The patient returned to town, and he supposes had incisions made to enlarge the opening, at least he felt acute pain, and saw blood flow. Weiss's instrument for dilating the female urethra was then introduced, and screwed open for half an hour with excessive agony. This operation was repeated every second day for four months. He then went to the country, and passed a bougie every third or fourth day. Finding no improvement at the end of three months he had returned, in despair of ever regaining his health. He had no evacuation of his bowels unless by taking medicine; and when the desire to discharge the thin matters contained in the gut came upon him he had no power to restrain their escape. He felt constant uneasiness and burning pain about the anus, and through the whole pelvis. He was thin and haggard-looking, and unable for any exertion of body or mind.

ART. VI.—*Contributions to Intra-Uterine Pathology.*—PART I. *Notices of Cases of Peritonitis in the Fœtus in Utero.* By JAMES Y. SIMPSON, M. D. Fellow of the Royal College of Physicians of Edinburgh, Lecturer on Midwifery, &c.

IN the recent progress of pathology it has been amply proved, that the *fœtus in utero* is liable to a considerable variety of morbid states. Of its diseases, some we have reason to believe, are altogether of a functional nature; but in regard to this class of fœtal affections we as yet possess comparatively little information, because, excluded as the fœtus is, during its abode *in utero*, from any of our present means of observation, it is only when its morbid derangements produce symptoms of a very aggravated character, that we are enabled to recognize their existence during the continuance of intra-uterine life. Indeed for nearly all the limited knowledge which we as yet possess of the diseased conditions of the fœtal system, we are indebted principally if not entirely to pathological anatomy; and consequently the diseases of that system with which we are chiefly acquainted, are either such as are organic in their nature, or that lead to an organic result.

Of all the various morbid actions which are liable to occur in the fœtus, *inflammation*, with the different pathological changes which it produces, seems to be one of the most important, both as regards the frequency of its occurrence, and the nature of the effects to which it gives rise. In the present communication, it is my intention to bring forward a series of cases to prove, that one species of inflammatory action, namely *peritonitis*, forms a com-

mon variety of fœtal disease, and probably constitutes one of the more frequent causes of death of the fœtus during the latter months of pregnancy.

It may be necessary, however, to premise, that the investigation by pathological anatomy, of the presence and effects of inflammatory action, and indeed of all other morbid changes in the fœtus, is beset with unusual difficulties. When the fœtus labours under any morbid state which happens to prove fatal during its abode *in utero*, there generally elapses an interval of from five to twenty days, before the uterine contractions, necessary for its expulsion, supervene. During this period a number of changes are liable to occur, which are calculated to mask or destroy the usual morbid appearances left by inflammation. Pathologists are now becoming fully aware that various injections, colorations, serous and sero-sanguinolent effusions and softenings of different tissues and organs, more or less perfectly resembling the corresponding alterations produced in the same parts by inflammation, are liable to be met with in the dead body of the adult, as the effects of merely chemical and physical causes acting during the latter hours of life, or after death. In the case of the dead fœtus retained *in utero*, we have not only the same causes producing the same results, but these results increased considerably in their degree and intensity by the longer period during which their causes are generally allowed to operate: and, besides, we have further to take into account the additional effects of the endosmosis of the *liquor amnii*, and of the blood and other fluids of the fœtus through the dead tissues of its body, and the continued maceration of these tissues in the effused and transuded fluids in which they are placed. In consequence of the operation of these and other causes, we have constantly found in our examinations of fœtuses that had died several days before birth, the heart and large blood-vessels almost entirely emptied of blood, the different serous cavities of the body filled by an abundant sero-sanguinolent fluid, and the same fluid often collected in the general course of the cellular tissue, but more particularly in that of the scalp, while at the same time the different solid tissues are reduced more or less in consistence, and altered in colour and physical appearance. We have seen tissues and membranes which, from the morbid secretions existing upon them, we knew to have been the seats of acute morbid action immediately previous to death, macerated and blanched, and sometimes variously discoloured from the imbibed bilious, intestinal, and other secretions; whilst, on the other hand, we have found other membranes and tissues of the body that had in all probability not been the seat of any morbid state during life, more or less deeply reddened, injected, tumefied, and softened. Indeed, we had not been long

engaged in this field of pathological inquiry, before we became fully convinced, that we were not entitled to consider any tissue or organ in the dead fœtus, as having been the seat of inflammation during life, unless we could detect in that tissue or organ, one or other of those characteristic morbid secretions, or more distinct permanent changes of structure, which are recognized as the distinctive organic results of inflammatory action, such as the deposition of coagulable lymph, and the indurations, thickenings, &c. to which this deposit gives rise, the effusion of more or less serous or sero-albuminous fluids, or of true purulent matter, ulceration, &c. Accordingly, in the details of the following cases it will be observed, that we have only entered as genuine examples of inflammation of the peritonæum, those instances in which there existed upon that membrane, or in its cavity, one or other of the organic products of inflammation to which we have just alluded, but more particularly effused coagulable lymph, and the adhesions and pseudo-membranes which such lymph so readily produces, when thrown out upon serous surfaces.

Cases of Acute Peritonitis.

Case I.—On the morning of the 15th October 1836, my attendance was requested at the Lying-in Hospital in a case of twins. The first child had been born after a natural and easy labour. On examination I found the second child presenting by the head, and labour pains having spontaneously recurred, it was expelled in about forty minutes after the birth of the first. The first-born child was living, healthy, and well formed. The second had apparently been dead for some days; its cuticle could be easily peeled off, and was raised into bullæ at various parts by a sero-sanguinolent effusion beneath it. Its body, however, was by no means emaciated, but as plump and fat as that of the first child.

Being unable to discover in the portion of the double placenta belonging to the second child any disease that could account for its death, I opened its body, twelve hours after birth, in presence of Mr Scott, house-surgeon to the hospital, and Dr Pollexfen. Besides the subcuticular effusions already alluded to, there was a considerable accumulation of serous and sero-sanguinolent effusion in the cellular tissue in different parts of the body, and in the cavities of the pleura, pericardium, and peritonæum. Over the surface of this last mentioned membrane (the peritonæum,) there were also deposited several isolated patches of soft coagulable lymph, which had produced at various points adhesion of the folds of the intestines to one another, and to the internal serous surface of the abdominal parietes.

In this case the consistence and other characters of the effused coagulable lymph were such as sufficiently indicated that it was the result of recent and acute peritoneal inflammation. That the child had perished of an acute disease was still further attested by the general plump condition of its body, and by the large deposit of fat in the subcutaneous tissue and other parts, which was observed on dissection.

The mother, Ellen Cornwall, was a healthy young woman, of twenty-two years of age. It was her first pregnancy. She was not aware of having received any physical injury, or of having experienced any particular mental emotion, that could enable her in the least degree to account for the death of the second child; and her feelings had never led her to suspect that any change had occurred in the contents of the uterus in the last periods of pregnancy.

Case. II.—I was sent for (April 3d 1837,) by Dr Allan, house-surgeon to the Lying-in Hospital, to a case of difficult labour which he was attending in Blackfriars Wynd. The left arm was presenting, and the membranes being entire and the passages well dilated, I at once passed up my hand into the uterus, turned, and delivered the child by the feet. It had been evidently dead for some time, as shewn by the detachment of the cuticle from the abdomen and other parts. From the appearance of the child and the calculations of the mother, it seemed to have been born a few days before the seventh month.

