

Patient is anemic and nervous, muscles are soft and flabby. Her former weight was from 127 to 130 pounds, but she now weighs only 105 pounds. The pain of each menstruation is very severe. It begins a day or more before the membrane is cast off, reaches its height at the expulsion of the membrane, then gradually subsides, disappearing only a day or more after the extrusion of the membrane. There has been much stomach disturbance, distress after eating and vomiting, especially in the morning. Stomach disturbance is worse during the menstrual period.

In treating this case the cervix was incised and dilated, the curette thoroughly used over the entire uterine cavity and equal parts of tincture of iodine and carbolic acid applied to the entire cavity of the uterus. These applications were repeated once or twice weekly after curetting. For three menstrual periods after the curetting the pain was not so severe, though small pieces of membrane came away each time. Under tonic treatment, too, the patient's general health improved, and she gained three pounds in weight. All discharge from the uterus ceased in a short time, the cervical endometritis disappeared entirely. In spite, however, of the applications almost an entire cast of the uterus came away during the last menstruation, while under observation, and the accompanying pain was nearly as great as before the dilation and curetting.

A second case came under my observation in August last. This case, however, differed essentially from the one just described. This patient was a married woman who had borne several children, was well nourished, florid and healthy in appearance, but of a decidedly neurotic temperament. She sought relief for painful and excessive menstruation, the flow being accompanied by clots and shreds of organized membrane. These shreds were examined on several occasions, but no utricular glands were found. Physical examination in this case showed the uterus to be considerably enlarged and sensitive, and there was here the same sympathetic disturbances as those described in case No. 1, but in a minor degree. Here the same means were employed as in the first case, but not with complete success. Though the uterus was found to be three-quarters of an inch shorter than before curetting, the next flow was not entirely painless and some shreds of membrane were extruded. This patient has now quite regained her normal health. Her last menstruation was without pain, but she has not menstruated for over two months, and has probably reached the climacteric.

A notable feature of this case was the excessive amount of bladder disturbance. It was probably the relic of a former inflammation, excited by the same cause which produced the endometritis. While there was no pus and scarcely more than the normal amount of mucus secreted, there was found, on microscopic examination, an excessive amount of pavement epithelial cells, often adhering in groups so as to be visible in the urine as flecks.

The literature of membranous dysmenorrhea is scanty and unsatisfactory. A report of the post-mortem appearance of a uterus subject to this disease is not to be found. Nearly all modern writers, especially those of Europe, regard it as a result of metritis. Schroeder remarked that "chronic catarrh is so often found it may be regarded as the cause of the disease." August Martin, Pozzi, and Lawson Tait express similar views. The last mentioned author

recites the history of several cases inflammatory in their origin, in which there was specific urethritis in the husband, and concludes that the membranes are fruitless pregnancies resulting from partial sterility in the male. Mr. Tait also states that he has never known the disease to occur in a virgin. Other authors are silent upon this subject, but the cases to which I have access occurred in married women, or in those whose virginity at the time the disease appeared could not be easily proved.

It is difficult to believe that this periodic desquamation of the whole lining membrane of the uterus is always the result of inflammation. The membrane itself is often not an inflammatory product. It has all the histologic characteristics of a normal membrane overgrown. The disease occurs, too, in cases where the ordinary signs of metritis are absent. (Skene, *Diseases of Women*, p. 235; Thomas, *Dis. of Women*, p. 622.) Lastly, uterine inflammations, metritis and endometritis are very common, while membranous dysmenorrhea is so infrequent that it violates all logic to regard the two as cause and effect.

Skene, Thomas, Wylie and many of the older writers, both of America and Europe, regard the formation of the membrane as the result of an abnormal nerve stimulus. It has been called by Oldham an "ovarian stimulus" and by Simpson "an exaggeration of a normal condition, or an exalted degree of physiologic action."

In the absence of demonstrable facts conclusions become unprofitable speculation. In the cases which are reported here one is impressed with the amount of sympathetic nerve disturbance, especially in the first case. There is tenderness upon pressure over the entire abdomen, an especially sensitive point being over the region of the solar plexus. Whether this disturbance is the cause or effect of the trophic change in the uterus is not plain. The severity of the pain each month, and its prolonged duration, however, seem to be sufficient to account for the nerve irritation.

It would be interesting to know whether the enlargement of these uteri is the result of a true hypertrophy and whether, as in the normal hypertrophy of pregnancy, the decidua is cast off in the absence of a vitalized ovum. A true hypertrophy of the non-pregnant uterus is probably a very rare disease (Martin, *Frauenkrankheiten*, p. 69); but there is no good reason for believing that it does not exist. It is, however, quite likely that Scanzoni was right when he concluded that the disease may be either hypertrophic as the result of sympathetic nerve disturbance, or pseudo-hypertrophic, resulting from long continued inflammation.

ON MEMBRANES DISCHARGED FROM THE UTERUS.

Read before the Chicago Pathological Society, Jan. 13, 1896.

BY EMIL RIES, M.D.

CHICAGO.

