mation of some portion of the intestinal tract, usually the colon. In one of these a pulsating tumor lay in the left hypochondriac region, doubtless consisting of thickened membrane and enlarged glands lying over the abdominal aorta. In another case the pulsation was also manifest, and all the cases were bronzed to a varied degree. One was discharged much improved by a treatment consisting of the nitro-hydrochloric acid, arsenic, external galvanic currents and regulation of the diet, and two cases are improving under treatment of a similar character.

My experience in this affection has convinced me that many cases remain undiagnosed by physicians who neglect to avail themselves of the signal aid given in obscure chronic diseases by systematic examination of the alvine discharges.

MISCELLANEOUS.

Other cases admitted presented instances of ovaritis, menorrhagia chlorosis, pernicious anæmia, obstruction of the bowels, meningitis, chorea, multiple neuritis, musculo-spiral spasm, hæmiplegia, locomotor ataxia, etc., in some of which excellent results were obtained; but as the number of each was limited, no general deductions from them will be presented at the present time.

212 South Fifteenth St.

PUERPERAL SEPSIS—LAPAROTOMY.

Read by invitation before the Kansas City Academy of Medicine.

BY A. H. CORDIER, M.D.,

KANSAS CITY, MO.

For ages the cause of "Puerperal Fever" (which is a symptom—not a disease) was supposed to exist in the atmosphere of the lying-in hospital or chamber; it was believed that the fever was an *infectious, contagious disease*—that it was not necessary for actual contact to take place. The many opportunities both on the operating table and in the dead room for studying its pathology have cleared up the mystery. As a result of the recognition of its septic character within the last few years, the puerperal woman has been looked upon as a wounded woman and has been treated as such; so it is now a rare occurrence for a woman to have a "bad getting up" after confinement because practitioners recognize the principles of aseptic surgery and apply them intelligently to the treatment of the lying-in woman. With clean hands and surgically clean instruments used by a clean physician in doing the work in this physiological process of labor the woman will rarely have puerperal fever from *outside sources*.

The causes may be divided into autogenetic and heterogenetic—*i.e.*, self-infection (*from within*) and bacteria introduced from without. In the first type the pathogenic microorganisms are located at one or more points in the genital canal, the fallopian tubes and uterus being by far the most frequent localities, especially the tubes; here the bacteria find a hiding place until the resisting points of the surrounding structures are weakened by any cause; then they produce their direful results. They multiply the instant proper culture fluid is supplied. It is undisputed that the same microbes developed in one fluid may offer more resistance to germicides than those cultivated in other fluids. The recognition of this fact alone explains why germs remaining in the vagina, cervix or uterus as innocuous tenants may, dur-

ing the puerperal period, take on vicious tendencies, multiply rapidly in the lochia and quickly produce the symptoms known as "puerperal fever," and the pathological conditions now recognized (in the majority of instances) as metro salpingitis with the ever present pelvic peritonitis—not cellulitis. The lochia should be a normal fluid following a physiological process, but this like all other healthy processes may be subject to a wide variation, and yet from a clinical standpoint remain within the limits of the lines of health.

A woman with a purulent or catarrhal salpingitis of one or both tubes at the time of her confinement is certainly in more or less danger of developing a puerperal peritonitis or a fever with the accompanying phenomena so vaguely called "puerperal fever" (a term the sooner relegated to the past the better for the lying-in woman; as long as this unmeaning term is used by book writers and teachers, so long will it be necessary for us to unlearn in practice some of the teachings of our illustrious preceptors).

In order to intelligently understand the various types of puerperal sepsis it is necessary to keep in mind the dominant local process producing the symptoms. In arriving at an opinion as to the character of the local pathological process much information may be gained by the educated finger in examining the case, to which of course, as in all diseases the clinical history must be added.

