and any attempt to do so excited severe pain. When admitted, the boy looked ill. His right thigh was flexed up to a right angle upon the pelvis, and everted. It could be more flexed without pain, but it could not be extended without giving rise to agony. There was a great hard swelling in the right iliac fossa, and swelling beneath Poupart's ligament, and down the inner side of the thigh. The patient's bowels were regular, and motions natural. It should be added that the case had been sent into Guy's Hospital as one of hip-disease. In a few days, the swelling in the thigh became larger and resonant. It was, therefore, freely opened, when pus, gas, and feces escaped. Two incisions were made, one in the thigh, and the other within and above the anterior superior spinous process of the ilium backwards, parallel with its crest. The above cavity was well washed out with iodine-water, and drained. The patient was relieved by this measure, but died a month later from hæmorrhage, due to ulceration of the deep circumflex iliac artery. At the necropsy (156), a large sloughing cavity was entered on passing the finger through the wound beneath Poupart's ligament. The cæcum was felt with an opening into it. On injecting the vessels, it was found that the deep circumflex iliac artery, which lay in the posterior wall of the abscess, was completely divided by ulceration. A clot existed at its free end. Above the ileo-cæcal valve in the ileum were a few ulcers, not unlike healing typhoid ulcers. A large ulcer had perforated the valve, leaving an opening large enough to admit the finger. In the cæcum were other ulcers, one of which had perforated, and led into the abscess-cavity. The iliac abscess had burrowed in the course of the psoas, and had travelled between the muscles down the thigh. The hip-joint was bathed with pus, both internally and externally; the cartilages were deeply stained.

REMARKS.—This case is full of interest; first, in the attack of so-called colic, a month before the boy's fatal illness, when the pain was above his right groin; secondly, in the fact that, when the pain of colic was relieved, a pain passing down the thigh, in the course of the anterior crural nerve was left; thirdly, in the gradual flexion of the thigh upon the pelvis, and its rotation outwards with inability to extend the limb; fourthly, in the formation of an abscess extending beneath Poupart's ligament down the inner side of the thigh, and the presence of flatus in the abscess; fifthly, in the rapid relief which followed free incisions; and lastly, in the purely accidental ulceration of the artery which led to sudden death. Had this mischance not ensued, in all probability a good result would have had to be recorded.

Some ten years ago I saw, with Dr. Smith, of Highbury, a precisely similar case to this, although it was in an older man. In it, the abscess, which was resonant (as in the former case), not only extended downwards, but also upwards into the right loin. I treated it with free incisions, irrigation, and drainage, and the man quite recovered.

CASE LII. Ulceration of the Cæcal Appendix: Concretion: Suppurative Peritonitis.—Edward W., aged 37, was admitted on January 2nd, and died on the 5th, 1874. Having been quite well five weeks beforehand, he had strained himself when at work, and could not afterwards flex the right thigh. He also felt a lump above Poupart's ligament. His present illness began fourteen days before admission, with pain in the hypogastric region, not aggravated by pressure. On December 29th he went to bed as usual, and woke with a distinct sensation of movement in the right iliac region, and with pain. He vomited also, and was purged until January 2nd, when the vomit became stercoraceous; and in this condition he was admitted, with the abdomen distended. A tumour could be felt in the right iliac fossa. There was no hernia. The rectum and the bladder were normal. The urine was albuminous, and full of lithates, of specific gravity 1036. The man died on January 5th.

At the post mortem inspection (3) the intestines were found matted together by peritonitis. The appendix cæci was of port-wine colour, and ulcerated at the apex, with a cavity about it which contained concretions.

REMARKS.—This case well follows the last; since in it, as in the other, the pain was first felt in the right groin above Poupart's ligament, and with it there was some pain in flexing the right thigh. It is to be noticed also that with the acute symptoms there was purging, not obstruction. In fact, in the light of present knowledge, all the evidence pointed to cæcal trouble.

(To be continued.)

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—The third meeting of the session was held at the Royal Kent Dispensary, Greenwich Road, on Friday, December 5th, at 8 P.M. Dr. Horrocks, of Guy's Hospital, read a paper on Inflammation of the Cervix Uteri.

THE PUERPERAL FEVERS.

