In utero the umbilical veins carry the blood from the placenta through the umbilicus of the foetus, part of which joining that in the portal veins enters the liver, the remainder entering the vena cava ascendens. When the placenta is separated from the womb during labour, or when the cord is suddenly tied soon afterwards, this circulation must stop. This condition must lead to the production of a certain amount of passive congestion in the liver, which will also be reflected backwards towards the portal vein. But the outward flow of blood from the child towards the placenta being interrupted as well, a temporary, and of necessity very slight, slowing in the general circulation may be expected. But only a few seconds previous to the tying of the cord other and more important changes begin to take place in the infant's circulation, simultaneous with its first inspiration. In utero the plan of circulation is that of the higher reptiles; now there is going on a change towards that of the mammalia. This transformation is never instantaneously complete, but must of necessity be gradual, and may probably extend in duration from moments to months in different individuals. So we may safely conclude that in every case for the first few minutes there is a double kind of circulation in the heart, partly through the four chambers, as in the adult, and partly through the foramen ovale, ductus arteriosus, &c., the Eustachian valve also likely acting imperfectly. The effect of this "setting-to-right" process in the heart on the general circulation will be evident. A feeble circulation must occur, which will be more marked in parts removed from the heart. This is how I account for the blue, cold extremities observable in infants during the first few hours, and very different from the bright rosy hue seen on the subsequent visits. The coldness of the hands and feet may be accounted for by exposure at the time and evaporation of moisture from the body, but I have noticed it in rooms heated up to an almost unbearable extent, and can only attribute the extremely low temperature to enfeebled circulation. Considering the tortuous course of the blood supply to the liver, and the innumerable ramifications and subdivisions of the bloodvessels in its substance, there also must a passive congestion take place, and which will in no way be diminished by the separation of the placenta or tying of the cord already noticed. In proportion to the strength of the child, the capacity of the inspirations, &c., the passive congestion of the liver will be mild or severe, long or short in duration; but in the majority of cases, though unattended with danger, it is severe enough to lead to an excess of biliary colouring matter in the blood and its appearance on the skin and sclerotic. This phenomenon we term "icterus neonatorum." In the natural course of things the hears recovers from its confusion of currents, and a healthy circulation is speedily established. The passive congestion disappears, and so also the icterus which resulted from it. In a weakly infant the congestion in the liver will be more marked and prolonged—a fact which corresponds to the observations of every midwife, that icterus is deeper in puny children than in the robust. Thus we see the same symptoms arise here that we would expect in an adult suffering from congestion of the hepatic organ, and the fretfulness and irritability often noticed for the first few days in the child may be due to this cause.

If my theory be correct, then icterus neonatorum is the result of a pathological process, and not merely a spurious jaundice, or a mere discolouration of the skin, or due to the activity of the skin to get rid of the surplus of bile in the blood &c., as various writers have held. The older authors, who maintained that it indicated a serious pathological condition, though exaggerating the dangers, came much nearer the true state of matters. But even they were not very far wrong in attributing dangers to the usually evanescent and simple phenomenon; for, to my mind, those cases in which an apparently healthy child, without any other known cause, will within a few days of birth be seized with a fatal hæmorrhage associated with jaundice, are merely instances of exaggerated and hopeless forms of the same pathological process. It is easy to understand how, in such a case, when the passive congestion has once developed, if the heart fails from any cause to respond to the demand, complete stasis of the blood will occur, followed by paralysis of function and more or less complete disorganisation of the liver substance. Bile and waste products will accumulate in the blood, the delicate walls of the capillaries throughout the body will be impaired, and effusions of blood take place under the skin, mucous membrane, &c., till the child sooner

or later dies of exhaustion. This appears to me to be the morbid history of the case I have described, but being a general practitioner, and having to consult the feelings of my patients, I was unable to verify my statements by a post-mortem examination. To my mind, also, it seems possible for the liver to be the primary seat of affection in those cases of hæmophilia in which no trace of jaundice occurs.

Bury, Lancashire.

A CASE OF PAROXYSMAL HÆMATINURIA, WITH FUNCTIONAL ALBUMINURIA.

By AMBROSE E. L. CHARPENTIER, M.B.

