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THE

# Canadian Journal of Medical Science.

A MONTHLY JOURNAL OF BRITISH AND FOREIGN MEDICAL SCIENCE, CRITICISM, AND NEWS.

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SUBSCRIPTION, \$3 PER ANNUM.

Correspondents will please address all communications, remittances, &c., to the Editor, 57 Adelaide Street West.

TORONTO, MARCH, 1880.

## Selections: Medicine.

### LATENT ALBUMINURIA: ITS ETIOLOGY AND PATHOLOGY.

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

Professor of Clinical Medicine; Senior Physician to King's College Hospital.

It is a matter of common and in fact everyday observation, that the urine of persons apparently in perfect health is often found to contain more or less albumen. The discovery of what had been a latent and unsuspected albuminuria is often made by accident. Within the last twenty years, at least half-a-dozen members of our profession have come to me with essentially the same statement, which was to this effect: "I was testing some albuminous urine, when it occurred to me to compare the action of the tests upon a presumed healthy specimen. I therefore tested my own urine; and to my dismay, I found it highly albuminous." During the last few months I have been consulted by three men, each of whom believing himself to be in good health, and having proposed an insurance on his life, had been found to have albuminuria by the medical adviser of the insurance-office. Quite recently, an apparently healthy young man told me that, seeing his medical brother testing some albuminous urine, he said to him jokingly, "You may as well test mine"; and the result was that it was found to contain an abundance of albumen. About the same time, a surgeon called on me and said that he had been made very anxious by the accidental discovery that one of his children had albuminuria. The eldest son, who was studying prac-

tical chemistry, had busied himself in testing the urine of every inmate of the house, when he discovered that a younger brother, apparently in good health, and attending a day-school, had albuminuria.

These are a few instances out of a large number that have come under my observation in which the existence of albuminuria, heretofore latent and unsuspected, has been discovered as it were by accident.

The attention of the profession has recently been especially directed to the subject, of what I propose to call latent albuminuria by several physicians, especially by Dr. Moxon (*Guy's Hospital Reports*, 3rd series, vol. xxviii), by Dr. Clement Dukes (*British Medical Journal*, Nov. 30th, 1878) and by Dr. Saunby (*British Medical Journal*, May 10th, 1879; also *Birmingham Medical Review*, July and October, 1879). My main object in this communication is to maintain, first, that this latent albuminuria—albuminuria, that is, unassociated with any other evidence of functional disorder or structural disease—may, by a careful inquiry, be traced back, in a very large proportion of cases, to some probable exciting cause; secondly, that the presence of even the smallest trace of albumen in the urine is always pathological, never physiological, as I have somewhere seen it suggested that it may be; and that the neglect of this indication of a pathological condition and tendency, especially such negligence as involves repeated exposure to the exciting cause, may convert a temporary and occasional into a persistent albuminuria, which sooner or later, though it may be after many years, will result in a fatal disorganization of the kidney.

In prosecuting the important practical inquiry into the probable cause of a recently discovered albuminuria, we shall not unfrequently come upon a history more or less clear and definite of an acute nephritis, either with or without dropsy, dating back for a period varying from a few months to several years. The acute renal disease may have been the result of exposure to cold and wet, or it may have occurred in connection with one or other of the following diseases: scarlet fever, measles, diphtheria, erysipelas, typhus or typhoid, pyæmia, rheumatic fever, etc.; or it may have been associated with the puerperal state, either before or after parturition. The acute symptoms having passed away, convalescence has appeared to be established; but, in some cases, the patient having been kept under careful observation, the albuminuria has been found to continue for months and years. In other cases, there has been a less careful and prolonged observation, and the history, therefore, is less complete. Convalescence having been apparently established, no further examination of the urine had been made until after an interval of months or years, when albuminuria is found to be present, and there is great reason to believe that it has continued from the time of the previous illness. The practical lessons to be deduced from facts, such as these, which are matters of every-day observation, are: 1. To test the urine for albumen repeatedly during the progress of all febrile and inflammatory diseases until convalescence has been completely established; 2. When, in the circumstance referred to, albuminuria has been found to exist, to keep the patient under observation, and to test the urine until it has been found continuously free from albumen; care being taken to test for albumen not only after rest in bed and before breakfast, but after food and exercise. As a general rule, it will be found that, whatever may be the cause of the albuminuria, the albumen is twice as abundant after food and exercise as before breakfast; and I have met with a considerable number of cases in which the urine before breakfast having been free from albumen, is found to be more or less copiously albuminous after food has been taken. In all cases, therefore, of actual or suspected albumin-

uria, I ask to be supplied with two specimens of urine: one passed on rising in the morning, the other secreted two or three hours after a meal. In some exceptional cases, food has less influence than exercise on the production of albuminuria. A distinguished London physician, whose successful career was cut short by degeneration of the kidneys, found that, at the onset of his malady, albumen appeared only occasionally after walking exercise, when it was present in large amount. Food at the commencement appeared to have no influence on the production of albuminuria; but after a time there was persistent albuminuria, and ultimately death from uræmia.

In another class of cases of latent albuminuria, there is no history of any previous illness to explain the renal disorder. Dr. Dukess in the paper before referred to, speaks of the common occurrence of such cases amongst the boys at public schools. From a careful inquiry into cases of this kind amongst boys and young men, I am convinced that one of the most frequent causes of this form of albuminuria is the reckless manner in which they often expose themselves to cold and wet, especially after being overheated and fatigued by prolonged or violent exercise. A boy plays at cricket or football, or runs a long race, and then, while tired and perspiring, and while the products of disintegrated tissues are abundantly present in the circulation, he stands about until he is chilled, or he lies down upon the damp ground; and if, as sometimes happens, an attack of acute pneumonia or renal dropsy quickly follow, the illness is at once recognised and traced to its obvious exciting cause; but if the only result be albuminuria without obvious disturbance of the general health, the mischief may remain latent for any indefinite period, and when at length it is discovered, it may with difficulty be traced back to its originating cause.

Another not uncommon cause of albuminuria in young men and boys is imprudently prolonged cold bathing. In the *Transactions of the Clinical Society*, vol. vii., p. 42, I have given particulars of four cases of temporary albuminuria excited by cold bathing. Since the publication of that paper, I have met with several cases of confirmed degeneration of the

kidney clearly traceable to repeated and prolonged cold bathing. The last case of this kind I saw lately with my friend and former pupil, Mr. Alfred J. Bell, of St. John's Wood. A young man aged 19, in the summer of 1878, after bathing repeatedly in Teddington Lock, noticed that his urine became "almost as black as ink." This was probably hæmaturic; but no chemical examination of the urine was made. The dark colour passed away after a few days, and he had no symptoms of illness. He continued to take active exercise—fishing, shooting, and bicycling; and seemed to be in good health until near the end of October, 1879, when considerable dropsical swelling of the legs occurred. The urine was then found of normal colour, of specific gravity 1020, albuminous to the extent of one-half, and deposited a sediment in which were found numerous hyaline and oily casts. In tracing back the history of this case, we found good reason to believe that the renal disease commenced eighteen months ago with congestion of the kidneys and hæmaturia excited by cold bathing, and that the albuminuria has continued from that time until the present. This case is a type and illustration of many others that have come under my observation. Thus, in one case, albuminuria in a previously healthy young man was a result of wading through a river up to the shoulders at the end of a twenty-mile walk; and in another it was excited by swimming his horse through a river in fox-hunting, and allowing his wet clothes to dry upon him and to chill him. From what I have seen of the effects of cold bathing, I have arrived at the conclusion that more people are injured than are benefited by the practice; and I am confident that, if the urine of all men, women, and children who paddle about in the sea until they are blue and cold were tested within a few hours after their immersion, it would be found to be more or less albuminous in a large proportion of cases.

Amongst the common causes of albuminuria, more or less copious and persistent, but for a time unattended with local uneasiness or serious disorder of the general health, and therefore often latent, is an excessive consumption of animal food and alcoholic stimulants, either separately or combined, as not unfrequently

happens. The kidney is the channel by which a large amount of excrementitious nitrogenous material, whether the product of disintegration of tissue or of imperfectly digested and unassimilated food, is eliminated. The chain of events which connects albuminuria with over-feeding and dyspepsia is probably this. Imperfectly digested food passes into the blood and loads it with impurities. The gland-cells of the kidney excrete these ill-digested products, and, in doing so, undergo structural changes; while the imperfectly assimilated albuminous materials pass more readily by exosmosis through the Malpighian capillaries. Further, the malnutrition resulting from chronic dyspepsia causes a general nervous exhaustion, with loss of vaso-motor nerve-force, and consequent diminution of tone and contractile power in the muscular walls of the arterioles generally, including those of the kidney; while the walls of the capillaries are probably weakened by depraved nutrition. Thus the filter and fluid to be filtered are both materially changed; while the increasing impurity of the blood throws more work upon the kidneys and favours the escape of the altered albumen, which is often much increased after food.

Alcoholic intoxication may alone be a cause of temporary albuminuria. In my *Lectures on Bright's Disease* (p. 41), I have described the case of a man whose urine during a fit of alcoholic narcotism (dead-drunkenness) was loaded with albumen, which in a few hours had entirely passed away; and quite recently a similar case was under my care in the hospital. In my private practice, I have seen a number of cases in which albuminuria associated with habitual alcoholic excess has passed away more or less speedily when the patient has been for a time frightened or persuaded into total abstinence, and has again returned under the influence of an immoderate consumption of alcohol.