Read at the Opening Meeting of the Eastern District of the Metropolitan Counties Branch, October 16th.

By ROBERT BARNES, M.D.,
Obstetric Physician to St. George's Hospital.

WHETHER there be a special puerperal fever, a fever sui generis, to be ranked with small-pox, scarlatina, typhoid, rubeola, or erysipelas, is a question still keenly debated. This question I propose to examine by the light of physiological study of gestation and puerperity, and the clinical observation of the disorders that characterise these two states.

We may clear the ground of one source of confusion by admitting that, if we postulate a fever to rank with scarlatina and the other zymotic fevers, then the existence of a special puerperal fever is not proved. But this is a very incomplete and unsatisfactory answer. Women die in childbed, and die in greater numbers than from any other cause, with fever of some kind. Therefore, we must enlarge the question, and ask of what nature is the fever or fevers which assail lying-in women.

Clinical observation will teach us that there is not one puerperal fever, but several. Like Meigs and Arthur Farre, we must use the plural number, and give up the attempt to describe a puerperal fever. The task before us is only to be accomplished by a process of analysis. Thus, to set the problem as it comes before us at the bedside: On the third day after labour we find our patient exhibiting the common signs of fever. She has had shivering, perhaps. The pulse and temperature are over 100; the respiration is accelerated; there is, in short, if not puerperal fever, fever in a puerpera. Thus, by a transposition, or change of terms, we are in the presence of, not a defined specific fever, as the term puerperal fever would imply, but of an indefinite fever. And now our task is to find out what is the nature of this fever. This is to be done by a process of analysis or differentiation, calling to our aid the light that history and close observation of the process of the disease may throw upon the case.

In the first place, we may state two undeniable propositions. 1. The fever implies poison, that is, toxæmia. 2. The poison may have sprung up in the patient's own system, or it may have been taken up from an external source. This great distinction is the first step in the process of differentiation or analysis. I long ago emphasised this division of fevers in the puerpera, by calling those which spring up in the patient's own system, *autogenous*; and those which were due to empoisonment from without, *heterogenous*. These terms have become classical, but their full meaning is not even yet appreciated.

Let us first examine the nature and production of autogenous fevers. These lie at the very foundation of the whole question.

But we must start with a fundamental proposition which distinguishes the diseases of the grávida from the diseases of the puerpera.

The diseases of the grávida are diseases of high nervous and high vascular tension. The diseases of the puerpera are diseases of low nervous and low vascular tension. In the grávida, the balance of osmosis is centrifugal; in the puerpera, it is centripetal. The diseases of the grávida arise out of natural conditions exaggerated in intensity. Thus, the most striking examples of high tension in excess are seen in the albuminuria and eclampsia, and the hæmorrhages of pregnancy. An active process of building is going on, and everything is made subservient to this work. But the moment this work is complete, the reverse process of demolition, and of carrying away the refuse, is begun. Absorption and excretion then are the ruling energies. Of course, an active absorption, commensurate with and subservient to the process of construction, goes on during gestation. But this is a very different thing from the absorption of the refuse stuff which, having served its purpose, has to be cast out from the body. This refuse-stuff, if not duly excreted, may be as poisonous as are the elements of urine if not duly excreted. Hence we see that, in pregnancy, thrombosis, phlegmasia dolens, and septicæmia are extremely rare, whereas, during the puerperal state, they are common.

We might add that the conditions which mark the diseases of the grávida also distinguish them from the diseases of all other persons.

Now we will briefly trace the puerperal process, which, if disturbed, may lead to autogenous fever. The following are the factors to be taken into account.

1. There is the blood of the grávida modified by the processes of construction and nutrition of the embryo and uterus. They are: excess of fibrin, diminished proportion of red corpuscles, increased pro-

portion of water, increase of white corpuscles. These characters are found at the time of labour; and the blood so constituted, differing as it does from the blood of woman in her ordinary state, is the blood in which are wrought the *post partum* and puerperal processes. Nor is the peculiar state of the blood all. The altered blood is associated with universal changes going on in the body. Tarnier reminds us that "Science records day by day new facts which lead us to conclude that, in the pregnant woman, there is not a single fibre or a single drop of liquid which does not undergo some modification." If there have been much hæmorrhage during or after the labour, the blood has become more watery and more charged with fibrin. The excess of albuminoid or colloid materials increases centripetal osmosis.