On opening the body next day, (Tuesday 4th,) along with Dr Allan, Dr Charles Bell, and Dr R. Paterson, we found an effusion of reddish serum within the sacs of the pleurae and pericardium; but the lungs and heart were healthy. There was a similar effusion within the abdominal cavity; and on the peritonæum covering the convex surface of the liver, we observed various distinct patches of coagulable lymph, with corresponding points of a similar effusion upon the serous membrane lining the abdominal parietes and diaphragm. The adhesions formed between the opposed surfaces of the peritonæum at the points of the deposit were so slight, and the coagulable lymph forming them so soft in consistence, that they readily gave way under the manipulations required for exposing the contents of the abdomen. The mesenteric glands were large, some of them equalling in size the half of a small split pea.

The mother of the child (Mrs Bean) was 36 years of age, and had borne six living children, besides having had a miscarriage several years previously, and another on the 13th of June last (1836.) In this last abortion the child was expelled about the sixth or seventh month, and she herself attributes its death, and that of the fœtus whose history I have given, to an excess of hard labour, and more particularly to the exertion required in carrying

loads of water up a long stair of three stories. In her first pregnancies she had not been exposed to such toil. In her last pregnancy the motions of the fœtus had continued from the first of January, when they were first felt, up till eleven days before she was delivered. For two or three days previous to this last date, it moved "a great deal more (to use her own expression) than usual."

Case III.—December 23, 1837. I inspected along with Dr Banks and Mr Stewart, the body of a dead-born child, which had been sent to me for dissection on the previous day by Mr Brown. It was a fœtus of about the seventh month; and the state of the cuticle and tissues in general shewed that it had been dead for some time before birth.

The thoracic organs were healthy, though there was the usual quantity of pseudo-morbid reddish serous fluid in its serous cavities. On laying back the abdominal parietes, a patch of soft coaguable lymph was seen on the abdominal peritonæum near the right iliac region, and on further examination this was found to have formed a portion of a quantity of the same deposit, effused around the caput cœcum and its vermiform appendage. The peritonæum covering the liver and other remaining parts of the intestinal tube seemed healthy; but the peritoneal coat of the spleen was covered, more particularly on its outer or convex surface, with a thickish layer of coagulable lymph, which united it to the corresponding portion of the abdominal parietes by a large web of false membrane.

Mary Campbell, the mother of this child, is a strong and healthy young woman of 22 years of age. She had previously borne one living child. About a fortnight before the birth of the dead-born fœtus above described, she had a fall down stairs; and to this accident she at the time ascribed the death of the infant, as it ceased to move in a day or two afterwards. At the present date (July 15th) she cannot recollect if the motions of the fœtus were greater than natural after the fall, previously to their final cessation.

Case IV.—On dissecting (January 8, 1838,) the body of a dead-born male fœtus which had been for two or three months in my possession, I found the most marked effects of inflammation in almost all parts of the peritoneal cavity.*

The upper or convex surface of the liver, but more particularly of its right lobe, adhered to the corresponding surface of the diaphragm. The left edge of its left lobe was united by effused

* Recent preparations of the abdominal viscera, showing the particular morbid appearances described in Cases III. and IV., were shown at a meeting of the Medico-Chirurgical Society, and are still preserved.

lymph to the spleen, and this latter organ was further morbidly adherent along its external surface, partly to the large intestine, and partly to the abdominal peritonaeum. The omentum was connected at one or two points by coagulable lymph, to the concave surface of the liver, and to the inferior part of the spleen. The small and large intestines were agglomerated together into a mass, and their corresponding surfaces intimately united at numerous points by effused lymph. In consequence of these adhesions the jejunum was intimately united to the sigmoid flexure of the colon. Both the *tunicæ vaginales* of the testes still communicated with the cavity of the peritonæum, and the serous surface of the left one was partially coated by a layer of coagulable lymph, or thin false membrane. The other cavities of the body were healthy. The child was not in an emaciated state.

I regret that I have not any notes of the history of the mother of this child.

Case V.—July 28, 1838. I examined in the Lock Hospital, along with Drs G. Weir and Allan, and Messrs Scott and Bannatine, the body of a child of which one of the patients in the house had been delivered on the preceding evening.

The cuticle was loose and easily separated. The cavities of the pleuræ and pericardium were filled with a reddish serous effusion; but these membranes, with the exception of numerous points of purpurous effusion beneath them, were otherwise quite healthy. The purpurous spots were seen both under the pleura pulmonalis and costalis. The cavity of the peritonæum contained upwards of an ounce of a still deeper coloured reddish serous effusion, along with one or two clots of blood, which appeared to have come from a ruptured point in the lower surface of the right lobe of the liver. The edges of the laceration were partly reunited by coagulable lymph. A considerable portion of the liver in the neighbourhood of this part was much congested, more deeply coloured, and softer than the remainder of the viscus. The gall-bladder was filled with a quantity of viscid bile, and its coats were thickened to about a line and a half or two lines, by a serous effusion into its cellular tissue. The surface of the abdominal peritonæum was coated by a beautiful lace-like and adherent layer of tough coagulable lymph, which was of considerable thickness at some points, and threw out long lines or films that were in contact with the surface of several of the abdominal viscera, but not apparently in any place adherent to them. This layer of lymph was particularly abundant in the left hypochondriac, and in the iliac regions. Several loose long films and masses of it were seen also among the intestines and upon the mesentery. The mesenteric glands were large. All the other abdominal and pelvic organs were healthy,

with the exception of one of those small pediculated serous cysts adhering to the right broad ligament of the uterus, which are so common in this part of the body of the adult female.

Helen Grey, the mother of the child, is 19 years of age, and naturally of a healthy constitution, but she has now suffered under four different attacks of venereal disease. About fifteen months ago she had severe ulcerated sore-throat and other secondary symptoms. During the course of the present pregnancy she entered (April 5th) the Lock Hospital under my care, affected with an ulcer and gonorrhœa of five days standing. She was dismissed cured on the 20th of the same month. She re-entered the hospital 12th July, suffering under another recent attack of gonorrhœa, and with two slight ulcers; but was nearly well again when labour pains supervened on the 27th. The *liquor amnii* was in great quantity. The placenta was pretty firm and healthy, and had not the bleached anæmic appearance which it usually presents in cases in which the child has been dead for a week or two. The motions of the fœtus were not very sensibly felt by the mother after the 13th of July, but subsequently to that period they were repeatedly discovered by applying the hand to the abdomen, and the fœtal heart was most distinctly heard by myself and several of the pupils of the hospital, only five or six days before delivery. I counted its beats at that time at 25 in the 10 seconds. The mother was not aware of having been exposed, during the latter periods of pregnancy, in any such way as could account for the death of the fœtus. She had an abortion about eighteen months ago, when passing through an attack of typhous fever.

Case VI.—On opening a dead born male fœtus of the seventh month, which had presented by the breech and been attended by Dr Allan, I found, along with that gentleman and Messrs Scott and Bannatine, the following morbid appearances, on inspecting the body the day after birth. (July 29th 1838.)

The cuticle was separated in many parts, and could be easily removed. The face of the fœtus was swollen and deformed with œdema; and the upper extremities, but particularly the hands, were also anasarcous. The feet and legs were likewise dropsical, though in a less marked degree, and there was a considerable amount of hydrocele. The cellular tissue of the scalp and loins was infiltrated with the usual reddish serous effusion. The cavities of the pleuræ and pericardium contained a similar fluid, but these serous membranes themselves, as well as the lungs and heart, were perfectly healthy. The cavity of the peritonæum was filled with a considerable quantity of the same effusion, and the surface of the abdominal peritonæum, more particularly on the right side, was covered with a lace-like layer of adherent coagulable lymph, which presented appearances and characters very exactly resembling those

seen in the preceding case. Several masses and filaments of lymph were also seen among the convolutions of the intestine, and produced a pretty strong adhesion between them at one or two points. The spleen was large, and four drachms, thirty-five grains in weight; its surface had several patches of lymph upon it, and the inferior portion of the organ was intimately and extensively united by morbid adhesions to the larger omentum. The mesenteric glands were large and well developed. The other abdominal organs were healthy.

