to the method of treatment of empyema by the insertion of the drainage-tube. We also perceive what may be urged against the method of treatment with the aspirator, the most important of which is the too brief duration of the force exerted upon the pulmonary tissue. We see what advantages belong to both methods of treatment, and some plan, combining a permanent opening for the escape of fluid with the power exerted by the aspirator, suggests itself as reasonable and consistent; and for such a plan I propose the term "continuous aspiration".

The apparatus constructed for this purpose consists of two parts, one of which is attached to the thorax, so as to cover the orifice of the drainage-tube; the second being connected with the first, and used for the purposes of exhaustion. The former may be made of ivory or India-rubber, in the form of a small hemispherical cup, with a broad grooved margin or phlange to obtain adhesion. The second part is a double-valved ball of caoutchouc, of considerable thickness and elasticity, by which the cup may be exhausted and fluid removed.

The amount of atmospheric pressure which may be brought to bear upon the condensed lung will depend upon the expansile power of the exhaustor. In the earlier experiments which were made, one of the self-acting elastic cups used for cupping was employed. Subsequently, an exhausting syringe was attached to it; and finally, the arrangement constructed by Mr. Banks for Messrs. Maw, Son, and Thompson.

A suggestion of my friend Mr. Napier, to employ the respiratory movements of the lowest part of the thorax as an exhausting power, I

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