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THE PATIENT HIMSELF*

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CHICAGO

Among the vices of advancing years are carping criticism, garrulity and needless admonition. To all of these I plead guilty and so can only beg your indulgence while I say a few things that I think should be said, knowing that I say them poorly and that I add nothing to our store of knowledge.

My theme is that much neglected individual, the patient himself. Concerning his organs and their functions, we have numberless tomes. Concerning the diseases that attack his parts, we have whole libraries. Concerning the various ways of cutting him open and sewing him up, there are several six-foot shelves. For the manifold instruments, machines and appliances of our armamentarium, an extensive congeries of industries is in constant operation. Indeed, some of us are so used to practicing medicine by machinery that the cortical cell bids fair to shrink into sterile desuetude. But of the patient himself — the man, the woman, the child — relatively little is thought or written.

THE PATIENT ABOVE THE EYEBROWS

What do I mean by the patient himself? I mean what we mean when we speak of our friend, our enemy, our son, our daughter. We like a man because he is sensible, kind or entertaining; dislike him because he is selfish, irritable or pessimistic. So do we admire or despise because of certain mental, not physical, qualities: traits that reside above the eyebrows. Our attitude depends on the individual's personality: the biggest thing to us and to him. It is more important than his kidneys and his liver, and its disorders are as momentous to him and to society as is disease of his organs. His personality is what he is — the man himself; and he is the sum of all his tendencies and experiences; his desires, aversions, affections, hates, passions, inhibitions, appetites, reflections and knowledge. The tendencies are few and simple, the experiences myriad. And a little thought shows that most of this experience has been in the form of conflicts. From the beginning, life is a conflict: an effort to live and be happy — that is to say, an effort to adapt ourselves to the conditions under which we must live. The struggle between what we consciously or unconsciously wish to do, and what the present state of society requires us to do begins in infancy and never

stops. Very early the normal child learns that certain perfectly natural functions may not be fulfilled in a completely natural way. He may not urinate in the parlor nor appropriate anything he happens to see. As we grow older these conflicts become more complex and more acute. Some of us come out of them pretty much to the satisfaction of ourselves and our neighbors. We are the happy, the well and the successful. Some of us are unable to make the adjustment. We, then, are the unhappy, the ill or the unsuccessful. Now, as every one of us has these conflicts and has them all the time, it does not take much perspicacity to see that there are many defeats. Occasionally one comes out of the conflict a thief, a tramp, a pauper, an invalid. Perhaps one does not think of petty larceny, constipation and eye strain in the same terms; but they may be equally due to social inadaptability. Each is the reaction to a difficult situation.

THE RESULTS OF MALADAPTATION

The whole question of health is one of adaptation or adaptability. We have typhoid fever either because individually we are still vulnerable to the typhoid germ, or because as a community we have failed successfully to combat it. Some of us have neuroses or psychoses because we are unable successfully to harmonize with our environment — *and for no other reason*. Often this fact is overlooked. What has social inadequacy to do with the practice of medicine? A great deal, because it starts a multiplicity of symptoms which the patient expects the physician to relieve. To speak of the hyperacidity and gastric distress of financial insufficiency, the dysmenorrhea of domestic disharmony and the tachycardia of industrial futility may sound incongruous, but sometimes that is what they are.

An easy approach to consideration of the neuroses as a result of maladaptation, that is to say, as the outcome of a conflict, is by way of the war neuroses because there the conflict is so apparent. A war neurosis, grossly misnamed shell shock, is a means of, let us say, getting out of the front line trenches. The soldier can no longer stand the bursting shells, the falling parapets, the horrible sights and the imminent danger of death. But army discipline and morale, personal honor, pride, ideals make running away impossible. A neurosis makes it possible. So does loss of an arm. If he loses an arm, the soldier doesn't have a neurosis. A neurosis is no fun, but it is a great deal better than the trenches.

Peace neuroses are just the same. They are a way out of trouble or around an obstacle; a way selected more or less unconsciously. If one cannot remove an obstacle from his path and cannot surmount it,

* Presidential address, read before the Institute of Medicine of Chicago.

he goes around. Perhaps he *can* push it away, or *can* surmount it; but he *prefers* to go around. For our patients, the way around is often insomnia, "nervous breakdown," backache, dysmenorrhea, asthenopia, indigestion, headache, abdominal pain, dyspareunia, impotence, exhaustion, palpitation and many other things for which medicines are given and operations performed.