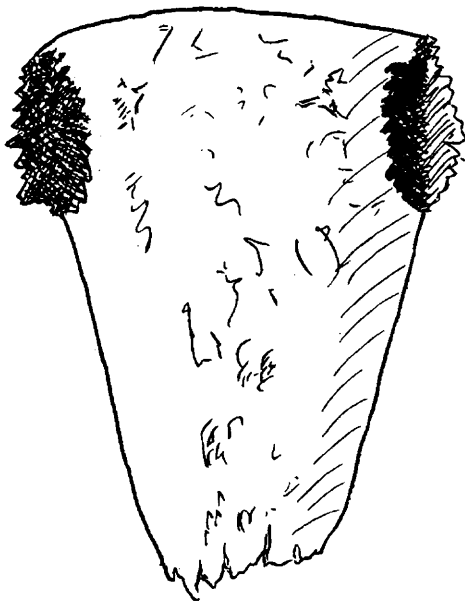
The gynecologist often receives for examination membranes which, he is told, have been discharged from the uterus. Unfortunately he often receives them in a stage of decomposition which makes them hardly fit for microscopic examination. The cause of this may be that the membrane has been retained in the vagina for some time before it was discharged, or that after discharge it has not been preserved with sufficient care. If the membranes are kept in water or in weak solutions of alcohol the decomposition may

go so far that the epithelium is thrown off from the surface and from the glands, and the cells of the interstitial tissue stain very badly or not at all. Let me draw your attention to the importance of the careful preservation of such membranes in concentrated alcohol or in a 20 per cent. solution of formol. The shrinking which may be caused by the alcohol is far less injurious as regards microscopic examination than the decomposition.

The first question which we have to consider when we examine such membranes, is whether they are really discharged from the uterine cavity or not. This question is easily answered in the affirmative, if the membranes form a faithful cast of the uterine cavity. (Figs. 1, 4, 7, 10). The best preserved specimens are three-cornered sacks with a cavity inside. But very often we receive nothing but shreds.

Macroscopic examination can sometimes show directly that the membrane did not come from the cavity of the uterus. Thus we often see shreds of various sizes discharged after vaginal treatment with strong solutions of ichthyol or acetate of lead in gly-

Fig. 1.



Membranous Dysmenorrhea.

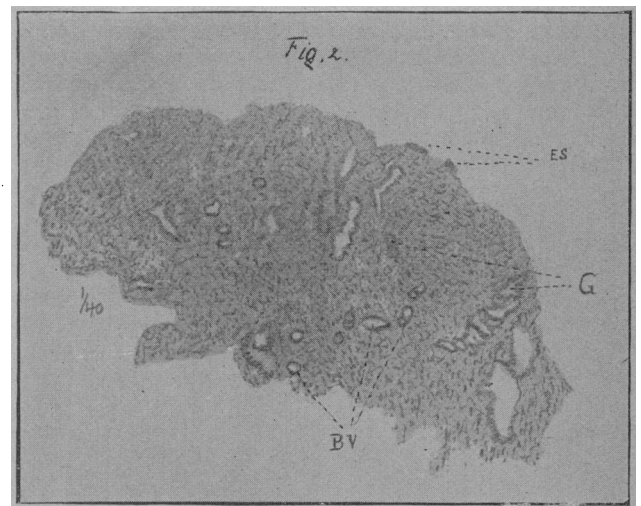
cerin or with tincture of iodine and other astringents. These shreds are discharged without pain and are often found covering tampons which had been applied saturated with one of the solutions just mentioned. These shreds are whitish or brown, the color depending on the remedy previously applied; they are always very thin, as is easily understood after microscopic examination has shown that they consist of the superficial epithelial layers of the mucous membrane which covers the vagina and the vaginal portion. The cells are large, flat, polygonal; they lie closely together without interstitial tissue; they contain a nucleus, which stains readily, and a very clear protoplasm. If seen from the surface a mistake about the nature of these cells is almost impossible, but if sections have been made in a transverse direction the flat cells may appear like spindle-cells and thus a wrong idea as to the nature of these cells may originate in the inexperienced. The microscopic aspect described above, especially the observation that the cells lie closely

together and that their protoplasm does not stain must prevent such errors. It needs no further evidence to prove that these membranes are without importance. A few days' rest from treatment and the vaginal mucous membrane will be repaired.

Membranes of quite a different size and of very grave importance are sometimes discharged in cases of puerperal inflammation of the uterus. They are sometimes so bulky that it would be a misapplication of the term were we to call them membranes. They generally have a very disagreeable smell; are soft, sloughing masses and on microscopic examination prove to be parts of the muscular wall of the uterus, containing muscle cells in great quantities. The observation of such shreds establishes the diagnosis of metritis dissecans, a condition in which inflammation of the uterus produces necrosis of the muscular tissue, parts of which slough away and are discharged in shreds of various size.

Excluding the two kinds of membranes just described, membranes can be discharged from the uterus under the following conditions: 1, dysmenorrhea membranacea; 2, pregnancy in a normal uterus; 3, extra-uterine pregnancy; 4, pregnancy in one horn of a double uterus, which can be *a*, fully developed, *b*, rudimentary.