There is yet another class of cases in which albuminuria is a result of inveterate dyspepsia in persons of strictly temperate habits. In these cases, we often find that for months, and even for years, there have been symptoms of impaired digestion, such as pain or uneasiness after food, flatulent distension of the stomach

and bowels, occasional nausea and vomiting, habitual looseness or irregularity of the bowels, constipation and diarrhoea sometimes alternating. With this there is often turbidity of the urine, which is high-coloured, excessively acid, and deposits urates or oxalates abundantly. After a time, the urine, which had been scanty, becomes more copious, of pale colour, of low specific gravity, and is found to contain albumen, and to deposit a cloudy sediment, in which are found small hyaline and granular casts. In such cases, renal congestion and albuminuria, and ultimately structural degeneration, result from the long-continued elimination of some products of faulty digestion through the kidneys. Analogous to this is the not infrequent occurrence of albuminuria and renal degeneration as a consequence of the persistent excretion of large quantities of sugar in cases of diabetes. It appears, then, that imperfect digestion, the result of functional disorder of the stomach or the liver, may lead to over-stimulation of the kidney, resulting in albuminuria, and ultimately in serious degeneration of the gland.

We have another illustration of the influence of a primary disorder of the liver resulting in a secondary disturbance of the kidney in the appearance of renal epithelium and tube-casts, with sometimes more or less albumen in the urine, excited by the excretion of bile-products by the kidney in cases of jaundice. This fact, which was, I believe, first pointed out by me in my book on *Disease of the Kidney* (p. 108), published in 1852, I have somewhere seen referred to as a recent German discovery.

As the dyspepsia which is associated with albuminuria, is often excited or greatly aggravated by the abuse of alcoholic stimulants, so I have no doubt that excessive tobacco-smoking is an occasional, though probably a much less frequent, cause of a primary hepatic and gastric disorder, with inveterate dyspepsia, leading on, in the manner before described, to renal irritation and congestion with albuminuria, and finally in some instances, to irremediable degeneration of the kidneys.

Dr. Clifford Allbutt has directed attention (*British Medical Journal*, February, 1877) to the influence of mental anxiety in causing

granular degeneration of the kidney. I do not agree in opinion with Dr. Allbutt that "mental anxiety is one of the chief, if not the chief, cause of granular kidney"; but I believe that there is a real etiological relation between mental anxiety and some cases of albuminuria; and I have often seen, in cases of chronic renal disease, a great increase of albumen under the disturbing influence of mental emotion. In my own experience, however, saccharine diabetes has much more frequently than albuminuria been traceable to mental and emotional influences; and it has appeared to me that as, in the diabetic cases, the saccharine urine, whether in the rabbit whose medulla oblongata has been mechanically irritated by the operator's needle or in the human subject whose brain has been tortured by mental-anxiety, the primary influence of the nerve-disorder is upon the sugar-forming liver, so, in an analogous manner, the albuminuria which results from mental anxiety is a secondary result of a nervous influence acting primarily on the liver and the stomach, the so-called chylipoietic viscera. In fact, it seems to me that the albuminuria which appears to have resulted from mental and emotional influences is a form of albuminuria from dyspepsia, and the immediate cause of the renal disorder is the excretion of some abnormal products of imperfect digestion. In many of these cases, too, it is obvious that more than one etiological agency has been operative. The man or the woman depressed by mental anxiety, with a failing appetite and disturbed sleep, often seeks temporary relief from misery in an alcoholic stimulant; and so it is often found that the noxious influence of alcohol as a substitute for wholesome food has to be taken into account in explaining the albuminuria and the renal degeneration which had their starting-point in mental worry.

We now come to our second proposition, which is that the presence of albumen in the urine, although small in amount, and appearing only occasionally in the urine of persons otherwise apparently in good health, is abnormal and pathological. The main point of the practice, therefore, is to make diligent inquiry for the probable cause of this abnormal condition; and then, having ascertained it, we can instruct our

patient how both to avoid the exciting cause and counteract its effects. It is sometimes difficult to convince a man or a boy, who but for his doctor's statement that his urine misbehaves itself under the influence of heat and nitric acid, would believe himself in perfect health, that it is necessary for him to submit to any restraint in his diet or general mode of living. It therefore becomes necessary to explain to him what may be the result of negligence in this matter. The result of my experience is, that the occasional appearance of even a small amount of albumen after food and exercise or exposure to cold, if not traced to its exciting cause, and if the cause be not such as can be avoided or counteracted, will almost certainly, at no distant period, become a persistent albuminuria; and persistent albuminuria leads on sooner or later to fatal degeneration of the kidney. It is true that many years may pass before the renal disease begins to react upon the general health. The most protracted case of the kind that has come under my own observation occurred in a hard-working general practitioner, who, when fifteen years of age, had dropsy after scarlet fever. He recovered from the dropsy, and believed himself to be well. Five years later, he was a medical student; and while he and some of his fellow-students were engaged in testing each other's urine, his was found to be albuminous. The albuminuria continued until his death from uræmia, at the age of forty-five; yet, until within a few months of his death he was in fairly good health and actively engaged in a large practice. Here, then, was an interval of thirty years between the beginning and the end of the fatal malady, yet during the whole of that period, it might have been said of him "heret lateri lethalis arundo." In another case, an interval of nine years elapsed between recovery from acute renal dropsy, but with persistent albuminuria and oily casts, during which the general health appeared to be quite unaffected. Then came an attack of hemiplegia and a series of uræmic symptoms, ending in fatal coma, ten years after the commencement of the disease. A considerable number of cases have come under my observation at a late period of a chronic disease, in which there has been reason to believe that, albuminuria having

persisted after an acute attack long before, there has been an interval of from ten to fifteen years between the commencement and the fatal termination of the malady. Since then, the only probable result of a neglected and persistent albuminuria is a fatal degeneration of the kidney, with the multifarious miseries resulting from uræmic poisoning, it is obviously of the highest importance to impress upon the patient the necessity for a continuous systematic treatment, dietetic, hygienic, and medicinal, adapted to the circumstances of each case. As a general rule, it will be found that, *cæteris paribus*, the earlier the patient is subjected to treatment after the onset of the symptoms, the more speedy and complete is the success; but we sometimes have the satisfaction of witnessing a complete recovery after a very long continued albuminuria. One of the most satisfactory cases of recovery after a long duration of threatening symptoms was that of a very distinguished medical graduate of London, who, when he consulted me in November, 1877, was twenty-six years of age. His urine had been continuously albuminous after food since an attack of scarlet fever in June, 1871. In spite of the anxiety which this symptom had occasioned, his general health had been good, and he had worked hard and obtained the highest honours at the university. I advised him to place his main reliance upon a carefully regulated diet. Under the influence of an exclusive milk-diet for five or six weeks, the albumen had much diminished. He then took a small quantity of solid food; and, after a time, a two-ounce glass of Hunyadi Janos water every morning, which, acting rather freely on the bowels, relieved him of a dull pain before felt in the region of the liver, and still further reduced the amount of albumen. During the month of July, 1878, the albumen disappeared; and for the last eighteen months there has been no recurrence of the symptom. In this case, then, albuminuria of seven years' duration has been completely removed, and I have lately seen the former patient in perfect health. The complete recovery of health after so long a continuance of the symptoms may afford encouragement to those who are engaged in the treatment of these troublesome and anxious cases. On the subject of treatment, I shall have something to say on a future occasion.—*British Medical Journal*.

CIRCUMSCRIBED PHLEGMONOUS  
DERMATITIS, DUE TO IODIDE  
OF POTASSIUM.

BY LOUIS A. DUHRING, M.D.

The patient, a woman sixty years of age, had been referred to Dr. Duhring, by Dr. T. C. Rich, on September 29th, 1879. She had been under treatment for rheumatism during some weeks previously, for which five-grain doses of iodide of potassium, with wine of colchicum, had been administered. About a fortnight before she had come under observation a singular eruption had made its appearance upon the forehead, in the form of a slightly inflammatory annular patch, half an inch in diameter, consisting of a number of pin-head-sized vesiculo-pustular lesions, and resembling an irritated example of ringworm. This had extended rapidly, so that in the course of four or five days it had attained a diameter of an inch and a quarter, and was accompanied by considerable thickening and infiltration, the pustular lesions having become more deeply seated, larger and more prominent. About this time, a similar but more deeply seated inflammatory patch appeared on the left cheek, studded with numerous pin-head-sized pustular foci of apparent suppuration. A third and fourth lesion manifested themselves on either side of the nose.

When first seen by Dr. Duhring the disease was at its height. The original lesion had reached a diameter of nearly two inches, and was a circumscribed, at points sharply defined, irregularly rounded, elevated, firm, thickened, inflammatory, reddish, violaceous patch. Its centre was a crusted, irregular depression, of a lighter colour, and covered with a brownish crust, where the process was evidently subsiding. Over the patch, especially about the periphery, were numerous deep-seated, yellowish, large pin-head-sized, apparently sebaceous, pustular lesions, which had their seat manifestly in the middle and lower strata of the skin, evincing no disposition to rupture. These lesions were conspicuous, and presented a mammillated acne-form appearance on the cheek, where the patch was nodular, of a cherry red or violaceous colour, with a slight inflammatory

areola, while on the forehead they had, in some places, coalesced, giving the patch here situated a carbuncular look. The lesion on the ala nasi was the size of a large pea, sharply circumscribed, markedly raised, mammillated, and covered with a yellowish, tenacious deposit or coating, giving it a button-like or fungoid form. The fourth lesion was insignificant. When pricked or cut into, all the yellowish pustular points bled, but did not exude their contents, thus differing from ordinary pustules. The patient stated that the process had begun with itching, but that lately this had disappeared and had been replaced by a throbbing pain.

