casts do not disturb me anything like as much as they did formerly. The important practical point is that they are not necessarily the precursors of serious kidney disease, and that their presence does not inevitably demand very careful regulation of the life and constant medical supervision.

In a certain proportion of cases, how large this proportion may be it will take years to determine, interstitial changes will reach a degree to shorten life, advancing more or less rapidly. It is not in our power at present to distinguish accurately which these cases are. Some help is afforded by the close estimation of solids in the twenty-four-hour urine; but in the average individual the reserve balance of kidney power is sufficient to permit of extensive renal impairment without curtailment of the ordinary daily work. The reserve may be diminished or gone; but if the reserve is not drawn upon too much or at all no apparent stringency is felt. We can grant that renal albuminuria is always pathological. Chronic pharyngitis is also pathological. It may be heresy, but I cannot resist the feeling that we are coming to believe that the clinical significance of the one is not necessarily greater than that of the other. I shall follow up my cases as far as I can and hope to be able in the course of years to throw further light on this important practical question. Life insurance companies are right in refusing risks reported as presenting albumin and casts. Life insurance is more like the French than the English criminal law; — it holds that innocence must be proved beyond reasonable doubt. But I have no doubt that risks are daily accepted by the best companies where an expert examination would detect albumin and casts. Few examiners apply the heat and nitric acid tests in a manner to try their full delicacy, and a microscopical examination is practically not demanded. Even if it were it would not ordinarily be sufficiently careful to be of much value.

Finally, my results may be summed up in the following conclusions:

(1) Renal albuminuria, as proved by the presence of both albumin and casts, is much more common in adults quite apart from Bright's disease or any obvious source of renal irritation than is generally supposed.

(2) The frequency increases steadily and progressively with advancing age.

(3) This increase with age suggests the explanation that the albuminuria is often an indication of senile degeneration.

(4) Though it cannot be regarded as yet as absolutely proved, it is highly probable that faint traces of albumin and hyaline and finely granular casts of small diameter are often, especially in those past fifty years of age, of little or no practical importance.

PELVIC INFLAMMATIONS.¹

BY LEONARD WHEELER, M.D., WORCESTER, MASS.

THE subject of Pelvic Inflammation is one of great importance to every practitioner; for the condition is very common, and, for two reasons beyond inherent difficulties, it is not easy to diagnose. These two reasons for the difficulty in diagnosis are, first, that in its present aspect the subject is so novel that only the younger men among us learned anything of it in the

¹ Read before the Worcester Society for Medical Improvement, April 4, 1894.

medical school; second, that any degree of expertness in diagnosis requires the handling of a good many cases.

The pathological history of pelvic inflammations has been long and varied, but the salient points are interesting, and may be made very brief. Up to 1850 there was nothing extraordinary. Correct post-mortem observations had been made and recorded. Forty years ago, however, Nonat in France, followed by West and Simpson in Great Britain, and they again by Emmet in this country (of course, there are other names in plenty, but these were leaders), placed the seat of all these pelvic indurations and suppurations in the cellular tissue of the pelvis. It is wrong to say that these men based their ideas unduly on what they were able to feel during life, on clinical appearances and signs rather than the revelations of the post-mortem table. Autopsies do give strong credence to this view. It is only abdominal surgery, after all, that has proved it false. Where the pelvic inflammation has gone on to a fatal result, this cellular tissue has become extensively involved, and it is quite impossible to determine the point of origin of the disease. The suppurative process gets into this cellular area and follows it along, just as Schlesinger's air and liquid glue followed it between the folds of the broad ligament, along the psoas muscles, inward around the cervix, outward to the inguinal ring and downward between vagina and rectum. Having felt the disease during life and in its earlier stages apparently in the broad ligament, and after death finding a vast suppuration involving this very cellular area, it was natural enough to conclude that the disease had been all the time an affection of the cellular tissue, and that the diseased tubes always found with it were secondary. All this time, however, the opposite and correct view was stoutly maintained by Aran and his followers. He insisted that the masses felt during life were the same as those found so often after death from other causes as well as this pelvic inflammation, namely, diseased Fallopian tubes.

In 1857 appeared the first account of Bernutz's remarkable researches on the nature and pathology of pelvic inflammations. He clearly described the disease clinically; and he showed pathologically that it was a disease of the tubes and ovaries accompanied by peritonitis, and that cellulitis had no influence in causing the symptoms, that, in fact, it rarely existed at all as a primary disease except as a phlegmon in puerperal cases. This is the accepted doctrine of to day, in the past few years made plain by hundreds of operations for the radical cure of that large class of cases until recently regarded and treated as chronic cellulitis.