The great difference in the pathologic importance

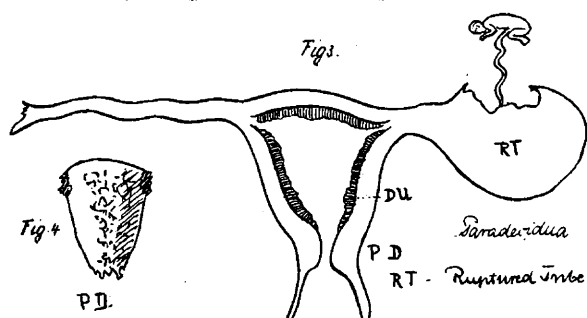


ES, epithelium on surface; G, glands; BV, blood vessels.

of the conditions just mentioned renders a full investigation of the membranes discharged in such cases very useful and sometimes indispensable for an exact diagnosis. For instance the membranes of membranous dysmenorrhea and extra-uterine pregnancy may so much resemble one another macroscopically, that they can not be distinguished without microscopic examination, and the same holds good in certain cases of differential diagnosis between intra-uterine and extra-uterine pregnancy. I shall present a full description of the various membranes and shall then compare them with each other, so as to show the more clearly their similitudes and dissimilarities.

In menstruation sometimes membranes or clot-like masses are discharged which may be of three-cornered shape representing faithful casts of the uterine cavity. (Fig. 1.) Sometimes only small, soft shreds of such membranes are passed. The most important clinical symptom which accompanies the discharge of these masses is severe colic-like pain, which often stops

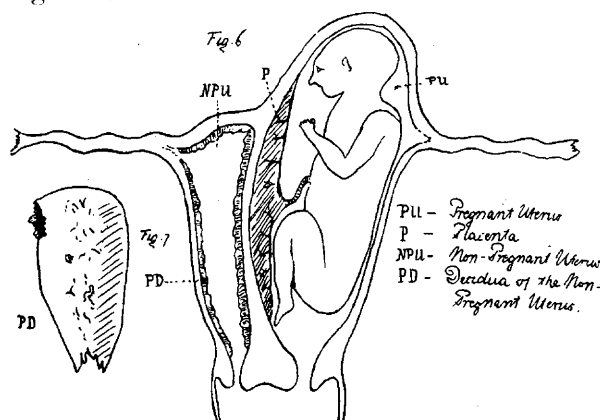
after the membranes are expelled. The blood-clots discharged are solid bodies, they do not contain a central cavity, their surface is smooth. The shreds of membranes are sometimes very small and often escape unobserved, if the woman pays no special attention to her menstrual flow. If three-cornered membranous sacks are discharged they present a shaggy surface, the corners present irregular openings with ragged borders leading into a central cavity. If the sack is cut open its interior surface is seen to be crossed with shallow furrows and perforated with a great number of minute openings which correspond to the mouths



Extra-uterine Pregnancy.

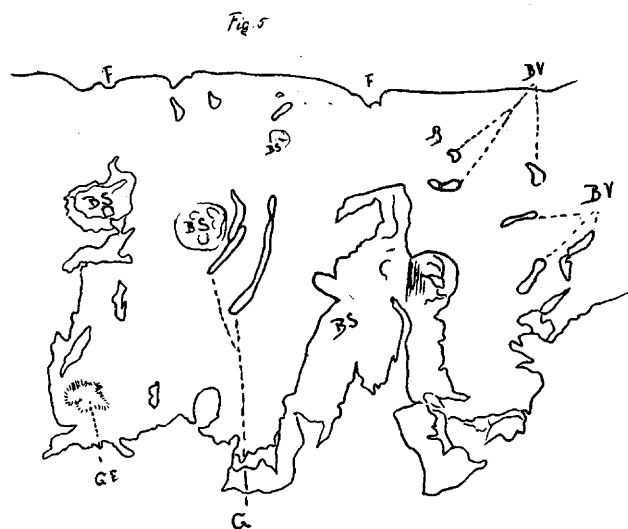
of the uterine glands. On microscopic examination the blood-clots are seen to be largely composed of red blood corpuscles more or less changed in form, between them are white blood corpuscles and the whole clot is held together by a mesh-work of threads of fibrin radiating around and through masses of blood-corpuscles. Of the epithelium of the surface of the uterine mucous membrane or of the glands or of interstitial tissue there is nothing to be found on or in the clot. The membranes which are sometimes found in the menstrual discharge are composed of the super-

This latter fact, the absence of a decidua in cases of membranous dysmenorrhea is worth dwelling upon a little longer. Some authors have called the membranes discharged in this disease "decidua menstrualis" and this has led to errors, as some have been induced by this name to believe that these membranes are of similar construction as the real decidua. It is necessary expressly to state that these membranes have nothing whatever to do with pregnancy and that they are not composed of decidual cells. It is therefore better to avoid the name of "decidua menstrualis" altogether.



