labour, especially if severe or prolonged, may be an exciting cause.

Fothergill reports the case of a pregnant woman with swelling of legs, scanty urine, albuminuria, and enlargement and tenderness of the liver. Premature labour was induced with Champetier de Ribes's bags, and the patient recovered and had no fits. He says that there is no justification for allowing pregnancy to continue when a toxic state has been diagnosed which may be fatal to mother and child and does not yield to careful eliminative treatment. More Madden says:

If the woman is in labour or undelivered lose no time, but begin at once manual dilatation of the os; as soon as it is sufficiently dilated apply forceps and deliver.

Professor Mangiagalli says that whatever the hypothesis held as to the etiology of eclampsia, its connexion with pregnancy is undoubted, and is therefore a sound basis for treatment by delivery of the woman.

If the patient is in labour and is progressing favourably, controlling the attack with morphine or chloroform may be all that is required. If the os is well dilated and the head is not coming down we may use forceps, the patient being well under the influence of chloroform.

If the os is not dilated we may dilate by the manual method, by Bossi's dilator, by Barnes or Champetier de Ribes's bags, or may make deep incisions in the cervix as recommended by Dührssen. Dr. De Lee in the *Therapeutic Gazette*, October, 1899, says that he cannot agree with those who say that it is possible to stretch, tear, and cut the cervix open and extract the fetus in thirty minutes to one hour, unless the upper part of the cervix is effaced, that is drawn up into the body of the uterus (carrying with it the circular artery). The dangers of rapid dilatation are great laceration of the cervix, even to the peritoneal cavity, haemorrhage, even fatal, and sepsis. When the cervix is effaced, he says treatment by incision or dilatation is comparatively without danger. In Dr. Salt's case, where I made incisions, the cervix was effaced, but in Case III, where I used a Bossi's dilator, it was not. In the latter case I had no bad results.

Various other operative methods have been employed, such as Caesarean section, craniotomy, and version.

It is a difficult matter to decide as to the correct treatment of each particular case of eclampsia. We must exercise our own judgement as to the proper course to pursue. During the fit we must see that the patient does not injure herself; we should place a gag between her teeth to prevent her biting her tongue. We place her on her side to prevent fluids which may collect in the mouth from trickling into her lungs. If unconscious, she must be fed by the rectum. After delivery we should keep the patient on a milk diet, keep the bowels well opened, and if the skin is not acting give diaphoretics. We may also encourage the action of the kidneys by alkaline diuretics.

The treatment of *post-partum* cases is conducted on the same lines as in those occurring before delivery.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, September 16th, 1908.

A CONTRIBUTION TO THE PHYSIOLOGY OF THE FALLOPIAN TUBE.

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THERE are no glands, as such, in the Fallopian tube, but glands are, after all, but involutions of a secreting surface in order to increase that surface, and the remarkable foldings of the tubal mucosa may be looked upon as glands, the increased surface of the membrane being brought about by elevation instead of depression. We cannot draw any certain distinction between the epithelial cells of mucous membranes and so-called gland cells. As covering surfaces, they might all be called epithelial cells, and they all probably separate definite materials from the blood.

Experiments on rabbits and guinea-pigs have, I think, proved conclusively that there is tubal secretion. Mr. Bond¹ has shown that if a ligature be applied round the Fallopian tube close to the uterine cornu and another just

at the commencement of the tube, in the course of a few weeks, and probably earlier, the portion of the tube between the ligatures becomes distended with fluid secretion. If the tube be only ligatured at the uterine end, no accumulation occurs, the fluid probably escaping into the peritoneal cavity and becoming absorbed. Doléris and Roulland² performed similar experiments with like results. They draw attention to the appearance of abundant intra-tubal effusion as soon as occlusion takes place and assume that the mucous membrane must be normally capable of producing a fluid secretion.

No mucus has ever been found in either menstrual or non-menstrual tubes, nor in fluid of hydrosalpinx. I have personally washed out several healthy tubes removed from patients of different ages, and neither in the washings nor in the fluids of hydrosalpinges have the various tests for mucin given a positive result.

It is extremely difficult to define the term "mucus" as applied to the secretion of mucous membranes. It is not the same in every situation, for it varies in the nasal passages, in the alimentary canal, and in the urinary bladder and ureters. In studying the act of secretion, we find that in some cases the cells give up the substances they have eliminated by rupture or deliquescence; while in others there are no signs whatsoever of any changes in the cells, and it is then that the secretion is more liquid, containing very little solid matter, or having it in a state of such perfect solution as to be capable of easy transudation.

It appears to me that the Fallopian secretion is of this second variety, the fluid being clear and watery. Mr. Bond, after examining the contents of his experimental hydrosalpinges, concluded that the natural secretion of the tube is a watery fluid; and in the course of some work on hydrosalpinx in Professor Briggs's laboratory at Liverpool University, I found on analysis that the fluid contents contained large quantities of sodium chloride, together with traces of calcium, phosphorus, and potassium. In most of the fluids albumen was present, in one there was not a trace of proteid. This fluid, when centrifugalized, gave no deposit. A drop from the bottom of the tube showed nothing microscopically, but when evaporated to dryness on a cover-slip revealed the characteristic feathery crystals of sodium chloride.

It would be difficult to conceive a more perfect fluid than this faintly alkaline saline secretion for preserving the vigour of the spermatozoa in their endeavours to reach the ovum and of the ovum during its passage to the uterus.

The next question to be considered is whether the act of secretion in the tube is constant or occurs only at certain periods. Some mucous surfaces never secrete in the healthy state, unless under certain physiological stimuli, whereas other membranes are continually moistened by a fluid varying according to its situation and function. In other words, those parts which are not in perpetual, but only occasional, contact with foreign or secreted substances, seem to show no secretion unless stimulated by such contact, while the surfaces of organs like the gall and urinary bladders are constantly coated with a quantity of secretion.

It is exceedingly probable that the Fallopian mucosa is continually moistened by a small quantity of fluid which is poured forth more abundantly during physiological excitement—namely, the passage of the ovum.

Now the ampulla is the widest part of the tube, and its plicae are more numerous and more folded than in any other part. There is thus a "well" of saline fluid ready to receive the ovum, which in passing through the ostium abdominale sets up a peristaltic contraction of the muscular coat, and closes this orifice. A current is created in the fluid by ciliary motion, and the ovum is swirled along like a cork in a stream towards the uterus. It is absurd to imagine that delicate protoplasmic processes like cilia propel the ovum by direct contact—the cilia of other mucous membranes propel fluids—not bodies. The probability is that when a pregnant ovum remains in the tube, this occurrence is due to one of two things or to a combination of the two: either there has been too little secretion, or there has been a diminution in the lashing movements of the cilia, from a previous salpingitis.

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¹ Bond, *Lancet*, 1899, ii, 200. ² Doléris et Roulland, *Soc. d'Obstét., de Gynéc. et de Pédiatrie de Paris*, June 10th, 1907.