central vessels are lacerated; secondly, the large venous openings are exposed; thirdly, sometimes, and indeed, not unfrequently, there is laceration or disruption of the placental structure, whereby the ramifications of the umbilical arteries and veins are more or less torn through. There are, then, always two surfaces exposed, upon each of which vessels are laid open, which sometimes pour out blood in such torrents as to deluge the bed, and the floor of the room, and places the life of the woman in the greatest jeopardy, and, indeed, sometimes destroys her by the first gush. When the placenta is only partially separated, the blood which is lost, is chiefly venous, and mostly comes either directly from the great venous apertures, or indirectly in its course from the placenta. . . . But, when the organization of the placenta is broken into" (as it is argued is the case in *Placenta prævia*), "the blood now comes from the fetal vessels, and cannot long flow without causing the death of the child."—*Lancet*, Feb. 27th, 1847.

"Let us suppose a case," Dr. Murphy observes, "in which the placenta is completely attached to the mouth of the uterus, and that labour has just commenced: what takes place? The first effect of the pains must be to break the vessels passing from the margin of the os uteri into the maternal portion of the placenta. The curling arteries of the uterus are closed by coagula formed in their torn coats; they cannot, therefore, pour out much blood; such is not the case, however, with the large uterine veins when they are broken across: one fragment is an opening that communicates with the large net-work of veins in the uterus; the other leads directly into the cavernous structure of the placenta: through both these orifices blood may be discharged, being in the former case venous blood, flowing in a contrary direction to its course from the uterus, and in the latter, arterial blood, passing directly through the cavernous structure of the placenta, and escaping from the broken openings on its surface."—*Lectures on Midwifery*, p. 331.

These quotations need not be extended; the foregoing are sufficient to show that the opinions of obstetric pathologists by no means coincide in regard to the source of hæmorrhage in placental separations, and doubtless this discrepancy of opinion has in a great measure tended to those very opposite rules of practice which have been inculcated by different writers. It occurred to me, that some light might be thrown upon this question by selecting an animal, the organization of whose placenta approximated nearest to that of the human female, exposing the uterus at the full period of gestation, and detaching portions of the placenta, so as to observe the actual source of hæmorrhage. This experiment I was enabled very satisfactorily to perform with the kind assistance of Mr. Marshall, of University College Hospital, and the following particulars comprehend a summary of the facts which were observed.

A large pregnant bitch, which it was calculated was within two days of the full period of gestation, was placed under the influence of chloroform, and the uterus was then fully exposed by an incision, made in the course of the linea alba, from the sternum to the pubes. The uterine tissues were now carefully divided over one of the placentæ, and at right angles with this incision another was made along the border of the placenta, so as to admit of an easy separation of the two organs. It was observed, that the portion of the uterus in apposition with the placenta was highly vascular, and bled freely upon being divided; this, however, soon moderated, and then the separation of the placenta was commenced. The moment it was begun, profuse hæmorrhage, of a bright arterial colour, took place in a continuous stream from the uterine surface, which had been previously adherent to the placenta. No bleeding whatever took place from the placental surface; and on continuing to detach further portions of the placenta, it was observed that each successive detachment was attended with increased hæmorrhage from the uterus, but none from the placenta. In due time, the placenta was entirely detached, but the blood still continued to flow from the uterine surface only.

A second observation was now made with another placenta, and with the same results. No hæmorrhage whatever was observed to take place from the detached placental surface, whilst blood poured profusely from the uterine, increasing as the detachment continued.

In a third instance, the placenta was abruptly torn away from the uterus, but blood continued to flow freely from the denuded uterine surface after the separation.

In a fourth case, the placenta, fetus, and membranes were together removed from the uterine cavity. The investing portion of the uterus contracted immediately on their removal, but still a large quantity of blood was poured out from that portion of its interior to which the placenta had been attached.

The following observations were also made in the course of this experiment, which it may not be uninteresting to subjoin. I. On detaching the placenta from the uterus, a number of white, elastic, filamentous-looking bands were observed to pass from one organ to the other. These were probably the utero-placental arteries: they were easily torn across, and their divided extremities would seem to close up and retract immediately upon being divided, as their orifices were not afterwards perceptible, nor did any blood issue in jets from the denuded uterine surface. II. The blood, as I have remarked, which came from the uterus, flowed in a continuous stream, and was of a bright arterial colour. III. Except from the divided edges of the uterine wound, and the denuded lining membrane of the uterus, no blood escaped from this organ. IV. Although no hæmorrhage came from the detached surface of the placenta, whilst the organ was entire, it was yet found on tearing or lacerating it, while it was partially adherent, that blood flowed from the torn or lacerated parts; but this was to a very inconsiderable extent, and instead of being of a bright arterial colour as was that which flowed from the uterus, it was of a dark purple or bluish tint. It should be added, that each fetus was alive during these observations, and continued to live for some time afterwards.