The patient was admitted to the hospital, and the iodide of potassium and colchicum mixture suspended. No local treatment was ordered. Two days later the disease presented an aggravated appearance, but there was otherwise no change. The following day a diminution in the colour was noted, and the next day a disposition to desiccate and a decrease in size. From this date the amelioration was rapid, and the patient was discharged, quite well of the skin disease, at the end of a fortnight.

In commenting upon the case, Dr. Duhring said that when the patient first came under observation there was no history of the administration of iodide of potassium, and that the diagnosis had rested, in his mind, between two diseases, viz.: dermatitis, from the internal use of bromide of potassium, and an undescribed disease presenting very similar clinical features, of which he had recently seen a well-marked example in the ward for skin diseases of the Philadelphia Hospital, a full report of which was in preparation. Iodide of potassium had not occurred to him as a cause, having never encountered or heard of a similar eruption following the use of this drug. Some years ago (in 1869), when in London, Dr. Duhring had been taken by the late Dr. Tilbury Fox to see the case of an epileptic boy, under the care of Dr. Cholmeley, who was found to be suffering from a very extensive inflammatory eruption, in the form of palm-sized, raised, infiltrated, painful patches, involving, chiefly, the sebaceous glands. This eruption was determined to be due to the bromide of potassium, which the

boy had been taking. This case was subsequently reported. A similar one may be found in the Sydenham Society's plates of skin diseases. Both of these eruptions were due to the bromide of potassium; the peculiarity of the present case lies in the fact that the manifestation is due to the iodide, and not the bromide of potassium.—*Medical and Surgical Reporter.*

### THROMBOSIS OF PORTAL AND SPLENIC VEINS; RAPID FILLING OF THE PERITONEAL CAVITY; GENERAL PERITONITIS.

BY A. A. SMITH, M.D., NEW YORK.

Lieut.-Gen. T., while in Washington the latter part of February, 1879, as he was about to leave the house where he was staying to go to a dinner party, was suddenly attacked with hæmatemesis, vomiting, it was said, more than a quart of dark blood. In two weeks from this time he recovered his strength sufficiently to leave Washington and come on to New York. Previous to the attack of hæmatemesis, he represented himself, and evidently believed himself, to be in good health, but his friends had for some months observed appearances of bad health. On his arrival in New York he consulted Prof. Austin Flint, who found the spleen greatly enlarged and tender on pressure, and some fluid in the peritoneal cavity. The liver seemed of normal size. His appetite was good, and he complained of nothing except shortness of breath and difficulty in going up stairs. The abdomen rapidly enlarged and became painful, and his general condition became worse.

March 23, Dr. Barker was associated with Dr. Flint in the case. The patient's appetite now began to fail, and he suffered so much distress from distension of the abdomen that it became necessary to relieve him by tapping. I did the tapping, and drew off nine quarts of fluid. For the first time, it was now possible to make a thorough examination of his abdomen. No tumor of the stomach could be found. The liver seemed normal as to size, and his habits of life and symptomatic history seemed incompatible with the theory of cir-

rhosis of the liver, while the enlarged spleen and the hæmatemesis were believed to be due to some obstruction to the portal circulation.

For three days after the tapping he was greatly relieved of both the pain and dyspnoea, rising about ten o'clock and sitting up until evening. He took about two quarts of milk a day with great relish, but very little food besides.

On April 8th he began to complain of great pain in the abdomen, nausea, weakness, and disgust at the sight of food. The next day he vomited about a quart of fluid, which was chiefly blood, having the appearance of black vomit. He also had several discharges from the bowels of the same character. He became unconscious April 11th, and died in the night.

**AUTOPSY,** April 12th, made by Dr. W. H. Welch, twelve hours after death: *Exterior.*—Emaciated. Old brownish cicatrix over crest of left tibia, said to be due to a wound received in the Mexican war.

*Heart.*—Dimensions of heart walls and cavities normal. Recent fibrinous vegetation, of the size of a pea, on auricular surface of mitral valve; also, several smaller fibrinous deposits on the same surface.

*Lungs.*—Old pleuritic adhesions on both sides, hypostatic congestion, and œdema.

*Spleen.*—Much enlarged, about ten inches long and six broad; consistence firm; capsule much thickened in spots. The organ contains several hæmorrhagic infarctions, three of large size, one being four inches in diameter. The large ones are of dark-red color; some of the smaller ones are partially decolorized. Grayish-red ante-mortem thrombi can be detected in the branches of the splenic vein leading to the infarctions.

*Kidneys.*—Surface coarsely lobulated; presents several cicatrix-like depressions; cortical substance thin; capsule non-adherent.

*Liver.*—There are two cicatricial depressions on the upper surface of right lobe. The remaining surface is somewhat granular, but the cut surface shows no signs of cirrhosis or other change.

*Peritoneal Cavity.*—Contains several quarts of yellowish fluid holding in suspension flocculi of fibrine. There are present recent fibrinous



deposits over visceral and parietal peritoneum, evidencing acute general peritonitis.

*Splenic and Portal Veins.*—On the inner surface of the splenic vein, and also to a less degree in the portal vein, there are several rough calcareous plates and spines projecting into the lumen of the vessel. Firmly attached to these calcific spots, and extending throughout the splenic vein and into the substance of the spleen, and through the portal vein as far as its primary divisions in the liver, is a grayish-red thrombus, which at the bifurcation of the portal vein appears to completely occlude the lumen of the vessel. The thrombus is moderately adherent to the vessel wall, but is not organized.

*Stomach.*—Contains black coagulated blood.

REMARKS.—It would seem impossible, as the autopsy showed, to have been more definite in the diagnosis than to say there was some obstruction to the portal circulation, and yet I know of nothing that could obstruct the portal circulation and produce ascites so rapidly the first time as it was produced in this case, except thrombosis. The peritoneal cavity seemed to fill with fluid in ten days. We see cases of cirrhosis of the liver sometimes in which there is as rapid filling of the cavity as this after the patient has been tapped.

Had malarial poisoning, from which the General had suffered in 1864, in Louisiana, while serving in the Confederate army, anything to do with the causes of his death? There might have been at that time a portal phlebitis, which left a thickening of the coats of the vessel.—*N. Y. Medical Journal.*

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EFFECTS OF INTRAVENOUS INJECTION OF SUGAR AND GUM.—Mm. R. Moutard-Martin and Ch. Richet have studied the effects of the intravenous injection of sugar and of gum, and their researches have some bearing on the physiology of the renal secretion, for on determining the blood-pressure with a hæmometer, they have ascertained that the injection of gum materially increases the blood-pressure in the arteries, raising it from 0.03 to 0.05 mm. of mercury, whilst the injection of sugar has no influence on the pressure. Here then we have two substances, of which one, sugar, causes polyuria, but has no influence on the blood-pressure; whilst the other, gum, augments the blood-pressure, but, so far from producing polyuria, arrests the urinary secretion.—*Lancet.*

## SINGULAR FORM OF MALARIAL POISONING.

BY M. O. LOWER, M.D.

This case being a little singular, is my apology for reporting it. At 4 p.m. on the 16th of August, 1878, I was summoned to see Jacob K., a farmer, aged 50 years, living about three miles from town. I was told by the messenger that he was "jerking all over, and wanted me to bring my lancet along." I armed myself with the instrument and hastened to his assistance. When I arrived there I found him on the floor and apparently in the worst stage of chorea. By inquiry I learned that he had had a chill of ague in the forenoon of the same day, and instead of it being followed by fever, as is usually the case, he was seized with irregular contractions of nearly all the voluntary muscles, simulating chorea. It was so violent from the time of its commencement, which was 12 m., that he was nearly exhausted when I first saw him. He said that about 23 years since he had a chill and it was followed by the same symptoms. At that time they bled him freely, which gave instant relief and he requested me to do the same; but thinking it best not to resort to venesection, I gave him, as near I could guess—not having any thing with me to weigh it—20 grains of bromide potass. combined with 3 grains pulv. opii.; thirty minutes after the medicine was given he fell asleep, and the irregular muscular contractions ceased. I remained with him another half hour, and he was still sleeping, seemingly naturally. I told his wife to let me hear from him in the morning, which was done by himself coming to town; he said that he had slept about five hours after I gave him the medicine yesterday, and woke very much refreshed. His tongue at this time was heavily coated, and he complained of his limbs, back and head aching; he had all the symptoms of intermittent fever, for which I treated him. He then remained as well as usual until the 19th of September, in the same year, when I was called to visit him again, which I did, and found him in the same condition as in August, lying on the floor, with the irregular muscular contractions. I gave him the bromide and opium, which soon quieted the muscles and gave him

another good sleep; I then followed the same treatment as before. Since that time he has been in good health, has had a few symptoms of ague occasionally, but always avoided a chill by proper remedies.—*Med. and Surg. Rep.*

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OBSERVATIONS ON THE DIGESTION OF MILK.—

Under this heading, Dr. E. F. Brush (*N. Y. Med. Jour.*, 1879, p. 300) gives the result of some experiments which he has made in the digestion of milk and kumyss. Cows' milk, he says, is not so digestible as the milk of mares, etc., because the cow is a cud-chewing animal. In kumyss the caseine is, so to speak, practically regurgitated and chewed, *i. e.*, having been coagulated, it is re-subdivided, and incapable of being coagulated under any acid or ferment. An advantage of kumyss in the artificial feeding of children is that the sugar of the milk has been changed into alcohol instead of lactic acid, alcohol, when properly presented, being in reality a hydrocarbonaceous food. Dr. Brush subsisted for a number of days on kumyss exclusively, taking eight bottles a day. During this time his urine, carefully examined, contained no alcohol. Afterwards, distilling some kumyss, he drank the distillate, and, later discovered alcohol in his urine. This goes to show that alcohol, as contained in kumyss, is destroyed in the system, but the same alcohol, when it has undergone the process of distillation, is eliminated as alcohol.—*Med. Times.*