The mother, Elizabeth Henderson, is a robust woman of 42 years of age. The present is her fourth child. The first was alive and at the full time. The second was believed to be at the full time, but was born dead. The third, like the present, was at the seventh month, and also dead at birth. She confesses to having been affected with venereal disease, but would not afford such information as to enable us to judge of the form of the affection, or the particular period at which she suffered from it. She attributes the death of the present child, to her having fallen down a flight of stairs about a fortnight before delivery. The placenta was adherent.

Case VII.—I had an opportunity of examining (February 21st 1838) the following case of fœtal peritonitis along with Dr Fisher, under whose care the mother was delivered.

The appearances of the body of the infant were such as indicated that it had been dead for sometime *in utero*.

The epidermis was peeling off in various parts. The muscles of the limbs were soft and flabby, and the periosteum was separated from the bones at various points. There was no serous effusion into the subcutaneous cellular tissue of the trunk and extremities, but the sero-sanguineous extravasation beneath the scalp, so frequent in dead and retained fœtuses, was strongly marked. Some effusion existed in the thoracic serous cavities, but the lungs and heart were healthy in structure. In the cavity of the peritonæum there existed a turbid effusion, with large flakes of coagulable lymph in it. On the upper or convex surface of the liver, a few non-adherent patches of lymph were observable; and there was the same morbid effusion on the lower surface, particularly along the edge of the left lobe, where the lymph was firmer and adherent. The spleen had numerous patches of slightly adherent lymph scattered over its peritoneal surface. Similar patches were seen on the peritonæum of the colon, and produced at one point, near the sigmoid flexure, adhesion of two of the contiguous folds of that bowel. The peritoneal surfaces of the small intestines, mesentery, and abdominal parietes, had numerous flakes of coagulable lymph deposited upon them. Patches of lymph were ad-

hering to the right Fallopian tube. The mesenteric glands were large. The mucous membrane of the stomach and intestines appeared healthy.

Ellen Scott, the mother of this infant, is a stout young woman of 20 years of age; and had three years before a dead-born child at about the seventh month. It was believed to have been dead for some time before its expulsion from the uterus. In the present pregnancy the mother calculated that she was between the sixth and seventh month of utero-gestation when labour came on. She had not felt the child move for about twenty-three or twenty-four days, before delivery, but during the two days preceding the cessation of its motions, these motions, she alleges, were distinctly much greater than usual. She cannot account in any way for the death of the child, except it be that she had a fall upon her right side the day on which its motions ceased; but the increased and morbid movements of the fœtus had been sensibly felt during the whole day preceding this accident.

Her general health was good during pregnancy, with the exception of occasional nausea, vomiting, and pain in the back. She denies that she ever suffered under any form of venereal complaint.

Case VIII.—I inspected (January 10th 1838) along with Dr Fairbairn and Dr John Reid the body of a fœtus that had died some time before birth. Its cuticle was separating in different parts, but its cellular texture was not much infiltrated.

The pleura and pericardium contained a reddish serous fluid, but the thoracic organs themselves were healthy. On opening the abdomen a considerable quantity of sero-sanguinolent liquid escaped, having numerous flocculi and large shreds of coagulable lymph floating in it. Similar shreds of loose coagulable lymph were found lying upon the peritoneal surface of the intestines at various points, but nowhere did this lymph seem to be adherent to that surface. On passing the handle of the scalpel among the loose intestines, it came out covered with patches and shreds of the substance in question.

The mother of the child (Mrs Macmillan, aged 26,) had been exposed to much fatigue and hardship during pregnancy, and her health had been very infirm during the whole period. The movements of the child ceased altogether fifteen days before its birth. On the day of their cessation it had moved with great and unusual violence, as if (to use the patient's own expression) "the infant were coming out at her side." Two days previous to this occurrence, the mother had been obliged to sleep in wet clothes after a long day's travelling on foot. She had borne two living children previously.

Case IX.—In a male fœtus between the fourth and fifth month,

which I examined (July 7th 1838) along with Dr Allan and Mr Bannatine, a few hours after its expulsion from the uterus, the peritoneal cavity contained a quantity of serous effusion, having numerous flocculi, and shreds of coagulable lymph floating in it. Patches and small masses of this lymph were deposited in considerable abundance upon the peritonæum, covering the abdominal parietes and different abdominal viscera, but nowhere did we find any of this exudation adherent to the serous surface. The left pleura contained a quantity of clear, limpid, reddish-coloured serosity, without any flocculi floating in it, or deposited upon the surface of the membrane. The fluid in the cavity of the right pleura was turbid, and contained numerous minute masses of animal matter, the source of which was readily traced to a softened and pulpy condition of the corresponding lung, and to part of the broken down substance of the organ having escaped through a rupture in the pleura. Whether this state was the effect of intra-uterine disease, or of physical injury during or after birth, seemed to us impossible to be determined.

The mother, Frances Gordon, a healthy young woman of 18 years of age, had been under my care in the Lock Hospital from the 12th of April 1838 to the 26th of May. She was then suffering under a recent and severe attack of gonorrhœa, and had the remains of a chronic syphilitic eruption upon the skin. During her pregnancy she had been comparatively well in her general health up till about a fortnight ago, when she had several attacks of chilliness and slight fever, with pain in the uterine tumour, increased by stooping. These symptoms lasted for three or four days, but were not so severe as to confine her to bed. Her last menstruation occurred five months and a few days ago. The fœtus was six ounces and two drachms in weight, and exactly six inches and a half in length. It had seemingly been dead for some days. The placenta was healthy, but in that white anæmic state which is generally seen in those cases of abortion and premature labour in which the infant has been for some time dead *in utero*.

Case X.—A case of peritonitis similar in its anatomical character to the two last, is mentioned by Cruveilhier as having been met with by him, in the instance of a child that was born with the abdomen large, and evidently containing a quantity of liquid. Death occurred about three hours after birth. On opening the abdomen there was found a great quantity of yellowish serosity, with some pseudo-membranous flocculi in the cavity of the peritonæum. The intestines and stomach were extremely contracted. The large and small intestines were filled with meconium. The stomach contained thick white mucus like coagulated milk, (but the child had not swallowed a drop of that fluid,) and this appearance of the gastric mucus, may perhaps, M. Cruveilhier suggests as a query, be the ef-

fect of inflammatory action in the organ. The internal surface of the stomach presented a very marked punctuated redness, in some parts of an irregular form, in others disposed in lines. The liver was large, and the spleen also increased in size, and dark coloured. The gall-bladder contained only some colourless mucus. Indurated and enlarged lymphatic glands surrounded the hepatic duct.

The lungs contained numerous small but unequally sized red spheroidal masses of inflammatory induration, like crude tubercle, both on their surface and in their substance.*

Case XI.—For the details of the following interesting case of congenital peritonitis, I am indebted to my friend Mr Scott, who had an opportunity of seeing the child during life, and of examining its body after death, with Mr Logan.

