was a pale, unhealthy-looking woman, with decayed and inefficient teeth, and a flabby, indented tongue. She menstruated profusely every three weeks, her bowels were obstinately constipated, and she passed less urine than before this illness came upon her. She could only get her meals at long intervals, as her occupation kept her walking for five or six hours at a time. When she did get them she was accustomed to eat heartily, her favourite food being hot heavy cake, pastry, and weak tea. She owned to drinking nine or ten cups of this beverage daily. Her family history was unimportant. After careful examination, I could find nothing amiss except in the stomach, where the gastric resonance extended from the fourth intercostal space to an inch below the level of the navel in the left nipple line, *i.e.*, about seven and a half inches, and the stomach caused a visible prominence in the abdominal wall. At intervals she would eructate offensive gas, and be greatly relieved by this proceeding; and after each eructation the abdominal swelling would grow less, until the gas had collected again. The pain was not limited to a small spot, but extended over the epigastric and umbilical regions, and was also felt in the interscapular space. Consequent on the vomiting, she suffered from severe headache; and complained of great weakness in the legs. When her abdomen was shaken, and auscultated at the same time, the splashing in the stomach were plainly audible. I attributed her symptoms to impaired digestion, caused by large and unwholesome meals, resulting in enlargement of the stomach cavity, and weakening of its walls; the pain being caused probably by stretching of the gastric nerves from over distension of the stomach by the gas which was formed in greater abundance after food had been taken, and also by the muscular soreness a result of the incessant vomiting. I ordered her a milk-diet, and an aromatic mixture, containing bismuth, strychnia, and hydrocyanic acid, three times a day, and a drachm and a half of Carlsbad salt every morning. A week after (November 24th) she came again, and reported herself no better, but suffering from an attack of diarrhoea as well. I prescribed some astringent powders, and a mixture with nitro-hydrochloric acid and quassia, and Morson's pepsin-powder. The diarrhoea continued till the 26th, when it stopped, leaving her much weaker, and her stomach still unable to take more than small quantities of milk. I advised her to rest in bed for an indefinite time, and to continue the mixture. On December 3rd the diarrhoea returned, but was soon checked by chlorodyne. She went on pretty well till January 8th, resting in bed, and limiting herself strictly to a diet of milk, varied at times with barley-water and a raw egg. On January 8th she complained that the pain in her stomach was worse, and she was ordered opium and belladonna liniment, which gave great relief. At her urgent request, I permitted her to get up on January 29th; but this experiment was followed by a sharp attack of vomiting and diarrhoea, with menorrhagia, which sent her to bed again, and the pain and sickness, which had been partially in abeyance, returned as severely as ever. I had suggested a trial of the siphon-tube previously on two occasions; but she had been dissuaded, by the solicitations of anxious friends, and also by a medical man of many years' standing, who assured her it would be "the death of her," and averred that such a mode of proceeding was altogether preposterous and unprecedented. At last, on February 5th, 1880, I got the better of her fears, and introduced the tube, with the usual consequences of nausea, retching, and vomiting of tough, gluey mucus, but no blood. I used a pint of a weak solution of Cond's fluid; and after the operation, in spite of the violent straining and vomiting, she said she felt better. I continued this on the 6th and 7th, when she felt so much relieved that she thought she would try to do without the washing out for the next day. I therefore ordered her to take fifteen-grain doses of hyposulphite of soda every four hours, and to adhere, as before, to her simple diet. I may say here that I had prohibited the use of tea, coffee, and alcohol, from the commencement. On the 8th the medicine seemed to exert no salutary effect whatever; therefore, at her urgent request, I resumed the tube on the 9th, and discontinued the medicine.