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BLACK TONGUE, OR NIGRITIES.—Dr. Hirtz (*Gaz. Med. de Strasbourg; Jour. des Sci. Med.*, 1879, p. 582) had occasion to examine a child of 6, whose tongue was absolutely black. No other morbid condition existed, excepting a slight gastric disturbance. Washes of every sort were used without effect, but the discoloration of the tongue lasted for six weeks. In another case the parents were sure the child had spilled ink upon its tongue, but the same persistence was observed until lotions of corrosive sublimate were used, which quickly removed the condition. An examination of the literature of this curious affection shows that so far back as 1855 Mr. Bertrand had described it; but it was reserved for M. Gubler (*Dict. Encyclopédique*) to suggest and for M. Maurice

Raynaud (*L'Union Med.* July 1 and 3, 1869) to prove the existence of a parasite resembling that of ring-worm. Fèrèol, however, a little later, attempted to show that the parasitic growth was an epiphenomenon, and that the essential disease was a papiliform epithelial hypertrophy. But more recent investigations by Lanceraux and Dessois (1878) appear to prove conclusively the presence of vegetable spores; and the treatment which has proved successful, namely, scraping and washing with lotions of corrosive sublimate (gr. i to ʒi) seems to point also to a vegetable parasitic origin of the affection.

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DIRT AND BODILY HEAT.—The part which the skin plays in the regulation of bodily heat is not adequately estimated. The envelope of complicated structure and vital function which covers the body, and which nature has destined to perform a large share of the labour of health-preserving, is practically thrown out of use by our habit of loading it with clothes. It is needless to complicate matters by allowing it to be choked and encumbered with dirt. If the skin of an animal be coated with an impervious varnish, death must ensue. A covering of dirt is only less inimical to life. We are not now speaking of dirt such as offends the sense of decency, but of those accumulations of exuded matter with which the skin must become loaded if it is habitually covered and not thoroughly cleansed. The cold bath is *not* a cleansing agent. A man may bathe daily and use his bath-towel even roughly, but remains as dirty to all practical intents as though he eschewed cleanliness; indeed the physical evil of dirt is more likely to ensue because, if wholly neglected, the skin would cast off its excrementitious matter by periodic perspirations with desquamation of the cuticle. Nothing but a frequent washing in water of, at least, equal temperature with the skin and soap can ensure a free and healthy surface. The feet require especial care, and it is too much the practice to neglect them. The omission of daily washings with soap and the wearing of foot-coverings so tight as to compress the bloodvessels and retard the circulation of the blood through the extremities, are the most common causes of cold feet. The remedy is obvious: dress loosely and wash frequently.—*Lancet.*

## Surgery.

### DIFFUSE MULTIPLE CAPILLARY FAT EMBOLISM OF THE LUNGS AND BRAIN AS A FATAL COMPLICATION IN COMMON FRACTURES, ILLUSTRATED BY A CASE.

BY DR. CHR. FENGER AND DR. J. H. SALISBURY.

A Paper read before the Chicago Medical Society, Nov. 17th, 1879.

In calling your attention to the above-named serious but very rare disease, we shall first quote the history and post-mortem examination of a case observed last summer in Dr. E. W. Lee's surgical ward in Cook County Hospital, and afterwards make some general remarks on the main features of the subject.

*History.*—The patient, Mrs. B., a housewife aged 45, and a native of Ireland, was admitted to Cook County Hospital, July 25th, 1879.

On admission, the patient stated that she had fallen from the roof of a kitchen to the ground, a distance of 3 meters, striking upon her left side. On examination, evidences of a fracture of the upper part of the shaft of the left femur were found.

The leg was placed in a comfortable position, but no permanent dressing was applied. Morphia was given *pro re nata*.

July 26th.—The patient was very restless, but did not complain of much pain.

July 27th.—In the morning the patient seemed to be sleeping quietly, but the respirations were quite rapid; 1 p.m., the patient was still unconscious; she could be roused somewhat, but did not become conscious; the pupils responded to light; 5 p.m., she had some slight spasms; the jaws were firmly set for a few minutes; 7 p.m., pulse 112, somewhat weak; temperature 38.5 (101½ F.); respirations, 40 per minute, regular. The patient was still comatose, face pale, lips slightly bluish. The movements of the thorax were natural. Upon percussion, the dullness of heart, liver, and spleen, was found to be within the regular boundaries. Auscultation showed the sounds of the heart to be normal. Over the lungs the normal vesicular breathing was heard. No râles were heard, either with inspiration or expiration. The posterior parts of the lungs

were also natural. The abdomen was natural. The pupils responded to light, and were equal in size. There was no local paralysis in any part of the body. The urine contained no albumen.

July 28th.—The symptoms were about the same, except that all over the lungs were heard the coarse râles which usually occur in the agony.

Dr. Fenger saw her, and made the diagnosis of diffuse multiple capillary fat embolism of the lungs. Prognosis, fatal.

Dr. Salisbury noticed about the patient an indescribable sweetish odour.

*Autopsy.*—To the coroner, General Mann, we owe our thanks for his kindness, which enabled us to hold the exceedingly interesting post-mortem. There were present General Mann, Drs. McWilliams, Merriman, and Lee, of the hospital staff, besides the internes of the hospital.

The autopsy was made twenty hours after death. The rigor mortis was well marked. The subcutaneous adipose tissue was abundant. The striated muscles appeared natural. In the pericardium were found 15 cubic centimeters of thin yellow fluid. The heart was natural in shape and size, but flabby. The valves and endocardium were natural. The heart muscle was somewhat greyish. The heart and large vessels contained dark fluid blood, as in strangulation. Small drops of fat were found swimming on the blood. Some old adhesions existed in the left pleural cavity. Nothing abnormal was found in the pleura costalis, nor in the pleura pulmonalis. In the subpleural tissue were many small ecchymoses, up to the size of a pin's head.

*Left Lung.*—The surface of the whole lung had a peculiar red, spotted appearance, which was most marked in the anterior parts of the lobes. The cut surface of the lung presented the same appearance. Some parts were quite white, which was due partly to anæmia, but chiefly to emphysema along the anterior borders.

The posterior part of both lungs was congested and somewhat œdematous. There was no capillary bronchitis. The bronchial mucous membrane was somewhat injected, but there

were no ecchymoses and no mucus except in the largest tubes.

In one place, at the base of the lower lobe of the right lung, were some larger ecchymoses. One was as large as a lobule, M. .008 in diameter. These ecchymoses were mostly subpleural. The cranium was rather thick, but otherwise natural. The dura mater was natural. The lateral ventricles contained a little clear serous fluid. The brain tissue of the hemispheres was natural, and not particularly anæmic. On the cut surface of the hemispheres, especially in the white substance, were found numerous ecchymoses, appearing as small, round, dark, blood-red points, varying in size from points scarcely visible up to 1 millimeter in diameter. These were found all through the white substance, and a few were found in the grey. The same spots were found in the cerebellum, and a group of them in the anterior part of the pons varolii, and some in the corpus callosum. The vessels at the base of the brain were natural. The substance of the large ganglions was natural.

No fluid was found in the abdominal cavity. The peritoneum was natural. The spleen was of natural shape and size, but on the surface were seen several small, dark irregularly-shaped spots 4 millimeters in diameter, which seemed to be superficial hæmorrhages.

The liver was greyish and anæmic, but there were no ecchymoses. The liver was of natural shape and size, flabby, but otherwise normal. The uterus and bladder were normal. In the fundus of the stomach were small ecchymoses in a limited space of 2.5 Cm. in diameter. Otherwise the mucous membrane of the intestines was normal. In the upper part of the left femur between the 1st and 2nd third, was a complete transverse fracture, surrounded by the usual amount of coagulated blood, filling the surrounding inter-muscular spaces. The substance of the fractured bone was normal. The marrow in the canal of the shaft was yellow from infiltration with fat, as we usually find it in elderly persons. No traces of inflammation were seen in or around the fracture. There were no coagula in the larger of the surrounding veins. The femoral vein contained dark fluid blood with no visible fat drops in it.

Microscopical examination showed the following interesting features :

Small pieces cut off with the scissors from the surface of the lung showed the smaller arteries and some of the capillaries of the pleural tissue as a whitish-yellow refracting net-work, owing to the injection and filling up of those vessels with liquid fat. Sections from the interior of the lung tissue showed a fine, more or less complete injection of liquid fat, in the net-work of capillaries surrounding and protruding into the air cells.

\* \* \* \* \*

Upon adding osmic acid in the sections of lung tissue, the fat in the vessels is coloured black and the vessels then appear as if they were filled with some black injecting fluid. This renders the demonstration of the presence of fat much easier than by the examination of unstained specimens.

We are indebted to the kindness of Dr. Merriman for part of the literature concerning this subject, viz. : the *Medical Record*, of New York, July 19th, 1879, where two fatal cases of fatty embolism in fractures are briefly stated.

As far as we remember, the first observation was made in Germany, in 1862, by the renowned pathologist, Prof. Trenker. Attention once called to the danger of liquid fat from the marrow of fractured bones gaining access to the veins and causing obstruction of the lung capillaries, numerous examinations were made of the lung tissue, in occasional deaths after fractures and other lesions, and it was found that fat embolism in the lungs occurs in almost every case of extensive fracture of the bones. It is however in only a very small number of fractures that the amount of fat entering the circulation is considerable enough to prove fatal, or even to give recognizable disturbances in the course of common uncomplicated fractures.