Notwithstanding this thorough work and its thorough discussion for years, the opposite theory still had its supporters, and would have had to the present day but for the revelation of Tait's operation, so-called.

In 1872 Battey did his first oöphorectomy, and the discussion and operations following prepared men's minds for the favorable reception of Tait's operation. Tait may have done some operations before, but the table in his book "Diseases of Women" begins with 1880. The operation for removal of diseased appendages was not done in this country until 1882. In 1883 it began to be much talked about, and has been ever since. The more it was discussed, the more attention was diverted from cellular tissue and fastened upon Fallopian tubes, though men were slow of conversion. Emmet held his ground firmly until 1888 or 1889.

It seems strange that so common and so grave a dis-

ease as salpingitis should have been neglected for so long a time, especially after it had been so well described as it was by Bernutz. Still there would probably have been no further advance in these times except that Lister's grand discovery and proof of the value of cleanliness in surgery had made modern abdominal work possible. Except for this the pioneer work of Battey, Hegar, and Tait would have been quite likely to be dropped and forgotten.

With the advance in pathological knowledge and surgical treatment has come an eager study of the causes producing these inflammations, and all this attention has resulted in finding the disease of far more frequent occurrence than had been supposed. Gonorrhœa in the female has received a new meaning, and the necessity of surgical cleanliness in all gynecological and obstetrical work has received a capital emphasis.

In 1875 Noeggerath first published in this country his ideas in regard to latent gonorrhœa, which have given rise to a vast amount of discussion. It was a saying of Ricord that in the great conflagration of the final judgment the last thing to be consumed would be a drop of gleet. Noeggerath's ideas were in the same line. He maintained that any stricture after a gonorrhœa supplied a secretion capable of infecting the female, and that the favorite chronic abiding place of this inflammation in the female was in the tubes. His views have not been proved, but they went far in bringing about the modern idea of gonorrhœal disease in women. It used until quite recently to be considered a trivial disease. But with the present better knowledge of tubal pathology it becomes plain that it may be a very serious and dangerous disease.

It seems to be proved that some, perhaps many, deaths ascribed to puerperal fever are really cases of ruptured gonorrhœal pyosalpinx.

Another and probably more important cause than even gonorrhœa is the septic inflammation that extends over the genital mucous membranes after an unclean confinement, or especially abortion, or after the use of unclean instruments obstetrically or gynecologically.

There are other causes like syphilis, tuberculosis, exanthematic fevers, tubal pregnancy; but the important truth is that pelvic cellulitis, as it used to be understood, practically does not exist. The hard vaginal vault, the pre-uterine masses, the lumps by the side of or behind the uterus, the thickenings, the indurations, the areas of fulness with which we are so familiar, all these come from diseased tubes and consist either of swollen and adherent tubes and ovaries, or of peritoneal adhesions, or cicatricial bands. Other masses, of course, are often enough felt in the pelvis, but practically all the cases which used to be considered cellulitis are of this sort, and they are caused by an extension of inflammation from the uterine mucous membranes into the tubes.

Having in mind the bacterial nature of the disease its etiology may be expressed as follows: pus in the pelvis may owe its origin, first, to an inflammation of one sort or another (that is, may be owing to some form or another of germ growth) extending over the uterine mucous membrane into or through Fallopian tubes (gonococcus, etc.); second, to an inflammation extending through the parenchyma of the uterus via lymphatics or veins (streptococcus, etc.); third, to an inflammation derived from the intestine—the appendix, in one of my cases (*bacillus coli communis*).

In the great majority of cases it comes in the first way, via utero-tubal mucosa. It is a pyo-salpinx or the sequelæ of a pyo-salpinx. Those occurring in the second way, by an infection through the lymphatic or venous channel of the uterus, are of septic origin, starting from an abortion, confinement, or some surgical operation on the genital organs. The third sort is rare.

The prognosis and treatment of these cases of pelvic inflammation is a matter of much perplexity, and each case has to be decided on its own merits. One would think that a consultation of the authors writing just before the surgical treatment of the disease began, would give a definite idea of the prognosis of the disease. As a matter of fact, however, one finds merely vague statements of personal impressions, the general idea being that pelvic inflammation, except in puerperal cases, is not often fatal but is apt to entail a vast amount of distressing sequelæ. Wherever figures are used, however, the mortality becomes more conspicuous, as in McClintock's twenty four cases with seven deaths.

