

formity proportionate to the amount and character of the strain, while the persistence of the aberration of function would depend on the degree of interference with nutrition and the relative perfection of the different parts of the mechanism.

The history of the sexual life of women shows that, even among the most healthy, excitement, overwork or emotional disturbance are reflected in disturbance in the function of the generative organs, especially among those in adult life and who have borne children. If these abnormal conditions occur during the menstrual molimen or in the cycle of maternity, they result in dysmenorrhea, headache, emotional outbreaks, or abortion, delirium, subinvolution, leucorrhea and ovarian tenderness; all of which disappear as soon as the general health of the woman is restored to normal. On the contrary, if the nervous organization of the woman is unstable, these untoward effects are exaggerated and tend not only to recur but to persist and become habitual. This is manifested by the change of character, which as a rule is permanent; the failure of memory and attention; and the lessened or lost capacity for continuous mental effort. Even in the mildest cases there is loss of self-control, manifested by impatience, irritability and complete loss of "grit," so that the victim succumbs to trifling disturbances, is exhausted by slight muscular effort, and on account of these conditions becomes abnormally self-conscious, recording all experiences in a staccato key and looking upon every relation in life from the standpoint of individual personality; realizing vividly the responsibility of others toward herself, which she magnifies, but losing sight entirely of her responsibility toward others. These people are most unhappy, living always on a transcendental plane of nervous erethism, magnifying every ordinary sensation into a profound emotion; seeing in every call for muscular effort a herculean task, and resenting the apparent want of sympathy shown in the failure of those around them to appreciate things as they see them; while at the same time their exaggerated egotism makes it impossible for them to realize that there is any standard other than their own.

If I am right in my contention it would follow that the symptoms accompanying pelvic disease and menstrual disorder and referred to them are the result, rather than the cause, of disturbance in the nervous system, and that their variation, intensity and persistence are dependent upon the nervous potentiality of the woman. Therefore, in determining their pathology and considering their management, as well as the prognosis and the effect of treatment of the disease of the generative organs; we should be guided by the data to be obtained from the family and personal history of the woman, which show the limitations of her nervous potentiality and the nature of its response to the untoward conditions in her environment.

Neuroses and psychoses as they occur in men are quite commonly attributed to disease conditions in, or abuse of, the generative organs, but we do not hear of operative measures being recommended for the cure of the existing neurosis or psychosis. On the contrary, it is fully recognized by those whose experience has made them familiar with the manifestations of insanity, that these disturbances or perversions of sexual function in men are symptoms and a part of the neurosis or psychosis. The gonorrheal infection, which in woman produces a pyosalpinx or hydrosalpinx or pelvic adhesions, in man produces cystitis, pyelitis or septic arthritis.

Yet, if these conditions occurred in association with a neurosis or psychosis, they would not be looked upon as causative factors, and we would not expect to cure the nervous disease by operating upon the generative organs; although such an operation might be done for other reasons.

Three men have been admitted to the hospital at St. Peter during the last ten years, the victims of self-mutilation, in all of whom dementia rapidly supervened upon the castration. Their history, however, showed them to be defective individuals, in whom the mental breakdown was the result of the incidence of the ordinary stress of industrial and social competition upon a limited cerebral potentiality at a time when resistance was lessened by privation or disease.

I can not do better in closing than to quote from the conclusions expressed in my paper of last year on this subject: Menstrual disorder and pelvic disease are quite commonly associated with the different neuroses and psychoses, but in my experience they bear no apparent causal relation to the nervous disturbance; nor is the intensity of the nervous disturbance in proportion to the gravity of the physical disease; but on the contrary, the most grave pelvic disease, even among the neurotic and insane, exists without disturbance in the nervous system and frequently without physical symptoms.

In cases where the insanity or chronic nervous disease has existed for more than a year, or the patient has a defective nervous organization, treatment of the disease of the generative organs is practically without effect upon the insanity or neurosis, and in such cases operative interference resulting in the establishment of an artificial menopause almost invariably hastens the onset of dementia.

Operative interference is called for in the treatment of pelvic disease among the insane for the same reasons that would determine the necessity for such treatment among the sane; that is, for purely surgical reasons.

In order to determine whether or not treatment of the disease of the generative organs will have a curative effect on the insanity or neurosis, it is important to know the family and personal history of the patient with regard to the presence or absence of evidence of unstable or defective nervous organization, the length of time the insanity or neurosis and disease of the generative organs have existed, and to what extent the general health of the woman is affected by the pelvic disease independently of the insanity or nervous disease.

#### PELVIC DISEASE AS A FACTOR OF CAUSE IN INSANITY OF FEMALES AND SURGERY AS A FACTOR OF CURE.

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In considering what we know of the causes of insanity, the unknown quantity represents an equal ratio with that which may be fairly regarded as the known. In the psychiatric revival of the last ten years, the moral causes, upon which so much stress was wont to be laid in the past, have sustained a severe recession.

