2. A *current regulator*, rheostat or modifier by which the strength of the current may be adapted to the required needs of individual cases, and this should be of convenient size, durable in construction and simple in arrangement. The simplicity, economy and efficiency of such appliance would insure its being readily adopted by the profession.

3. A *series of electrodes* which should be constructed according to a fixed standard as to size and shape, and they should be made of material which is cheap, readily conducting, and non-polarizable.

4. All should make use of a *standard milliamperemeter* for determining "strength of current" and a *colombmeter* for "quantity" or dose.

Complying with such conditions as these, progress in determining the limitations of electricity as a therapeutic agent would advance with rapid strides. The incandescent electric light plants with low electro-motive force are very common throughout the country. The physician and dentist finds the current extremely useful in his office. It illumines his apartments, it runs his motors, it lights the tiny lamps with which he explores the cavities of the body. It heats the water for his sprays and douches. It will not be long before it will be made use of by the many as it has been for some time by the few, for all the applications of electricity to the human body, since it does away with a host of difficulties that have up to the present been of such magnitude as to make electric applications either a burden or a farce.

RELATION OF GYNÆCOLOGY TO NEUROLOGY.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-second Annual Meeting of the American Medical Association, held at Washington, D. C., May, 1891.

BY WM. B. DEWEES, A.M., M.D.,
OF SALINA, KANSAS.

The intimate relationship which exists between diseases of the organs in the female pelvis and the general nervous system has not yet been elucidated. Though as early as 1858 Brown-Séquard pointed out the dependence of insanity, epilepsy, hysteria and other affections, upon organic disease of the female generative organs. Baker Brown put these teachings into practice and furnished clinical proofs of their correctness. He, however, fell a martyr to the professional bigotry which his doctrine excited. Now, however, that the rancor of that day has died away, his book on "The Curability of Certain Forms of Insanity, Epilepsy, Catalepsy and Hysteria in Women," can be read with interest and modified by the later revelations of science, his teachings can be followed with safety.¹

¹ Dr. Charles A. L. Reed, of Cincinnati, O. Buffalo Medical and Surgical Journal, May, 1889.

The influence of the unhealthy uterus and ovaries upon the development of the diseases of other organs of the body by virtue of the neuric forces through the intermeddling of the complex generative nerve-circle, the sympathetic and the cerebro spinal systems of nerves, is a matter which I am led to believe has received very little attention at the hands of practitioners as evidenced by the fact, that I mailed a carefully prepared letter of inquiry to two hundred and fifty of the most noted practitioners of the United States, and the only responses came from Dr. Charles A. L. Reed, of Cincinnati, O.; Drs. Barton Cook Hirst, William Goodell, James Tyson, John V. Shoemaker and R. J. Dunglison, of Philadelphia, Pa.; Drs. Trail Green and Charles McIntire, of Easton, Pa.; Dr. C. Henri Leonard, of Detroit, Mich.; Dr. Henry O. Marcy, of Boston, Mass.; Drs. J. Taber Johnson and Irving C. Rosse, of Washington, D. C.; Dr. R. H. Thomas, of Baltimore, Md.; Dr. P. Bryce, of Tuscaloosa, Ala., and Dr. Alexander B. Shaw, of St. Louis, Mo. I had hoped to be able to present valuable data from this source, but the responses being too limited in number, and too meagre with facts, to be of any material value to science, they have therefore been omitted.

For more than a decade my attention has been directed to the interdependence between diseases of the female pelvic organs and diseases of other organs. Which is the cause and which the result is not always possible to determine, the relationship evidently varying in different cases, for while in a large percentage of cases of neurosis in the female, interdependence of diseased conditions through the neuric forces could be distinctly traced and finally lucidly established, by the subsequent course and termination of those cases; in other cases the causes could be seen to depend upon a condition of malnutrition alone.

My authority for coming to this conclusion may fairly be questioned, and therefore I give my reasons. If I am consulted by a female patient complaining of voice, heart, brain or other troubles in whom examination reveals physical signs of diseases of these organs, and if in the same patient I find uterine or ovarian disease, and if the voice, lung, heart, brain and other troubles disappear upon treatment of the uterine or ovarian disease without any other medical aid, it is but logical to conclude that the voice, heart, brain and other troubles were dependent upon that of the womb or the ovaries. This being conclusively shown, by a few illustrated cases selected from a large number and appended hereto, it follows that what may have been a coincidence becomes a sequence, and the conclusion at which I have arrived is inevitable.

Far be it from me to assert from my experience that all cases of neurosis in the female are dependent upon lesions of the generative organs;

but that a very large percentage of the neurosis are dependent upon local disease within the pelvis is fully warranted. It is not my intention to theorize upon the subject, to waste useful time in useless conjectures, my object being only to draw attention to the clinical fact and to endeavor to awaken the medical mind to its great practical importance.