2. There is the fall of nervous and vascular tension, involving a change in the dynamic state of the circulation.

3. There is a period of comparative rest following labour, of preparation for the active processes of breaking up of the tissue used during pregnancy, now superfluous, and of casting out the refuse-stuff. This period may be stated to be about forty-eight hours. We rarely see evidence of self-empoisonment before the third day.

4. At the end of the second day, the process of disintegration of the uterus and other organs has begun. An immense revolution is at hand. The proceeds of the disintegration of the uterus and other superfluous structures are rapidly taken up into the circulation, and ought to be as rapidly converted and excreted. Absorption revives. The lymphatic vessels and venules have come into active function. If the lymphatic system and liver, especially, fail to modify the waste-stuff brought to them, so as to fit it to enter the circulating blood, then this unprepared, unmodified waste-stuff is noxious, poisonous. Hence one form of toxæmia.

5. But, even assuming that the waste-stuff enters the blood-mass properly prepared or digested, unless it be got rid of *pari passu*, there will be accumulation of waste-stuff in the system. This, again, is a form of toxæmia. Hence there must be easily working excretory organs; the lungs, kidneys, and skin, must be sound.

6. Now it is obvious that both the evils pointed out may co-exist, that is, the conversion of the waste-stuff and the excretion may both be defective. Hence, already we see a complex toxæmia, purely endogenous, derived from no external source.

7. Fresh dangers are at hand. It is a remarkable fact—not without practical interest beyond our immediate theme—that all the successive steps in the history of reproduction are marked by violent lesions of tissue, ruptures, or lacerations. The bursting of the Graafian follicle and ovary, the frequent rupture of the fourchette and of the hymen in coitus, the tearing of the cervix uteri during the passage of the child, the disruption of the placenta from the uterus, the laceration of the perinæum, are obvious illustrations of this proposition. Another fact, less obvious but even more constant than some of the preceding, is the violent bruising to which the parturient mucous tract is exposed during labour. A process which may be likened to glacier-action takes place. The mucous membrane in contact with the head glides down under the influence of friction, separating it to some extent from the submucous tissue. In this movement, the connecting vessels are torn. Hence the ecchymosis commonly seen in necropsies about the cervix uteri and vagina, if performed within a week of the labour. Not only is there commonly found extravasated blood, but a quantity of effused serum in the stretched and torn connective tissue. This condition of the mucous membrane has not hitherto, as far as I know, been considered. I am disposed, however, to think it is often the most important factor in the poisoning process. It is the most active and constant septicode or poison-route.

8. Here, then, are several roads open to the reception of poison from the mucous tract. If no poison collect on any part of this septicode receptive tract, the wounds heal readily and the door is closed. It matters little that there existed an extensive traumatic surface. But if blood or lochial discharge remain in the uterus or vagina, and air find its way into contact, decomposition takes place. A foul fluid bathes the wounded mucous tract, and at some point or other finds an entry into the system. This is still a form of autogenous toxæmia, but it differs from that form which is the result simply of the accumulation of badly prepared or excessive waste-stuff in the blood, by the addition of foul stuff from the uterine discharges. The case has increased in complexity. There is, first, the fundamental state of the blood derived from the gravid process; second, the blood further modified by the waste-stuff from disintegration of tissue; and, third, there is the septic stuff taken up from the wounded mucous tract. Whenever the blood is poisoned, be it with septic stuff or other, the natural process of purification, of excretion of the waste-stuff, is obstructed; the balance between disintegration, absorption, and excretion is lost. The simple septicæmia then, as imagined and described, cannot exist.

9. The puerpera is still open to toxic invasion from other sources. Poisons altogether foreign to her may be brought into contact with the traumatic tract, and be absorbed. Thus, the cadaveric poison from dissecting may be inoculated by the finger used in examination; other poisons, the result of diseased action, clinging to the obstetric finger, may be inoculated in like manner; sponges or linen tainted with similar poisons have been the carriers of poison to the genitals. In some of these instances, it is probable that bacteria play an important part. Certain it is, that poisons may be inhaled.