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Formerly excessive grief or excessive joy, loss of property or loss of soul, diabolism or sainthood; in brief, any disturbance of the emotions, was sufficient in assigning cause. To-day, in the light of what we know of anthropology, pathologic chemistry, bacteriology, and autointoxication, science has turned to physiologic phenomena for explanation in the disease, insanity. It having been observed in the early history of medicine that many nervous and emotional disturbances in women were associated with disorders occurring at puberty, the catamenia, the puerperal state, the lactic and the climacteric periods, the older observers placed great weight upon these normal physiologic appearances as evidences of pathologic manifestations.

If the insane condition suggests a disturbed brain on the one hand and pelvic disease on the other, an allied pathologic condition would naturally suggest a close anatomic connection and an intimate physiologic association. For what interest it may lend we will briefly rehearse the early development of these two sets of organs and note in how far there is justification for this faith from an embryologic standpoint. The earliest evidence of anything like form in the embryo of organic life is the aggregation of the epiblastic cells about a medullary groove, which ultimately becomes the neural canal; then there quickly follows in the anterior portion of this canal the formation of three vesicles which later go to make up the brain. In the chick all this process occurs within the first twenty-four hours. About the forty-fifth hour there appears upon the field for the first time the earliest indication of any cell arrangement in connection with the genital organs, viz., the Wolffian duct, a product of the mesoblastic layer. On the fourth day may be seen on transverse section of the embryonic chick the first appearance of the Wolffian bodies. These are vascular glomerulous structures, and in the human appear to have some connection with the embryologic evolution of the genital organs. They remain functionally active throughout life in some lower vertebrates, but atrophy before birth in mammalia (Quain). However, vestiges remain as the efferent ducts of the testes, the paradidymis and the gubernaculum (Kobelt) of the male, the paroophoron (His and Waldeyer) and the round ligament of the uterus of the female. They seem to establish their identity in these parts of the genital organs. According to Waldeyer ova are seen in the thickened germinal epithelium of the embryo chick of four days. Up to a certain time in the human the external organs are entirely of the same form in both sexes, and the genital organs which afterward distinguish sex have a common origin. At about two and one-half months the genital tubercle projects about 1.5 mm., and has a knob-like end which indicates the future glans penis or clitoris. On its lower surface is situated a groove bounded by the genital folds, which in the female become the nymphæ. At twelve weeks the sex is yet indefinite, and not until three and one-half months is the sex distinguishable. Thus, while the genital apparatus has not taken on its form or function, the brain and cord are long since established in both and preside over all. Flechsig and Efinger, in their investigations in the embryology of the nervous system, have shown that most of the nerve fibers develop their medullary sheaths before the fourth and sixth week. Before the sexual organs have begun to functionate, the various segments of the cord are fixed and established, and are concerned in the evolvement of the very or-

ganism of which they are but an embryonic part. It is to be borne in mind in this brief résumé that the entire nervous system, including the peripheral, sympathetic, and splanchnic systems, develop from the epiblast, while the genital and urinary systems take their origin from the mesoblast; that these different systems of organs were formed at different stages of early development; that the function of the generative organs comes into activity later and departs earlier. Furthermore, after the organism is fully evolved, and all its parts fixed in function, that the pelvic organs are formed to be innervated by the lowest centers of the cerebro-spinal axis; that their connection with the higher brain centers is indirect and remote; that their functions are largely, if not wholly, involuntary and automatic, as are those of other organs of the viscera depending upon the spinal cord for their innervation. The burden of explanation of these pathologic seemings must needs, therefore, fall upon the sympathetic system, of which we know so little, but whose screen is so convenient when something of a functional character is to be elucidated. In approaching the subject from this standpoint should we not have a care in crediting an inferior organ which has developed under the dominance and supremacy of a higher organ with so great an influence in instituting pathologic processes in that organ? When we consider the distance and indirect path which an impression must pass from the lowest segment of the cord to the highest cortical level, is not the probability scant for minor local lesions or disturbances causing such a degree of irritation as to establish a central psychical disorder?

All the eminent authors, past and present, who have written of mental disease have treated the subject of the relation which disturbances of the genital organs of females sustain to the cause of their mental difficulties.

Hippocrates spoke of the first menstrual effort in this connection. Esquirol says in his text: "Menstruation, which performs so important a part in the economy of women, can not be a stranger to the production of insanity. It even takes a sixth place among physiological causes." He alludes with equal fervor to leucorrhœa, the puerperal state and period of lactation. Greisinger and Feuchtersleben, the older German writers, with equal enthusiasm allude to the part which disturbances of the genital organs take as physical causes of mental disease in woman. Clouston recognizes puerperal and lactational insanity as special forms, although other reliable observers discredit these as special types. Maudsley must be added to the list, but modifies his argument as follows: "So frequently is hereditary predisposition more or less traceable in these three forms of insanity—that of lactation, puerperium, and pregnancy—occurring in connection with child-birth, that we are warranted in declaring that it is quite exceptional for any of them to be met with where it is entirely absent." He adds that "disease of the pelvic organs may act as a powerful co-operating cause for the production of insanity without giving rise to any particular group of symptoms." Among the older writers reference is made to special cases of mental disturbance which seem to depend upon pelvic disease. Schröder Van Der Kolk alludes to that of a woman, perpetually melancholy, who was relieved by replacement of the uterus. Fleming also relates cases cured by the employment of pessaries. Since these men wrote, all that is known of asep-

chemical pathology, abnormal states of the blood in the pregnant condition, and kindred matters, have been added to pathology in general and have become common property in the pathology of the insane state.