During the act of parturition, after the birth of the head, the expulsion of the body of the infant was prevented for some time by the distension of the abdomen. On examining the child shortly after birth, Mr Scott found the belly marked with spots of purpurous or hemorrhagic effusion, especially at the sides; it was very tense, and fluctuation was indistinctly felt. Both hands were œdematous, the left more so than the right. There was no œdema of the lower extremities. The child was plump and fat, but cried only in the feeblest manner, and kept its legs firmly drawn up. It survived for twenty-eight hours only after birth; and, before death, œdema of the scrotum and penis took place, with an erysipelatous blush extending to the lower part of the abdomen. The bowels of the child had never been opened, though castor oil had been twice administered to it; and little, if any, urine whatever had been evacuated. The infant was large, and had evidently reached the full term of utero-gestation.

On opening the body after death, some air and a quantity of fluid escaped, when an incision was made into the cavity of the abdomen. "Marks of inflammation (as Mr Scott observes in the notes with which he has favoured me) were obvious on the surfaces both of the abdominal and intestinal peritonæum, and from these surfaces I collected about a tea-spoonful of flaky puriform matter, exactly resembling that which I have found in my dissections of adult females who have died of puerperal peritonitis." The intestinal canal was pervious throughout, but the stomach, upper intestines, and cæcum, were much distended with air.

The left lung was not at all inflated: the right seemed to have been fully used. Spots of purpura were seen on the pleura of both sides. The internal surface of the contracted urinary bladder was covered with similar spots.

Mrs Peters, the mother of this infant, had previously borne

* Anatomie Pathologique, Livrais. xv. p. 2.

three living children. A fortnight before her confinement, with the dead-born child above described, she was exposed to cold and wet in walking from Portobello at night. On her reaching home she was seized with shiverings, which recurred frequently during the two following weeks. She did not feel the motions of the child after the night on which she first had rigors, and she herself believed that it had been killed by the exposure to which she had been that day subjected.

Case XII.—In a memoir read to the Royal Academy of Medicine in 1825, M. Veron, among other cases proving the existence of inflammatory and other diseases in intra-uterine life, adduced an instance of peritonitis, analogous in several respects to the case which we have last detailed. The case was observed in 1822, along with M. Baron, on the body of an infant who had been brought dead to the Foundling Hospital at Paris. From the state of the umbilical cord, and the appearance of the child, it seemed scarcely to have survived a day after birth. On opening the peritoneal cavity, it was found to contain a quantity of purulent serosity, but not in any great abundance. There was an albuminous layer or deposit of coagulable lymph of about a line in thickness on the surface of the cavity, and so adherent to the membrane that all the abdominal organs and intestines were glued together, and formed only one mass. The serous membrane itself was intensely red. The intestinal mucous membrane presented no such colour.*

Case XIII.—In the Journal General de Médecine, M. Brachet has detailed the following well-marked case of acute inflammation of the peritonæum and substance of the liver, in a fœtus which was born dead at the full term of pregnancy. The body of the child was large and well developed, but its flesh was soft, its abdomen large and distended, and the skin had a yellow tint.

On inspection, the contents of the cranium and thorax were found healthy. The cavity of the peritonæum contained some reddish serosity, and its right superior part was occupied by some filamentous shreds of coagulable lymph, forming the rudiments of false membranes. The superior or convex surface of the liver was rugous, and adhered over almost all its right lobe to the corresponding portions of the abdominal parietes, by means of patches of pseudo-membrane that were not yet organized. The liver itself was very red and larger than natural; its tissue was friable and softened in its enlarged right lobe; on dividing it, an inodorous grey reddish fluid resembling purulent sanies, flowed from the cut surface. The other abdominal viscera were healthy, with the exception of a reddish state of the omentum.

* Observations sur les Maladies des Enfans, (Paris 1825,) p. 17.

The mother of this infant had, during the nine months of pregnancy, experienced only the usual indisposition attendant upon that state. Lively fœtal motions had been felt up to the middle of the eighth month. From that period till the supervention of the pains of labour they had become less and less sensible, and at last ceased altogether during the act of parturition, which was extended to eighteen hours. It was her first pregnancy. The placenta was very large and slightly gorged with blood, but in other respects healthy.*

Case XIV.—In 1821, a well-marked case of fœtal peritonitis and enteritis was observed by Chaussier in the Hospice de la Maternité, and reported by him to the Societé de Medecine. †

The subject of the case, a male child, born about the seventh month, was well formed, and presented even a degree of plumpness. The abdomen was more distended and elastic than natural; and a glyster was given to it and returned with little effect. In the subcutaneous cellular tissue there was a slight serous infiltration, more particularly in the lower extremities. Its respiration was laboured, and it died in an hour and a-half after birth.

On opening the abdomen about ten drachms of a yellowish viscid serosity, containing some small flocculi, flowed out. The omentum appeared somewhat thickened. The convolutions of the small intestines were so united and adherent to one another by a tenacious layer of concrete lymph, that they were formed into a single roundish mass, encircled by the course of the colon. On examining more minutely the small intestines, the cellular coat was found pale, thickened, and friable, and penetrated by a semifluid whitish matter or lymph, which separated it from the peritoneal coat. The cavity of the intestine was filled with greyish mucus; and the mucous membrane appeared thickened, and traversed here and there with small patches or circles of vascular injection. The other viscera of the abdomen, and those of the head and thorax, seemed healthy.

The mother of this child was a woman of 22 years of age, and pregnant for the first time. She had always enjoyed the best health, and had not met with any accident, or experienced any disagreeable symptom during the whole course of pregnancy. The labour was natural, speedy, and easy.

Case XV.—XVII.—After quoting the foregoing case (XIV.) as given by Dugès, M. Billard, in his excellent treatise on the Diseases of Children, adds, that he "had found peritonitis to the

* Journal General de Medecine, Tom. cii. (1828) p. 43.

† Bulletins de la Faculté et de la Societé de Medecine, Tom. x. (1821) p. 242. The same case is mentioned by Billard, (p. 242,) as described by Dugès in his Recherches sur les Maladies les plus importantes, &c. des Enfans nouveau-nés. Paris, 1821.

same degree in three infants who died a short time after birth, and who were all fresh and vigorous. In none of these three cases had any symptoms of the peritonitis been observed during life, and it was only by *post mortem* inspection that the cause of death was discovered. In one of them there was an abundant sero-purulent effusion, and the intestinal convolutions, which were very red exteriorly, were beginning to contract adhesions to one another." M. Billiard does not state what particular morbid appearances were presented by the other two cases.*

Case XVIII.—In the slight summary which Professor Carus of Dresden has given, in his well-known work on Midwifery,† of the diseases of the fœtus, he states, " I have observed on the peritonæum of several children born dropsical, perceptible inflammation in several places, and once even the effusion of plastic lymph and adhesion."

Cases of Chronic Peritonitis.

Cases XIX. XX.—M. Billard, in the work already referred to, has alluded to two cases that had fallen under his own observation, of infants who died shortly after birth, and in whose bodies he found coagulable lymph effused upon the peritonæum in such a solid form as to indicate the existence of an inflammatory action which had run through its different stages during intra-uterine life. The first of these infants died in eighteen, and the other in twenty-four hours after birth ; and in both solid, and apparently old, adhesions existed among the different intestinal convolutions. In one of them, the anterior or convex surface of the liver adhered by four very tough, although very slender filaments to the anterior wall of the abdomen. One of the infants was lean, small, and very pallid ; but the other had the usual plumpness of the new-born child. ‡

Case XXI.—In the second volume of his Pathological Anatomy, M. Andral mentions an instance in which he found all the intestines agglutinated together by intimate and very firm cellular adhesions, (the result, as we presume, of old peritonitis,) in an infant only two days old.§

Case XXII.—The best marked case, however, of chronic peritonitis in the fœtus which we have been able to meet with, is one casually described by Morgagni. The subject of the case was an infant, who was brought to him with the umbilical cord

* Traité des Maladies des Enfans, (Paris, 1837,) p. 479.
† Lehrbuch der Gynäkologie, Bd. ii. S. 251.
‡ Traite, &c. l. c.
§ Anatomie Pathologique, Tom. ii. p. 737.

not tied, and consequently that had probably not lived for any length of time after birth. With respect to size, it seemed to be less than the full time. The body was not in any way decayed or putrid.