As already indicated, a neurosis is by no means the only avenue of escape from an intolerable or uncomfortable situation. Some ways are much simpler. The man who, when tired of his job and dissatisfied with his wife, stops work, gets drunk and beats up his connubial partner, does not develop a neurosis from those particular troubles. He doesn't have to. But he is just the one to get a lame back or sore feet in the army, where he can't escape by the simpler way.

An intelligent and pleasing woman was dissatisfied with her town and her husband. She referred to the former as "a piffing little place," and said of the latter, "He gives me no satisfaction." What was the solution? Recently she spent four months in New York, and with bright eyes and a pleased smile said, "You bet I had satisfaction there." Last winter she visited Los Angeles with the same gratification. Did she have a neurosis? Why should she? There was absolutely no conflict. She was as simple and direct as a child.

Contrast the following:

A woman of 34 years complained of daily headache, poor sleep, ready exhaustion, some dyspnea on exertion, poor appetite and constipation. With considerable pains, I ascertained that she too was dissatisfied with her husband and with her social and financial position. She could not adjust herself to conditions as they were, and she could not change them. Her ideals and training did not allow the simple means of escape adopted by the other. Instead of deliberately going to New York and California, she subconsciously went to headache and insomnia.

NEUROSIS AS DEFENSE REACTION

In short, the neurotic is an individual in trouble with no easy and direct means of escape. A neurosis is a defense reaction, a means of escape; a psychologic dugout in which to hide. That the difficulty may be imaginary, the patient fleeing from a ghost, does not alter the situation. His efforts to adjust his appetites and desires to the demands of convention, society, the herd are the same as ours. He attempts to dodge defeat and to shift responsibility for lack of success as do we whom a lenient society calls normal. Because he played so poorly, an irascible golfer first threw his bag of clubs and then his caddie into the creek. Very, very often the nervously inadequate person unconsciously shifts the responsibility to some bodily trouble, when he naturally comes into the physician's domain. And too, too often the physician takes his complaint at its face value. Sometimes the literalness of physicians is equal to that of religious fanatics. Once I examined a justly celebrated clergyman who was in a state of profound delusional melancholia, in consequence of which he falsely accused himself of sundry grave sins. Having recovered, he was tried by a church tribunal and dismissed from the ministry because of these self accusations of a disordered mind. Such superficiality and narrowness makes a physician smile. But compare the following:

A young man brought to me his wife, who at various medical hands had received sundry powders and potions for insomnia, nervousness and loss of appetite. After a bit of

questioning, I sent the husband on an errand. As the door closed behind him I said, "Now, quick, tell me what's the matter." The startled wife then told me that their young priest, a close friend of the husband, was almost daily assailing her virtue, and that she was quite distracted between fear that she might yield and fear to tell her husband.

And the following:

A woman of 50 years was having a prolonged rest cure because of general nervousness, mental depression, "exhaustion," and insomnia. She appeared to be very weak, and walked across the room with difficulty. A bit of direct questioning revealed that she was intensely afraid of a stroke, and that this fear was based on tinnitus, which she expressed as a "noise in the head." This to her meant cerebral calamity: a stroke, paralysis, death. When the simple situation was explained to her she got up and went to the coast of Maine for a holiday.

Would these medical examples make an ecclesiastic smile? The following incident is not unusual:

Many years ago, only with uncomfortable persistence did I dissuade a well-known surgeon (since deceased) from performing a gastro-enterostomy on his wife. He insisted that she never could be well until operated on. But I knew of grave emotional stress of which he was partly ignorant and which he partly ignored. With the mental adjustment which came about in a couple of years, all abdominal symptoms disappeared, and she has continued well.

How many of us constantly keep in mind that we, the acme of civilization and culture, have every instinct and passion of the caveman? Are we always alert for the ever present emotional-ideational-intellectual conflict? And do we recognize its importance? To repeat: The product of these conflicts is WE—the patient himself. And in the vast and intricate complexity of modern life, the name of the conflicts is legion. Neurotics are just as different as physicians, and for as many different reasons. Consequently, investigation in many directions is necessary. Here laziness, carelessness and false modesty on the part of the physician have no place. I should not like to say, even if I knew, how often to my question "Did you tell all this to all these other doctors?" the reply has been "No, they didn't ask me."