Further investigations by Flournoy and V. Recklinghausen in the necropsy theatre at Strasbourg, showed that slight diffuse fatty embolism could be found in 10 per cent. of a series of 260 dead bodies. Up to 1879, Egli Sinclair had gathered records of 140 reported cases, and he found the etiology to be limited to one of the following three morbid conditions :

1. Extensive contusion or laceration of soft parts, containing abundance of adipose tissue.  
 2. Fracture, with extensive lesion of the marrow of the bones, and, 3. Osteomyelitis—chronic as well as acute inflammation of the marrow of the bones.

The most severe cases of fatty embolism however set in after fractures; *e. g.* In 140 cases, death ensued in 18; that is, 13 per cent. Of these 18 deaths, 16 occurred in the 84 cases of fracture.

*Symptoms and Diagnosis.*—The symptoms, as Egli Sinclair gives them, from cases of fatty embolism in extensive fractures, are as follows: Unexpected, rapidly increasing, general debility; then the symptoms from insufficiency or entire absence of oxidation of the blood; respirations from 40 to 60 in the minute; pulse weak and frequent; temperature often somewhat augmented. Râles in the larger bronchi, and finally in the trachea (premortal). Dyspnoea sometimes to the highest degree; then reddish foam coming out of the mouth. The face grows pale, later cyanotic; the extremities get cold, pupils contracted. The patient becomes somnolent, finally comatose, and death ensues, sometimes preceded by vomiting and spasms.

The diagnosis in the case which we have related was based on the following reasoning:

We had before us a previously healthy person with a simple, uncomplicated fracture of the femur, that from the beginning promised to run the usual benign course towards healing. The second day, except some restlessness, there was nothing to indicate the approaching danger. The third morning she was found in a comatose condition, which had set in without any previous suffering sufficient to waken her from her sleep, which means that the grave symptoms, as usual in these cases, set in suddenly. Besides this comatose condition, we find no fever of any account. A temperature of  $101\frac{1}{4}^{\circ}$  is the usual aseptic and innocent rise in temperature that will be found (R. Volkman, in 11 out of 14) in most of the fractures of the femur not treated with immovable dressings. The physical examination does not show any morbid symptom in the organs of the thorax and the abdomen. The urine shows that there is no disease of the

kidneys and no diabetes. As to the brain, we find no symptoms of a local disease. There is no paralysis, equal pupils and no symptoms of pressure, such as stertorous breathing, etc.

The only positive symptoms able to lead attention in the direction of the seat of serious trouble were the cyanosis, paleness of the face, bluish hue of the lips and the augmented number of respirations—40. These symptoms evidently pointed to the lungs. As now the air-cells as well as the bronchi were normal, we must place the trouble in the circulatory system of the lungs, thrombosis or embolism in a great part of the pulmonary vessels.

A spontaneous thrombosis in the trunk and branches of the pulmonary artery can take place in endarteritis of this artery. But this disease is as seldom found here as endocarditis in the right heart. Embolism could occur from a loosened thrombus in any part of the venous system from the right ventricle or auricle, but here was no previous heart disease and no previous exhausting febrile disease.

The only peripheral diseased place to be found was this recently fractured femur. Around a fracture, thrombosis in the larger veins is not uncommonly found (F. Durodié). The thrombi from the smaller veins formed round every fracture extending out into larger and larger veins, causing probably part of the œdema accompanying so many fractures of the extremities. Loosening of part of these thrombi and subsequent embolism of the lungs is rare, but takes place in one case out of three hundred (Durodié). A sufficiently large aseptic embolus in both of the main branches of the pulmonary artery might give a similar series of symptoms ending in death. But the formation of these peripheral venous thrombi and their subsequent detachment and entrance into the circulation take a much longer time than 48 hours, and consequently we were compelled to abandon this explanation of the symptoms. Finally there was left no other diagnosis that would correspond to the symptoms of the case than the fatty embolism of the lung capillaries, *i. e.*, the introduction into the circulation of liquid fat in sufficient quantity to make the greater part of the lung capillaries impassable for the blood. The moderate acceleration of

the pulse and the not extreme cyanosis are easily explained by the difficult passage of the blood through the lungs from the venous system over-filled with blood. The weakness of the radial pulsation is a natural consequence of the diminished quantity of blood in the arterial system. The comatose condition may be explained by the want of blood supply to the brain and the medulla oblongata (Wagner), probably combined with accumulation of carbonic acid in the blood. Whether the multiple capillary embolism in the brain in our case contributed to the depression of the cerebral functions or not, cannot be decided.

In a number of the reported cases of this kind the fatty embolism has caused sudden death. (Wagner, loc. cit.)

In one of Déjerine's cases death occurred in two and a-half hours, in the other, thirty-six hours after the fracture was received. The report of his cases does not give any information about the duration of the grave symptoms. About this we cannot tell anything for want of the original reports of previous cases. Our case, though fatal, did not take a very rapid course, which was so far interesting, as it gave sufficient time (the grave symptoms lasted over thirty-six hours) to have the diagnosis based upon a minute examination of the symptoms.

*Prognosis.*—The prognosis depends upon the quantity of the circulating fat, and upon the strength of the heart's action. If the right ventricle can get and keep up power enough to push the fat through the lungs, then the immediate danger will be overcome. An extensive fracture, as the source of the embolism, will make the prognosis worse 20 to 40 per cent. than lacerated soft tissues or osteomyelitis.

*Treatment.*—The natural treatment will be to stimulate the action of the heart in the hope that an increased *vis a tergo* can drive part of the fat through the lung capillaries, out into the aortic system (digitalis, alcoholics, etc). When the immediate danger from the pulmonary system can be overcome, then the organism will gain time to get rid of the fat, presumably by transforming it into soluble soaps through the action of the alkalies in the blood. Merely hypothetically, we should advise

to keep the fractured bone or the diseased part scrupulously immovable, with the view of preventing any more liquid fat from escaping from the tissues. As to this point, we must remember that in the marrow as well as in the adipose tissue, the fat is contained in so-called fat-cells, *i. e.*, membranous sacs. These membranes must be destroyed or torn open before their contents of liquid fat can gather in a fluid, movable mass; and it is in this condition of the fat that the danger lies, as we do not find the fat-cells or sacs but only their contents in the capillaries of the lungs.

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### HOW TO GRASP THE PELVIS FOR FIXATION IN CONTRACTION OF THE HIP.

BY R. GERSUNY.

(Translated from German by Herman Mynter, M.D.)

If a patient, with a contraction of the hip-joint, which is disguised by the oblique position of the pelvis, lies on his back on a level surface, the diseased leg touches with its posterior part the mattress, while the lumbar vertebræ are curved forward. If we now take hold of the healthy femur and bend it passively until it touches the chest, we see that the arch, which the lumbar vertebræ form above the mattress, flattens more and more as the flexion of the healthy hip-joint increases. At last the column of the lumbar vertebræ is perfectly straight. At the same time the diseased femur rises from the mattress, and cannot be pressed down as long as the healthy femur is fixed. The cause of this is that the pelvis is fixed forcibly by aid of the passively flexed healthy leg. I shall only further point out that this position of the body may be of use both in *brisement forcé* and in gradual stretching of the hip-joint, whether we use passive-manipulations or apparatus for extension. I was able to convince myself of the practicability of the method in question, both in *brisement forcé*, on account of contraction of the hip following coxitis, and in passive movements in cases of paralytic contraction with healthy hip-joint.

I have had no opportunity of trying whether this method may be of use by permanent extension, This might be done easily by fixing

the flexed healthy femur, by aid of a broad band, while the diseased leg was permanently extended downward.—*Centralblatt fuer Chirurgie.*

**ANTISEPTIC SKIN GRAFTING.** (By Joseph Lister, F.R.S.)—The large callous and foul sore, having been dressed for a few days with moist boracic lint covered with gutta percha tissue, was purified completely by sprinkling the surface lightly with the powder of iodoform, after washing the surrounding epidermis with strong watery solution of carbolic acid. Prepared oil silk (protective) dipped in boracic lotion was then applied to the sore, and covered with boracic lint overlapping well in every direction. A similar dressing of oiled silk and boracic lint was applied every third or fourth day, until the granulations had assumed thoroughly healthy characters, when skin-grafting was performed by shaving a thin slice about a quarter of an inch across, consisting of little more than epidermis, from the inner side of the upper arm, which had been washed with 1 to 40 watery solution of carbolic acid, cutting this into small pieces on the thumb-nail, and placing each, with the raw surface downwards on the granulations, each graft being covered, as it was deposited, with a little bit of oiled silk dipped in boric lotion. A general piece of the oiled silk rather larger than the sore was then applied, and over this boric lint in two layers secured with a bandage. This dressing was left untouched for a whole week, so as to allow the grafts a long period without mechanical disturbance. We all know how black and foul oiled silk would be if left for a much shorter time upon a suppurating sore without the use of an antiseptic. But here it was quite free from discoloration or odour, while every one of the nine grafts was found to have taken root, and cicatrization was proceeding at the margins of the ulcer with a rapidity that could not have been hoped for under water-dressing changed daily.—*Lancet.*

THE *Chicago Medical Gazette* sagely remarks that "any new medical college necessarily fills a space which would otherwise be a vacuum."

## Midwifery.

### EXAMINATION OF THE GENITALIA AFTER LABOUR—TREATMENT OF LACERATED PERINEUM.

BY ALBERT H. SMITH, M.D.

