or abnormal cells to be arrested in the lymph or blood-stream passing from the tumour.

Thus we see that the glands of the axilla are first affected in cancer of the breast, and the liver-substance in malignant disease of the intestine. Of course, after a while, the glands and the liver, becoming disorganised, are no longer able to filter out the obnoxious particles, and, eventually, general dissemination takes place. Again, by microscopic examination, the structural peculiarities of the secondary deposits often admit of their being identified with the primary tumour; for instance, in secondary cancer of the liver, not only can the large epithelial cells of the rectum be recognised, but they actually attempt to develop into an adenoid growth having all the characteristics of Lieberkühn's follicles. From these facts, it would seem that the early secondary growths develop from morbid cells derived from the primary tumour. Subsequently, no doubt, the cells of the tissue in which the secondary deposits develop become infected, and thus, after a while, the identity of structure of the secondary deposits with the parent tumour is lost.

The source from which these cells spring, and the cause of their collection into tumours, is the real pathological problem, of which the so-called diathesis is no explanation. Neither do I think that the multiplication of names by which modern pathologists designate malignant tumours gives much assistance in understanding their real nature. What the surgeon removes, and the microscopist cuts into sections, must not be regarded as the disease, but rather as the product of some hitherto unexplained irritation, a portion of which is almost certainly left behind, and which will in time cause a reproduction of the disease. In one way, however, we are much indebted to the microscope, for it has at least taught us that there is nothing obscure in the structural formation of the primary tumour, and that it is formed by the undue collection of the cells normal to the part in which it grows.

I have elsewhere published the results of microscopic investigations, that have led me to entertain the view that the function of the epithelial cells, whether of the intestine, skin, or gland-tissue, is not merely excretory, but that they have a higher function, inasmuch as they are the parents or producers of the leucocytes of the body, and that their nuclei, multiplying, are passed into the submucous or subcutaneous tissue, eventually finding their way into the circulation. Moreover, I have suggested, under certain circumstances, that these nuclei will develop into the likeness of the parents whence they spring. If this view should prove to be correct, or even partly correct, it would in some measure afford an explanation of secondary malignant growths; the young cells, infected at birth, are unable to pass freely into the body, and, becoming arrested, multiply *in situ*, forming the primary tumour; while such as escape are for a time arrested in the glands, where they develop into the likeness of the parents from whence they were originally derived.

As to the nature of this infection, at present we have no direct clue; but analogy would suggest some specific poison, for the course followed by cancer closely resembles what is observed in other diseases known to be due to specific inoculation—for instance, as in pyæmia. In both we have a primary infection, glandular implication, and eventually a general dissemination about the body. In cancer, however, the duration of the disease must be reckoned by months or years, while pyæmia runs its course in days or weeks. In both, the secondary deposits consist in cell-accumulation; in the one, slowly collecting and organising into a distinct tissue; in the other, rapidly accumulating into the formation of abscess.

Again, with reference to a traumatic causation, thousands of blows may be struck on bones without causing acute pyæmic necrosis, just as we see that similar injuries are rarely followed by malignancy. In cases of acute pyæmic necrosis, the primary subperiosteal abscess often teems with minute organisms, and yet there has been no lesion of the skin by which such bodies could have been admitted from the external air. Thus, one is driven to the conclusion that the poisonous organism must have been circulating in the blood, in which it was innocuous; but, when the extravasation caused by the blow allowed it to become stationary, it multiplied, producing all its poisonous local effects. I would venture to raise the question, as to whether the explanation of traumatic malignancy might not lie in some organism accidentally circulating in the blood becoming the cause of active disease, by infecting the cells of a part when left stationary, by effusion into the tissue.