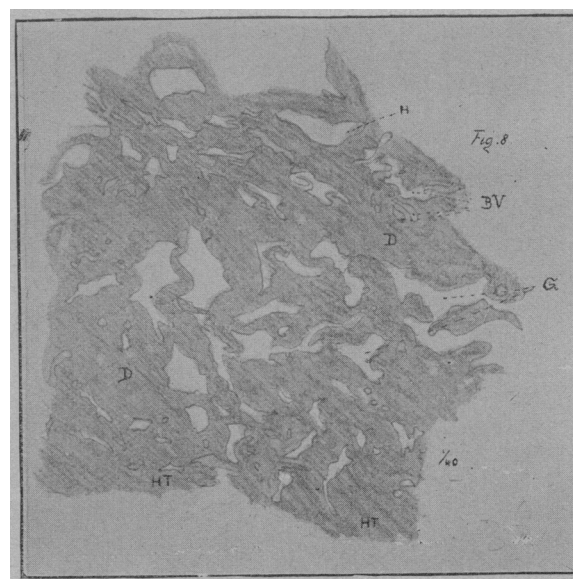
Pregnancy in one Horn of a Double Uterus.

The connective tissue in these membranes is not changed into decidua cells, it has the same aspect as in the normal or endometritic uterine mucosa. It may contain round-cell infiltrations, or the cells may be pushed asunder by edema or hemorrhage. The blood



F, furrows on surface of decidua; GE, gland with epithelium; G, gland without epithelium; BV, blood vessels; BS, blood sinus.

ficial layers of the mucous membrane of the uterus. (Fig. 2.) They contain therefore uterine glands, interstitial tissue, superficial epithelium and blood vessels. The epithelium of the surface is often lost on account of bad preservation of the specimen, but if found it presents a normal aspect. The glands are often hypertrophied as is recognized by their tortuous course. The interstitial tissue contains the normal cells of the areolar tissue of the uterine mucosa and is not changed into decidua.



H, hemorrhage; HT, hemorrhagic tissue; G, glands; D, decidua; BV, blood vessels.

vessels of these membranes are generally empty or contain only the shadows of red blood corpuscles. The vessels are generally of capillary size, so that arteries and veins can not be distinguished. One side of the membranes, the side which had been in connection with the uterine wall is always most irregular in outline, causing the shaggy appearance on macroscopic examination. Here the tissue is generally infiltrated with blood, which sometimes is found adherent to the outer surface in small clots.

The discharge of parts of the mucous membrane of the uterus is a decidedly rare and abnormal occurrence. I mention this specially because Dr. Johnstone has recently tried to reestablish the old and abandoned theory that in normal menstruation the superficial strata of the uterine mucous membrane are shed. The most reliable investigations of Gebhard, of Berlin, and other microscopists have on the contrary proved beyond doubt that in normal menstruation as a rule no tissue is destroyed and that shedding of some strata of the mucous membrane is always abnormal. Specimens taken from corpses can never disprove this and specimens of the uterine mucous membrane removed from the normal living uterus during menstruation invariably prove that nothing is destroyed or shed. The tissue is infiltrated with hemorrhages which break through the superficial epithelium and may occasionally tear off a few epithelial cells in bursting through them. But the mucous membrane as an organ is not thrown off in normal menstruation.

We have now to consider the membranes which are produced in, and sometimes expelled from the uterus in connection with pregnancy, whether this pregnancy occurs inside the uterus or outside.

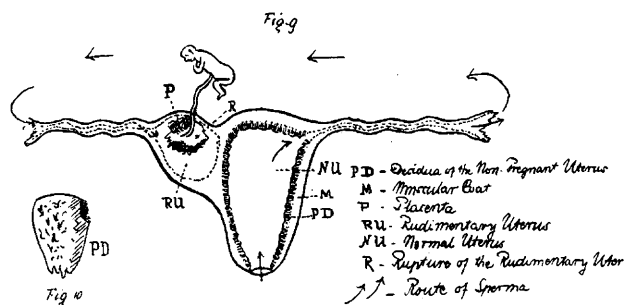
If the fetus is inside the uterus the mucous membrane of the uterus produces the decidua vera, serotina and reflexa. The serotina represents part of the

diagnosis of pregnancy inside the uterus. If we find only decidual tissue we can only give a diagnosis of pregnancy, but are not enabled summarily to decide that this pregnancy is inside or outside the uterus.

A decidua can develop itself in a uterus which does not contain a fetus under the following conditions: 1, tubal pregnancy (Fig. 3); 2, pregnancy in one horn of a double uterus; *a*, both horns being fully developed (Fig. 6); *b*, one horn being rudimentary (Fig. 9).

There are some other varieties of abnormal location of a fetus which I shall not further describe here, as the formation of the decidua in these cases is the same as under the conditions just mentioned.