The lungs were of a red colour, degenerating into a dark-brown, and parts of them when laid upon water immediately sunk to the bottom.

The abdominal cavity was filled by a large quantity of black blood, which was subsequently traced to have escaped from an erosion or laceration of considerable extent upon the concave surface of the liver. The whole of the upper or convex surface of the liver adhered to the diaphragm and corresponding parts of the abdominal parietes. At first sight the mesentery and the intestinal tube seemed (with the exception of the rectum and lower part of the colon alone) to be entirely wanting; but, on further examination, these apparently deficient parts were found agglomerated up into a small mass, under the lower surface of the liver, and covered over by a false membrane. This pseudo-membrane was of considerable thickness, of a tenacious consistence, and rendered rough by a kind of arenular deposit. There was meconium in some of the upper intestines, but none in the rectum. *

General Summary of Results.

The various cases which I have cited in the preceding pages will, I believe, be found to afford sufficient evidence for establishing the pathological fact, that the *fœtus in utero* is occasionally the subject of peritoneal inflammation; and by an analysis of the same and of other additional data, I shall now endeavour to trace out some of the leading and general circumstances regarding the morbid appearances left by the disease,—the causes which are liable to produce it,—the symptoms which most frequently indicate its presence,—its most common terms of duration,—the periods of gestation at which it most commonly occurs,—and its effects upon the life of the fœtus. We reserve the discussion of its more indirect effects upon other morbid states of the abdominal organs for a future occasion.

Morbid Appearances observed on Dissection.

The nature of the morbid inflammatory effusions or products observed in the cases of fœtal peritonitis which we have related, has varied considerably.

In two cases, (XVI., XVII.) the particular morbid appearances which were met with are not specified. In three, (XI., XII., XV.) the morbid effusions into the peritoneal cavity presented more or less of a puriform character, combined with the pre-

* De Causis et Sedibus Morborum, Ep. lxvii. §. 17.

sence of coagulable lymph; and in all the remaining cases, this latter morbid product (coagulable lymph or fibrine) was found either alone, or accompanied (as in cases I., II., V., VI., VII., VIII., &c.) with a larger or smaller quantity of serous effusion. The coagulable lymph again has been seen in different cases under different forms. In three instances, (VIII., IX., X.) it consisted of unadherent flocculi and membranous shreds of various sizes floating in the serous effusion, or lying on the surface of the peritoneal membrane; in others (I., II., XIII., XVI.) it was still soft and pulpy, but was attached to the serous surfaces on which it was deposited, and produced even slight and lacerable morbid adhesions between some of the opposed points of these surfaces; and in four cases (V., VI., VII., XXIII.) it was found to present both of these characters, being in part adherent and in part still loose and unattached to the serous membrane.

In another set of cases again, (III., V., VI., XIV.) the adherent coagulable lymph was still more advanced towards the process of organization, and had assumed a somewhat firmer and more membranous character; in some instances being effused in such abundance as almost to agglutinate together into one mass, (IV., XII., XIV., XXI.) a greater or less number of the abdominal organs covered by the peritoneum, or, where the effusion was more partial and limited, appearing in the form of a membranous (III.) or lace-like (VI.) web, or of threads or filaments (XIX.) passing between some of the morbidly attached surfaces and organs.

Lastly, in the more chronic cases the effused coagulable lymph may, as we have seen, pass into a still more solid and pseudo-membranous form (XIX., XX., XXI.); or appear, as in the remarkable case quoted from Morgagni, under the character of a false membrane investing almost all the abdominal viscera, and containing in its substance some morbid bodies, not improbably analogous to those tubercular deposits which are so often observed in cases of chronic peritonitis in the adult, whilst at the same time this morbid membrane had exercised upon the included viscera that contractile power which is possessed in a greater or less degree by all organized lymph, whether it exist in the form of granulated cicatrices upon the external or internal surfaces of the body, or as organized false membranes, or morbidly developed fibrous tissue.

Complications with coexistent inflammatory disease in other abdominal organs and tissues have been observed in only a very few of the cases. In one instance (XIV.) besides the layer of coagulable lymph upon the free surface of the peritonæum, there was a considerable effusion of semifluid whitish matter, (concrete albumen, *Dugès*,) into the cellular tissue of the smaller intestines, producing a degree of thickening and friability in the coats of the bowel. In a second case, (XIII.) the peritoneal inflamation was accompanied by hepatitis in the stage of softening and incipient

purulent infiltration ; in another to be presently quoted (XXIII.) the morbid changes in the same organ were of a more chronic character, the coats of the liver being opaque and somewhat thickened, and the organ itself reduced in size. In one instance (X.) there were found some of those small masses of inflammatory induration in the lungs which form the most common type of pneumonia in the fœtus and infant.

In two cases (V, XXII.,) there were in the peritoneal cavity coagula of blood, which had apparently proceeded in both instances from a rupture or laceration upon the concave surface of the liver. In the first of these cases (V.) the edges of the laceration had again become agglutinated together, a fact shewing that the lesion must have occurred several days before death ; and the congestion observed in the surrounding hepatic tissue was so great, that it might probably have acted as the predisponent, if not as the exciting, cause of the laceration.

In two instances (VI. X.) the spleen was unusually large, and in a case mentioned by Petit-Mengin,* which we shall have occasion to quote in our next communication as an instance of the combination of ascites and peritonitis in the fœtus, the spleen was enormously hypertrophied, and had its peritoneal surface morbidly adherent.

In four of the cases (II., V., VI., VIII.,) I have mentioned the very large size of the mesenteric glands. This is an appearance which I have now met with so often in my dissections of dead-born children, that I should feel inclined to regard it rather as a state natural to the fœtus than otherwise. Certainly, according to our own experience in such cases, the glands, if morbid in any way, are simply hypertrophied, and do not, as Oehler† would seem to imply, show some of the characters of scrofulous degeneration.

In two of the cases which I have related (V., XI.,) minute hæmorrhagic effusions, similar to those seen in *Purpura Hæmorrhagica*, were observed in some of the internal organs of the body. This particular morbid appearance would, according to the experience of Cruveilhier, ‡ seem to be not unfrequent in the bodies of fœtuses who have died *in utero*.

The *extent* of the inflammatory action in fœtal peritonitis, as shown by the post mortem appearances, appears in the majority of cases to have been pretty general over the peritoneal surface ; but occasionally, (as in cases II. and III.) we find it more or less limited to particular localities and portions of the membrane ; and we shall afterwards have occasion to point out the pathological importance of this fact in reference to the production of congeni-

* Gazette Medicale de Paris, Juin 1833.
† Prolegomena in Embryonis Humani Pathologiam, p. 34 and 44.
‡ Anatomie Pathologique du Corps Humain, Livr. xv.

tal hernia by local inflammatory adhesions formed between the peritoneal surface of the descending testicle and some of the contiguous abdominal viscera.

Exciting Causes of Fœtal Peritonitis.