The objection will at once be raised, that such an organism has never been seen, nor has cancer ever been propagated by inoculation. The first is no real objection, for it may merely infer imperfection in our method of observation; nor do I consider the negative experiments with regard to inoculation as conclusive. The demonstration that is occasionally carried out by nature would suggest that such inoculation might take place, if the diseased and sound epithelial cells were kept

sufficiently long in contact. In an instance recently recorded at St. Bartholomew's Hospital, an epithelial ulcer had developed over the internal condyle of the humerus, in a case in which the arm had been closely bandaged to the chest, and kept in contact for two months with an ulcerating cancer of the breast. This auto-inoculation is not of very rare occurrence, but has not hitherto received as much attention from pathologists as the importance of the phenomena would suggest.

POST PARTUM HÆMORRHAGE.

By JOHN BASSETT, M.D.,

Professor of Midwifery in Queen's College, Birmingham.

UNDERSTANDING that the term uterine hæmostatics may be construed broadly, and as comprehending the consideration of the causes and prevention, as well as the treatment, of flooding after delivery, I venture to offer some remarks with the object of ascertaining, as far as may be, the causes which induce an unnatural loss of blood at or near the time of delivery, and then of inquiring whether we have any means in our power of preventing such occurrences.

It is admitted by all obstetric writers that hæmorrhage at the time of delivery is one of the most formidable of the complications which beset the parturient woman, not only from its frequently having a fatal termination, but also from the great damage which it occasions to the general health, and the liability to the development of latent hereditary tendencies, which display themselves under the debility occasioned by great losses of blood. Further, such cases are a cause of so much anxiety and perturbation to the accoucheur, that he requires to be armed with all the foreknowledge which a careful examination of the subject can furnish.

It is assumed that the loss of more than a limited amount of blood at the time of delivery is an unnatural circumstance, and one that brings any case in which it occurs within the domain of pathology.

Hæmorrhage at or near the time of delivery may be roughly divided into four orders: first, those cases in which it occurs from an unusual situation of the placenta; secondly, those cases where it happens from lacerations and injuries to the uterus or placenta, or to the uteroplacental vessels; thirdly, those cases in which it is brought about from certain circumstances which transpire during the progress of the labour and delivery; and, fourthly, those cases in which it is produced by constitutional states of the mother, such as diseased conditions of the liver and kidneys and other important viscera, but more especially by general anæmia, and more rarely by a too plethoric state of the system. It is no part of my present purpose to dwell upon other causes of hæmorrhage, such as the association of pregnancy with fibrous tumours, or cancer, or obliquities of the uterus; nor shall I dwell upon the first two of the divisions which I have named. With reference to the third, I observe that a variety of circumstances transpire during the course of an otherwise natural labour which have a strong tendency to disturb the uniform and rhythmical action of the womb. The well-known influences of hope and fear are under daily observation; and, among other causes, are the tendency which exists in certain classes of society to administer alcoholic stimulants, whereby the force and frequency of the circulation are greatly increased; the tendency which has existed, and does still exist, to help the labours by the use of the finger and the too frequent use of the ergot of rye; also, too rapid emptying of the uterus, from diminished power of resistance, or too rapid delivery by the forceps, or, on the contrary, undue delay in the use of the forceps. Errors in the management of the delivery of the child and of the placenta, are fruitful sources of hæmorrhage, in not permitting the womb to expel the trunk of the child slowly; in not following the nates by the hand, so as to get the placenta detached at the same time that the child is expelled; in not allowing the womb a suitable interval of rest after the expulsion of the child; in pulling at the umbilical cord to ascertain if the placenta be detached; in forcibly extracting the placenta without the concurrent action of the uterus; in not dealing promptly with the placenta when it has become partially detached and the womb is being filled with blood; in not administering ergot of rye and opium, when their use is plainly indicated by the paralysed or spasmodic state of the womb. These various causes are quoted as having a direct tendency to bring about an irregular and imperfect contraction of the womb, whereby hæmorrhage is greatly promoted. In nearly all such cases, a spasmodic state of the womb has been established, in which one set of fibres is acting, perhaps, violently, whilst others are either passive or relaxed. Blood is poured out, which in its turn becomes a source of irritation to the interior of the uterus.