Some portion of the placenta may remain attached to the internal surface of the uterus, and, becoming putrescent, give rise to hæmorrhage, for we know that anything remaining in the uterine cavity after the expulsion of the after-birth acts as a splint to keep the uterus uncontracted. Should you, under such circumstances, insert your hand into the uterus, you will discover the existence of hæmorrhage in the shape of coagula, which should be first removed, and then the cavity of the womb should be thoroughly cleansed with antiseptic washes.

If you meet with a tendency to flooding after labour, and if, upon careful examination you find the uterus firm and contracted and the cervical and vaginal surfaces presenting no loss of continuity, you should suspect the presence of "placenta succenturia" and at once remove it.

*In primiparæ always make it a duty to make a thorough ocular examination of the parts after the placenta has been expelled, and in the case of a multipara do not hesitate to go through with the same process if you have the slightest reason to suspect the existence of any such lesions, for fissures of the perinæum and vagina of a very serious character may otherwise escape notice.*

In its normal state it is a very easy matter to detect the difference between a smooth and lacerated vaginal surface; but where, after labour, the vagina is puffed up and œdematous, it may be very hard to recognize the existence of a tear by the sensation which it presents to the touch. Hence, you should always have the parts illuminated by the light of a candle or by gaslight. Then, again, for the thorough detection of these rents and fissures, you ought, in every instance, to introduce the first and second fingers of the left hand into the rectum and draw it forward and pouch it out and so expose the posterior vaginal wall laterally as far as the fossa at the tuberosity of the ischium, bringing the pouched surface well out beyond

the vulva. This you can easily do, and in this way calling the eyes to the assistance of the fingers, you can at once detect the presence of any lesion, if such exist, which requires your attention. At the same time you may see to it that no hæmorrhoid or fissure of the rectum be allowed to remain unattended to. This examination must be always made in the case of a primipara.

Where a laceration of the vagina thus discovered is too slight to demand operative interference, all that is necessary will be to wash the parts out thoroughly with a strong disinfectant solution.

I remember very well my first examination of the vagina after labour, and how utterly astonished I was at the appearance of its mucous membrane. It looked more like a mass of beef's liver than anything else, and seemed as though the slightest force applied would tear it through, but, pressing my finger against it I found it firm and resisting. It really looked as if the whole bulk of tissue were making preparation to slough away. The livid appearance of the parts is produced, of course, by the immense amount of congestion present, from the steady advance of a tightly fitting head.

Indeed, this livid and congested mass is much more favorable for vital purposes than any one would imagine. Never be led into mistaking this almost habitual condition of the vaginal canal after labour for one of gangrene, for if you examine it twenty-four hours afterwards, you will find that the parts have almost entirely regained their wonted appearance, if no loss of tissue have occurred.

In making such an examination as this, the first thing that you are likely to see, if it exists, is a laceration of the perinæum. This condition should be treated promptly and effectually. In the vast majority of cases, the best results will follow if you bring the torn surfaces completely together at once, so as to keep out the lochia. You will not only save your patient from great and everlasting discomfort, but will also thus set aside the necessity of the performance of the secondary operation, which is more serious and always tedious.

You can easily etherize your patient, and

you will find her very willing to undergo the operation as a part of the labour process.

It is customary to divide lacerations of the perinæum into three classes, viz: (1) lacerations simply of the integuments; (2) lacerations through the perinæal body to the sphincter ani; and (3) lacerations completely through the sphincter ani and into the rectum. These last are fortunately very rare. As a general thing, nature seems to guard this occurrence, and the tear, if serious, takes a course round the sphincter so as to almost dissect it out. If the sphincter ani is torn and gapes, the patient is placed in the wretched position of having lost all power of holding her fæces and her wind, and they escape at pleasure, rendering her the most unhappy of women.

I advise you to sew up all kinds of lacerations, for wherever you have cicatricial tissue there you have pain.

The old method of putting in the stitches was to pass the stitch through the integument on the anterior edge of the tear and bring it out on the lacerated surface, and carrying it over to the other side to bring it out there in the same manner. The effect of which was to make a pocket behind the stitch in which the lochia would collect, and so interfere with perfect union of the sides. The old method simply reunites a part of the lacerated surfaces.

In order to prepare for such accidents, you should always, particularly in country practice, carry with you the necessary instruments for sewing up the perinæum. For this purpose you want needles. I use a long Baker-Brown needle, with an eye at the end in which the wire loop is placed when you are ready to place it in situ.

You may use this needle permanently fixed in a handle, or you may prefer needles which are not attached to a handle, but which can be used by grasping them with a needle-holder, the best form of which is a Russian clamp, which renders the grasp of the holder very powerful.

Many prefer the separate needles, because they are smaller in thickness than the ones with permanent handles, and because, if one of them should be broken, you can very easily replace it.



You should have a pair of bull-dog forceps, a tenaculum, a pair of scissors, and some good, stout silver or iron wire. Or, you may use silk thread, or reliable cat-gut.

If you guard the perinæum by support and lateral incisions when needed, laceration will be very rare occurrences, the accident when it does happen, need not cover you so with opprobrium, that you shall be afraid to acknowledge the true state of affairs and let your patient go on from bad to worse, rather than make a confession. I say this because I know the accident may, and in fact often does, occur in the practice of the very best obstetricians.

Before performing the primary operation, you ought to see that the torn surface has been thoroughly cleansed. Use carbolized hot water for this purpose. Be very careful, however, if you find the rent is large enough to need sewing up, that you do not use so strong a solution of the carbolic acid as to destroy the vitality of the parts. You can never get any union between two cauterized surfaces. Always employ a douche of hot water before putting in your stitches, for it stimulates the parts and so hastens the healing process.

I have seen surfaces that looked as if they were going to slough, immediately improve most markedly in appearance under the use of hot water. The stimulation of the tissues produced by hot water increases ten-fold the chances of rapid and satisfactory union.

Before you proceed to put in the stitches, be careful to place a sponge well up against the mouth of the cervix uteri, so as to prevent the blood and other discharges from getting between the stitches and so interfering with union, and take very good care to withdraw this sponge when the stitches are all in situ.

The books all tell you to make the first stitch below. I always put in the first stitch above, making that stitch draw thoroughly together the margins of sound tissues above the laceration.

In one of my cases the recto vaginal septum was so thin that the needle could not take hold of the tissue. Now, it is very easy to see that if your first stitch is passed through such thin tissue as this, it is but too likely to tear out, or to ulcerate through into the rectum. So, al-

ways pass your first stitch through the thick and healthy tissue where you know it will hold, imbedding it completely; then pass the other stitches and imbed them all as much as possible in the tissue. I always take pains to imbed the wire all the way around in the tissues so that when I draw the ends of the wire together there is no pocket left behind the stitches. I pass my needle in close to the upper angle of the laceration and pass it entirely round to the other side, so that it does not come out at all, except at the extremity of the suture; then I take a very long wire and pass it through the eye of the needle and draw the needle back. Having, now, one stitch in the strong and un-lacerated tissues, I gain a support for the tissues below, a sort of break-water which protects the lacerated surface from the lochial discharges; then I put in a second stitch. Sometimes the recto-vaginal septum is so thin as to render it utterly impossible to prevent the needle from coming out now and then on the surface.

You are advised by the books to tighten up the lowest stitch first. I advise you to tighten up the highest (*i.e.* the first) stitch before you touch any of the others, and I think you will understand perfectly why I say this. If you tighten up the stitches from below upwards, the blood and other discharges will constantly be flowing down over the lacerated tissues and will fill up and bulge out all the little puckering and crevices formed when the lowest stitch is tightened, and so you will have union interfered with; whereas, if you tighten up the highest stitch first, it will protect the tissues below and no blood can fill up the crevices, and then all you have to do when you come to the other stitches is to wipe off the raw surface and tighten the next lowest stitch, and so on until all the stitches are secured.

Thus you will have brought together the whole surface of the lacerated tissue, so that when the plastic material is thrown out, there is no portion of raw surface not in contact with some other portion.

One of the advantages of the Baker-Brown needle is, that it makes a track larger than the wire, and so you withdraw it very nicely; and even when the recto-vaginal septum is very

thin, there is less chance of the wire lacerating into the rectum and giving rise to a recto-vaginal fistula.

As regards the method of fastening the ends of wire together after the stitch has been tightened up, I twist them together.

If you employ silk, be sure to cover it well with wax or paraffine; but after all, there is nothing like thin wire. The best results are obtained from the finest wires.

With regard to the dressing needful after the stitches have been properly secured, I generally use some emollient ointment, such as cosmoline.

The patient must be carefully catheterized for forty eight hours after the operation, to prevent the urine from running over the wound. Perhaps the nurse may not know how to use the catheter. In this case, I advise you to provide yourself with one of Goodman's self-retaining catheters. It is particularly valuable when the meatus urinarius is hard to reach. The gum-tubing connecting the self-retaining catheter with the vessel under the bed, should run *over* and not *under* the thigh. If it runs under the thigh, the catheter rests on the stitches, and so by its continued pressure may do some injury; whereas, if it runs over the thigh, the end of the catheter is lifted off the stitches.

After introducing the catheter, the legs should be bandaged tightly at the knees and the patient placed in bed. The after-treatment is very simple. The vaginal douche should be used at the end of twenty-four hours and the canal washed out with carbolized (weak solution) warm water.

I generally leave the stitches in as long as I can. Patients are always nervous and want to have them taken out, but I never remove them under five days, and if they can be left in for seven days I am all the better pleased. If you take the stitches out prematurely, the parts which are beginning to unite may gape again.