The woman may or may not give a history of previous attacks of salpingitis. Recurring attacks of salpingo-oöphoritis usually result in a closure of the abdominal tubal ostium, consequently pregnancy is not likely to occur if the disease is located in both tubes. Early in pregnancy the woman may contract a gonorrhœa of one or both fallopian tubes. The disease may remain latent up to confinement. During the contraction of the uterus in the expulsion of the child an adherent fallopian tube filled with pus, swarming with poisonous germs, is ruptured or a closed fimbriated extremity is opened up giving vent to this virulent fluid. The peritoneum is inflamed, either locally or diffused, according to the individual susceptibility or immunity to the amount of escaped septic material. If the fluid laden with the septic microorganisms escapes in large quantities into the peritoneal cavity the resulting peritonitis is generally of a diffused character, accompanied by the usual symptoms of a diffused septic peritonitis running its course quickly, terminating in death within two or three days unless early surgery, with gallons of sterilized water and a drainage tube saves her. *The surgery must be done at once.* If the leakage is slight or if the inflammatory process extends by continuity, from tubal mucous membrane to the serous peritoneal coat, the symptoms are not so quickly developed, neither are the results so rapidly disastrous. This is the usual type of the disease, *i.e.*, the special form under consideration (autogenetic).

When this process is once inaugurated in the puerperal woman, no one can foretell with a certainty its progress. Each case individualizes itself and it must for the time being rest with the judgment of the attending physician and surgeon as to the course to be pursued in the case under investigation.

If the attack bids fair to run a mild course as indicated by the mildness of the constitutional symptoms and the trivial local manifestations, the advisability of any operative procedure may be placed in

the balance and weighed while the case is being scrupulously watched for the development of unfavorable indications. The moment such are observed delay should be countenanced no longer.

Gonorrhœal pus is not by all odds the most dangerous fluid we have to deal with in the peritoneal cavity. The gonococci thrive best in localities lined by columnar epithelium, the endothelium of the peritoneum is an almost insurmountable barrier to the farther progress of gonorrhœal infection. It is rare indeed to find an unmixed infectious fluid in the tubes as the ever present pyogenic bacteria soon associate themselves with the gonococci in their destructive invasions.

If at an operation or a post-mortem on one of these cases (puerperal fever) an ovarian abscess is found or a fallopian tube filled with pus, with pathological changes well marked, one may be certain that these changes antedated the attack of peritonitis and may conclude safely that in this locality the starting point of the diffused inflammatory trouble has been found.

There are other localities in which under favorable circumstances, systemic infection of the gravest type may take place. In the uterus, a retained infected clot, or a portion of the secundines may give rise to putrid absorption (*sapremia*); or a true septicæmia from absorption of pathogenic bacteria and the preformed ptomaines may arise. Either of these conditions is liable to extend to the fallopian tubes and (if the woman lives long enough) develop secondarily the special form of puerperal disease under discussion to-night. It is true that in the puerperal sepsis of vaginal, cervical or uterine origin there is often produced pathological changes in the pelvis, but these changes follow later in the disease than if the trouble was primarily in the tubes.

An œdematous swelling is often felt at one or both side of the uterus where lymphatic or venous absorption of septic material is taking place, but it must be remembered that this poison is outside the peritoneum and that the outer side of this serous sac has wonderful resisting powers to septic invasions.

Even in the rare instances where (following a cervical laceration) a true pelvic abscess forms in the broad ligament holding a pint or more of pus, the upper or intra peritoneal side of this membrane will be found perfectly healthy in many instances and all the pelvic viscera free from any marks of inflammatory disease.

Where the uterus is the focus of absorption the systemic symptoms develop early—of an intense character owing to the large absorptive surface exposed to the poison. The woman may die before any local results have had time to develop. The uterus will be found large and soft, and an early, thorough and oft repeated antiseptic irrigation may cause the alarming symptoms to disappear quickly. If the disease is in the main located in the tubes, irrigation will avail nothing, and the pulse and other indications upon which we rely for a favorable prognosis will remain unchanged.

The temperature is very misleading in all forms of puerperal sepsis; especially is this true of that variety in which the intensity of the disease is located in the peritoneum. The pulse, tympanitis, and physical examination of the pelvic organs are the most to be relied upon in giving a prognosis.