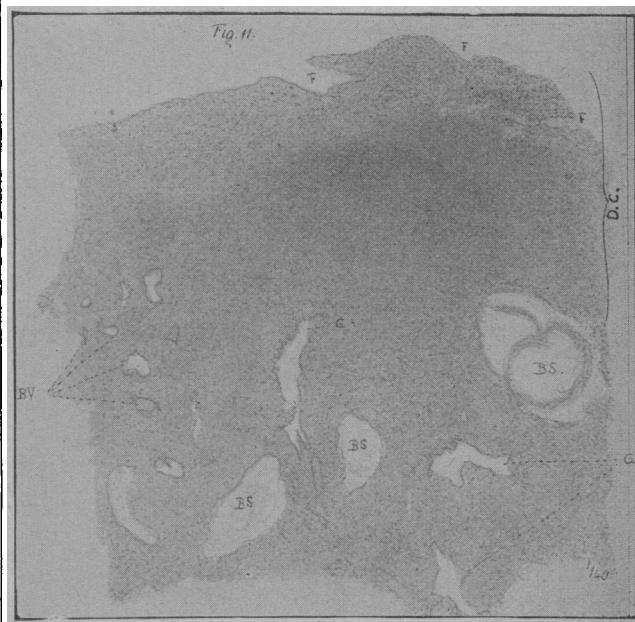
If the fetus is in the tube the uterine mucous membrane undergoes the same change as if the fetus were in the uterus itself, while the tubal mucous membrane forms the decidua vera of the fetus. I call the uterine decidua in such cases a "para-decidua" to avoid mistakes. Such a para-decidua is also invariably developed in the empty horn, if the uterus is double and one horn is pregnant. I have had the



Pregnancy in the Rudimentary Horn of a Double Uterus.

placenta and is therefore partly removed in connection with the placenta. The reflexa may be retained, if parts of the fetal membranes are retained and may be discharged with them. The vera may be discharged to a greater or smaller extent along with fetal membranes or it can be discharged alone. These membranes are never casts of the whole uterine cavity, but are always shreds of various size and very irregular form. If parts of the decidua are discharged along with parts of the fetal membranes, we find under the microscope the chorion with more or less atrophic chorionic villi easily recognized by the star or spindle-shaped cells of the embryonic connective tissue, of which the chorion consists. (Fig. 13). The epithelium of these atrophied chorionic villi is always lost. The chorion reposes on a layer of decidua cells, which surround the atrophied villi of the chorion. The cells of the decidua reflexa generally are indistinct, the whole tissue staining diffusely. This is always seen if the case is not one of very early pregnancy. In the later stages the reflexa undergoes hyaline degeneration and the whole membrane has a homogeneous aspect. If parts of the vera are discharged along with the reflexa they look very much like the latter; often they are infiltrated with numerous round cells.

If we get such shreds for examination and find parts of the chorion in them, we can give a positive



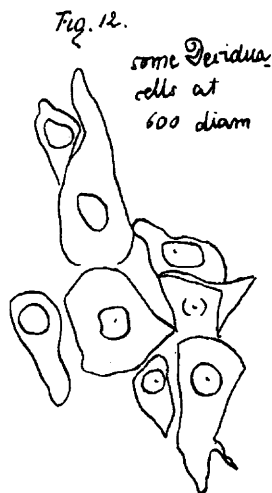
BV, blood vessels; F, furrow of surface; G, glands; BS, blood sinus; DC, decidua compacta.

good fortune to observe the comparatively large number of four such cases while I was assistant to the gynecologic clinic of the University of Strassburg. In three of these cases both uteri were well developed and the labor was to all appearances the same as in a normal simple uterus. The fourth case was a case of double uterus, one horn of which was rudimentary; only the body of the rudimentary uterus was developed and there existed no communication between the two uteri (Fig. 9). The rudimentary uterus contained the fetus, which had grown in it until the fifth month, when the uterus ruptured and the fetus was born into the abdominal cavity. The rudimentary horn was removed and the patient recovered. This description suffices perfectly for the establishment of this case as one of impregnation by external migration.

In all of these four cases a para-decidua was discharged from the empty uterus; in three cases, among them the case with the rudimentary horn, parts of the

para-decidua were passed on the day of the confinement, the rest a few days later; in the fourth case the para-decidua was passed three or four days after the confinement as a complete cast of the uterine cavity. In cases of tubal pregnancy the para-decidua is generally discharged soon after the death of the embryo; there are, however, exceptions to this rule. The para-decidua of tubal pregnancy is passed either in shreds or as a complete sac.

If we compare complete specimens of para-deciduas passed in tubal pregnancy and in pregnancy in one of a double uterus, we observe a marked difference in the macroscopic appearance. The para-decidua of a tubal pregnancy is a three-cornered sack with openings at the three corners corresponding to the two tubal and the cervical orifices of the uterus (Fig. 4). The para-decidua passed from the non-pregnant horn of a double uterus has only two corners and openings with shaggy borders, while the third corner is rounded and presents no opening (Figs. 7 and 10). The cause thereof is that such a uterus contains the orifice of only one tube; the corner opposite the orifice of the tube is round and the decidua can be separated here without any interruption of its continuity (Figs. 6 and 9).