THE SEXUAL ELEMENT

And here I venture a direct word on sex matters. Without following the self-styled psychoanalysts in tracing practically all psychoneuroses to a sexual origin, without even discussing their tenets, I wish definitely to state that something relating to matters sexual has a great deal to do with starting many nervous disorders. Aside from the demonstration of experience, a little reflection will show that this is reasonable. In the present state of society, practically every individual between early childhood and presenility has sexual problems and conflicts. In the solution of the problems and disposition of the conflicts, generally he has the assistance of neither publicity nor knowledge. On the contrary, he is handicapped by ignorance, superstition and isolation. All the conditions are there for the development of fear, shame, remorse, guilt, resentment, a feeling of inadequacy or impotence; the most painful emotions, plus secretiveness. Who would not escape from them by way of a neurosis, very distressing but with none of the tragedy of the other forms of suffering? Thousands of soldiers escaped from the shell torn trenches, that is, from their intolerable

emotions, by way of a psychoneurosis. Millions of us have tried to escape from other tearing emotions by means of so-called functional nervous disorders. Hence, whatever our decision as to the psychology of sex, in the case of the individual patient there is but one answer: sufficient investigation, proper instruction, and counsel based on adequate understanding.

But I do venture to add that, in my opinion, to express love of power, money and ease; fear of pain and death; the satisfaction of food, delights of the eye and ear; the disappointment of failure, the pleasure of work well done, all in terms of sex—howsoever sublimated—is to express a narrow conception of *Homo sapiens*. And I also believe that in the vast majority of cases, the exhaustive and intricate corkscrewing methods of the freudians are unnecessary. Sometimes they are harmful.

DIAGNOSES THAT FALL SHORT

Our medical affinity seems to be the concrete and tangible. Organic abnormality is the most facile explanation of disorder. Given almost any complaint, if the patient reveals undoubted organic disease, our tendency is to stop there. When shall we learn that a prolapsed kidney or stomach may be as good as normal, a valvular lesion innocuous, a urethral stricture of small importance, a deviated septum symptomless, and a torn cervix not even a cosmetic offense? But prolonged fear, disappointment, resentment, anxiety, regret, perplexity are never symptomless. The physician's wife, mentioned above, undoubtedly had enteroptosis; but that did not cause the trouble. The following is a common type:

A middle-aged woman had been operated on for ruptured perineum, rectocele, and "ulcer of the womb"; later, for hemorrhoids and laceration of the cervix. Still later, she had a curettage, and then the ovaries and tubes were taken out. Finally a hernia, a relic of one of the previous operations, was repaired.

No very exhaustive investigation was required to show that this patient never had been physically disabled, but that she always had been intellectually and temperamentally absolutely unequal to life's demands. Each operation was only an additional urge into physical invalidism as an escape from the toil and responsibilities that fell to her lot. That such treatment tends to perpetuate the trouble is obvious. If dysmenorrhea and pelvic pain are really a recourse from laborious housekeeping, ventrifixation fixes the mental attitude of the patient. And the next operation for adhesions makes her more adherent to her disability.

When a woman dates her symptoms from marriage or childbirth, it behooves the physician to look for the presence of discontent, unhappiness and fear. A diagnosis of pelvic disease may have to be changed to mother-in-law, which often means a more or less inadequate daughter-in-law. When a man is disabled by an organic disease or abnormality that apparently doesn't measure up to the disability, one should take the precaution to look for the neurosis which really makes the trouble. A simple arthritis, with which some people would happily limp through life, makes others useless. Why? Because there is something back of the arthritis; something the matter with the patient himself. While the clinical picture may be made up of symptoms strictly organic plus others purely functional, the latter may be by far the more important, even though the former are more salient.

EFFECTS OF FEAR

Elsewhere,¹ I have tried to emphasize the importance of recognizing fear. One might think that if a patient were afraid he would know it and tell of it. Neither may be the case. That one may be sick from fear and not be aware that he is afraid is certainly true. And "to deny fear seems to be almost as instinctive as that emotion itself."¹ That is to say, the physician must not wait for the avowal: he must dig it out. This is especially true of that exceedingly common apprehension, the fear of "losing the mind." Patients will carry this fear for years and never mention it. A very common way of consciously or unconsciously dissembling fear is to complain of the symptom which is the basis or the result of the particular fear. The patient bitterly complains of headache. But the real distress is not the headache (often it isn't a pain at all), but the idea that the headache means insanity or a stroke. Abdominal distress may be trifling, but it is disabling because to the patient it signifies cancer. But he doesn't say so. He hardly knows that it is so. He doesn't wish constantly to be afraid of insanity or cancer; he prefers to have headache or nausea. How can one successfully treat such a headache or stomachache without becoming acquainted with the patient himself?