On the nature of the causes of peritonitis and other inflammations in the fœtus, we as yet possess very little accurate information. Internal inflammatory diseases in the adult are comparatively seldom the result of noxious agencies applied directly to the organ or tissue which is the seat of the inflammatory action, but are generally the result (as we think might be shown if this were a fit opportunity for discussing such a subject,) of a variety of intervening morbid alterations which originate in the first instance in derangements of the secretions and other functions of the part to which the external exciting power is applied, and that subsequently react through it upon the economy in general, or upon that particular part of it in which the inflammation ultimately becomes located. These intermediate morbid states seem further capable, in different instances, of being produced by very different morbific agencies ; and may probably in the fœtus, as in the adult, occasionally consist in, or be excited by derangements in some of the natural secretory and excretory actions of the fœtal economy, as in the non-elimination of different matters from the fœtal circulation in the placenta of the mother, or in the introduction through the same channel of morbific substances previously existing in her system. We can have little doubt but that in the latter mode, the particular poisons exciting the specific inflammations characteristic of plague, small-pox, syphilis, &c. are conveyed from the mother to the fœtus in those cases in which the fœtus is attacked *in utero* with these diseases.

Causes more particularly referrible to the conditions of the mother.—In some of the cases of fœtal peritonitis which I have detailed, the mother had been exposed to severe labour (II.,) or fatigue and exposure to cold and moisture, (VII., XI.,) or bodily injury, (III., VI? VII?) during her gestation ; in two cases, (VIII., XXIII.,) there existed general ill health during the whole of that period ; and in one of these, (XXIII.,) the mother herself was twice attacked with peritonitis during the course of pregnancy. In two of the cases (V., IX.,) the mothers had an attack of gonorrhœa during the period of utero-gestation, along with a syphilitic eruption in the one instance, (IX.,) and ulcers in the other, (V.) A third, (VI.,) confessed that she had suffered from venereal disease ; and the line of life pursued by others of the number, (III , VII., and I believe also IV.,) was such as certainly freely exposed them to syphilitic infection. Indeed it appears to me highly probable, from the investigations which I have already made upon this point, that a great proportion of

those children of syphilitic mothers that die in the latter months of pregnancy, may yet be shewn to have perished under attacks of peritoneal inflammation.

But before attributing to this, or to any of the above causes on the part of the mother, too great and exclusive an influence in the production of peritoneal inflammation in the fœtus, it must be recollected, that in other instances which we have brought forwards, as, for example, in cases I., XIII., XIV., XXIV., the mother was not aware of being in any way exposed to any known morbific influence, and had not been the subject of any particular indisposition, either during pregnancy, or antecedently to it. Besides, that the disease in the fœtus may occur altogether independently of any morbid state of the maternal system, and from causes strictly originating in, and confined to the fœtal economy itself, would seem to be shown by the first instance which we have related, where, in a case of twins, *one child only* was affected, whilst the other was healthy and lively, although they were connected to the mother by one common placenta, and consequently were both exposed equally to any morbific influence, which the state of her economy might have been capable of exerting upon them. In some of the instances we have cited, the children born with peritonitis, were, as in the case (I.,) just now referred to, the product of a first pregnancy, and the offspring of a healthy mother, (XIII., XIV.) In three instances the mothers had previously borne one or more living children, (III., VII., XI.) But others of them, (II., III., V., VI., VIII.,) had already previously suffered from the abortion or premature delivery of a dead fœtus or fœtuses. In none of these latter instances have I as yet had an opportunity of examining two of the dead-born children of the same parents, to ascertain whether there may have been an identity of intra-uterine disease in them, but it seems not improbable, from other ascertained facts relative to intra-uterine pathology, that in certain cases such an identity of morbid action might be traced.

Causes referrible to the conditions of the Fœtus.—In some instances peritonitis in the fœtus would appear to be directly induced by morbid physical conditions of the abdominal viscera, and by irritant fluids accidentally applied to the peritoneal surface itself. Legouais and Dugès* are said to have met with cases in which peritonitis in the fœtus had been apparently produced by an internal strangulation of the intestines. When the urethral canal of the fœtus has been impervious, the urinary bladder has often been found greatly distended with an accumulation of urine, as seen in numerous cases recorded by Ruysch, Portal, Sandifort, Meckel, Vrolik, Steghlehner, Chaussier, Billard, Howship, Wil-

* Cyclopædia of Practical Medicine, Vol. iii. p. 291, and Billard, p. 483.

son, Lee, Montgomery, and others. In instances of this kind, the distended organ seems liable to give way under the great morbid dilatation of its cavity,* and the effusion of urine into the cavity of the abdomen consequent upon the perforation of the viscus, would appear, as in the adult, to be followed by severe and fatal peritonæal inflammation, as exemplified in the following case recently detailed by Mr King.†

Case XXII.—On opening the hydropic abdominal cavity of a fœtus of the fourth month, it was found to contain a considerable quantity of opaque viscid fluid, having numerous soft flakes of fibrinous matter floating in it. The natural gloss of the peritonæum was a good deal destroyed; and the surface was in parts slightly coated, as with fibrine. The liver was reduced in size, and had become much rounded in figure; its tunic was opaque and somewhat thickened. With this organ the bowels were collected into a bunch, in the middle of the superior part of the abdomen. The urinary bladder extended to the umbilicus, had a globular form, and was so distended as to be capable of containing above half a pint of water; its coats were decidedly thickened. A little behind its summit a perforation was found, around which the vesical tunics were very much reduced, as if by absorption from the pressure of distension. This ruptured opening of communication from the bladder into the peritonæum was a simple fissure, rather less than half an inch in length, and its margins were extremely thin. The ureters were enlarged, tortuous, and somewhat thickened. The kidneys were small, and not materially affected by the internal pressure. The urethra was imperforate from the prostate gland forwards. No very decided alteration was seen in any of the other organs.

The mother of this child, aged 27, was of a strumous appearance, and menstruated irregularly. After having been married eighteen months, she became pregnant with the above infant. She appeared to suffer from *peritonitis* at an early period of her pregnancy, and subsequently continued more or less ailing and delicate. The premature parturition was preceded by an attack closely resembling *peritonitis*. She did not suppose herself with child until the time of her delivery. The fœtus, a male, was born dead, with a full ascitic abdomen, and the abdominal parietes very considerably distended and attenuated.

In two cases that we have detailed (V., XXII.) in which there

* In one recent case which I had an opportunity of examining along with Dr John Moir, the muscular and mucous coats of the dilated bladder seemed entirely removed at one circumscribed point, and the peritoneal tunic alone remained to prevent the effusion of urine into the abdominal cavity.

† Guy's Hospital Reports, No. v. p. 508.

were coagula of blood in the abdominal cavity, from a partial laceration of the substance of the liver, could the peritonæal inflammation have been excited in consequence of the effused blood acting as an irritant upon the serous membrane?