A. B—, aged thirty-five, married, sent for me to see him on Feb. 15th, 1887. He was said to be suffering from the effects of a cold. I saw him, and elicited the following particulars. His father died of apoplexy, and his mother of kidney disease. Two of his sisters died of phthisis. One brother and one sister are alive and well. The patient has had the usual infectious diseases of childhood, but up to the present has not had any serious illness, though never having very good health. For the first twelve years of his life he lived in a damp and low-lying part of Oxfordshire; since then he has lived in London near the Thames until four years ago. He has never had ague or any intermittent fever. Four years ago he became very thin, and suffered from cough and dyspepsia; he was consequently advised to leave the neighbourhood of London. He now (1887) resides in a damp and cold part of Middlesex. Within a quarter of a mile of his house are three streams and some acres of marsh land, which latter are in winter quite submerged. He has taken a great deal of out-door exercise, playing cricket and lawn tennis, and frequently taking long walks. He has always been moderate in the use of stimulants, but has generally eaten heartily. Two years and a half ago the patient went out, when he got wet and was chilled. On reaching home he had some hot drink and went to bed. On the following morning he suffered from much pain in the loins and thighs, and passed thick porter-coloured urine. He had a day's rest, and on the symptoms abating resumed his employment as usual. Since then he has had a similar attack whenever he has had a chill. A few months ago he was anxious to assure his life (he having been refused once before), and was examined by the local referee for the company, who was inclined to accept his life; he was, however, rejected on the ground that the former examiner had reported the presence of albuminuria. This led to a more thorough examination, which showed that albumen was present only after meals.

On the evening of Feb. 14th the man received a chill. I saw him on the 15th and found him very thin and anæmic, with a yellowish colour of skin. He complained of great pain in the loins and of feeling very cold. He had passed urine of a dark-brown colour and very thick. The loins were tender on pressure. The lungs and heart were apparently healthy. Pulse 100, compressible. The urine, on standing, separated into two layers, the upper being clear and brown in colour, the lower being thick and almost black; specific gravity 1030; acid; about one-tenth albumen; large quantity of urates and phosphates; loaded with urea. Nitric acid in excess produced a solid mass of crystals in the test tube. The guaiacum test gave the blue reaction. Under the microscope, mucus, granular debris, epithelial cells, crystals of phosphates, and a few blood-corpuscles were seen. The patient was ordered light non-nitrogenous diet, with warm drinks and a stimulant once a day; a mixture of quinine and digitalis every four hours; cream or glycerine after each meal; and one of the digestive ferments with all food to aid the digestion.

Feb. 18th.—Patient has no pain. Urine in the morning contains blood; cloudy; not high coloured; sp. gr. 1024; no excess of phosphates; no albumen. After dinner: Urine contains albumen as before; nitrate of urea (by HNO_3) one-third volume of urine. Ordered iron, quinine, and arsenic three times a day; diet to be non-nitrogenous; to clothe warmly and to remove to a warmer part of the country. Neither lying in bed, exercise, nor cold bathing made any difference to the albuminuria.

In the month of May the patient removed to the south coast. The urine after meals still showed about one-twelfth

volume of albumen, but it was not high-coloured or cloudy. In August, after light dinner with digestive ferment, the urine contained no albumen, but after a similar meal without the ferment albumen was found to be present as usual. This was repeated, and showed only a trace of albumen with the ferment; usual amount (one-twelfth volume) without. The urine was pale, and there was no excess of urea. The man was gaining in weight, and was taking cod-liver oil. In May of the present year the patient was still increasing in weight, and the albumen had been gradually lessening. He had no constitutional sign of kidney disease. The urine after dinner, without artificial ferment, was clear and light-coloured; it required careful testing to show any trace of albumen. The man was advised to continue taking tonics, and to carefully diet himself.

Remarks.—This case shows several points of great interest bearing on the important subject of albuminuria. Firstly, as to nomenclature: Although the foregoing is a typical case of functional albuminuria, as described by Dr. S. Mackenzie, Dr. Pavy, Dr. Ralfe, Dr. Johnson, and others, yet, taken in connexion with the hæmatinuria and general bad health, it most certainly cannot be termed "physiological." In this instance, indeed, "post-cibal albuminuria" would be a more appropriate term. Dr. Ralfe could hardly have found a case more suited to illustrate his theory as to this disease, with the important exception that between the paroxysms the urine has not contained an excess of urinary pigment. As to the cause: In this instance we have an *embarras de richesses*. The family history was found to be bad; the previous history of the patient was unsatisfactory from a gastric and renal point of view; and lastly, in accordance with Dr. Dickinson's theory as to the etiology of the hæmatinuria, the patient had for many years lived in cold, damp, and low-lying districts. The course of the paroxysms and the state of the urine are typical, but the progress of the case has been most satisfactory, though it is uncertain whether the credit should be given to the warmer climate, the diet, or the drugs. Another interesting point is the apparent influence of the artificial ferment on the albuminuria. One case affords but small data for generalisations, but this seems to open up a field, at all events, for further experiments. It is known that an excessive meal of eggs will produce albuminuria, as the ingestion of a large quantity of sugar will produce glycosuria. Similarly, some chemical substances will cause glycosuria, and others albuminuria. The two conditions bear a close analogy, which, however, requires further working out. They both are in some degree equally connected with the vaso-motor system, and each is connected with a separate function of the liver. So, as there are cases of functional albuminuria, there are also cases of glycosuria without any perceptible organic change. In the former case the hæmolytic action is excessive, while in the latter the glycogenic function is increased. With regard to the albuminuria: Can it be that, by the combined action of cold and a possible malarial factor, a poison is produced in the blood, which may either aid in disintegrating the corpuscles, as other malarial poisons do, or irritate the vaso-motor centre, or do both, and thus produce a paroxysm of hæmatinuria? Does this act in a similar manner, but to a lesser degree, during the intervals producing the albuminuria, or is a more diffusible form of albumen formed by the dyspepsia, of which almost all these patients complain? As to treatment, that suggested by Dr. Ralfe appears effective; but, in addition, I would suggest the use of one or other of the concentrated digestive ferments.