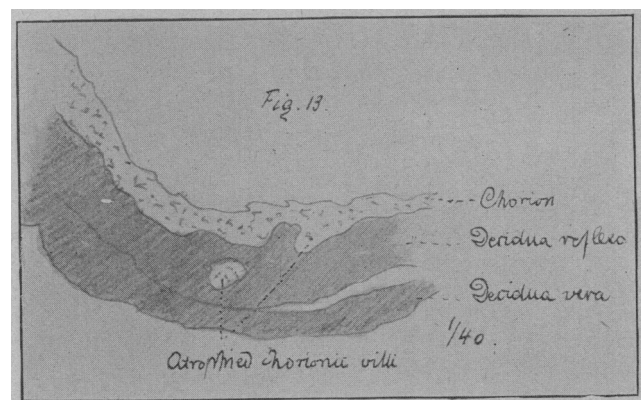
These para-deciduas present a shaggy outward surface, while the surface looking toward the cavity of the uterus shows a network of more or less shallow furrows, which surround islands of smooth tissue, which is dotted with very minute openings corresponding to the orifices of the uterine glands. The size and thickness of these membranes vary very much. Each individual membrane has thinner parts corresponding to the fundus and the lateral borders of the uterus. The para-deciduas of tubal pregnancy vary in thickness up to three millimeters, the para-deciduas in cases of double uterus are between four and seven millimeters thick, the size of the latter is usually twice or three times the size of the para-deciduas of tubal pregnancy.

The microscopic examination of these membranes shows them to be largely composed of fully developed decidual cells with large clear bodies and a comparatively small vesicle-like nucleus (Fig. 12). The size of these decidual cells varies according to the progress which the pregnancy has made in the same way as in the decidua vera of a normal pregnancy. The decidua cells lie closely together, leaving only narrow spaces between them, in which sometimes round cells are impacted. In tubal pregnancy the

expelled para-decidua contains mainly the compact layer; the spongy or glandular layer remains in the uterus. Some authors, among them Abel in his recently published work on "Microscopic Technique in Gynecology," assert that these membranes never contain glands, if they are not removed artificially. But I possess specimens of para-decidua cast off by the uterus itself, in which there are quite distinct glands with well-preserved epithelium (Fig. 5). In cases of pregnancy in one horn of a double uterus, both the compact and the glandular layers are expelled; in one of my specimens the glandular layer is remarkably well developed (Fig. 8). The epithelium of these glands is usually much flattened out, so that it is sometimes very difficult to distinguish it from the endothelial layer of vessels. The blood which is often contained in these spaces does not enable us to make a differential diagnosis between blood-vessels and glands, as some spaces which are lined with distinct epithelium and are thereby characterized as glands, also contain blood.

The epithelium of the surface is seen occasionally in para-deciduas of tubal pregnancy as described by Abel; in one of my specimens of para-decidua from a double uterus it is very well preserved and is in direct continuity with the epithelium of the glands.

The blood-vessels are dilated in all para-deciduas and



choked full with blood-corpuscles. The endothelial cells of the vessels generally present the same swollen appearance as in normal pregnancy. Besides these blood-vessels are seen many comparatively large spaces filled with blood-corpuscles and fibrin; they form the so-called blood-sinuses and are generally found near the inner surface of the membranes (Fig. 5). The surface which had been in connection with the uterus generally presents some large blood-sinuses and the whole tissue on this side of the membranes is infiltrated with blood-corpuscles.

The normal interstitial tissue of the uterine membrane is often preserved in the deep layers of the para-deciduas, generally much infiltrated with round cells.

The mechanical process by which the membranes here described become detached from the uterus is not definitely settled. But if I consider the regular occurrence of hemorrhagic infiltration along the line of separation of these membranes, para-deciduas, deciduas and membranes of membranous dysmenorrhea, I can not help conceiving the idea that these hemorrhages have something to do with the detachment of these membranes. I can not deny that they may be a consequence as well as the cause of the separ-

ation and that this theory needs much further evidence before it is firmly established.

After having reviewed these different membranes it will be well to point out the main symptoms by which we are enabled to make a differential diagnosis between them. The history of the case generally gives some valuable indications as to the nature of the membranes passed, especially so in cases of membranous dysmenorrhea, where a history of more or less regularly repeated discharge of membranes is highly significant. By microscopic examination two kinds of membranes can be diagnosed without any difficulty, the membranes consisting of vaginal epithelium and the blood-clots. For the rest of the membranes the main question to be answered is whether there is pregnancy or not. If we find chorionic villi the diagnosis of intra-uterine pregnancy can be given with absolute certainty. If we find the membranes composed of parts of the uterine mucosa with well-preserved glands and epithelium without any decidua cells, the diagnosis of dysmenorrhea membranacea may be safely pronounced. The main difficulty arises, if we find decidua cells in the membranes. Some authors assume that decidua cells are no proof of the existence of a pregnancy, because decidua cells have occasionally been observed in cases of simple endometritis. But it seems to me that there exists a wide difference between the occurrence of a few decidua cells in an otherwise normal interstitial tissue and the composition of a whole membrane by decidua cells. One swallow makes no summer and one decidua cell makes no decidua. But if we observe that a membrane passed from the uterus is totally or largely composed of decidua cells, if we find the whole specimen like those above described as decidua or para-decidua membranes, I believe we need not apprehend a mistake if we give a diagnosis of pregnancy. To decide whether this pregnancy is intra- or extra-uterine it is of the greatest help to have the whole membrane for examination. Their size, the thickness, the number of the openings at the corners of the sacks give most important clues.

Finally, the aspect of all the membranes above described can be much changed by degeneration or hemorrhages and round-cell infiltration, so that eventually an exact diagnosis is impossible. In making a diagnosis from the descriptions above given it must always be borne in mind that absence of a symptom is of very inferior value to positive observation.