The comparison is often made between salpingitis and appendicitis, but the two cases are only distantly similar. The appendix is a useless organ, and it is an advantage to be rid of even a healthy one, whereas there is no more important organ, except those necessary to life, than the Fallopian tube. Again, the diseased tube more frequently drains successfully into the uterus than the appendix into the cæcum. The universal surgical treatment of appendicitis may be maintained with some show of reason. Not so with salpingitis. Men make very definite statements as to certain conditions of the tubes entailing sterility, but it is a matter of much difficulty to determine what tubes are hopelessly diseased. I have seen a chronic pelvic inflammation, many months in duration, where the pelvis from side to side was of wooden hardness, in a woman who afterwards bore several children. Diseased appendages are not to be indiscriminately removed.

The cases to be operated upon are those where there is a recurrence of disease arising from a permanent focus of disease; second, those where there is a permanently palpable enlargement of the tube causing symptoms which wear upon the health; third, a few acute cases which have to be treated simply as abscesses.

As an illustration of my subject I have briefly reported the following ten cases, all but one of which occurred in my last year's service at Memorial Hospital. Four recovered without operation, two after the removal of the appendages, one after vaginal drainage, one died of peritonitis after operation, and one (a puerperal case) of peritonitis without operation.

CASE I. D. W., admitted October 28, 1892. Thirty-eight years old; widow; three children, youngest thirteen years. History of salpingitis one year before entrance. Recurrent attack two weeks before entrance. Whole pelvis found filled with hard irregular, sensitive mass, in which no organs could be made out. In three months this had gradually disappeared until there was nothing abnormal beyond slight lateral thickenings with backward displacement of the uterus. Patient was feeling well and having no pain even at time of menstruation.

CASE II. E. D., thirty-six years old, married. Admitted to Memorial Hospital November 24, 1892.

No children. Abortion four months before admission, followed by pelvic inflammation. Probable abortion five weeks before admission, followed again by pelvic inflammation. On admission there was a hard, tender mass extending from the retroflexed uterus to left pelvic wall. Under treatment this mass slowly disappeared, leaving an adherent retroflexed uterus; and patient had pretty well recovered her health in ten weeks.

CASE III. J. S., twenty-two years old, single. Admitted to Memorial Hospital February 16, 1893, with appendicitis. Abscess opened and drained (pus two ounces) February 17th. Limits of abscess cavity could be touched by finger in all directions except toward pelvis. This wound was completely closed by March 23d. Two weeks before this a purulent vaginal discharge led to the discovery of a double salpingitis, which gradually disappeared under treatment in the course of two months, leaving nothing palpably wrong in the pelvis except a retroflexion with adhesions.

CASE IV. J. McS., twenty-two years, single. Admitted to Memorial Hospital January 10, 1893. Confined with first child in Canada two weeks before entrance. Placenta adherent and removed. Chill on seventh day with abdominal pain and tenderness, vomiting and diarrhoea. Acute symptoms abated; but patient lost flesh, color and appetite, and complained of nearly constant pain up to time of entrance. Examined at this time, pulse was 95, temperature 101°. Abdomen somewhat distended and tender. P. V. uterus crowded backward and to the right by a hard, tender, immovable mass, filling left side of pelvis and extending above pelvis brim. After six weeks in the hospital, the mass had entirely disappeared, and the uterus was normally movable.

CASE V. L. R., twenty-one years, single. Admitted to Memorial Hospital January 20, 1893. A thin, pale, nervous girl. Gives history of invalidism, amenorrhoea, polyuria, etc., for four years. Has had local treatment. On left of uterus is a pear-shaped mass, twice as large as uterus, closely juxtaposed but not adherent to that organ. The diagnosis was solid tumor of ovary. The abdomen was opened February 15th. The tumor proved to be a huge pyosalpinx larger than the fist, with a few light adhesions to floor of pelvis and one very firm attachment at utero-vaginal junction, where the pus was apparently creeping toward the vagina. The breaking of this adhesion allowed a single drop of pus to escape. The tumor was easily tied off and removed. The right tube was found enlarged into half the size of this, and filled with pus. This was also removed. The recovery was uneventful. Discharged well March 14th.