Before resorting to operative procedure investi-

gations should be carried in all directions, that no mistake be made, and if in doubt as to the exact source of the sepsis, begin with the less hazardous procedure and watch the results closely, keeping on the alert constantly for any new developments that would point to any error in diagnosis that the method may be intelligently changed with a fair prospect of saving the patient. *Do not persist in one treatment too long unless marked improvement is seen and is continuous.*

If this early treatment has produced rapid improvement and the patient does not have recurrences of the bad symptoms, while continuing this course, one may feel sure that the right treatment is being pursued. For instance: a woman two days after labor has a chill followed by a temperature of 105° F., checking of lochia; antiseptic intra-uterine injections are used, three or four times in the twenty-four hours, the patient's temperature comes to normal, the lochia returns and the patient's condition is quickly changed from one of great danger to a comparatively safe state. Now this woman may remain free from fever and her convalescence be uninterrupted by any bad symptoms. If the symptoms were produced by absorption of putrid material, and if the treatment has removed the offending substance all is well, but, now if any of this poisonous decomposing mass is left behind and infection with the staphylococcus or streptococcus takes place, an inflammatory process is quickly lighted and extends rapidly to the fallopian tubes, and the woman either dies of *sapremia*, septicæmia or by the slower and more painful peritonitis, abscesses, secondary to tubal extension; or she gets well from quick and sensible surgery or has a slow convalescence, followed by prolonged invalidism. How many cases have we all seen giving a history like this?—"Was confined for the last time two or fifteen years ago, had childbed fever, has not seen a well day since, up one day about the house, but down the next. The cot or bed is her greatest comforter." I saw two cases like this, to-day. Examination revealed old inflammatory bands binding down a large subinvolved uterus, the cul-de-sac filled with adherent fallopian tubes, ovaries, sigmoid and coils of ileum. Surgery will cure both these cases at an early date.

Case 1.—This case was a patient of Dr. Ritter of this city, a careful clean practitioner, doing considerable obstetrical work. All aseptic precautions were thoroughly carried out during the delivery. The patient "died, not as a result of the surgery, but in spite of it." Had this patient been operated on earlier her chances for recovery would have been greater. An operation had been urged for several days before the consent of the patient was obtained.

This lady, nineteen years of age, confined in December; first child; perineum lacerated down to sphincter; had a clean delivery attended by a clean doctor. Two days following confinement had a chill followed by fever of an inflammatory or septic type. Uterus irrigated thoroughly and curetted at this time, followed by a slight decline of the febrile symptoms for a short time; the pulse remained up to 120 to 130, an indication within itself that the woman had trouble that had not been removed. The fever soon returned to its former height and would remain high until a diarrhœa (drainage) reduced it for a day or so only to return again. For five weeks her case had pursued about this course; at this period I saw her the first time. Her temperature at my first visit, was 102° F., pulse 130, and very weak. Examination revealed a healed perineal tear, and the uniform œdematous infiltration in the vaginal vault known to the older authors as pelvic cellulitis. An inflammatory diaphragm extended from one anterior superior spine to the other; no fluctuation but great tenderness. Uterus not large.

Operation performed in sixth week following confinement. Two days before operation her temperature was 103° F., pulse 130. A thorough purging in preparing her for the operation reduced her temperature the day before the operation to 99° F. On morning of the operation her temperature was 97° F., pulse 130, an unfavorable condition it is true, for an operation, but bid fair to be the best I was likely to find her in.

At the operation I found as I had predicted, many firm inflammatory bands binding down the uterus, matting together the intestines, omentum and tubes. *The uterus was firm and about the size one would expect to find five weeks after delivery.* The ovaries and tubes on the right side were filled with pus and firmly bound down under the uterus; the left tube was likewise distended with pus; there was nothing left of the left ovary but a cheesy disorganized mass. The adhesions were broken up, sound organs liberated and diseased structures removed, the peritoneum irrigated, and glass drainage tube introduced. Entire time of operation thirty minutes. The patient reacted nicely and bid fair for forty-eight hours to recover. At this time her heart gave out and my patient died—not from an extension or rekindling of the peritonitis, but from exhaustion induced by her long illness prior to the operation.

Every puerperal woman developing a fever does not necessarily imply that a laparotomy is the only resort, but it does signify that she has somewhere a cause for the fever and that the focus of absorption is in the genital tract in the majority of cases. The variety or location in this tract should point out the proper treatment.

This case was operated on since this article was read. I now add it to the above report.