In connection with these instances of inflammation of the peritonæum, originating in direct physical and chemical injury of the membrane itself, I may here mention, as cases in all probability referrible to a somewhat similar principle, that I have repeatedly observed an effusion of patches of coagulable lymph upon the peritonæal surface of the intestines and other abdominal viscera, in instances of monstrosity consisting in the extroversion of these viscera from a partial deficiency of the abdominal parietes; and I have seen this both in the human fœtus, and in that of the lower animals. Thus, for example, I find that among the short notes which I made some years ago, of various cases of fœtal monstrosity contained in the museum of Guy's Hospital, London, I have incidentally marked the existence of an effusion of coagulable lymph upon some part of the peritonæum, as visible in three of the cases in which there was general extroversion or hernia of the contents of the abdomen, from the deficiency alluded to. One case (2542 A) is described as having "some fibres of coagulable lymph upon the peritonæal surface of the liver and protruded intestines; the head of this fœtus is much malformed, and probably it was one of those instances in which this part adhered by inflammatory false membranes to the inner surface of the placenta or amnion. There is also a strong thread or band, probably composed of organized lymph, attached to the skin over the external side of the left elbow." The second case is marked as a "fœtus with harelip and extroverted heart and abdominal viscera, and with apparently a few patches of coagulable lymph upon the peritonæum and pericardium:" and the third case (2550 A,) a malformed fœtal pig, is mentioned as having (among many other anomalies of structure) "the extroverted abdominal viscera partially surrounded by a transparent serous-like membrane, which has strings of coagulable lymph attached to it." I have now seen in other pathological collections, several additional instances of similar partial effusions of coagulable lymph upon the peritonæum, and even intimate morbid adhesions between the contiguous serous surfaces of such abdominal viscera, as happened to be protruded in cases of fœtuses with malformations resembling the above. We may here observe also, that Scarpa, in his Treatise on Hernia, mentions and represents* a case of umbilical hernia in the human fœtus, in which a considerable portion of the jejunum adhered, (no doubt in consequence of previous peritonitis,) to the entrance of the hernial sac; and the same author, in another passage of his

* Treatise on Hernia, Wishart's translation, p. 377, and plate xiv. fig. 2.

work, p. 378, §. 6, points out the "firm adhesion" contracted by the protruded abdominal viscera to the hernial sac, in instances of congenital umbilical hernia, as one of the causes opposing reduction and leading to the early death of almost all those infants that are born affected with this disease.

Symptoms of Fœtal Peritonitis.

In the prefatory observations made to the present communication, I have already taken occasion to allude to the almost insuperable difficulties which are opposed to our arriving at any accurate knowledge of the symptomatology of intra-uterine diseases; and the present affection only affords too apposite an illustration of the remark in question.

In eleven only of the preceding cases have we any account whatever of the condition and feelings of the mother during the period of pregnancy. In four (I., VII., XII., XXI.,) out of these eleven cases, nothing seems to have occurred that was calculated to direct the particular attention of the mother to anything peculiar in the condition of the fœtus: in three (III., V., X.,) the cessation, about a fortnight before delivery, of the motions of the fœtus, as felt by the mother, was the only circumstance remembered, and in one of these cases (V.,) the fœtus certainly continued to live for some time after this occurrence: in another case (XI.,) the motions of the infant became less and less sensible during the last two weeks of gestation: and in the three remaining instances (II., VII., VIII.,) these motions, after being much and morbidly increased for two or three days, ceased entirely and rather suddenly, at a period varying from eleven (II.,) and fifteen (V.) days, to upwards of three weeks (VI.) before delivery. This last combination of symptoms, namely, a great but temporary increased degree of the fœtal motions, attended occasionally with spurious pains, and followed up by the sudden and final cessation of all perceptible movements on the part of the infant, may, we believe, be not unfrequently noticed in cases of acute and fatal peritonitis of the fœtus; but, at the same time, it must be held in recollection, that this same sequence of morbid phenomena is common to peritonitis with all those diseases of the fœtus in utero which are similarly acute and fatal in their character, and consequently they cannot by any means be held as diagnostic marks of peritonæal inflammation alone. We omit here, as we have done in the detail of individual cases, the recapitulation of various well-known but equivocal symptoms in the maternal system of the death of the child, such as rigors, a sense of weight in the tumour of the uterus, flattening of the abdomen, &c. because these signs, when they do occur, can only be regarded at

best as probable indications of the death of the fœtus, without leading in any way to a knowledge of the cause of that event.

When the child has been born alive, but affected with congenital peritonitis, it has sometimes, in the more chronic forms of the disease, been emaciated, (XIX.) but not always so (XX.;) and, in the more acute cases, when any great degree of change is observed in the condition of the child in regard to its natural condition of fatness and plumpness, we shall in general be justified in ascribing it to other causes besides the peritoneal inflammation, as we know that this disease may even prove fatal without bringing down the state of the little patient in this respect (XIII., XIV.) In several cases the abdomen was swelled and fluctuating at birth (V., X., XI., XIII., XIV., XVIII.;) sometimes even tense and tender to the touch (XXIV.) With the abdominal effusion a certain degree of hydrocele generally exists in the *tunicæ vaginales* of male infants (as in Case VI.;) and in some there has also been observed a coexistent degree of dropsical swelling in other parts of the body, as in the hands (XI.,) in the upper extremities and face (VI.,) in particular, or in the lower extremities and beneath the skin of the whole body (XIV.)

In two of the cases the children's skin presented at birth the yellow discoloration of jaundice. In one of them that was dead-born (XIII.,) the liver on inspection was found to be the seat of acute inflammation, and commencing purulent infiltration.* In the second case (XXIV.,) which will be subsequently more particularly described, the child was born alive and survived.

Again, in other instances of congenital peritonitis, none of the equivocal symptoms here alluded to have been remarked, and the cause of death has only been discovered by the *post mortem* dissection (XV. XVI. XVII.)

Duration of Fœtal Peritonitis.

We have as yet but few data on which we can rely with any great degree of certainty for fixing the general duration of attacks of peritonitis in the fœtus. We have enough, however, I believe, to show that, contrary to the surmises of some pathologists,

* Baumes, in his Traité del'Ictere des Enfans de Naissance, (Paris 1806,) mentions an interesting case, (p. 45,) of congenital jaundice complicated with hepatic inflammatory disease. A mother, who was herself much affected with jaundice during pregnancy, produced a child with both skin and conjunctiva sensibly discoloured. The child, whose right hypochondrium was very prominent and hard at birth, died under increased symptoms of icterus in four or five weeks afterwards. On opening its body, the tissues of the abdominal parietes and of all the abdominal viscera were seen to be stained yellow. The liver was very large, particularly the left lobe, which was morbidly adherent on its surface to some neighbouring parts, and softened in its substance. The right lobe felt indurated, and its lower or concave surface contained a small abscess. The gall-bladder was half-filled with a greenish, limpid, slightly bitter fluid. The *ductus choledochus* seemed obstructed by a viscid yellowish matter. The stomach was much contracted.

inflammatory action may occasionally proceed with nearly as great a degree of acuteness and severity in intra-uterine life as after birth. In some of the cases of peritonitis that have been related (I., II., XX.,) the plump and unemaciated condition of the fœtus after death affords very strong evidence that the fatal morbid state under which it had suffered had not been long in its duration. In others, those symptoms of increased movement and restlessness in the fœtus, which indicated the occurrence of acute disease in some part of its system, were only remarked for one (VII.,) two (VIII.,) or three (II.) days before its death; and in one of these cases (VII.) we have further corroborative evidence of the occasional very acute character of the disease in this circumstance, that the apparent exciting cause of the peritonitis was applied only two days previous to the death of the fœtus, as indicated by a sudden and total cessation in its motions subsequently to a greatly increased degree of them. In two other cases (III., XI.) also, the fœtal movements ceased in the course of a day or two after the supposed exciting cause of the fœtal disease had operated upon the maternal system. Besides, the inspection of the dead body in this and in other instances (as in I., II., VIII., IX., X., XII.) presented such morbid appearances, as corresponded only with those left by the more acute and rapidly fatal forms of peritonitis in the adult. Again, in other cases, the state of emaciation, and hence, probably, of long continued disease (XIX.) combined with the particular appearances found on dissection (XIX. to XXII.) do show in as unequivocal a manner, that in these instances the inflammatory action must have been of a decidedly chronic character.