In regard to the treatment of *vaginal furrows*, all that is necessary usually is to wash the vagina out with a strong solution of carbolized hot water. If the bleeding is obstinate however, you may be obliged to put in vaginal

stitches, imbedding them, if possible, at the rate of about five to the inch, to stop the hæmorrhage and cause union, thus preventing cicatricial bands.

Incisions of the labia I am in the habit of cauterizing with pure carbolic acid, so as to prevent septicaemia, for a cauterized surface cannot absorb putrescent materials. In speaking of labial incisions I refer, of course, to those made for the prevention of perinæal laceration. In only one case in my practice have I found it necessary to sew up these incisions with sutures, in which case I did not, of course, apply strong carbolic acid.

With reference to lacerations of the cervix uteri, Dr. Broomall proposes uniting the torn lips immediately by cat-gut sutures. As there is no tension of those tissues after union, I see no reason whatever why she should not succeed perfectly with the cat-gut. The condition of lacerated crevix calls for one of the most serious operations in gynæcology, for unless it is properly treated, there is the pouting of the crevix and all the attendant constitutional disturbances first pointed out by Dr. Emmet, of New York. I see no reason why the primary operation should not succeed.

If hæmorrhoidal masses project from the anal surface after labour, be very careful to restore them at once when the rectum is widely distended, and they will give rise to no trouble. Pass them in and hold them there until they show no tendency to prolapse again. If left out, they become tense and inflamed and give rise to great agony on the part of the patient.—*Hospital Gazette*.

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FOR BURNS AND SCALDS, the *Allg. Hopfen-Zeitung* says one of the best but least known agents is oil of peppermint. Applied by pencil or cloth to the wound, it gives prompt ease from pain and leads to a rapid cure without scars. This oil should always be kept on hand. Previous to its application the burnt part may be kept under water. It is sometimes advisable to dilute it one-half with glycerine. In this form it is an excellent application to frozen extremities.—*Allgemeine Wiener Zeitung*, No. 1, 1880.

## OBSTETRICAL SOCIETY OF LONDON.

*Methods of Transfusion.*

At the meeting of the Obstetrical Society, London, held on Wednesday, the 3rd December, a report of an Experimental Inquiry into the Methods of Transfusion, by E. A. Schafer, F.R.S., was read. The first part of the inquiry was to ascertain whether any other fluid, such as milk, could with advantage be substituted for blood in transfusion. Numerous experiments were made on this point, with the co-operation of Mr. G. F. Dowdeswell. It was found that rabbits generally died within twenty-four hours if ordinary milk was injected into their veins, even in small quantities. The blood-corpuscles became disorganized, and the blood swarmed with bacteria. Milk which had just been boiled, or which had been drawn direct from the cow's teat into a previously superheated vessel, was innocuous. Dogs and cats resisted the action of septic organisms in milk. In animals reduced by bleeding to almost a lifeless condition, the injection of milk into the blood-vessels was sometimes, but not always, followed by temporary rise of blood-pressure, but there was never any permanently beneficial effect. Such animals always died. These results are confirmatory of those of Howe and Dupuy in America. It was next explained that no fluid lacking hæmoglobin could be expected to be of benefit in cases of acute anæmia. The question next to be determined was whether the blood of any other animal could be used for transfusion in cases of depletion of the human subject. This question is answered in the negative by the results of the microscopical examination of mixtures of human blood with the blood of lower animals. As Landois and others have already shown, sooner or later the red blood-corpuscles of one or both kinds of blood become dissolved. Moreover, the white blood-corpuscles cease their amœboid movements, and are soon killed. Sometimes the solution of the colouring matter of the blood-corpuscles occurred in a few minutes, sometimes not for some hours. At any rate the action of the blood or even serum of the lower animals is by these experiments proved to be an actual poison to the human blood-

corpuscles, and would probably be the same to the living cells of the tissues. Moreover, it was found that dog's blood could not be transfused to any great extent into a cat in place of the animal's own blood, or lamb's blood into a dog, without fatal consequences. The result of these, experiments, then, is to prove that *in man only human blood can be used with advantage for transfusion.* It was next sought to determine the best method in which transfusion can be effected, and especially if it were possible to transfuse arterial blood into an artery towards the heart. The great advantage which such a method must present is pointed out by Blundell, who, in one passage in his "Researches," gives as a reason for recommending such a course that the circulation through the coronary arteries is at once renewed, and the heart thereby strengthened. Numerous experiments were accordingly made upon dogs and cats with the object of testing the results of such a mode of transfusion and its applicability to the human subject. In these experiments an animal was first depleted of blood until arterial pressure had sunk almost to zero, and one of its arteries (femoral) was connected by glass cannulæ and simple indiarubber tube filled with carbonate of soda solution, with the artery of another healthy animal. The connection was in every case followed by a recovery of the depleted animal almost magical in its rapidity and extent. It was found that a flow of one minute's duration was generally enough to restore the patient, and further that there was little or no danger of the flow of blood from the donor being excessive, for the pressure in the arterial system of the recipient speedily became equal to that in the donor. Out of many experiments of this nature, in only one was the ultimate result unsuccessful, death occurring on the seventh day from secondary hæmorrhage. But in this case the animal was unhealthy (skin disease) at the time of the operation. It was pointed out that the ordinary risks of transfusion, such as the introduction of air or clots into the veins, and supervention of phlebitis, are absent from this operation, and that it has further the advantage that no apparatus is required beyond a simple tube, and that the blood is at once introduced into the situation where it is most

needed—viz., the arterial system. The difficulties that are presented by the use of arteries for transfusion were not lost sight of, but it was insisted on that the very general fear of dealing with arteries is in great measure unfounded; especially if a minor artery is employed. In the human subject it is recommended that the dorsal artery of the foot should be used both to yield the blood and to receive it. The exact method in which the operation is to be performed was described, and the tubes and cannulae recommended were exhibited. The details of the experiments on transfusion, and especially of transfusion from vein to vein, instead of from artery to artery, then followed. These showed that transfusion from vein to vein, through a simple india-rubber tube with glass terminal previously filled with carbonate of soda solution, was both easy and, except in extreme cases, in which the heart had almost ceased to beat, rapidly effectual. It was found that the intervention of an elastic pump, as in Aveling's apparatus, did not accelerate the flow, but in some cases stopped it by sucking in the wall of the vein, and was, moreover, liable to force clots into the patient's vein. And it was pointed out that there is no object in measuring the amount of blood which flows except by the effect produced upon the patient and donor. Finally, it was recommended, as the result of these experiments:—1. That fluids other than human blood should never be used for transfusion in cases of hæmorrhage. 2. That transfusion should always, if possible, be effected through a simple flexible tube with glass cannulae. 3. That direct centripetal arterial transfusion should, if possible, be employed. 4. That failing any person willing to submit an artery to yield the blood, but ready to allow of the exposure of a vein, direct venous transfusion be employed. 5. If it is impossible to attempt either arterial or venous direct transfusion, immediate transfusion of either unwhipped or whipped blood collected into a funnel and allowed to flow through an india-rubber tube and glass cannula into a vein can be tried, although with greater risk of the introduction of clots and of the germs of putrefactive bacteria into the vascular system of the patients.—The President expressed his sense of

the great value of the report. At the same time he felt that there were great difficulties in carrying out direct transfusion, especially the arterial. The objection to opening an artery, and the state of general confusion of a household at the time transfusion was required, rendered it extremely difficult.—Dr. Hicks agreed that it was impossible in many cases to effect direct transfusion, and asked if saline solutions (such as of phosphate of soda), used to prevent the blood to be transfused from coagulating, rendered people more liable to hæmorrhage after its use.—Dr. Champneys stated that the effect of transfusion of lamb's blood in persons suffering from exhausting disease at Dresden were blushing, dyspnœa, hæmaturia, and, in some cases, urticaria. No fatal cases occurred.—Dr. Aveling objected to arterial transfusion, preferred venous, and advocated elevation of the limbs and buttocks, with lowering of the head.—Dr. Cory had transfused three times—twice with saline solution, both died; once by Roussel's apparatus, and the case recovered.—In reply, Mr. Schafer pointed out the danger from using defibrinated blood, acknowledged the difficulties of direct transfusion, and stated that the blood might be prevented from coagulating by mixing with it saline solutions, but the transfusion of such a mixture would prove fatal.—*London Lancet.*

#### THERAPEUTIC ACTION OF SUBCUTANEOUS INJECTIONS AND SIMPLE PRICKS OF THE SKIN.

—M. Dumontpallier sets forth some results he has obtained in certain neuralgias from injections of pure water. In persons affected with very painful sciatica, lead colic, and various neuralgias, he has caused the pain to disappear by simple injections of pure water. In acute articular rheumatism, also, these injections have relieved the pain. As a still more curious thing, M. Dumontpallier has witnessed the same effects from simple pricks. In order to relieve the pain in any given point it suffices to prick the homologous point of the opposite side. *Apropos* of this, M. Laborde reminds us that acute articular rheumatism was formerly treated by acupuncture, after a method borrowed from the Chinese. However, it appears to be demonstrated that the neuralgias due to an organic affection, such as cancer, are not benefitted by injections of pure water.—*Le Progrès Médical.*

THE CANADIAN

# Journal of Medical Science,

A Monthly Journal of British and Foreign Medical Science, Criticism, and News.

TO CORRESPONDENTS.—*We shall be glad to receive from our friends everywhere, current medical news of general interest. Secretaries of County or Territorial medical associations will oblige by sending reports of the proceedings of their Associations to the corresponding editor.*

NOTICE.—*Correspondents will please address all communications, remittances, &c., to the Editor, 57 Adelaide Street West.*

TORONTO, MARCH, 1880.