Case 2.—Puerperal Sepsis. —Laparotomy.—Recovery.—This lady two or three days after labor developed a "puerperal fever," having suffered much in region of right ovary during the last few months of her pregnancy. When I saw her two weeks after confinement she was having a septic fever, with much pain in pelvis. Examination revealed a "boggy" mass to right of uterus extending to a level with the anterior superior spinous process. This examination was made two weeks after labor. She was septic, temperature running from subnormal to 104° F., pulse from 110 to 140.

Operation revealed the true character of the mass to right of uterus; omentum, bowel, fallopian tube and ovary all matted together. The tube was cheesy and disorganized, showing well marked evidence of long pathological changes. Sound organs liberated and diseased structures removed, gallons of hot sterilized water used with irrigator, drainage and recovery.

This was certainly a case of autogenetic puerperal infection. That the woman was septic, as much as any one could be and live, is beyond doubt.

The right fallopian tube and its contents were responsible for the attack.

DEDUCTIONS.

1. Many cases of puerperal sepsis develop regardless of any aseptic precautions on the part of the accoucheur. In the majority of cases in this type of the disease the foci of infection will be found in the fallopian tubes.

2. Fallopian tubes may be infected with the gonococci, or other specific or pathogenic bacteria after impregnation.

3. Pathogenic microorganisms develop more rapidly and are more virulent during the puerperal period. This is due to the fact that (either) the secretions are more favorable culture fluids or there exists a weakening of the resisting powers (want of immunity) on the part of the lying-in woman.

4. Rely upon the physical examination of the case under investigation in classifying the form of the disease you have to deal with.

5. After deciding as to the location of the poisonous foci, the treatment at once suggests itself.

6. If in doubt as to the source begin with the milder procedure and watch closely the results of your treatment. If permanent improvement does not soon take place direct your course in another direction. Surgery in these cases must be done *early, thoroughly* and quickly to insure the lowest rate of mortality. Delayed and imperfect work will, in these cases, always bring disastrous results.

Rialto Building.

CONTAGIOUSNESS OF CONSUMPTION.

Read before, and unanimously endorsed by, the Medical Association of Georgia, April 20, 1893.

BY J. G. HOPKINS, M.D.,
OF THOMASVILLE, GA.

The question as to whether consumption is contagious or not is one of vital importance to posterity as well as to the present generation. While the theory of Koch is becoming generally accepted, there are still many who are skeptical upon the subject. These skeptics, in a great measure, are confined to those who have not given the work of Koch and his collaborators much of their time or attention. They look upon the bacillus as septic or putrefactive rather than pathogenic. I have joined that growing army which places tuberculosis in the category of contagious diseases, and my experience with this disease during nineteen years of investigation in Thomasville, which place is a resort for consumptives, bears me out in my opinion and makes me a willing subject of the great and erudite Koch. I do not intend, in this article, to delve in the depths of science by entering into minutiae, but simply to deal with facts as we find them.

We will take, to begin with, the negro, a creature in whom, prior to and during the war between the States, consumption was unheard of. In those days he was properly fed, properly clad, kept out of doors in the day time, was never crowded, and rest at night was compulsory. This process kept him, as far as possible, up to the "norm," and he was better enabled to wrestle with such disease germs as may have invaded his person. There is a vast contrast between then and now; his environments are materially changed, as any resident of, or sojourner in the South can testify. It is a well known fact, as shown by the records of our sexton, that more negroes die of consumption in Thomasville since the place has been a resort than ever before, and we find also that most of those who die of it have been at some time or other connected with some hotel or boarding-house in the capacity of chambermaid, laundress, or some other which exposed them more than others to the invasion of the tubercle bacillus. It is true that the whites escape to a far greater extent than the blacks, but it is also true that they are not as intimately connected with these subjects, and it is a well known fact that the whites possess far greater powers of resisting disease than the negro—except those of malaria and syphilis. We see this exemplified more particularly in diseases of the air passages. The percentage of recovery from pneumonia is so small that it is rare for a negro to recover from a severe case of the disease.

Frequently we find that the wife of a consumptive husband, or *vice versa*, comes down also with consumption, and dies as did the loved companion of life. Many instances of this character could be