As representing the more modern and rational view of this question your attention is called to two authors particularly.

Krafft-Ebing maintains that the influence of diseased generative organs in woman should not be underrated as a physical cause of insanity, and gives them the following order: "1. Uterine trouble, accompanied by chronic inflammatory irritation changes. 2. Neuralgic and hyperesthetic affections of the vagina. 3. Chronic catarrh, hypertrophy, erosions, etc., of the cervix." He holds that malignant disease seldom leads to insanity; that the psychosis presents nothing characteristic; that genital disease sometimes so weakens a constitution that it falls a prey to mental disease, or occurring in a pre-disposed person, acts as an exciting cause of insanity.

Kraepelin, with no little degree of conservatism, admits a close relationship between psychic conditions and the sexual life, as evinced by the changes in character in the normal development and retrogression of the sexual organs, and in the altered character of the castrated. He regards it, therefore, comprehensible that disease of the sexual organs may have a decided effect on the psychical life. Reference is made by him to the special disposition of women to develop insanity at the climacteric, a period of retrogression and degeneration noted in men as well at the beginning of old age, to the circumstance that operative procedure originated from the fact that certain forms of hysteric insanity improved by treating existing genital disease, and the conclusion was drawn that displacements of the uterus, erosions of the cervix, diseases of the tubes, ovaries and vagina, were actually able to produce insanity, and that hysteria is often the clinical expression of these cases. These cases furnish the list of wonderful cures by operation. We know, however, that the same results are obtained through entirely different, even senseless means, from which we conclude the effect to be a psychic one. In fact, upon the ground of clinical experience to-day, we can say with certainty that disease of the female genital organs leads to insanity only when the ground has been already prepared by disease-predisposition. It is without characteristic clinical features, which are dependent on the constitution of the one affected. We will have to do with some one of the many forms of degeneration insanity. It is noteworthy in the entire matter that the severest diseases of the pelvic organs—the malignant tumors—comparatively seldom produce insanity. When this is the case, they are such forms as occur with all severe disturbances of nutrition.

Since prominence has been accredited the physical element as a factor in the cause of insanity, renewed effort has been made to increase the percentage of recoveries of the insane, but with little promise. Despite the pursuance of lines of treatment in accordance with our newer ideas of pathology, our increase in the list of recoveries is not commensurate with the effort and energy employed. Out of the theory that disease of the pelvic organs of females was responsible for many of the neuroses incident to this class, and out of the fact that some brilliant results have been demonstrated by the use of the knife, that instrument in the hands of the surgeon has been heralded as a therapeutic agent of virtue in the cure of the insane.

The knife as a factor in cure has widened its sphere of action and utility in a number of new fields during the last quarter of a century. The part it has played in the realm of the abdomen, the kidneys, the urinary tract, the organically diseased brain, the stomach and the intestinal tract, has given an impetus to this means of cure, until now the only question arises as to what are the limitations of its real usefulness. In this observation I have reference to the rôle which surgeons play in the cure of insanity by operations upon the pelvic organs of the female.

Neither one nor several successful cases is sufficient to establish a rule of practice. While reports of a considerable number of successes have been recorded, those cases in which failure resulted, and those in which the condition was made worse have no place in publication. The results have been so various that the entire subject is a mooted one, and our object in this paper is to throw some light upon it. On the other hand, most alienists, while granting that cure may possibly follow the use of the surgeon's knife, are not willing to join the ranks of those of such strong faith, but oppose it with a conservatism which they regard as justified by a broad and practical experience. Between these two positions the writer believes there is a middle ground on which all can stand with rationality.

Before endeavoring to indicate what this position should be, it is our purpose to present some practical results of operations gleaned from those who have been investigating this subject, and from the observations of others equally interested.

Dr. H. A. Tomlinson of St. Peter State Hospital, Minnesota, reported, in a monograph, in 1899, a study of 450 female cases. Half of these had some menstrual irregularities. Of the married women 58 per cent. had pathologic conditions of the pelvis, mostly dependent on labor. Many of these were operated on—number not stated—with the following general results: More or less improvement of physical condition, occasionally slight improvement of mental condition, but in the majority of cases practically no effect on the mental condition, and no cases cured. Another series of 231 unselected cases contained 38 whose mental disturbance was apparently increased by the pelvic condition. Seventy presented pelvic diseases justifying operation. Results: Pelvic condition cured in 22, improved in 48; mental condition, no cures, 29 improved, 51 unimproved.

Dr. R. M. Bucke, Ontario Asylum, reports that 136 selected cases—out of 750—showed 126 with pelvic disease; of these 110 were operated on, 196 operations being made altogether. General results: 3 deaths; 40 recovered mentally, 36 per cent; 32 improved, 29 per cent.; 35 unimproved, 32 per cent. The results in inflammatory were much better than in non-inflammatory conditions. Of the cases benefited by operation, the number where duration of insanity exceeded two years equaled the number under two years' duration. Thirty-two non-gynecologic operations showed no mental recoveries. This author places importance on the toxic effect of internal secretions of the ovaries and glandular structures of the cervix, and claims that one-fourth to one-sixth of all female patients in asylums are there because of pelvic diseases.