FREQUENCY OF MILD MELANCHOLIA

One other very practical aspect of the real patient, the patient above the eyebrows, I must at least mention: the frequency of unrecognized mild melancholia. Instinctively, these patients hide their feelings of uselessness and hopelessness, their self reproach and fear of insanity. They complain of what to them seems to be the cause of their ill feeling, and generally this is some bodily complaint. Headache, insomnia, indigestion, constipation, biliousness; exhaustion from overwork, worry or sexual irregularities; leukorrhea, loss of memory and pelvic distress are among the more common. And the literal physician overlooks the disorder of the personality. The result is useless or harmful treatment. This is bad enough. What is worse, the patient is given every chance to commit suicide—which he rather frequently does. In Chicago there are more than 600 suicides a year, and I am quite sure that fully 400 of these are due to melancholia—every one of them preventable.

EFFECT OF DISTURBING EXPERIENCES

The relations of past experience to present conduct are most complex. Our feelings and behavior today are the result of myriad experiences, most of them forgotten, and still more not in our awareness at any given time. No man can trace all the steps that have led him to be a Republican or to dislike a certain person. Why does Miss X delight in ice cream and abominate pork chops? It didn't just happen. There are reasons. Of four men in trouble one prays, one gets drunk, one has a fit and one has a headache. Why? That is for us to find out. Generally it can be done. Not always.

Clinically, the relation of a pathogenic experience to consciousness is generally one of two, with no definite line of division. First, the patient remembers perfectly well the (generally unpleasant) experience, but has no idea that it has anything to do with his

1. Patrick, H. T.: The Factor of Fear in Nervous Cases, J. A. M. A. 67: 180 (July 15) 1916.

present trouble. Second, the disturbing episode has been quite forgotten and is brought back into consciousness only by some unusual stimulus or mental state. Obviously, it may happen that we cannot bring it back at all. To illustrate the first type:

A young traveling man was unable to eat in restaurants because of intense feeling of prostration and oppression, palpitation, etc. He had not in any degree forgotten that a few months before consulting me he had been taken very ill while dining in a restaurant, had nearly fainted and had liberally distributed vomitus over the floor before he could get out. But apparently a connection between the causative disagreeable episode and the neurosis never had occurred to him, and information of the illness was not volunteered. It was elicited by leading questions.

Another example:

A middle-aged, happily married woman complained of nervousness, insomnia, mental depression, intense dislike of social intercourse, even with good friends, and intense agoraphobia. Painsstaking inquiry for more than two hours, evidently with the cooperation of the patient, failed to elicit a cause. Only after the analysis of two dreams by Dr. Lewis J. Pollock, my assistant at that time, did we learn of events in her childhood and youth causing poignant shame and self reproach that were clearly the cause of her disorder. These experiences she had not forgotten; but their relation to her present complaints had never occurred to her, the subject was distasteful, and instinctively, scarcely deliberately, she had suppressed the facts.

An example of the second type:

A young married woman had so-called vaginismus to a degree entirely preventing intercourse. No local cause could be found. The patient neither feared nor objected to the nuptial embrace; indeed, she was most anxious to be a complete wife and an early mother. It was only after many questions and the awakening of many associations that she recalled two not very striking experiences when she was about 11 years old. Aside from temperament, these were the prime cause of her disorder; but apparently for years she had not consciously thought of them.

NEED OF APPROPRIATE TREATMENT

A good many years ago, Möbius described akinesia algera, paralysis from pain; the patient does not move because it hurts to move. When we come to therapeutics for the patient himself, many of us have a sort of amblyopia algera. We do not see because it is uncomfortable to see. It is much more comfortable to say, "nothing to it," "just a nervous crank" and do nothing, than it is to realize that here is a pathologic condition, obscure, maybe complex, that must be laboriously worked out. So we naturally go blind, see nothing and do nothing. Probably every physician makes an effort to regulate the bowels. How many of us make an effort to regulate emotional and intellectual movements? But intestinal stasis is vastly to be preferred to intellectual stagnation: so-called autointoxication is not half so lethal as disintegrating emotions.