DISCUSSION.

DR. M. L. HARRIS—I was in hopes that some of the expert gynecologists present would have something to say on this paper. Anything which will help us in making a diagnosis of extra-uterine pregnancy is of great importance, because as we know, this condition is extremely difficult to diagnose. The practical importance of this paper to me can be summed up in one point, namely, the diagnostic value of the decidua membrane in extra-uterine pregnancy. It is universally acknowledged now that a decidua invariably forms in the uterus in extra uterine pregnancy. Is such a membrane ever shed from the uterus where the individual is not pregnant? It would hardly seem necessary to raise such a question had not such an authority as Olshausen recently denied the possibility of such an event in this way. He says: "While I am not able to state positively that it is impossible for such a membrane to be shed during menstruation, still I do not believe it ever occurs, and that when it does it is an indication of extra-uterine pregnancy and simply shows how very common this condition is." This statement, however, can not stand. There is no doubt but

that such a membrane may be shed during menstruation. Cases have been reported by Franqué, for instance, where there was a periodic discharge of a membrane during menstruation from the age of 8 years up. Are we able to differentiate such a membrane shed during extra-uterine pregnancy from one thrown off during menstruation? This point does not seem so clear. We may take the points which have been given as diagnostic of the menstrual membrane, preservation of the epithelial cells, multiple hemorrhages, fibrin layers, serous infiltration, separation of the cells by round cells; but none of these points is diagnostic of a menstrual membrane. All of them may occur in a true decidua membrane. Again, a point which has been relied upon to differentiate the decidua membrane is this, that the connective cells, so-called decidua cells are always much larger than are found in menstrual membranes. The size of the decidua cells is no criterion by which we may diagnose the true decidua. Franqué made a large number of accurate measurements of the connective tissue cells in menstrual and decidua membranes, and concluded that we were not able to differentiate one membrane from the other simply by the size of the cells. Again, the growth of the decidua membrane is a very gradual process, the rapidity of its growth is variable, and the length of time which pregnancy is supposed to exist does not always produce a decidua membrane of the same degree of advancement. For instance, the decidua membrane will grow more rapidly or slowly, according to the distance of the fetus from the uterus, as was shown some time ago by Wyder. When the decidua membrane is fully formed and shed, so that we have a membrane made up wholly of decidua cells without glandular tissue we can be very sure of the diagnosis. When we have the membrane in the intermediate stage we are unable to differentiate a decidua from a menstrual membrane. Such is the opinion of Franqué after a thorough investigation. He stated that the microscope alone would not enable us to differentiate these membranes in all cases. We must have a decidua which is quite complete in its formation, otherwise we can not say it is a decidua membrane, because the menstrual membrane may contain all of the points which go to make up the decidua membrane, even an increased proliferation of connective tissue, and correspond very closely to a decidua membrane in its early formation. The same opinion is likewise held by Hofmeier, Ruge, Meyer, Löhlein and Fritsch from their own individual investigations. However, the value of the membrane when it can be differentiated in the diagnosis of extra-uterine pregnancy is considerable. I think that is the most important point which we can make from this paper, and it is an extremely valuable one.

As to the hemorrhages into the membrane and the cause of separation I had an opportunity to examine a membrane from a typical case of membranous dysmenorrhea some time ago, and I was greatly impressed with the hemorrhages into the deep layer. There was no doubt that this was a case of menstrual membrane from the history, and I was fortunate in securing the membrane soon after it had been discharged. It contained the ordinary uterine glands, the epithelium being preserved except where it had been lost from handling. In the deep layer were multiple hemorrhages, and so much infiltration of the membrane with blood that one could hardly fail to be impressed with the possibility of these hemorrhages being instrumental in causing its separation; still Löhlein concluded that the hemorrhages were not the cause of separation of the membrane, at least not the main cause. Other factors, with which we are not familiar, he considered to be the chief cause of the separation.

DR. EMIL RIES (closing the discussion)—I agree with Dr. Harris perfectly in some points. For instance, the difficulty of making a diagnosis in early extra-uterine pregnancy is undoubtedly very great. I have myself had a specimen of shreds

of membrane where I could not make a diagnosis, though I had numerous specimens of membranous dysmenorrhea and of extra-uterine pregnancy to compare them with. It was a case of uterine hemorrhage after menstruation had occurred one week too late, so that from a clinical standpoint a diagnosis of extra-uterine pregnancy had been made, though there were no distinct symptoms of this condition. There was no collapse; a tumor could not be distinctly felt. In this case the woman discharged with her irregular hemorrhages a few small shreds, and I examined them. I found cells resembling decidual cells, but the whole membrane was so much infiltrated with round cells that I could not get a clear view of the structure of this membrane, and from the microscopic appearance of the membrane I could not give a positive diagnosis. On the other hand, a microscopic diagnosis can be made very valuable where the clinical diagnosis is obscure. I remember a case where a woman had not menstruated for three months and then had hemorrhages. An examination revealed the uterus to be slightly enlarged, and to the right side of it was a distinct tumor which could be distinctly traced to the tube, so that the doctor had made a diagnosis of extra-uterine pregnancy, considering the hemorrhages the consequence of the rupture or of the death of the fetus. I got a little three-cornered sack from this uterus for examination, the macroscopic appearance of which resembled that of a para-decidua, but when I examined it under the microscope I found chorionic villi. This case could not be one of extra-uterine pregnancy, inasmuch as the fetus had been aborted and the irregular hemorrhages were the consequence of retained decidua and chorionic villi. The microscopic diagnosis may be of great value in such cases.