Dr. A. B. Howard, of the Cleveland State Hospital, reports 12 cases operated on. Results: 1 cured—acute case of 9 months' standing—6 improved—in 3 the improvement was of short duration—4 unimproved; 1 death from malignant disease. Of our own cases, 10

operated on at the Columbus State Hospital showed no recoveries, and in 2 the operation resulted in making the mental condition worse. Another group of 4 cases of ovariectomy was under my observation while acting as assistant in the Cleveland State Hospital, about twelve years since. Results: 1 recovery, 2 improved, 1 unimproved. These cases were 2 of hystero-epilepsy, 1 improved, 1 unimproved; 1 of recurrent mania, improved, has since had one recurrence; and 1 of hysteromania of five years' duration, resulting in a perfect cure.

1. The 206 cases mentioned here as operated on have been gathered out of an aggregate of 2000 insane females.

2. Of the selected cases it appears that we may expect recoveries in about 33 per cent.

3. Of the unselected cases we may expect a cure in about 5 per cent.

4. Inflammatory pelvic diseases promise the best results.

5. The cases wherein the mental disturbances are associated with the catamenia offer the best probable results.

6. Operation on the hereditary, predisposed cases, with no local disease, will most probably result in failure, and leave the patient in a worse condition than before operation by hastening an early climacteric period.

7. The class of cases predominating in different localities differs to such an extent as to probably account for some of the lack of uniformity of results noted by widely separated observers.

After an inventory of the data at hand, it appears that we are justified in the conclusion that pelvic diseases are a factor in the cause, and that surgery is a factor in the cure, of the insane condition. The question now confronting us is what estimate may be placed upon them as factors; as such both evidently have their limitations. The established law of multiplicity and complexity of cause admits few exceptions in singleness of cause. It is important to take the broadest view in the consideration of etiology in insanity. The specialist is too prone to infer the organ of his specialty to be the source of all other pathologic conditions in the body, when the lesion and the remote symptoms may be but consequential to general conditions. In the consideration of cause in the insanity of females, hereditary predisposition, puberty, the puerperal and the climacteric periods are especially to be borne in mind. In the general physical examination, pelvic disease should always be sought for, and when found to exist should be eradicated. No physician should consent to the commitment of a female until the existing pelvic disease is removed, except under absolute necessity from her mental condition. Upon entrance into an asylum, every female should be examined by a conscientious specialist, and if found diseased, operation should be urged. In brief, the rule of practice should be to give the insane woman the same advantages of treatment as the sane, when disease actually exists.

In the absence of pelvic disease, operative procedure as a possible curative factor should be approached with the best judgment and the greatest caution. It is questionable if medical knowledge and experience would justify operating on the defective classes, females at puberty, idiopathic epileptics and those whose insanity is of not over two years' duration. All our asylums have representatives from these classes, who have not only been not benefited, but in reality have been

made worse by operation. This is the list it would be at least instructive to parallel with that of the cases benefited, before passing judgment on any case to be operated on.

There are patients who, I believe, may be regarded as non-diseased but operable. These include the hysterical, those especially disturbed at the catamenia, and those in the post-climacteric years. From the first two, some of our most brilliant recoveries have come by the employment of surgery alone. Operation in the post-climacteric period may hasten senility, but is not likely to do much absolute harm.

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#### DISCUSSION ON PAPERS OF DRs. NOBLE, MARCY, JOHNSTONE, BEAHAN, RICKETTS, TOMLINSON, CARPENTER AND HUGHES.

[Dr. C. H. Hughes' paper on "Interrelation of Gynecology and Neurology in Practice" was printed in the *Alienist and Neurologist*, of July, and an abstract thereof in THE JOURNAL, vol. xxxv, p. 257.]

DR. W. E. PORTER, New York City—The most interesting and instructive fact which has been demonstrated by these highly interesting papers is that we must not, as gynecologists, attempt to deal with this most important subject alone. We must combine with the neurologists, but how infrequently this is done. We have a case presenting these nervous phenomena and we proceed at once to operate, without consulting the neurologist, and unfortunately do more harm than good. The patient is put into a mental state far worse than that which existed prior to the operation. This phase of the subject has not been dwelt upon and I will take the liberty to refer to nervous phenomena as the result of a premature menopause brought on by oöphorectomy and similar operations. In my clinic in St. Vincent's Hospital I frequently have such cases brought to me. Hysteria, mania and hystero-epilepsy occur in a surprisingly large number of cases. The patient has convulsions, epileptiform in character, occurring two or three times a month. I am sure we have all seen many of these cases. The ordinary nervous conditions are most commonly observed. Hence, before proceeding to operate on cases having a history of some nervous condition, we should consult with a neurologist and work with him. There should be in connection with the asylums for the insane a consulting gynecologist. The superintendent can not make a local examination, which every patient should have, and the gynecologist would, therefore, be a most valuable addition to the staff of the asylum.