The disturbance on the introduction of the tube gradually lessened, and, by the 15th, she was able to walk half a mile to my house, to have the operation performed there. On February 22nd, she seemed much better, and could take food with little pain and no vomiting, and the formation of gas was now reduced to a minimum; therefore, on February 23rd, I did not use the tube. It had, however, to be resumed on the 24th, no disturbance being now caused by its use, and was continued once daily until March 3rd, when I intensified the treatment by siphoning the stomach morning and evening, instead of in the morning only as heretofore; and at each sitting I used two solutions: the first being always either a weak solution of sulphurous acid, *B. P.* (half a fluid-ounce to a pint of water), or of salicylic acid

(two drachms to a pint of water); and the second pure spring water. She also took a mixture containing Carlsbad salt every morning before breakfast. She gradually improved in health and appearance, and by April 7th had gained five pounds in weight. She weighed 125 lbs. on November 17th, 1879, and 130 lbs. on April 7th, 1880. I now discontinued the evening washing, and, on April 16th, provided her with a tube to use herself, and altered the lotion to the original one of Cond's fluid. She persevered in this treatment until May 22nd, then used the tube only every other day, and finally discontinued it entirely on June 2nd, being now free from pain, flatulence, and vomiting, and able to eat a plain simple meal without annoyance to herself or her friends. On June 24th, 1881, she was enjoying capital health, walking on an average ten miles a day, weighing 137 lbs., and stating that she had not felt so well for twenty years. No nutrient enemata were used in this case.

[To be continued.]

ON PICRIC ACID AS A MEANS OF DISTINGUISHING ALBUMEN FROM PEPTONE.

By GEORGE JOHNSON, M.D., F.R.S.,

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AMONGST the few objections which have been raised to the use of picric acid as a test for albumen in the urine, is the statement that it forms a precipitate or coagulum with peptone, which is indistinguishable from that which it gives with albumen. If this statement were in accordance with facts, and if peptone be ever found in the urine, the use of picric acid as a test might be a source of confusion. The attention of my son and myself having been directed to this subject, we find that nothing can well be easier than to distinguish the precipitate which picric acid forms with albumen from that which it gives with peptone. We have experimented in the usual way, both on peptonised white of egg and on fibre of meat. The white of egg and meat fibre respectively were digested for some hours at a temperature of from 90° to 100° Fahr. in water acidulated with hydrochloric acid, and mixed with Bullock's pepsina porci. The liquid was filtered, and freed from the small amount of albumen which it was found to contain by boiling and a second filtration. We thus obtained a clear liquid peptone, which was coagulable neither by heat nor by nitric acid. On the addition of a saturated solution of picric acid there was an abundant gelatinous precipitate of peptone, *but this precipitate was immediately and completely redissolved by heat below the boiling point, and reformed on cooling.* Further, we found that the peptone, precipitated by picric acid, was completely dissolved by the addition of a few drops of nitric acid. Here, then, we have two simple and certain tests, by means of which albumen may be distinguished from peptone. The coagulated albumen, which is thrown down by picric acid, is always rendered more opaque and coherent by heat, and is insoluble in nitric acid; on the contrary, peptone, which is thus coagulated, is readily dissolved, both by heat and by nitric acid. The use of picric acid as a test, therefore, so far from tending to the confusion of albumen with peptone, will be found to be the simplest and most effectual means of distinguishing these two compounds, and even of separating them from each other when they co-exist in the same liquid. If the mixed precipitates, formed with picric acid, are heated, and then placed on a warm filter, the dissolved peptone will pass through, while the coagulated albumen remains on the filter.

Another means of separating dissolved albumen from peptone is that before referred to—*viz.*, coagulating the albumen by heat, and then separating it by filtration.

It has been asserted that peptones occur in the urine. This may be a fact, but with our present knowledge of this subject I feel some doubt as to the truth of the statement. My conviction is that if it ever occurs it must be a rare and exceptional phenomenon. Within the last two years, during which, at the suggestion of my son, I have used picric acid as a test for albumen, I have tested with it some hundreds of specimens of albuminous urine, and although I have not always applied heat to the urine after adding the picric acid solution, I have done so in a large proportion of cases, and in not one single instance have I found that the precipitate formed by picric acid has been either wholly or partially redissolved by the application of heat, but, on the contrary, it has invariably been rendered more dense and opaque. In almost every instance, when I have not heated the specimen after coagulation by picric acid, I have added nitric acid to another portion of the same urine, and have thus shown the presence

of albumen, except when the amount of albumen present had been too small to be detected by the nitric acid test—most of these being the urines of convalescents from acute albuminuria in which, shortly before, the presence of albumen has been indicated by heat and nitric acid. Now since peptone is not coagulable by nitric acid, it is clear that when the urine is found equally coagulable by nitric and by picric acid, the case is not one of peptonuria. And I infer that amongst these numerous cases there has not been one in which the urine has contained peptone.