CASE VI. B. W., twenty-five years, single. Entered Memorial Hospital November 22, 1893. Suffering from acute gonorrhoeal salpingitis (gonococci found in vaginal discharge). Pain was very severe, and patient altogether very sick. The acute symptoms passed away in the course of a few weeks, and she began to improve decidedly. The pelvic organs became less matted, and it was possible to distinguish the uterus with the swollen tubes on either side. At this point improvement ceased, pain became worse, and we decided to remove the tubes. This was done January 26th. The tubes were perhaps double the size of the thumb, and tensely filled with thin pus. As always in these cases, they were folded downward and back-

ward under the broad ligament. Adhesions were strong and universal. At first, it seemed impossible to find any place of cleavage. By patient scratching they were dug out, tied off without the loss of any pus. Was allowed to sit up in two weeks. Discharged well March 2d.

CASE VII. J. E., twenty-five years, married. Entered Memorial Hospital March 2, 1893. Artificial abortion a year ago followed by severe hæmorrhage. Confined at term six weeks ago. Had chill and fever on second day, otherwise recovery was not interrupted. Yesterday, March 1st, was seized with severe pain in pelvis accompanied by nausea and vomiting. Entered hospital March 2d at 5 P. M., temperature 104.4°, pulse 120. No defecation for two days; no urine for thirty hours, 22 ounces drawn by catheter. Abdomen moderately distended and tender. Masses on both sides of uterus felt by vagina. Uterus much enlarged. Free catharsis caused improvement in symptoms. Patient was so severely sick that hesitation was felt about opening the abdomen, so an opening was made per vaginam, drawing off four ounces of pus, and a drainage-tube inserted. The cavity was washed out daily, discharging pus for two weeks. Patient slowly improved, and was discharged after six weeks in hospital feeling nearly well. Uterus was still too large; adherent to it on the left was a mass the size of an English walnut. The right adnexa were naturally soft.

CASE VIII. N. M., thirty-one years, married. Entered Memorial Hospital March 12, 1893. Patient had a history which led to a probable diagnosis of tubercular peritonitis. Laparotomy was done. No tubercles found, but the whole pelvis was found occupied by what appeared to be a soft, solid mass, easily bleeding, in which pelvic organs, omentum and intestines were hopelessly involved. The next day began a discharge of pus from the rectum, which continued several days and was estimated at about a pint in amount. She improved rapidly; the pelvic mass melted down to an insignificant thickening; and she was discharged well on April 16th.

CASE IX. M. C., twenty-eight years, married. Entered Memorial Hospital February 14, 1893. Married at eighteen; child one year later. Three years ago had inflammation of the bowels. In bed four weeks. Unable to do full work for a year, and has been subject to pelvic pain since. December period copious, followed by recurrence of inflammation. In bed since. January, flow scanty, and followed by purulent vaginal discharge, which has continued since. Patient is thin, pale, with little appetite, small pulse, temperature nearly normal. Hard mass felt by palpation above pubes. Uterus in nearly normal position, partially embedded in hard mass on right, which extends from pelvic wall to beyond median line. Mass is hard, immovable, not sensitive. Orifice of sinus from which the pus comes, felt behind cervix to right. It was found impossible to follow this sinus for the purpose of dilatation. It was thought better to attack the trouble through the abdominal wall.

At the operation on March 28th, the right tube was found divided into two distinct four-ounce cavities filled with pus, extending from the side of the uterus to the cæcum and universally adherent. Omentum could not be separated, and was tied off. When the tube was nearly enucleated, it burst and covered the field of operation with pus. This was washed out with hot water, the enucleation completed, and the tumor tied off. There

was no difficulty of separation at the point of the fistulous opening into the vagina. Left tube healthy. Large gauze drain was left in. Patient died of peritonitis at the end of the third day.

CASE X. R. E., forty years, married. Admitted to Memorial Hospital March 15, 1893. First child born three weeks before entrance. Confinement normal. Was up feeling quite well on the eighth day, March 10th. Five days before entrance, eighteen days after confinement, after exposure, wetting feet, etc., had a chill followed by fever, vomiting, abdominal pain and tenderness. On 13th, temperature 103°, pulse 130. On 15th, when she entered hospital, temperature 103°, pulse 100. Abdomen moderately distended and tender; countenance dull. Said she felt better than the day before. Nothing abnormal was felt by the vagina. A few hours later she grew rapidly worse. At evening, temperature was 105°, pulse 170; and she died at 4 A. M., March 16th. Autopsy five or six hours after death. Body warm. Rigor mortis not present. When abdominal cavity was opened, a sero-purulent fluid escaped. The amount of this fluid in abdominal cavity estimated at from six to eight ounces. Peritoneum everywhere covered with lymph flakes. Intestinal coils just beginning to adhere one to another. Signs of peritonitis as much marked in upper part of abdomen as lower. Vermiform appendix and gall-bladder normal. Uterus possibly a trifle subinvolved. Site of placenta evident upon posterior part of fundus. Fallopian tubes and broad ligament free from adhesions. Broad ligament not thickened. Cause of the general peritonitis not determined by the post-mortem appearances.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

NINTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, 30, 31 AND JUNE 1, 1894.