DR. GEORGE ERETY SHOEMAKER, Philadelphia—It seems to me that Dr. Hughes struck the point at issue, that the gynecologist and neurologist should have the same view-point from the one central standpoint of truth. If we could all have the same training, and look at these things from the same point of view, our problems would be easily solved. Even as it is, our objects and methods are nearer alike than some think. A friend of mine has charge of a large institution for the insane, and is opposed to the gynecologic treatment of the insane. Now, he says that many of his patients show defective nutrition and he always proceeds to build them up. He says he cures quite a number of insane in this way and improves a great many belonging, of course, to certain types. The gynecologist goes to work on cases showing profound nervous symptoms as well as gynecologic symptoms in very much the same way, and proceeds to remove whatever trouble he can detect as an indirect way of improving the patient's nutrition. He has learned from the study of hematology that the presence of a pyosalpinx will alter the proportion of red and white corpuscles and other constituents of the blood. The soreness

present prevents all healthful exercise. He removes the infected tubes, not to cure a nervous condition directly, but to put that patient on the highest possible plane of nutrition. He has seen fibroids which have bled a little for years and years and finally the nutrition of the patients is brought to such a low point that disorders to which they may be liable have an opportunity to develop. Given a nervous system unstable by heredity, a bleeding fibroid may thus be an indirect cause of certain disorders of the nervous system. The gynecologist removes the bleeding fibroid, not to cure the insanity or neurasthenia directly, but to help the patient to a better state of general nutrition, and in some instances the result is remarkably good. He finds another patient who gets up ten or twenty times during the night to urinate because of descent of the bladder. The loss of rest has told sadly upon her nervous condition. He restores the pelvic floor and makes the patient comfortable. She rests well and regains her normal nervous equilibrium. We are, many of us, working to secure the same ends, and why need we clash in our theories?

I want to call the attention of our neurological co-workers to a misleading statement which sometimes appears in their statistics or case reports. The statement is "that such and such patients have had their ovaries or uteri removed to cure insanity, etc., without effect." Now, by what authority can they state that those ovaries were removed to cure insanity? How do they know whether or not there was grave ovarian disease in those organs? For example, a patient of mine had hysterectomy for large bleeding infiltrating adenoma, practically adenocarcinoma. She was of bad heredity, afterward became insane, and is now in an asylum. I submit that the superintendent of that institution, who has never communicated with me, gravely errs when he classes that patient with others whom he supposes have been operated on for insanity.

DR. JOSEPH EASTMAN, Indianapolis.—If there is one thing more important than another, any two things more appalling than any other two, it is the rapid increase of insanity and cancer. If there are more important problems for the coming century I would like to know what they are. Physical deterioration is the law of advancing civilization. The nervous tension so much in evidence in our school system and in society surely stands in a causative relation to the two dire maladies I have mentioned. A young gentleman, the other day, asked for the privilege of serving an apprenticeship with me in order to learn my specialty. I asked him how long he had practiced. He answered, eight years. I told him he had better go back and do general work two years more, as ten years in general work was an essential prerequisite before beginning a specialty. From the remarks this afternoon it looks as though the old-time general practitioner, who looked through the patient's entire system as well as through the speculum, was again coming into vogue. To plough deep, however, implies no attempt to turn a wide furrow. So it seems to me that a series of specialists, ploughing deeply along their respective lines, are needed in these obscure cases and will get good results. I recall two instances where gentlemen relieved insanity by neurologic and gynecologic treatment combined. I have said enough. It was only my desire to pay respect to the subject, which prompted me to take the floor. It were like adding color to the beauty of the rose with a paint brush, or embellishing the beautiful tint of the lily with a pencil to attempt to add one word to the subject under discussion after the scholarly, elaborate, eloquent and beautiful remarks of America's most distinguished neurologist, Dr. Hughes, of St. Louis.

One point with reference to Dr. Rickett's paper, I would like to call his attention to the report of the Edinburgh committee, that calomel beyond a question diminished the flow of bile. What seemed to be an increase of bile was in reality the subsulphid of mercury.

DR. I. S. STONE, Washington, D. C.—I am reminded this afternoon of a discussion some years ago along the same line, when several papers were read on this very subject. I wrote to nearly every insane asylum in the United States to ascertain whether any examinations of the genital organs were made, and I was astonished to learn that in not a single institution in this country were these examinations made. I

want those gentlemen of the asylums—the alienists—to at least give us credit for stirring them up in that matter.

In regard to Dr. Noble's paper, I see he has gone to much trouble and has done a great deal of work. He tells me that he has not read some of the most valuable parts of his paper. Regarding Dr. Rickett's paper, I do not see why he claims that reflex nervous disturbances are peculiar only to gallstones. I am very willing to admit that reflex phenomena do occur. I have operated in such cases, and produced a cure. Adhesions may have some influence on the nervous system, but at the same time it seems to me that an irritation of the foot or any part of the body would have much to do with autosuggestion and influence on the mind. I operated on a case for lacerated cervix, and the patient went insane. She thought her ovaries were removed. I had closed the uterus so tightly that she could not menstruate, and there was a collection of blood. She and her friends consequently believed that her ovaries had been removed because she did not menstruate. She was insane for about three months, when she was operated on again, the uterus was opened, menstruation reappeared and she recovered. I believe many cases of this kind occur.