Thus it would appear in the canine species, that the source of hæmorrhage, in cases in which the placenta is partially detached, is exclusively the denuded uterine surface, so long as the placenta is entire; that the blood escapes in a continuous stream, and is of a bright vermilion tint; that no blood comes from any other part of the interior of the uterus; and that although a certain amount of blood may escape from the placenta, if lacerated or torn while still partially adherent to the uterus, this is comparatively small in quantity, and of a dark venous character.

How far these observations apply to cases of partial separation of the placenta in the human subject, is a question to which we can scarcely give a positive answer, until the structure of the placenta of the bitch has been further examined, and compared with that of the human species: more particularly as regards the disposition of the blood-vessels in its maternal portion. We know, for instance, that in the human placenta, the utero-placental arteries open into large cells formed by the inner coat of the vascular system of the mother, and that between these a free intercommunication exists; whereas in the bitch the venous vessels of the maternal part of the placenta do not constitute a cellular or cavernous structure, but in form and distribution resemble ordinary veins. It remains then to be ascertained, before the value of these observations can be determined, whether there be a free lateral communication between these veins throughout, so as to permit the blood injected into them, where still connected with the uterus, to escape at the place where they have been opened by detachment.

Whilst, therefore, I regard these experiments as interesting in themselves, and as affording, in the general analogy which subsists between the structure of the placenta in the two cases, some support to the doctrine that these hæmorrhages have exclusively a uterine origin, I must not be understood to affirm, that they are positively conclusive on this point. As I have already remarked, some further investigation into the structure of the placenta of the bitch is necessary, to enable us to assign to them their true value and significance. This I propose to undertake; and I will communicate the results in a supplementary paper.

Chester Place, Hyde Park Gardens, London, December, 1852.

PECULIAR CASE OF ACCIDENTAL UTERINE HÆMORRHAGE.

By L. HARRINSON, Esq., Surgeon.

(Read before the Reading Pathological Society, Oct. 27, 1852.)

On Sunday, July 11th, 1852, at half-past 11 o'clock, a.m., I was called to Mrs. G——, Queen's-road, aged thirty-six years. She was a well-developed woman, having tolerable health, and was about seven and a half months advanced in her third pregnancy. She had suffered less during the present than her former pregnancies.

From her distressed condition, I could only gain the following particulars as to the method of her seizure. She was sitting in her kitchen, between 9 and 10 o'clock, a.m., preparing some culinary compound, when she suddenly felt faint; her bowels were twice moved in quick succession, and severe pain in the ab-

domen immediately succeeded. At half-past 10 o'clock I found her lying on a sofa, complaining of faintness and of extreme pain in her abdomen. She fancied that labour was coming on. There was no discharge. Some brandy was given, and she rallied. I requested that she should be got to bed, and promised to see her again in an hour.

On my return, she was more distressed, more faint, and in more pain; in a few words, she was in a state of collapse.

On examination externally, the abdomen was very tense, and the seat of pain was principally at the fundus of the uterus, which reached and occupied the epigastric region. The pain was that of distension, of bursting, and indescribably distressing.

On examination *per vaginam*, I discovered the cervix uteri not obliterated, the os uteri just admitting the finger, the membranes unruptured, and the head presenting.

Amid the enveloping agony, she was now and then slightly conscious of the pains of labour.

I determined at once to rupture the membranes, which was readily accomplished. The waters flowed profusely and clear; there was not a trace of blood. About this time she had a convulsion, during which life appeared to be all but extinguished.

Dr. Cowan now saw her, soon after 1 o'clock, p.m. After a careful examination, we agreed that a grave accident had happened, but could not determine its precise nature, nor its seat; nor whether it was perforation or rupture of some abdominal or pelvic viscus.

From, however, the condition of pregnancy, and the absence of any other recognized disease, we felt justified in thinking that the uterus must be the organ involved, and that rupture, partial or complete, of that organ had probably occurred.

The indications appeared to be, to relieve the pain, and to keep up the failing powers as well as possible, which were attempted to be fulfilled by opium and by brandy. One drachm of tincture of opium was given immediately, and brandy and water at frequent intervals. There was an almost incessant cry for cold water, which was ungrudgingly supplied.

Three o'clock, p.m. Much the same; no relief. The same dose of tincture of opium was repeated. The os uteri was progressively dilating.

At 5 o'clock Dr. Cowan again visited her. I proposed that we should spare her little remaining strength, by now completing labour with the perforator and the forceps; premising, of course, that that could be done readily and with safety. Dr. Cowan agreed. The head was perforated and extracted with little difficulty. In a short time, one hand being kept firmly applied to the abdomen, the body readily escaped. Without waiting to separate the child, the hand was still kept on the abdomen, and I was surprised to find that it had scarcely diminished in size or in tension.