Thus another complication is added. All the elements of blood-alteration already recited are at work, and are intensified by the new poison from without.

10. Then the puerpera is peculiarly susceptible to the ingestion of the zymotic poisons; typhoid, variola, scarlatina, rubella, erysipelas, act with special virulence in the blood of the puerpera. It has been the fashion to say that scarlatina in a puerpera is scarlatina and nothing more. It is something more. The scarlatina-poison finds in the puerperal blood, loaded with refuse-stuff which it cannot excrete, a medium specially favourable to the development of mischief. The subject may have had scarlatina before. She may have enjoyed the full degree of protection until she became pregnant. Under this protection, contact with the scarlatina-poison may have been harmless. If inhaled or otherwise absorbed, it failed to ferment. It was quickly eliminated. But, if this poison enter the puerperal blood, its elimination is arrested; the morbid train is fired. We have developed a form of toxæmia compounded of the autogenous forms previously described, and of the scarlatina-poison. This is very different from simple scarlatina. In these cases, the characteristic rash and sore-throat are often wanting. It may be doubted whether the zymotic poison always goes through the successive stages of zymosis characteristic of the simple scarlatina. The poison works in a specially prepared field in a special manner. It throws out of order the puerperal process. It arrests or prevents the disintegration-process, the due absorption by the lymphatics, the modifying action of the lymphatic glands and liver, the excretory function of the lungs, skin, and kidneys. Thus we get a complex poison, which cannot be called waste-stuff poison, septicæmia, pyæmia, or scarlatina, but is a compound of all, and perhaps of some new innominate poison, the product of their inter-reactions.

11. Another factor must not be lost sight of. Emotional disturbances play an important part. An emotion-storm may so affect the heart and nutrition that the blood curdles—clots suddenly. The influence of emotions upon secretion and excretion is well known in some conditions. It is not so well known in the puerperal state. But that it may and does profoundly impress the circulation, nutrition, and excretion, is certain. Emotion is in many cases the most conspicuous genetic cause of puerperal fever. Where it is not the primary cause, it may often be a secondary exacerbating cause.

We may summarise the forms of puerperal toxæmia under three heads.

1. The self-empoisonment resulting from the loss of balance between absorption of waste-stuff and its excretion. This may be called *endosepsis*, since the poison arises within the system.

2. Self-empoisonment from absorption of the foul stuff of decomposition in the uterus. This may be called *autosepsis*, since the puerpera takes poison of her own making. This is what has been more especially called septicæmia.

3. Empoisonment from foreign sources. This may be called *exosepsis*.

There may be a simple endosepsis, but autosepsis also implies endosepsis; and exosepsis is a compound of all three.

Endosepsis is not, I believe, communicable or infectious; autosepsis is. The discharges from one puerpera, which are capable of poisoning herself, may poison another puerpera. Exosepsis is doubly infectious; it is infectious as autosepsis and as a zymotic.

Let us endeavour to classify the various forms of fever that occur in the puerpera.

1. There is the simple excretory fever, the result of toxæmia induced by the retention in the system of the waste-stuff of involution.

2. Then there is the fever from toxæmia induced by the absorption of foul stuff from the parturient canal, either absorbed through the mucous membrane, or through the wounds made during labour. This is a compound toxæmia; it is so-called septicæmia, *plus* the toxæmia from retained waste-stuff of involution. The condition is now complex; and new combinations of the noxious elements may arise from their interreactions, which baffle analysis.

3. Limiting our inquiry for the present to the endogenous and autogenous fevers, we next find that the puerperal blood is variously affected by the poisons that enter it. In some cases the poison, entering by the lymphatics and veins of the uterus, finds the blood in a

condition to resist general invasion of the circulation. The poison is more or less localised or spent upon the blood in the pelvic vessels, or in the uterine walls. In the first case, the ingested poison acts as a precipitant upon the hyperinotic blood and lymph, and we have clotting or thrombosis; that is, thrombotic puerperal fever, or phlegmasia dolens.

In the other case, the invading septic stuff, more or less opposed in its progress, causes inflammation in the veins, lymphatics, and other tissues of the uterus and broad ligaments, which is almost sure to extend to the uterine and pelvic peritoneum; hence we have the various forms of metritis, pelvic cellulitis or parametritis, and of peritonitis. These each, in some instances, retain their individuality, but more frequently they merge into combinations, and there result metro-peritonitis, inflammation of the broad ligaments and other tissues.