DR. D. BENJAMIN, Camden, N. J.—I have found by examination and observation that a great many ovaries are being removed for pain. The discussion this afternoon, showing the relation of neurology to gynecology, has brought to my mind the fact that when I was assistant in the neurological clinic of the University of Pennsylvania Hospital, we often had patients with severe pain over the eyes, sometimes between the ribs, sometimes in the liver, but that did not mean that we were going to remove those parts. On the contrary, we endeavored to cure the pain by medicines and hygienic measures. Then, when I got into the gynecological clinic, and afterward had charge of an hospital, as I have now, I found that many of these pains were of the same character. We are too liable to forget that factor, especially when a patient comes in as a gynecological case. Many times women will come in and say that they have no pain; sometimes they are run down generally, and sometimes there is a local irritation. I have found that usually the operator proceeds at once to attempt a cure of the local condition, but the same symptoms are present after the operation, either there or elsewhere. I invariably prescribe for patients who are complaining of these pains, without any clear indication of organic disease or the exact locality of a lesion, those medicines which we use in the neurological cases. My assistants have repeatedly remarked about my exclusive use of medicines in many of that class of cases, but the results have justified my doing so. If we will remember to give those patients a full course of antimalarial or antineuralgic and electrical treatment, we will be able to cure many cases without an operation.

DR. E. G. ZINKE, Cincinnati.—What a wonderful difference between the meeting of to-day and that of two years ago at Denver. It shows what progress has been made within two years. Two years ago it was war and to-day it is peace. I have been very much instructed and have profited considerably by what I have heard this afternoon, and I wish to contribute my share of the compliments due to Dr. Hughes for presenting this matter in the proper light. No operation should be performed unless there is disease, and no woman should be confined to the insane asylum unless she has been examined by a gynecologist.

I wish to speak of two cases in which, within the last two years, I was called on to operate for pus-tubes. One patient was one of the most charming women I ever met. The result was all one could desire; there was perfect union and the lady left the hospital as well as any one possibly could do. Within one week thereafter symptoms of insanity developed and she had to be sent to the insane asylum, where she was confined for many months; nearly two years passed before she recovered. I was condemned by her family and friends and by many of my fellow practitioners for operating on this patient. Two months afterward I was called to see a similar case. I advised removal of both tubes, and ovaries, too, if necessary, notwithstanding my experience in the other case. Some one hearing of this went to the family and asked them who advised the operation. They were then urged not to submit to the opera-

tion. The patient would surely lose her mind if she did. Two weeks afterward that woman went insane and has not fully recovered yet, whereas the first patient recovered completely and has long since been restored to her former sphere of usefulness.

As to Dr. Rickett's paper, I regret that I can not agree with him in everything he has said. He is an enthusiast, and his enthusiasm has carried him away on the subject of gallstones. There are many men and women, victims of gallstones, who eventually recovered without operative interference. There are many such cases on record and we must not lose sight of them. I am firmly convinced that some cases recover without operation, and it does not seem right for us to take the stand that every case should be operated on as soon as the diagnosis of gallstones is made. I do not believe that the mortality will be reduced one iota by following a rule like that.

DR. J. H. CARSTENS, Detroit—If we will simply remember that healthy ovaries, uterus and tubes will not produce insanity, I think we will be on the right line. If we will consider that diseased ovaries may produce a disturbed alimentary canal, and will interfere with metabolism and the elimination of effete material, interfere with the blood-vessels and nourishment of nerves, we may say that this might increase the occurrence of insanity. If we consider another thing, that the pathological condition is simply irritation at the nerve periphery, producing a congestion and malnutrition of that nerve where it comes out of the spinal column; if that irritation is continued for any length of time, there will be blood-vessel changes, changes in the nutrition of the nerves. We may remove that distressed nerve, but the condition in the brain and blood-vessels has become permanent, so that the removal of the cause will not cure the patient. Hence, the point is to diagnose the case early, remove the cause early, and then you will not have the permanent pathological change take place in the blood-vessels and other tissues. Then you can do some good.

A few years ago I had a young woman, engaged to be married, who tried to kill her lover. She had homicidal mania. She had this insanity for only one week, during every month at the menstrual period. On examination I found diseased tubes and ovaries. I removed them on the request of the family physician, thinking that it was a case of sure cure. That woman went to the insane asylum, and it taught me a good lesson. My prognosis now is not as good as it used to be, and I want to say right here that it is not the gynecologist, but the common general surgeon who removes the healthy ovaries and does no good. We must be very careful about our prognosis. The family physician usually promises his patient a great deal from an operation where there is a morbid condition. I would not promise so much, and when I see that it is too late to operate I positively refuse to do so.

I want to defend my friend Ricketts. If a pus-tube is a bad thing and ought to be operated on as soon as possible, then gallstones are bad things too, and ought to be removed just as well.