It would seem *a priori* probable that peptonuria would be as rare a phenomenon as the so-called chyluria. This, however, is certain that, with the modifications of the picric acid test, to which I have referred, there can in future be no difficulty in detecting peptonuria when or if it does occur, or of distinguishing it from the far more common condition, albuminuria.

It has been customary of late to speak of various kinds of albumen, but this surely is not the language of scientific chemistry. There are various albuminoid bodies—such as, for instance, fibrine, casein, etc.—but, of albumen, there is but one kind, whatever may be its source. The albumen which is found in the urine is a derivative of blood-serum, and is always one and the same, although its behaviour with reagents will differ in accordance with the state of combination and of admixture in which it exists. Thus, albumen in alkaline, or in some neutral urines, is not coagulable by heat; and, again, the presence of a small quantity of a mineral acid, or a larger quantity of a vegetable acid, results in the formation of an acid compound of albumen, in which no amount of boiling will cause coagulation. The common practice of adding acetic acid to urine before applying heat, is likely to mislead by the formation of such an acid compound, not coagulable by heat. A small quantity of albumen, therefore, often escapes detection by this fashionable but fallacious method of testing. On the other hand, picric acid has not only the advantage over heat and nitric acid of being so sensitive that it will indicate the presence of albumen in a specimen experimentally diluted beyond the point where the other tests fail to detect it, but it acts equally well in acid, neutral, and even in alkaline urines; for, although the coagulation of albumen by picric acid is prevented by caustic alkalis, I have not once, in examining some hundreds of specimens, found it necessary to acidulate the urine before adding the picric acid. Another advantage of the test is, that it consists of a single cheap substance, which is not liable to undergo chemical change by being kept either in a solid form or in solution; and, without making seemingly invidious comparisons with other tests which have recently been recommended, this, at any rate, may be said of picric acid, that, in its action, it is singularly free from sources of fallacy. In fact, my estimate of the value of picric acid as a simple, certain, and most delicate test for albumen in the urine, has risen in proportion to my increasing experience of its efficacy. I confidently predict that it will soon come into general use; and one good result of the common employment of so trustworthy a test will be, that the next generation of practitioners will see fewer cases of incurable degeneration of the kidneys than daily come under our notice at the present time. For the history of a large proportion of these cases is, that some ten, fifteen, or it may be twenty years ago, there was an acute affection of the kidneys with albuminuria, which was supposed to have passed away; but the complete freedom of the urine from albumen was not ascertained by trustworthy, and frequently repeated, tests. The recovery was incomplete; an unsuspected latent disease has been insidiously making progress, until at length some of the many distressing results of degeneration of the kidneys bring the patient again under medical observation, when it is only too obvious that, not only have the kidneys in the course of years become incurably diseased, but that many other organs and tissues have become involved in the morbid process. There is, then, little more to be done than to watch the progress of the disease to its inevitably fatal result.

The calamitous results to which I have referred may, in a large proportion of cases, be prevented by the careful watching and treatment of recent cases of albuminuria, with a determination on the part of the practitioner that the patient shall not be declared convalescent until the most delicate available test fails to detect the smallest trace of albumen in the urine at any period of the twenty-four hours, and for many successive days.

It cannot, in my opinion, be too emphatically declared or too generally known that, while a fraction of a grain of saccharine matter per ounce is a normal constituent of all urines, the smallest trace of albumen is abnormal and pathological; and, if permanent, it has in it the germ of future trouble, and, it may be, of irreparable disaster.