Sometimes the ingested poison breaks bounds, and affects the entire volume of the circulation. There are at least two conditions observed. In one, the poison pervades the whole system, causing fever, without any tangible tissue-change or inflammation. This may end in recovery, but not seldom it results in death. In the other condition, there is at first pelvic inflammation, metritis, or phlegmasia dolens; but under the continuous imbibition or generation of fresh poison, and the degraded condition of the blood, the local barriers that resisted the first impulse of the invading poison yield, and general toxæmia ensues. This again may issue in death at no distant day, or, if there remain a fair degree of resisting force, distant inflammations may arise, as synovitis, pleurisy, pneumonia, diffuse cellulitis and suppurations in various organs and tissues, sometimes designated pyæmia.

Then we come to the heterogenetic fevers. These may be divided into two classes.

1. Some are due to the inoculation of some foreign poison, as the necrotic poison taken from dissection, or some foul stuff, the result of animal or vegetable decomposition, brought into contact with the wounded parturient canal, or inhaled or swallowed. I suppose there are few who have not had reason to conclude that a puerpera inhaling sewer-gas has, in this way, contracted a fever. This is not necessarily typhoid, although I believe typhoid fever is propagated in this way. The distinction is proved as follows. If the patient be removed from the influence of ordinary sewer-gas, she not unfrequently rapidly recovers, just as she may recover from that form of empoisonment which results from absorption of foul stuff from the uterus, if the supply of poison be cut off, by washing out the uterus; whereas, when she takes in the typhoid poison, she takes in a poison that ferments, that has reproductive power, and, therefore, produces a fever that runs its course.

2. The other class of poisons are the recognised zymotic poisons, as small-pox, scarlatina, rubeola, typhoid, perhaps erysipelas. These poisons, when they attack the puerpera, still so far preserve their special properties, that they run their course, if the patient survive long enough, and may propagate like disease to other puerperæ, or non-gravid persons; but their ordinary clinical phenomena are often masked or changed by the reaction in the blood peculiar to the puerpera, so that the special poison is not always recognised at the time of clinical observation. Its true nature is only made out by tracing back the history of the case, or testing the subsequent action upon other persons. Thus one case of fever, provisionally called puerperal fever, will be traced back to scarlatinal infection, and will further prove its character by propagating scarlatina to other persons. Another case will be traced to erysipelas, and cause erysipelas in others.

From this rapid and imperfect sketch, it will be seen that the puerpera is liable to the invasion of a great variety of poisons inducing a variety of fevers, and that the one constant thing that specialises these fevers is the puerperal constitution.

I have not touched upon treatment. The question of the constitution of puerperal fevers is large enough for one address. It is by far the most important question. Prophylaxis is easier than cure.

POISONING BY SOOTHING SYRUP.—At an inquest, held on November 28th, at Liversedge, Yorkshire, relative to the death of a child, it was stated that the child's mother had administered to it a dose of soothing syrup. Subsequently, she was unable to rouse it, and it died from the effects of the draught the same day. The medical man who visited the child, and afterwards made a *post mortem* examination, found symptoms of narcotic poisoning. The syrup contained paregoric, and the medical attendant stated that half a teaspoonful of the paregoric had been known to cause the death of an infant. The jury returned a verdict of "Poisoned by misadventure."

RHINOPLASTIC OPERATION AFTER COMPLETE DESTRUCTION OF THE NOSE.

Read in the Section of Surgery at the Annual Meeting of the British Medical Association.

By J. WARD COUSINS, M.D. Lond., F.R.C.S.,
Surgeon to the Royal Portsmouth Hospital.

H. B., aged 40, a man of fair complexion and muscular habit, came under my care last March, to undergo an operation for restoration of the nose. About six years ago, he received a severe blow on the face,

which caused pain, swelling, and discharge from the nostrils; and these symptoms continued for several months. Two years since, he had an attack of erysipelas of the head and face, and he then passed through

a severe illness of seven weeks' duration. Ten pieces of bone subsequently exfoliated, with destruction of the entire nose. At the time