By far the largest number of cases of hæmorrhage come in the fourth division which I have named, and arise from an altered state of the

blood, which induces a weakened condition of the muscular fibre of the body. This may be due to visceral unsoundness, or to malassimilation and defective nutrition. It is now well known that very frequently, during pregnancy, the blood undergoes chemical and physical changes which alter its vital relations. These changes vary in degree and kind in different cases; and if they are associated with defective secretion and excretion, a pathological state of a dangerous character may be established. In former days, these changes were always regarded as being of a plethoric order. Now we know, from an analysis of the blood, that during pregnancy it contains an excess of water; that the serum is deficient in albumen; that the red corpuscles are diminished in number; and that the fibrine and extractive matters are in excess. This is a condition which, in other words, is one of anæmia—a state which, according to my experience, is comparatively common in pregnancy, and one which is associated with those severe floodings which arise from imperfect and insufficient contraction of the womb after delivery. It is well known that in anæmia and chlorosis the muscular fibre of the body is in an incompetent condition, that the action of the heart is most irregular, either from its fibres being weak, or from the blood not imparting its natural physiological stimulus to the walls. It has been shown by Dr. Goodhart, in a paper read before the Hunterian Society, that anæmia may be a cause of heart-disease, and that it produces fatty striation of the muscular fibres. I have met with three or four cases in which heart-disease has been established during a pregnancy which has been associated with anæmia; and I doubt not that, when the muscular fibres of the uterus come to be examined carefully and critically in those cases of hæmorrhage which prove fatal, they will be found to be imperfectly organised, from defective nutrition, and that this, with the altered vital properties of the blood, will be recognised as the principal factors in producing this form of uterine hæmorrhage.

The second issue raised in this paper is, whether cases of uterine hæmorrhage can be prevented? My reply to this is, that in very many instances they can: first, by avoiding unnecessary interference during the progress of the labour, by permitting the delivery to take place slowly, by following the uterus with the hand as it expels the nates, by using expression rather than traction for the removal of the placenta, and by the not too liberal use of the ergot of rye; secondly, in all those cases where, from previous knowledge, I have reason to expect flooding, or where, from a careful examination of the patient, I detect signs of imperfect nutrition and general debility, I adopt a tonic treatment, into which the administration of iron usually enters, with a carefully regulated diet, and suitable hygienic surroundings. By these means, the tone of the health is raised, the muscular fibre of the body is strengthened, and the nervous system is braced, so that nature is able to perform the task she has in hand in a satisfactory manner; in other words, I have for some years paid the strictest attention to the health of pregnant women, and have not the slightest hesitation in declaring that I have seen the greatest possible benefit result therefrom.

CLINICAL MEMORANDA.

SUDORIFIC TREATMENT OF TYPHOID FEVER.

HAVING for many years past effectually treated several incipient cases of typhoid fever, and stopped its ravages, by immediately resorting to active sudorific treatment, vigorously kept up till all abnormal temperature had subsided, I think it well to call the attention of the members of our Association to it, who may have a wider field for testing its efficacy than I have. The cases I have treated in this way came under my notice at the very early stages of the disorder, and were ushered in by rigors, headache, and abdominal tenderness, with acceleration of pulse, and abnormally high temperature. From the physical appearance of the patients, and from the defective sanitary condition of their homes, they left no doubt, in my mind, as to how the disease would eventually terminate if left to run its ordinary course.

I have kept no special notes of the cases I have successfully treated in this way, as they extend over a period of more than twelve years. But they may be summed up in a few words. In about eight or ten hours after commencing the treatment, I found the temperature fall to very nearly its normal standard, the headache and abdominal tenderness cease, and the patient, though suffering extreme weakness, appearing in every other way free from the disease. My usual mode of proceeding, is to wrap the patient well up in blankets, and to cover all with a mackintosh sheet or waterproof apron to prevent evaporation, and, if there be nausea or sickness, to freely administer draughts of soda-water. The action of the skin is then kept up till all febrile symptoms have subsided. Within the last few months I have treated a case in

this manner, with the addition of jaborandi, and feel convinced that it saved my patient many weeks of suffering. I believe that sufficient importance is not paid at the present time to the due action of the skin in the early stages of febrile disorders, when a little assistance on our part would enable nature to throw off the poisonous influence of the disease.