FIRST DAY. — TUESDAY.

PRESIDENT REGINALD H. FITZ, of Boston, called the Association to order, and delivered an address on the

RISE AND FALL OF THE LICENSED PHYSICIAN IN MASSACHUSETTS, 1781-1860.¹

DR. BEVERLY ROBINSON, of New York, read a paper on

THE TREATMENT OF CERTAIN SYMPTOMS OF CROUPOUS PNEUMONIA, PARTICULARLY IN ADULTS.

The treatment of pyrexia and pulmonary congestion, he said, are of special interest in the first stage. The modern antipyretic drugs are not ordinarily useful, although good, occasionally. Phenacetine is the most satisfactory. More reliance is placed upon the use of spirits of Mindererus, citrate of potash and sulphate of magnesia to reduce temperature by action on the skin, kidneys and bowels. Three to five grains of quinine every four to six hours tends to diminish fever while strengthening somewhat the heart. Cold sponging, the ice coil, cold pack or cool bath for the purpose of reducing temperature do not act with any special efficacy as usually employed. Occasionally, when the

temperature is beyond 104° and there are evidences of adynamia, the tub-bath at 80° to 90° F. may be usefully employed, combined with continuous friction.

Aconite or aconitin may often be injurious by diminishing the energy of cardiac contraction. Even when combined in its use with digitalin, or digitalin and strychnine, it is not free at times from grave objections. There are other drugs eminently more useful, both theoretically and practically. In this stage of pneumonia no drug acts as well as antimony in small repeated doses. Kermes mineral, or the oxysulphuret of antimony, is the best form. It is given usually in doses of $\frac{1}{32}$ of a grain every two hours, or every hour for a while, in a mixture with syrup of gum and orange-flower water. Employed in this manner, fever and pulmonary congestion diminish at times in a very obvious manner. Expectoration becomes easier and more abundant, and the sputa from being very tenacious and viscid are more fluid and brought up with relative ease and increased frequency. Kermes mineral given in this way is not irritating to the digestive tract as tartar emetic often is, and does not produce a collapsed condition. It suits children, also, remarkably well. To aid its advantageous effect, we should employ at times alcohol internally, and revulsives to the chest wall. The great mistake formerly made in the use of antimony was the employment of the wrong salt and its use in excessive doses.

When the heart is particularly taxed by reason of pulmonary congestion and a tendency to œdema, no drug produces the rapid and remarkable results of nitroglycerin given by the mouth, or better still, hypodermically. We must not rigidly adhere to the ordinary dose of $\frac{1}{100}$ grain, but should use $\frac{1}{50}$ or $\frac{1}{25}$ if the condition of the patient is imminently threatening.

The use of inhalations of oxygen in relieving pulmonary congestion affords marked temporary relief to breathing in the greater number of cases of pneumonia; but, in a few instances, not even relief is afforded, but the dyspnœa, and subjective distress is obviously increased. These differences of action cannot always be accounted for.

It is essential to have pneumonia patients drink abundantly of water, and not force them simply to take milk, beef-tea, or broths of different kinds, with the idea that all that is required is to give nutritious fluids, losing sight of the great importance of water given by the stomach to promote the elimination of poisonous excreta through the skin and kidneys. The abundant use of cold spring-water or soda-water gives relief to thirst and helps reduce the fever, and may diminish slightly the viscosity of the expectoration.

The proper use of alcohol in the treatment of pneumonia is a difficult problem. Unquestionably, in many instances it is very beneficial. It is generally judicious practice when any reasonable doubt prevails as to the condition of the patient with respect to any one of the numerous conditions which seem threatening to life, to give moderate and repeated doses of alcohol. There are two absolute contra-indications: first, cases in which the patient is highly plethoric; second, cases in which the hepatic engorgement and gastric catarrh render it pernicious because nausea and stomachal intolerance are increased by its exhibition even in moderate amount, and assimilation of food and water is prevented.

The use of calomel in small repeated doses often has marked beneficial effect in cases where the tongue

¹ See page 529 of the Journal.