The hindrances to the true understanding of the relation of gynecology to neurology are to be found in:

1. The unsettled state of physiological and pathological history.

2. The absence of a thorough knowledge of the anatomy of the reproductive nervous system, and of data regarding the interdependence of menstruation and ovulation; and last, but by no means least,

3. The existing ignorance concerning the neurosis attendant on lesions of the female reproductive organs.

Confronted with these facts we must acknowledge that we grope for the truth like the blind, and are at a loss for philosophical explanations based on historical and experimental research.

Every experienced gynecologist will upon reflection admit, that there is nothing very extraordinary in the implication of distant organs in connection with and dependent upon utero-ovarian disease through the neuric forces, since in the practice of all such, instances are not wanting wherein tissue changes have been produced at a distance by ovarian or uterine irritation. Medical literature is full of examples of acne rosacea, pharyngitis, bronchitis, epilepsy, catalepsy, hysteria, melancholia, mania, insanity, diseases of the joints and muscles of the extremities, lesions of the heart and lungs, paralysis, etc., superinduced by reflex irritability of the intrapelvic organs. It is quite true that the number of women dying from these complications is now much less than formerly. We have learned better to differentiate and treat disease, but it is doubtful if we fully appreciate the consequential relations which one abnormal condition bears to another. While in many of these interdependent complications relative to the subject, the disease of distant organs bears to intrapelvic disorders the relation apparently of effect to cause, and you can observe for yourself the fact, yet the manner in which the changes are brought about may remain an open question.

Neurosis may be defined as an exaggerated intensity of both the sensor and the motor forces, and may be induced by *a*, developmental, or *c*, pathological causes.

a. Psychical causes may act by an impressionable idea allowed to become fixed by an active fancy or imagination, producing a diseased condition of the imagination, whencesoever, idealization produces neuric impulses.

b. Developmental causes may act by the rapid and swelling growth of the intra-pelvic organs as manifested by gestation.

c. Pathological causes may act by a fluxionary movement, as in suppressed menstruation; the presence of the neoplasm of the ovaries or uterus; misplacement, engorgement or inflammation of these organs. Pathological causes may also be produced by muscular laxity of the abdominal or spinal muscles, or both—unquestionably the most prevalent forerunner of all causes—destroying the primitive erectness of the body, the normal obliquity of the pelvis, the maintained ascendent position of the internal viscera from below upwards, resulting in a mechanical displacement of the visceral status, involving a train of both physical and functional derangements of the pelvic organs.

All of these causes may and do pervert the normal forces of the complex generative nerve-circle to disturb the whole economy, and the persistence and permanence of these causes may develop the emotional influences to an uncontrollable degree, as evidenced by that undefinable neurasthenia known or designated by the term hysteria, or finally affect the mind and even destroy reason, as evidenced by melancholia or insanity. Thus we have the sympathetic neurosis, hysteria, as the analogue of that cerebral neurosis, insanity, both alike dependent upon pelvic neurosis, which fact goes to prove conclusively the interdependence between gynecology and neurology.

In the language of Dr. Chas. A. L. Reed, of Cincinnati, O., who, speaking of the female organs of generation, says: "It may not be amiss, however, to recall the fact that all of these organs have intimate connection with both the sympathetic and spinal systems of nerves, and that these systems of nerves in turn communicate with each other. Through these instrumentalities morbid impulses originating in diseased conditions of the intra-pelvic viscera may be telegraphed, as it were, either to those centres which preside over nutrition, or to those other centres which govern sensibility and motion. In the former instance the sympathetic system furnishes the route of transit, and the result may be observed in the modified calibres of all the blood-vessels generally; in the perverted activity of all the glandular organs; in the unrhythmical movements of all the other viscera and gland ducts, or in a more or less marked interference with ultimate tissue nutrition. In the latter instance the cerebro-spinal system of nerves is involved and the results are pain, and may be motor disturbances of either the voluntary or reflex character. In either case the brain is reached, and we cannot fancy that impressionable organ receiving an impulse in excess of normal without sustaining more or less functional disturbance, whether that

disturbance be manifested by psychic phenomena or not. The perpetuation of this disturbing influence through the persistence of the initial lesion in the distant viscera is sufficient to convert the functional disturbance of the brain into an organic change involving that organ."