Firm pressure was kept up, and I was about to observe to the nurse that we had one or two more children to come, when one of the most fearful gushes took place I ever witnessed. Placenta, clots and fluid blood, to the amount of some quarts, were expelled at the same instant. The uterus was at once carried down into the pelvis, and there fixed with the hand. There was no further escape of blood. The uterus showed no disposition to relax, nor did it apparently in the slightest degree.

She was immediately relieved of that dreadful feeling of distension, and lay easy for a time. Anticipating what was to follow, while I was guarding the uterus, the nurse was employed in giving as much brandy and water as she could get down. Another drachm of tincture of opium was given. It was now about half-past six o'clock. After a short time the restlessness increased; she tossed about incessantly, and the extremities became cold. At eight o'clock she apparently fell into a quiet sleep. At half-past eight o'clock, Dr. Cowan again saw her. It was agreed to let her sleep a little longer. She slept, but it was the sleep of death. At ten o'clock her breathing was observed to change, and in a few minutes she died, twelve hours from the time she was first seized.

Autopsy performed next morning. Dr. Cowan was present. The uterus was found well contracted: no blood was discovered within it. No appreciable disease in any organ.

I may here remark, that the cord was twice round the neck of the child, and was very short. I much regret that I did not measure it. There was no disease of the placenta.

What occurred, then, to produce so lamentable an accident, undoubtedly was, a sudden separation, probably nearly entire, of the placenta from the uterus; and the only discoverable cause, an unusual shortness of the umbilical cord, and that twisted round the neck of the infant.

In the retrospect of such a case, a few points present themselves for consideration. Could a more accurate diagnosis have

been arrived at? and if so, could the treatment have been materially modified?

To describe her condition in a few words, it may be said, that she was in a state of collapse, with extreme pain. These symptoms, however, would equally belong to perforation or rupture of any of the abdominal or pelvic viscera, or even to the rupture of an aneurism.

The only characteristic I could name, would be the state of the abdomen. It was distended to the utmost; was dull on percussion; and had an unusual, peculiar, doughy feel.

Her strength was supported after the most approved methods, and opium, that sustainer of the vital energies, was carefully administered. Labour was accomplished as soon as the state of the uterus allowed. When the uterus was emptied, no further discharge was permitted.

No example at all similar has occurred to me before. No writer that I can find has described one exactly corresponding; and some authors do not even name the possibility of such an occurrence. Dr. Robert Lee, in his "Clinical Midwifery", Dr. Copeman in "Crosse's Midwifery", Drs. Churchill, Ramsbotham, and Blundell, etc., give good cases and descriptions of "*accidental uterine hemorrhage*", as ordinarily happening; but I can find no author giving an account on the diagnosis of such cases as the one related, where no discharge appears externally.

Reading, October, 1852.

BIBLIOGRAPHICAL NOTICES.

THE NATURE, SYMPTOMS, AND TREATMENT OF CONSUMPTION: being the Essay to which was awarded the Fothergillian gold medal of the Medical Society of London. By RICHARD PAYNE COTTON, M.D., Assistant Physician to the Hospital for Consumption and Diseases of the Chest, Brompton. pp. 286. London: 1852.

DR. COTTON'S object has been to present a practical exposition of phthisis, derived from personal observation. His work is divided into three parts, severally treating of (1) the Nature; (2) the Symptoms; and (3) the Treatment of Consumption.

I. NATURE OF CONSUMPTION. In chapter 1, Dr. Cotton points out the relation of phthisis to tubercle as that of cause to effect. By the term phthisis he understands a peculiar morbid condition, which involves, among other consequences, a tubercular state of some of the internal organs. This view he believes to be of great practical importance; for it is the *phthisis* that destroys life; and it is this which must be met by remedies. Of the intimate nature of phthisis, we know very little; but Dr. Cotton dissents from the opinion that it is a poison-disease, and also denies that it possesses any contagious property.

In chapters 2, 3, and 4, we find the following subjects treated of: Mode of Origin, General Characters, and Minute Structure of Tubercle; the Situation of Tubercle; and the Curability of Consumption. The author, allowing the *possibility* of a cure in the last stage of phthisis, believes that in most of the supposed cures, there is merely an arrest of the disease. He has no doubt that recovery may take place in the earlier stages, by removal of the tubercular deposit, or by calcareous transformation.

In chapter 5, the Identity of Consumption and Scrofula is insisted on; and is supported by a consideration of their intermixture in families, their frequent co-existence in the same individual, their mutual convertibility, and their interchangeability, or power of alternation.

In chapter 6, the author treats of the Relation of Consumption to other Tubercular Diseases; especially tabes mesenterica, hydrocephalus, and chronic peritonitis.

Chapter 7 treats of the Relation of Consumption to Diseases of a Different Character. Dr. Cotton discards the idea of any disease, as ague or rheumatism, being antagonistic to phthisis. Fistula in ano, believed by some to be very frequent, "was met with, in 1000 cases, only three times; and although this must be taken with some reserva-