Considering the value of the decidual cells in the diagnosis of pregnancy, I know that there has been a very severe controversy between several German gynecologists, which has lasted for many years, but has been abandoned because nothing new has been advanced about it. What seems to be the most important fact is that, without any doubt, in cases of simple endometritis cells can be found in the mucous membrane of the uterus which resemble decidual cells in size and which have the large nuclei of the decidual cells, the bodies of these cells not staining well, the nucleus staining very well. But as I said in my paper, there is a vast difference between a few cells resembling decidual cells and a membrane entirely composed of decidual cells. Dr. Harris mentioned the size of the decidual cells. I do not think it is safe to rely upon their size. That there are intermediate stages between the connective tissue cell and the decidual cell is undoubtedly true. The decidual cell is nothing but a connective tissue cell which has grown. We observe sometimes intermediate stages where the cell is so small that it does not look like an ordinary decidual cell, or it may be so large that it does not look like a normal cell of interstitial tissue. These are the cases where the diagnosis is difficult. Of course in cases of membranous dysmenorrhea it is not only the question of hemorrhages and edema and normal interstitial tissue cells, but one very important symptom is the presence of normal or slightly hypertrophied glands. In cases of extra-uterine pregnancy, or pregnancy in a double uterus, the glands disappear very soon; the epithelium becomes flattened out, whereas in membranous dysmenorrhea as a rule the glands and epithelium are well preserved, so that they can be readily recognized. The diagnostic importance of microscopic examination in these cases is inferior to that of such an examination in cases where the question is one of malignant or benignant neoplasm. But as I believe, it has been shown that in most cases the microscopic examination is of great diagnostic value.

SUPPURATIVE PERITONITIS—(CELIOTOMY)—PUERPERAL SEPSIS.

BY R. E. HAUGHTON, M.D.

RICHMOND, IND.

The position taken by some of the writers and operators quoted under the heading of celiotomy, in a paper read by Dr. Porter, of Fort Wayne, Ind., if correctly reported, may lead to misconception and error if permitted to go unchallenged by the profession.

First, the author of the paper quoted Prandin, who says in regard to general puerperal peritonitis: "The women die, no matter what form of treatment is employed." Dr. Baldy says, as quoted: "To my knowledge there has never been reported an undoubted case of general purulent peritonitis, from any cause whatever, in which an abdominal section or any other line of treatment, has succeeded in saving the patient's life."

The writer of this paper above referred to, viz., Dr. Porter, signalizes these statements quoted as being wrong, and he desired to arouse a sentiment against the too prevalent idea, that in septic peritonitis death is inevitable, and also to encourage and foster prompt operative interference. I have thus outlined the references as brought out at the Mississippi Valley Medical Association, to emphasize what Dr. Porter has said in regard to the question: 1, that all women do not die no matter what treatment may be used to the contrary. (Prandin). 2, Dr. Baldy is mistaken if he be correctly reported as I have quoted him: 1, because other men have an experience which contradicts the statement as quoted in both cases; 2, my own experience is radically opposite to that as quoted, as I have treated some cases which did not die and have operated, performing celiotomy to remove the conditions of suppurative peritonitis, resulting from septic inflammation. I have had the pleasure of seeing two cases among many of septic inflammations of the peritoneum recover, one without an operation, where the abdomen was filled with pus, and discharging from the umbilicus a quart of pus in twenty-four hours; and a second case after a confinement which developed the trouble, and after about eight months sent to me, 300 miles, on a bed, to be operated upon, and this being done, the patient in fifty days recovered so far as to visit her friends and ride out. This case has been reported in the *Annals of Gynecology*, giving careful details of operation, removal of quantity of pus, cleansing, disinfecting the abdomen, and use of drainage tubes during the recovery, ending in material good health. Upon the day of the operation, in the morning visit, in answer as to how the patient seemed to be, my statement was: "This is the last day if no operation is made."

The patient had been undecided for several days, while I had most fully stated the conditions to the husband and friends, and insisted that valuable time was being lost so far as the operation was concerned. I talked again with the patient, told her that I could do nothing else than offer the chance as she could not expect to recover in her then present condition. The physicians, three others, who saw the patient that morning and carefully examined her, said to me: "Your patient will inevitably die," and were so positive that they said to me in view of the operation contemplated: "She will die; your operation will not save her." I remarked to them in response to the judgment which they gave, that if she was brave enough to ask for and submit to such an operation, I was brave enough to assume the risks and would operate if it gave her but one chance in five hundred. We put her on the table after her consent and that of all her friends had been obtained, when we were all conscious she was sinking and her brain was beginning to wander, and she said to me, as I carefully and tenderly prepared her for the operation: "Doctor, what is the matter with my head, I wander, and it is getting dark; am I dying?" I said "No, but sinking;