Here let me digress to state in this connection that I regard thought and all mental actions to be the results of brain elimination, and in proportion to the quantity and quality of the grey matter of the brain so will be the intellectual capacity of the individual. Any change, either progressive or retrogressive, in the metamorphosis of the ultimate cell structure of the brain will upset that symmetrical balance of action known as sanity, and the various grades of insanity are developed. I regard the brain as the being—the man—all else, limbs and organs, as servants moved and compelled to do duty by the nervous mass. Oken asserts "that the animal is naught but nerve." Can you gainsay him? From the nervous mass called brain issue two, and only two forces, one sensor and the other motor.

Returning to our subject, it may again be argued that, first, there is a derangement and impairment of the complex nervous system and neuric function from the utero-ovarian or pelvic diseases, followed by impaired digestion and mal-assimilation as a natural consequence. Then comes the persistence of disordered hepatic, renal, etc., circulation, the invasion of the contents of the digestive tract by the *torula cerevisia* and consequent fermentation with its attendant disorders constantly increasing. Finally, by excessive irritability of the nerve-circle presiding over the orgasm function there is developed a morbid sympathetic or cerebro-spinal action, which may be curable because there is simply supernatural reflex irritability,—a sympathetic or cerebral neurosis dependent upon pelvic neurosis.

APPENDIX QF CASES.

Case 1.—In May, 1886, I was summoned to take under care the wife of a farmer, aged 54 years, and the mother of two sons, who had passed the menopause at 46, and always enjoyed good health up to about eighteen months prior to my seeing her, when she received some injuries by being thrown from a carriage by a run-away horse. Her suffering then being confined chiefly to her knees, which had become very swollen and painful, presenting all the local characteristics of acute articular rheumatism, for which disease, (the husband stated), nine different physicians had treated her during the eighteen months of her confinement to bed, without any apparent benefit, aside from the temporary relief of pain. A timely and careful examination revealed a complete protrusion of the uterus, greatly congested, from the vulva of the patient, who was lying on her back, and both her knees swollen to three times their normal size, red in appearance and very painful to the touch, so much so that the bed clothes had to be supported above them. She was very much emaciated by her long suffering and confinement. I noted my diagnosis *procidentia uteri*, complicated with neuristhenic insufflation of both knees—hys-

terical knees. I repositioned the uterus and retained it by proper mechanical support and painted the knee joints twice daily with oil of peppermint, which together with attention to diet and cleanliness constituted the entire treatment. The patient made a rapid recovery, she being able within six weeks to leave her bed and come to my office, a distance of ten miles, with all the appearances of being a well woman, and has remained well ever since.

Case 2.—Miss —, aged 24 years, was supported into my office by her father and mother seven years ago. The history given to me of her case was that she had been then under treatment for consumption and hystero-epilepsy for six years, without benefit, but on the contrary was gradually failing. The girl's appearance was pitiable in the extreme. Large drops of cold sweat bathing her emaciated face, which bore a livid hue, with an expression of extreme anxiety; her extremities swollen and abdomen distended until it had become painful. Of late she had been having frequent hæmoptyses with dyspnoea, painful chest and great increasing weakness. Back-ache, irregular and painful menstruation, leucorrhœa, anorexia, hacking cough, and a weak husky voice. She was now seized with a hystero-epileptic convulsion, and I had to defer further examination until it had passed off. After which auscultation revealed areas of dulness with sibilant ronchus over both lungs, prolonged expiration and feeble heart's action. Examination per vaginam showed a prolapsed retroflexed and inflamed uterus. The treatment consisted of special attention to the uterine condition, rest in bed for several months, hot water douches and nourishing diet, with finally placing a Smith Hodge pessary, and her recovery was complete in six months, she being robust and well ever since.

RAPID DILATATION AND CURETTING.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-second Annual Meeting of the American Medical Association, Washington, D. C., May 5, 1891.

BY J. G. CARPENTER, M.D.,
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This is a subject of no little importance to the profession; the voice of warning has already been raised against it, might be said, the wholesale use of rapid dilatation and curetting or the practice of these in the hands of those who are unskilled in their use and are poor diagnosticians of intra pelvic disease; in fact, these therapeutic measures have been severely condemned by distinguished abdominal and pelvic surgeons, chief of whom is Dr. Joseph Price of Philadelphia. He has written a most excellent paper on "Certain Causes of Major Pelvic Troubles Traceable to Minor Gynæcology."

That they have been severely condemned is no argument against their proper use; that they have been shown to be instruments of great harm in the hands of the rotenist, the inexperienced, and unskilful, and met with so great censure by intra pelvic surgeons so eminent, will deter many from their former practice and save the female the ordeal of abdominal sections. It may be truthfully stated that when the intra pelvic affections threatening life, arising from rapid dilation and curetting, as well as the improper use of the uterine sound and trachelorrhophy, and abuse of pes-