DR. J. M. BALDY, Philadelphia—It seems to me that the whole question has resolved itself into two propositions. Will pelvic troubles cause insanity? If they do, will an operation cure them? After due consideration and after carefully weighing all the facts presented to-day and in the past, I am more convinced than ever that gynecological troubles, *per se*, do not cause insanity. I am so convinced of that that I think the proposition made here to-day that every female patient entering an asylum should undergo an examination for pelvic troubles, and, if found, operated on, is preposterous and wrong. The majority of women who have been married, who have sustained the sexual relation and have borne children, have pathological lesions of the pelvic organs. There are probably a greater number of lesions amongst so-called healthy women than among patients in the insane asylum. The proportion of women in the almshouse suffering from pelvic diseases is much greater than among the patients in the insane asylum. The only justification for any operation in gynecological lesions is for a lesion which produces symptoms; the larger number of such lesions do not cause symptoms. The

fact that one or two cases can be quoted as having become insane from gynecologic reasons does not change the general rule. I admit that any woman, sane or insane, who has lesions that are endangering her life or causing her suffering should be operated on. Almost all of Rohé's cases were due to puerperal fever; those are, by all odds, the cases where insanity follows pelvic trouble most often. Nearly all of these cases become well without operation. I do not mean to say that there are not individual cases here or there which do not follow the general rule, but by far the greater majority of them do. I have operated on many gynecologic patients who were insane, but I have yet to see the first one get well and be cured of the insanity on account of the operation.

DR. PALMER DUDLEY, New York City—I am a gynecologist, and from my experience of over a quarter of a century, I have noticed one thing, namely, if the neurologist will look over the statistics of his cases in women, he will find that aside from heredity, where the insanity can be traced down through the family, the majority of the cases coming under his care are puerperal, that is, having puerperal fever as a starter. Aside from neurotic girls who come from such parents, those are the majority of insane patients. In what way does the puerperal condition produce insanity? By autoinfection, which at the same time results in gynecologic diseases. I do not believe that any of the gentlemen who read papers to-day will contend that point. Unless a woman is infected by puerperal sepsis, the nucleus of the trouble is hereditary. Therefore, do not promise too much when you are called on to operate on such cases.

How about the girl? She has a monthly poisoning; in the same way you find in neurotic girls that the ovaries are cirrhotic and the blood from each monthly epoch is absorbed and the woman is poisoned in that way. I have known many such cases and have relieved many puerperal insanity cases by operation. I remember one case in particular at the Bloomingdale Asylum. She had puerperal mania, the worst case they had, and it would astonish you to hear what we found stored away in her genitals. I curetted out a portion of retained placenta and she is a happy mother to-day. Therefore, I do not agree with the neurologist that insanity is directly produced by pelvic trouble.

DR. L. S. McMURTRY, Louisville—By reference to the program it will be observed that the subject under discussion is the relation of pelvic diseases in women to nervous diseases. It seems to me that almost the entire discussion has been devoted to insanity. I desire to call attention to a very common cause of disappointment in gynecologic practice where the question of neurasthenia is involved. These cases occur frequently. An operation is advised, the patient is assured that the repair of a demonstrable lesion of the pelvic organs will assure prompt recovery. This course will often lead to disappointment. Take for example a woman who has a laceration of the cervix or a torn pelvic floor, and who perhaps has gone for years without symptoms. She has some great disappointment or sorrow, trouble with her husband, or distress over a sick child; she suddenly develops a neurotic condition, which we classify under that general term "neurasthenia." She may have had a visual disturbance for years, and just as soon as the nervous system is depressed and the patient becomes neurasthenic, all these disturbances become prominent. The oculist is consulted, the neurologist and the gynecologist as well, and if a prognosis is given that she will be promptly cured by operation, there will be disappointment. We promise too much. These cases need the co-operation of the gynecologist and the neurologist. The local trouble should be taken care of by the gynecologist; but we should not say that this will cure the patient, nor should the neurologist assure the patient that a protracted course of rest treatment is going to cure her, for they will both be disappointed. The correction of impaired functions, the repair of neglected lesions of the pelvic organs, and appropriate treatment of the nervous system conjointly will obtain the desired result.

DR. C. L. BONFIELD, Cincinnati—My friend, Dr. Johnstone, of Cincinnati, made an assertion in his paper which should not go unchallenged. He said he cured a case of rheumatism

by doing a trachelorrhaphy. I do not think any man ever did that. I do not doubt his veracity, but I doubt his judgment. While most of us here to-day are exclusively surgeons, yet we are sufficiently versed in medicine to know that salicylate of soda is not the only remedy for rheumatism. Free purgation, rest in bed, warmth applied to the affected part, and restricted diet are well-recognized methods of treatment for this disease. Nearly all patent medicines for the cure of rheumatism contain violent purges. It is probable that Dr. Johnstone prepared his case for operation with a free purge, that after operation she was confined to bed for a number of days, and kept on a restricted diet. It seems to me that it is more reasonable to attribute the cure of the rheumatism to these measures than to the uniting of a lacerated cervix.

DR. C. H. HUGHES (closing the discussion)—The one very important point that has been broached is the question of promising too much. That, I think, is the trouble with gynecology and sometimes with neurology. I have always endeavored to guard against this whenever I advise an operation, as I have often had the opportunity to do. I have never made the mistake of saying that the operation would certainly cure. Another great difficulty in both departments of medicine, especially in surgery, is the amateur, the gentleman who comes straight from college and practices gynecology. We often have to encounter him and his self-confident counsel.