PERIODS OF FŒTAL LIFE AT WHICH PERITONITIS OCCURS.

Velpeau, in his elaborate treatise on Midwifery,* without specifying any particular diseased appearances, remarks in general terms, that he "had seen incontestable morbid alterations in the lungs, liver, *peritoneum*, and other parts of the body, at the *third* month." I have certainly, in several different specimens, observed unequivocal evidence of inflammation and morbid adhesions between different points of the cutaneous surface of the embryo, at a period as early, or even earlier, than that mentioned by Velpeau; and although I have adduced no case of peritonitis at that age, we shall take occasion, in our next communication, to show reasons for our belief, that we may yet be able to trace many of the malformations of the abdominal and pelvic viscera, as well as those of different other parts of the body, to different diseased actions, but particularly to inflammation occurring in some of their structures during the earlier stages of their embryonic developement and growth.

* Traité Complet de l'Art des Accouchemens. Tom. i. p. 392.

In some of the instances of fœtal peritonitis brought together in the present paper, the particular age of the fœtus is not noted. Of the remaining cases, the earliest are two, (IX. and XXIII.,) in which the fœtus was considered about four months old, or between that and the fifth. In two instances (II., VII.) the child was believed to be between the sixth and seventh month; in three (III., VI., XIV.) about the seventh month; and in others again near to, (V., XVIII.) or apparently at the full time, (I., V., VIII., XI., XIII.) Most of the children who were affected, but still alive at the period of birth, (as in Cases X., XI., XVI., XVII., XXIV.,) may also be presumed to have nearly, if not fully, reached the complete term of utero-gestation, before the supervention of the disease.

Effects of Peritonitis upon the Life of the Fœtus.

If I might be allowed to draw any general conclusion from the comparatively limited opportunities which I have as yet enjoyed of investigating the diseases of the fœtus, I should certainly feel inclined to regard peritonitis as much more frequently fatal to the fœtus during the latter months of pregnancy than any other individual acute disease to which its economy is liable. I had occasion to see nine of the cases which I have related, in dispensary and hospital practice, within a period of twenty-three months. During the same period I have met with other inflammatory diseases in the fœtus, but certainly with no single one in so many individual instances. According to the observations also of Professor Chaussier and Madame Boivin, peritonitis would seem to have been not unfrequently met with by them in their dissections of the still-born children at the Hospice de la Maternité at Paris. *

In a considerable number of the cases which have been narrated in the preceding pages, the peritonitis seems to have been so acute and severe as to prove fatal to the fœtus before birth.

In eight of the cases (I., II., III., V., VI., VII., VIII., IX.,) the children had been evidently dead for some considerable time before their expulsion from the uterus, as shown by the decomposing state of their bodies. In one (XIII.) the infant, though dead-born, was thought to be alive up to the commencement of parturition. In the three first cases of chronic peritonitis the chil-

* "Nous avons rencontré, avec M. le Professeur Chaussier, que nous avons longtemps accompagné dans ses recherches sur les maladies du fœtus, un certain nombre de cas de péritonites, avec ou sans épanchemens, et toujours accompagnés d'adherences plus ou moins multipliées des intestins."—Mad. Boivin, Recherches sur une des Causes de l'Avortement, p. 56. See also a note by Chaussier at p. 34-35 of his Memoire sur la Viabilite de l'Enfant Naissant. Paris, 1826.

dren were born alive, and survived to periods varying from eighteen (Case XIX.) and twenty-four hours (XX.,) to two days (XXI.) after birth. In several of the acute cases also, the child was born affected with the disease, and did not die till three hours (X., XIV.,) nearly a day (XII.,) or even longer (XI.) after the time of birth. In one example, indeed, recorded by Professor Desormeaux, a child born with all the most marked symptoms of congenital peritonitis, rallied completely after birth, and survived. The following are the interesting details of the case as given by Desormeaux himself.

Case XXIV.—"I had under my care, (he remarks,) some years ago, an infant whose mother's health had been excellent during the whole period of pregnancy. The infant at birth was extremely emaciated; the surface of its body was of a yellowish white colour; and it had an expression of suffering and, as it were, of old age strongly imprinted on its countenance. Further, the little patient had the abdomen swelled, hard, and tender; the intestinal convolutions could be traced under the integuments; and all announced an intense and already chronic enteritis. The infant was intrusted to a good nurse; and, notwithstanding its feebleness, it was able first to receive some drops of milk, and after a time to suck. It has since become (M. Desormeaux adds) a very fine child, and enjoys good health." *

From peritonitis forming so often a direct cause of death to the fœtus, the study of it, as of other fatal forms of intra-uterine disease, becomes a matter of interesting inquiry to the practical accoucheur, as bearing strongly upon the important question of the various modes in which abortion and premature labour come to be induced. And certainly the attention which has of late years been bestowed upon intra-uterine pathology has been useful in eliciting a higher degree of information on that subject; for the more our knowledge of the diseases of the fœtal economy has increased, the more have accoucheurs become convinced of the truth and practical importance of the fact, that the causes of abortion, and of the death of the fœtus during the different periods of pregnancy, are, in many instances, not to be sought for in any diseased condition of the general system of the mother, or in any morbid state of her reproductive organs, but in diseased actions originating in, and more or less strictly confined to, the fœtal appendages, or to the organs or tissues of the body of the fœtus itself. Besides, I feel much inclined to believe, that to these fœtal

* Dictionnaire de Medecine, Art. Oeuf. Tom. xv. p. 403.

diseases, and more particularly to certain degrees of inflammation, and to the results or products of that morbid action in different parts of the body of the fœtus, when it happens to be of a local and limited, and consequently not of a fatal character, we may be yet able to trace the origin of various morbid states, the true nature of which is at present little suspected.

In my next communication I shall endeavour to show the truth of this last remark, in as far as it relates to the effects of that individual species of inflammation which we have been here considering, namely, Peritonitis,—by adducing some additional cases and evidence to show that to the existence of this disease in the embryo and fœtus, as a pathological cause, we may yet trace the production of some varieties of malformation in the abdominal viscera, as well as the occasional occurrence of various instances of hernia, ascites, and hydrocele during intra-uterine life.

Art. VII.—*Case of Chorea Saltatoria.* By Dr Daniel Kennedy, Dumbarton.

A. M., aged 13, was seized, June 10th 1836, with symptoms of the peculiar nervous affection distinguished by the name of the dance of St Vitus. About the commencement of the attack she was affected during two weeks with slight constipation, and occasionally complained of a dull pain in the forehead. She was said to have been a stout, healthy girl previous to the accession of the symptoms. These attacked her suddenly, and began with the sensation of an *aura* or breathing air proceeding from the toes upwards, until it terminated in the abdomen. Hiccuping once, twice, thrice, was instantly excited, and was invariably followed by a tremulous motion of the head and neck from right to left. This motion was an uniform and never-failing precursor of one of the convulsive paroxysms which characterized the presence of the disorder.

The posture of the body during this preliminary stage was prone, and is aptly expressed by what is called the "squatting posture," the forepart of the thighs being drawn up towards the abdomen, and the forehead reclining on the posterior aspect of the right forearm, which was clasped at the wrist by the left hand.

Having remained for sometime in this posture, quite insensible to all external agencies, and even to loud bawling, rude handling, and frequent smart pinchings, she tossed her body to and fro in all directions; twisted it slowly round and round upon her head; frequently stood upon her head, and revolved upon it as upon a centre, her feet elevated and leaning against the wall. At this period, her face was much swollen, flushed, and expressive of extreme agony; her respiration retained for a minute, then issued