ERYSIPELAS AND ECZEMA IN A NEW-BORN INFANT.

By HERBERT J. ILOTT, M.D., Bromley, Kent.

Mrs. S., aged 28, was attended by me in her second confinement on December 8th. The labour was natural, and conducted, as far as possible, with antiseptic precautions. The hands were washed before and after each examination with carbolic solution, and the examining finger lubricated with thymol jelly (Richardson's). The placenta was removed by expression, and the vagina syringed out with warm carbolic solution. The external parts were washed with the same, and Southall's absorbent pads applied to receive the discharges. The after-progress of the mother was in every respect satisfactory, the discharge being small in amount, thin and free from odour. The infant (a male) when born was small, but well formed and nourished. Nothing abnormal was noticed with regard to it until the 14th, when it was shown to me by the nurse, and found to have a slight degree of purulent ophthalmia. The nurse was directed to bathe the eyes frequently with tepid water, and to apply at short intervals a tannin lotion. The ophthalmia quickly improved under this treatment. On the 18th, the infant cried a great deal, and a redness of the skin was noticed which, commencing near the umbilicus, spread over the abdomen and thorax. By the next day, nearly the whole surface of the body was covered with a deep redness. On the trunk, especially on the sides of the thorax, were numerous vesicles and bullæ filled with a clear fluid. Several of the bullæ had coalesced. The fluid soon became thick and yellow, and the bullæ, rupturing, left large flakes of epidermis on the skin. The redness subsided, leaving the surface of a yellowish red hue. The epidermis peeled off in large flakes over the body, except on the head and the penis and scrotum, which parts were very slightly affected. The treatment adopted was bran baths, with a lotion of zinc oxide, liquor plumbi, and glycerine. Internally, a saline mixture, with carbonate of magnesium, was given. During desquamation, vaseline was applied with a large camel's hair brush. By December 31st the desquamation had almost ceased, and the surface was healthy, with a few papules here and there. On the evening of the 31st, the infant was taken down stairs, and it is supposed that he caught a chill, for he screamed violently during the night, and next morning the skin was again bright red, the face being much more inflamed than during the first attack. There was soon oozing of fluid from the face, forming yellow crusts and bullæ, and vesicles, discharging a yellow fluid, formed on the body.

The same treatment as before was ordered, with the addition of small doses of quinine; as this, however, caused vomiting, and the child cried very much, a mixture of bismuth and soda, with aromatics, was substituted. On January 8th, the surface was in a general state of desquamation, the scales of a yellowish white, colour, resembling bran. The eyes were quite clear and bright; the child slept well, and took nourishment freely. The mother's milk being very scanty, he was given in addition Swiss milk and white wine whey, which was taken freely.

On the 10th the face was clear, but desquamation was going on over the scalp and back. The bowels were regular, motions healthy. The surface, from which scales had separated, was of a bright pink hue.

On inquiry I found that the mother who, as a rule, enjoys good health, but is not strong, had suffered during pregnancy from leucorrhœa with a yellowish white discharge. She had never had any skin-disease; nor had the father. The father's aunt, who was staying in the house, told me this history. About thirty years ago, while standing at a cottage-door in June, the weather being cold and snow falling, she felt a sense of swelling and irritation of face and head. After reaching home she was laid up with erysipelas of the head and face, extending to the arms and trunk. The attack was very severe, and she was ill from it for ten months. About two years after this she again got a chill, and was laid up with a similar attack for a like period. Although she has never had a recurrence of erysipelas, she is very subject to irritation of the skin from the effects of extreme heat or cold. She is also subject to urticaria, more especially if she venture to eat salmon. As a child, she suffered from redness and oozing of watery fluid from the bends of the joints.

The infant's grandmother, on the mother's side, has had more than one attack of facial erysipelas, the first occurring at the age of 52. His aunt (mother's sister) has had several attacks of eczema, which seems to be provoked by the effects of heat or cold winds.

I may add that I attended the eldest child, a boy, in August, 1860, when eighteen months old, for erythema of the fugacious type,