It was stated here to-day that gynecological procedures would cure insanity. It is always a mistake to say that any procedure will cure insanity. Neurology and psychiatry look upon insanity as the product of one or more generations of disease. They consider the neuropathic factor as the predisposing cause. Heredity is another factor. Neurologists all acknowledge that disease of the uterus and its adnexa, or any transmitted irritation, may act as an exciting cause if long enough continued. We then have insanity connected with uterine trouble. The gynecologist who will tell his patient that she will get well after an operation, is likely to make an error of judgment, although sometimes he may be making a correct statement. My rule in advising people is always the same. I tell them that this thing is a source of irritation, that if I had it I would get rid of it in order to give myself the best chance. I have always been very careful not to commit myself as to the outcome of the trouble. I have seen a trifacial neuralgia which ultimately recovered by persistent treatment, and yet after the patient had recovered I was surprised to find mental aberration set in. I had to treat her for two months before she began to recover. She had been gynecologically treated some years before that and the people blamed the gynecologist for the insanity.

DR. E. C. CARPENTER (closing the discussion)—My position with regard to giving the insane woman the same chance as the sane I still hold as tenable, because I regard the mental part of the disease so serious a matter that even where local disease is only a probable element, the patient should have the opportunity of having that cause removed.

DR. EDWIN RICKETTS (closing the discussion)—I will admit that Dr. Zinke's criticism that gallstones sometimes recover is correct, but I am quite sure that he would not take the chance on any pus-tube. Nevertheless, we know that some neglected cases of pus-tube empty themselves and recover and yet we do not stop to advocate the removal of pus-tubes. As to Dr. Eastman's remark, I want to call his attention to the fact that there is quite a difference between bile escaping from a fistulous opening and that coming through the anus. That is probably responsible for his sulphid of mercury.

DR. HENRY O. MARCY (closing the discussion)—A consultation took place, more than sixty years ago in London, between Sir Benjamin Brodie and Dr. Thomas Watson, who wrote the most excellent text-books on medicine and therapeutics, the standard works for a generation. The great surgeon, Sir Benjamin, asked the famous physician to first give his opinion. Dr. Watson replied:

"It is good medical practice to remove the cause of irritation, if possible, and then trust that the irritation itself will cease." Therefore you see that we, in this closing period of

the century, are not very much wiser than those men of the earlier time. I wish to refer to certain of the points not brought out in regard to Dr. Bucke's report. Quite a number of years ago he and I discussed the relation of nervous and mental diseases as often dependent on pathologic conditions of the reproductive organs. He said: "I will examine the 500 women under my care and ascertain how many, if any, are the subjects of pelvic diseases." The results have been published and he is now the most enthusiastic gynecologist I know. Cured, 40 per cent.; greatly improved, 30 per cent.; making 70 per cent. benefited by operative procedure. I suppose Dr. Bucke would say that he had removed the cause of irritation and therefore the patient recovered. I have asked superintendent after superintendent of the asylums what they knew of the pelvic diseases of the women under their care; the answer has been invariably a negative one. The multiplied testimony of to-day goes on record to show that the gynecologist and neurologist are in a common service, removing causes of irritation, believing that the mechanics of the great human machine, restored to its normal equilibrium, will permit the execution of its normal functions.

## THE RELATION OF SURGERY TO DIABETES,\*

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There exists an intimate relation between diabetes and surgery, principally due to the fact that diabetics are prone to gangrene, and this intimacy, in my opinion, is rendered especially dangerous from the fact that its existence is too often carelessly dealt with, and a great many men have failed to appreciate its importance until they have seen a gangrene follow an operation in which there was apparently nothing present to result in any such course, and it certainly seems to me that insufficient importance is attached to this subject. So far as I have been able to learn, not very much has been written and the standard text-books say but very little. Erichsen makes no reference to diabetic gangrene; I quote the following from "The American Text-book of Surgery," and it is practically all it says: "Individuals suffering from diabetes are frequently attacked with gangrene. Operations on these patients are supposed to be frequently followed by gangrene, and it is advised by some authorities to abstain from operating on these cases if possible. A more extended experience with aseptic surgery, however, will probably not sustain these views."

In Dennis' "System of Surgery," the author admits that diabetic patients are liable to suffer from gangrene, and gives as the reason the fact that the tissues in these patients are weak and are probably in a condition favorable to the growth of germs. He states that the mere presence of sugar does not cause gangrene, but claims that it is due to the accompanying arteriosclerosis. The "International Text-book of Surgery," which has just been published, says nothing in addition to the foregoing. Dr. C. Von Norden makes the following statement: "Wounds of the skin, also deeper wounds, heal more slowly in diabetics." Infection gains access more readily, granulations incline to necrosis, and he thinks that former reports of an unfavorable course of wounds in diabetic subjects are due to infection caused by imperfect surgical technique; he claims that with the asepsis and antiseptics of to-day this has been entirely changed, and that the results are now such that no distinction need be made between diabetics and non-diabetics so far as operating is concerned.

\*Read at the Sixteenth Annual Meeting of the Fifth District Branch of the New York State Medical Association, held in Brooklyn, May 22, 1900.