Uxbridge.

ARBROATH INFIRMARY.—The forty-fourth report was submitted to a meeting of the subscribers held on the 16th inst., the president of the institution (Mr. James Muir) in the chair. It appears the infirmary has been kept in a high state of efficiency, and the financial condition was satisfactory. One hundred and sixty-one patients were treated during the year, with only eleven deaths. Including the balance from last year, the ordinary increase amounted to £1007 14s. 10d., and the expenditure to £819 16s. 6d., leaving in hand £187 18s. 4d. A legacy of £100 had been added to the endowment, which now amounted to £9836 9s. 10d., exclusive of the Panmure annuity of £50. At the commencement of the year a change in the medical department had been introduced; four attending surgeons were appointed instead of two, each serving for six months.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF STRANGULATED ENTERO-EPIPLOCELE.

BY OWEN BOWEN, M.R.C.S.

JOHN S—, aged fifty, had always enjoyed good health, but for the last six years he had had a lump, measuring 3 in. by 2 in., in his right groin, of which he took no notice—that is to say, he never sought medical advice about it, or wore a truss. Occasionally he had been troubled during this period with slight attacks of biliousness and epigastric pain, and had observed that at these times the lump would get somewhat larger and harder. He did not think it had anything to do with the bilious attacks, but attributed them to "wind," and treated himself invariably with a largely advertised nostrum, in which he has, or had, great faith. On the evening of Dec. 12th, 1887, he was suddenly seized with pain of a griping character in the epigastric region, soon followed by vomiting. Both symptoms he again attributed to wind, and consequently swallowed five of the pills, but they were soon rejected. During the night he was able to keep nothing down. The following morning he took two more of the pills, and subsequently some Epsom salts, but, as he said, failed to effect a passage. Being headstrong, he would not consent to seeing a medical man, and so he went on till the evening of the 16th, when his brother insisted upon my friend, Dr. J. F. Gordon of Maghull, being called to see him. The patient by this time was worn and visibly emaciated, and complained of the constant sickness and of paroxysmal pain in the epigastrium and round the umbilicus. His pulse was not much quicker than normal—about 80. Dr. Gordon examined the usual hernial sites, and discovered the lump in the right groin, but upon being told that it had existed for six years, his first impression was that this was the sole cause of the man's illness was to some extent shaken, and he resorted to stomachic sedatives and morphia, with outward applications over the abdomen of a soothing character, there being no impulse on coughing or pain on manipulation. On the 17th the patient's condition was much the same, the vomiting still persisting, though a little weak brandy-and-water was not so quickly rejected. The pulse was no quicker and the pains were not so frequent. On the morning of the 18th, the pulse being feebler and having gone up to 100, and the other symptoms persisting, the vomited matter being now decidedly stercoraceous in character, Dr. Gordon impressed upon the brother the necessity of having a second opinion, as he felt convinced that strangulation existed and that operation was imperative; so, having obtained his consent, he sent for me. It was 6 P.M. when we saw the patient together. We found the pulse had risen to 110, the nose and ears cold, and the expression anxious. On examining the tumour, we came to the conclusion that immediate exploration was essential, and, having had the patient's permission to operate, we proceeded to do so without further delay. Dr. Gordon administered chloroform, and I, failing by gentle taxis to produce any diminution in the size of the hernia, found, after opening the sac, which I thought necessary considering the length of time since the first symptom was noticed (six days), a mass of omentum, and behind it and to its inner side a knuckle of deeply congested intestine. There was a good deal of blood-stained serum in the sac. Having divided the constricting part I was able to reduce the intestine, but reduction of the omentum was not so easily effected, the cause being probably adhesions. I therefore ligatured it close to its neck in two halves with strong silk, removed it, and left the stump at the bottom of the wound, hoping thus, if the patient survived, to enable him to wear a truss with comfort. The intestinal hernia was apparently a direct inguinal, and the omental portion indirect. The edges of the incision, about an inch and a half long, were brought together by three silver sutures, and a little bit of drainage tube was left in, to be removed next morning; iodoform dusted over, lint squeezed out of perchloride of