RICHARD RYDER.

SMALL-POX IN BIRDS.

APROPOS of "small-pox in birds," I may perhaps mention the fact that some years ago, a former steward of this hospital was in the habit of breeding a large number of canaries. As these arrived at maturity it was a common occurrence to find many of them dead, and presenting evidence of having suffered from some eruptive disease. It was further observed that, when the hospital contained a somewhat large number of patients, the mortality among the birds increased, and *vice versa*.—

WILLIAM GAYTON, M.D., Medical Superintendent,
Small-Pox Hospital, Homerton.

MALIGNANT DISEASE VERSUS SYPHILIS.

EVERY surgeon, I am sure, reads with pleasure and profit anything from the pen of Mr. Jonathan Hutchinson. In the JOURNAL of March 4th he refers to the clinical differences in character of malignant disease, according to its seat. Referring to certain cases of cancer of the skin of the trunk, it is stated that "In all, the ulceration progressed slowly during many years, caused but little pain, and produced no gland disease." Further on: "The disease of which I speak is most intractable, and, as far as I have observed, recurs immediately after removal." Reference is next made to an interesting case, in which Mr. Hutchinson twice removed the ulcer by the knife, and three or four times by caustic, but without benefit. "As soon as the sore was nearly healed, it recurred."

May a provincial surgeon be permitted to give a case in many respects parallel? Some years ago, a man aged 45, suffering from epithelial cancer of the scrotum, sent for an eminent surgeon, for the purpose of having it removed. The operation was well performed. No one who saw the case had the slightest misgiving regarding its nature, but, as a formal matter, the diseased structure was handed to a practised microscopist in the neighbourhood, who stated that it was epithelioma, without doubt. When nearly healed, it recurred, and was removed again, only to begin to spread when almost completely well. A third time it was taken away, with a like result. At the fourth operation, the testicle, which now appeared to be implicated superficially, was removed. When cicatrization was all but perfect, the surgeon left town for his holidays, and shortly afterwards the patient's medical attendant requested me to perform the fifth operation, as the disease was spreading again. Having the history of the case before me, in a hopeless, half-hearted sort of way I cleared away the diseased tissues as carefully and completely as possible with the knife, and watched the healing process with much interest. Matters progressed very favourably until the healing line was reached, when once more the ulceration began. Such conduct in a chimney-sweeper's cancer appeared to me unique. I saw that operating again was useless, and as I stood pondering at the bedside, my eye rested on the shining bald head of the patient. As a random shot, the question was put as to when his hair first came out. He said his hair began to fall soon after he joined the service, more than twenty years ago. The answer gave the clue. Iodide of potassium was prescribed, when the wound rapidly and perfectly healed, and has so remained.

Last year a lady, aged 60, came to consult me regarding an ulcer on the left side of the nose. She had been recommended by her medical attendant, whose card she brought, to see me regarding removal by operation. The sore, she said, began about two years ago, as a small scab or flattened wart, and continued to increase in size slowly and without pain since that time. The ulcer was now about five-eighths of an inch in length by half-an-inch in breadth, throwing out little discharge, and surrounded by an elevated, clear, glistening border. As she was accompanied by a friend, few questions were asked, and I simply stated that it might be prudent to defer operative interference in the meantime. The patient was given a prescription for tertiary syphilis, requested to use the medicine for six weeks, and then return. She did so, and the sore was completely healed. This was apparently a small rodent ulcer, with a syphilitic origin. We are, probably, yet far from thoroughly understanding the multifarious ramifications of syphilis.

ALEXANDER PATERSON, M.D., Glasgow.

DR. JAMES HYSLOP, of the Royal Edinburgh Asylum, has been appointed resident surgeon of the Pietermaritzburgh Asylum in Natal, the particulars of which appointment recently appeared in our advertisement columns.