To state it another way, we must first have a just conception of the nature of the trouble and then institute *appropriate* treatment. Nowadays few ovaries are removed for dizziness and indigestion, but the "rest cure" is applied about as heedlessly as was formerly oophorectomy. Confinement to bed, isolation, forced feeding and massage for perturbations of the personality may be compared to a linseed poultice for pain in the belly. Occasionally the cataplasm suffices, but treatment of the cause is to be preferred. Equally, we should treat the cause of neurotic manifestations. Who would prescribe a pill for vagrancy or a powder

for prostitution? The tramp and the prostitute are recognized as defective, unadaptable to society as now constituted, except on the underworld level. The psychasthenic (nearly always miscalled neurasthenic), the neurotic, the psychotic is a rather similar product. Unadapted to the upper strata of social efficiency, he gravitates to the underworld level of pain, prostration and dyspepsia: the realm of consultation rooms, hospitals and sanatoriums. But I hasten to add that when properly adjusted to his environment, the neurotic may be one of the most efficient, valuable and delightful members of society.

A fine young woman was about to decline marriage because handicapped, even disabled, by what she did not recognize as phobias. For years she had been unable to go down town except in a carriage, and then only for a few minutes. To go alone to a nearby market was out of the question. Deeply religious, she could not go to church alone, and when accompanied, she could sit only near the exit. There were other phobias. A short course of training and reeducation removed the lot, and for about ten years she has been an ideal wife and mother.

A fine young chap of 22, because hypersensitive and hyper-conscientious, became depressed and worried over the usual sexual problems of youth to the extent of total disability. The situation was explained to him: in a proper environment, he was carefully guided and was gradually led back to normal activities. In the spring of 1917, he entered the army and served brilliantly throughout the war.

An unmarried woman of 29, doing office work, for ten years had had attacks of dyspnea and palpitation, great weakness and insomnia. Although she positively and honestly denied that she was afraid of anything, exact questioning showed that she had several intense phobias. She really was ill and had been for ten years. But the trouble was not the heart muscle, it was lack of adjustment to her job, her associations and necessary conditions of living. Fortunately, she married happily, and her bodily complaints all disappeared.

A woman of 32, of the intellectual type, had been an invalid for years. Accurately to describe her symptoms would require a descriptive catalogue. They included "stomach trouble," "rectal trouble," severe headaches, ready exhaustion, tenderness at places over the abdomen and in the pelvis, loss of weight and anemia. She certainly had enteroptosis, with the right kidney far down. One of the greatest surgeons of Chicago thought it best to take out the appendix, fasten up the kidney, ventrifix and curet the uterus. Did all this help? Not a bit. She was sent East for a prolonged rest cure under the greatest master of that procedure, with the same result. She remained the same practically useless martyr, a burden to herself and the despair of her family. Finally, she was induced to take up an active, intellectual and taxing occupation in an environment that fitted her. Presto! The baffling organic disorders, the profound prostration, the disabling pains evaporated. She had found her place, and she has continued to be a busy, exceedingly useful and happy woman.

The following case shows the obverse mechanism:

A young man of ample means, shy and a bit effeminate, retired to a small farm where he raised a few fancy sheep and experimented in crossing flowers—all to his complete satisfaction, and with perfect health. Circumstances forced him into business and the hated city. He developed rebellious stomach, insomnia and headache, lost considerable weight and frequently his temper.

NATURE OF THE TREATMENT

These illustrations, which might be continued indefinitely and with interesting variations, serve to indicate not only that the neuropath may be useful but also what sort of treatment he should have. Very simply stated, the object is so to mold the patient that he

will fit his environment, and so to arrange the environment or so to place the patient that the environment fits him. Sometimes it cannot be done. Our laws and customs contain fragments from the dark ages and more primitive eras. So do we. Some of us belong to the period about 100 A. D. For such, transplantation to the present epoch is difficult. A few of us belong in the stone age, and we cannot live in the captivity of modern civilization without falling ill. Perhaps occasionally one is 500 years ahead of his time. If so, he has a hard life, and probably is a failure, judged by our standards.

In assisting to adjust a patient to necessary conditions, frequently we have to show him that he can do things that he says he cannot do. That is his way of expressing his great reluctance to do or fear of doing something necessary for his health. Demonstration discounts admonition. He should be given an understanding of his situation; but simply telling him is not enough. We must demonstrate to him that he can eat turnips or walk a mile or sleep without a hypnotic or go without a headache powder.

Let me again emphasize that the headache or the pain in the legs or indigestion is simply a means of escape from something for which the patient feels himself inadequate, or really is inadequate. Our job is to make him equal to the task he is trying to escape or so modify the task that he can perform it, or give him another which he can do with satisfaction. To say, "Don't worry" or "Why Worry?" or "That headache isn't in the least serious" is not enough. The unwholesome ideas, the distressing disorder, can be driven out only by wholesome satisfactory ideas, which in the vast majority of cases means a satisfying occupation, a something which makes life taste good.

THE OUTCOME

And for our encouragement, we may remember that the temperamental individual who is confused and discouraged by life's perplexities and takes refuge in physical disabilities is, when rightly placed, likely to be the finest enthusiast, the most glowing optimist. Just as he is dominated and defeated by a depressing idea, so is he exhilarated and activated by sanguine ideas. Some of the greatest and most beautiful work of all time has been done by these men and women who are too much controlled by their emotions, too sensitive to the jars of a battling society, too unstable to carry the gross burdens of a materialistic world. Ours the task, then to strengthen their intellectual control, to toughen their shrinking sensibilities, and adjust the burden to the bearer. Thus may we, too, add to the sum total of human health, happiness and progress.

25 East Washington Street.

Diet and Health.—A lack of the knowledge of how to adjust income and food expenditures is holding many children back in normal development, and thereby decreasing the ability of future citizens. Oftentimes medicine can be of no lasting value until the diet is regulated, and quite frequently when the diet is regulated medicine is unnecessary; but in the majority of cases the doctor has not the time to sit down and plan this adjustment with the mother, and the problem of food economics is a work apart from nursing, just as nursing is apart from the practice of medicine. To meet just such a situation as this the nutrition specialist in social work has come into existence.—L. L. Gillett, *The Commonwealth* 6:111 (May-June), 1919.

PELVIS OF KIDNEY AS POSSIBLE SOURCE FOR INFECTION OF BLOOD STREAM

PRELIMINARY REPORT *

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During recent years it has been generally conceded that in cases of renal infection the kidney is infected secondarily following a primary bacteremia. In some instances it seems that the kidney, previously infected either through the blood stream or by an ascending infection, may be the cause from which a bacteremia results. For the purpose of investigating this interesting problem, experiments have been conducted under the direction of the Departments of Urology, of Experimental Bacteriology, and of Experimental Surgery, with reference to the following questions:

1. Can organisms pass from the pelvis of the kidney into the blood stream?

2. Are the conditions under which they pass at all analogous to the pathologic status found clinically?

3. Are there clinical cases in which the kidney has acted as a focus of infection?

Our investigations have been concerned, as yet, only with the first two of these hypothetical questions.

The literature concerning the absorption from or the passage of organisms through the kidney is very meager. Albarran¹ was the first to investigate experimentally the infections of the blood stream through the kidney. In 1888, working with *Bacillus pyogenes*, which was afterward identified as *Bacillus coli* by Krogus, Achard and Renault,² he produced infection in the blood stream by introducing *Bacillus pyogenes* into the ureter. His work was without previous bacteriologic control of the blood, however, and in many cases peritonitis occurred. He traced the organism from the bladder to foci of infection in the kidney. "From these foci the organisms go into the connective tissue and then penetrate into the blood vessels, enter the circulation, and lead to far off emboli." Thus it is seen that thirty years ago the thought was suggested that the kidney might be a focus for blood stream infection.

Burns and Swartz³ do not believe that absorption takes place from the pelvis of the kidney under normal conditions. If an acute pyelitis occurs, however, absorption, and the clinical phenomena of chills and fever result. These authors consider such clinical manifestations as due to the absorption of urine and bacterial toxin either from the blood vessels or lymphatics of the renal pelvic mucosa directly, or from the urine and bacterial toxins retained in the uriniferous tubules. They do not suggest, however, that these clinical symptoms may be due to the passage of the bacteria through the kidney into the blood stream, thus causing a bacteremia. In their later work, after the injection, by the gravity or syringe method, of indigo-carmin and india ink particles into the previously

* From the Mayo Clinic.

1. Albarran, J.: Étude sur le rein des urinaires, Thèse de Paris, 1888.

2. Krogus, Achard and Renault, quoted by Brown, T. R.: The Bacteriology of Cystitis, Pyelitis and Pyelonephritis in Women, with a Consideration of the Accessory Etiological Factors in These Conditions, and of the Various Chemical and Microscopical Questions Involved, Johns Hopkins Hosp. Rep., 10:11-89, 1902.

3. Burns, J. E., and Swartz, E. O.: Absorption from the Renal Pelvis in Hydronephrosis Due to Permanent and Complete Occlusion of the Ureters, J. Urol. 2:445-455 (Dec.) 1918.