## THE DIGESTIVE FERMENTS, AND THEIR THERAPEUTICAL USES.

BY WM. ROBERTS, M.D., F.R.S.

Physician to the Manchester Royal Infirmary; Professor of Clinical Medicine to the Owens College.

### II.

PEPTONES AS FOOD.—Although we have been able for many years to imitate digestion very accurately in the laboratory, the proposal or suggestion to feed patients with artificially digested food has hardly yet passed beyond the tentative stage. There cannot be a doubt that if we had at our disposal an available supply of artificially digested (or peptonised) proteids in a state fit for human food, we should find numerous conditions in which such a resource would offer promise of important advantage. In the alimentation of fevers, in the malnutrition of infants, in various gastric and intestinal lesions; in short, wherever natural digestion was partly or wholly in abeyance, we should find an ample field for the trial of peptonised food. The attempts hitherto made to prepare peptones and peptonised aliments for the sick have followed the gastric method—that is, the process with pepsin and hydrochloric acid. But so far the results have been disappointing. The difficulty lies in this. If you subject any native article of food—say milk, or bread, or meat—to artificial digestion with pepsin and acid, you utterly destroy the grateful odour and taste, and the inviting appearance, which made

it desirable as food, and you convert it into a nauseous mess from which the human palate turns away with disgust. The unsavouriness of digested food is, however, not due to any ill taste or smell inherent in the peptones themselves—which, when purified, are both odourless and tasteless—but to a number of by-products of various kinds, volatile acids and other matters, which accumulate as digestion proceeds. One of these by-products is a bitter flavour, which is a constant and noteworthy characteristic of gastric digestion. I find it also associated with the later periods of pancreatic digestion, but in less intensity. The difficulty can be evaded by separating the peptones from the digested mass, and purifying them by repeated precipitation with absolute alcohol. But this process involves so much cost and labour, that it would preclude peptones so obtained from getting into general use.

PEPTONISED MILK.—For some time past I have been trying to attack the problem in another way. Last year, I found that extract of pancreas digested milk with great ease and with little apparent disturbance of its physical character. Milk, as you know, contains all the elements of a perfect food adjusted in their due proportion for the nutrition of the body. Two out of its three chief ingredients—namely, the sugar and the fat—are already in the most favorable condition for absorption, and require little, if any, further assistance from the digestive ferments. It is, therefore, obvious that, if we could change the casein of milk into peptone without materially altering the taste and appearance of the milk, such a result would go very near completely solving the problem of supplying a predigested food for the use of invalids. This consummation is still some way off; but the results already reached are, I think, susceptible of important dietetic application. You cannot, so far as I now know, *completely* peptonise milk without rendering it unfit for human food; but you can *fractionally* peptonise milk—that is, convert three-fourths or four-fifths of its casein into peptone—without materially diminishing its agreeable qualities as an article of food. In order to understand this matter fully, I must ask you to follow me while I describe what occurs when milk is

subjected to the process of pancreatic digestion. I cannot do this better than by describing an experiment performed this forenoon, of which the results are placed in these phials before me. A pint of milk was diluted with half-a-pint of water, and after being heated to 120° F., was placed in a glass beaker with a teaspoonful of liquor pancreaticus and twenty grains of bicarbonate of soda. The beaker was then placed in a warm chamber, and maintained at a temperature of 110° F. until the close of the experiment. In about ten minutes the milk was observed to thicken and become softly curdled. This phase soon passed away; the soft curds became dissolved; and in about half-an-hour from the commencement, the milk had recovered its diffluent condition. Meanwhile, the milk had lost something of its glossy white appearance, and become a shade yellower. Very gradually, further changes took place; the milk got to look a little thinner and greyer; its flavor also progressively deteriorated, and at length became somewhat bitter and unpleasant. The process was completed—that is, all the casein was converted into peptone—in two hours and a half from the commencement of the experiment. The milk no longer precipitated with acetic acid nor even with nitric acid. These numbered bottles contain samples withdrawn from the beaker at different periods, and immediately boiled to prevent further changes. No. 1 represents the original mixture; No. 2 was removed in half-an-hour; No. 3 in an hour; No. 4 in two hours; and No. 5 at the end of the experiment. Nos. 1, 2, and 3 are scarcely distinguishable from each other, either in appearance or in taste; and yet I know, from other and parallel experiments, that in No. 3 at least three-fourths of the casein is changed into peptone. Nos. 4 and 5 are perceptibly altered in taste, but even these have nearly preserved their original milky appearance. The slight yellowing and greying just spoken of are not appreciable, except by comparison with a specimen of unaltered milk placed by the side of the digested samples. The series of changes do not cease with the completion of the peptonising process. The milk continues to deteriorate; and in the course of some hours it becomes more grey and watery-looking, and

its taste becomes decidedly bitter and nauseous. It is important to know that you can arrest this series of changes at any point or at any moment by simply heating the milk to the boiling point. This at once destroys the activity of the ferments and puts an absolute check to all changes. It is also important to know that the greater part of the casein is converted into peptone soon after the commencement of the process, and that it takes a disproportionately long time to convert the remaining portion. Thus I found, when the experiment was so arranged that the milk was wholly peptonised in two hours and a half, that two-thirds of the casein was converted in the first half-hour and three-fourths in the first hour; and that it took an hour and a half longer to convert the remaining one-fourth. In this respect, the peptonising process followed the rule observed in many other ferment actions; namely, that the gradually accumulating product of the ferment-action hampers the operation.

In preparing peptonised milk for invalids, it is absolutely essential to immediately boil the milk when the process has reached the desired point, in order to stop ulterior changes. It is, moreover, obvious that it is not necessary for a therapeutical purpose that the milk shall be completely peptonised. A milk in which three-fourths of the casein is digested, and which is so little altered in flavour that it can be taken like ordinary milk, would probably fulfil all the service capable of being rendered by fully peptonised milk. Such a result as this is, I believe, now within our reach. The rate at which milk can be peptonised by pancreatic extract—in other words, the time within which a given quantity of milk can be digested by this means—varies almost indefinitely according to the attendant circumstances. Four conditions have especially to be taken into account, namely, temperature, the degree of alkalence, the degree of dilution, and, above all, the quantity of the ferment. The higher the temperature, up to about 140° F., the quicker the digestion. The process is arrested and the ferment destroyed at 157°-158° F. On the other hand, a slow action takes place even in the cold. The process is hastened by increas-

ing the alkali up to about four grains of the bicarbonate to each ounce of milk. An alkalinescence of one grain to the ounce of milk secures a sufficiently rapid action, and gives no appreciable taste to the product. A slower action takes place even in milk to which no alkali has been added. Dilution with water hastens the process greatly; it also facilitates it in another way. If the milk be diluted with one-third or one-half its bulk of water, the curdling phase is either altogether absent, or is usually so slight as not to amount to more than a transient thickening of the milk. In practice, I have, therefore, always found it advisable to dilute the milk beforehand, either with simple water or with a farinaceous gruel, so as to abate the tendency to curdling. This tendency varies in a way I cannot always explain. Pronounced curdling delays the peptonising process very considerably, and thereby renders the product less acceptable to invalids.

The quantity of ferment that should be used is always a matter of uncertainty. It is impossible to obtain pancreatic extracts of constant strength; and not only do several specimens of pancreatic extract differ from each other, but even the same specimen varies in activity according to its age. Freshly made extracts are nearly inert, and they go on increasing in activity for many months after they are made. But supposing you to be operating with the same sample, the proportion added to the milk greatly influences the rate of digestion. I have generally used a dessert-spoonful of the extract to a half-pint of milk. If the preparation be fairly active, this proportion yields a sufficiently quick result; and, in the case of the liquor pancreaticus, communicates no flavour. The glycerine extract perceptibly sweetens the milk, and is to some people disagreeable.

After a good many trials, I now advise the following procedure for preparing a peptonised milk for the sick-room. A pint of milk is first diluted with half its bulk of water and heated to about 150° F. It is then put into a covered jug with a tablespoonful of liquor pancreaticus and twenty grains of bicarbonate of soda (in solution). The jug is then placed in a warm place under a "cosey" for one hour. At the

end of this time, the milk is at once raised to the boiling point. It can then be used like any other milk, and undergoes no further change until decomposition sets in. It is well, however, to know that peptonised milk does not keep well, and that it should be used within twelve hours of the time of preparation. The use of the thermometer may be obviated by directing the milk to be diluted with an equal bulk of *boiling* water.

Another formula, which supplies a more nutritious product, and does not require the thermometer, is the following. To half-a-pint of cold milk, in a covered jug, add half-a-pint of well boiled and *boiling* gruel. This gives a temperature of 120° to 130° F. To this add a dessert-spoonful of the liquor pancreaticus and a dessert-spoonful of a saturated solution of bicarbonate of soda (which contains about ten grains). Put under a "cosey," as before, and heat to boiling at the expiration of an hour. In this case, the trypsin of the pancreatic extract acts on the casein of the milk and (I presume) on the gluten contained in the gruel. The diastase of the extract also acts on the starch of the gruel, and converts it into sugar. This method gives us a preparation similar in design to Liebig's food for infants, but in which the proteids, as well as the amy-lacea, are subjected to digestion. The making of it is exceedingly easy, and it would seem well adapted both for the nursery and the sick-room. The gruel employed should be made thin; it may be prepared from wheat-flour, or from oatmeal, or from any other farina.

I have now used these fractionally digested articles of food in a considerable number of cases, and in many with gratifying results. If the process be properly performed, if it be cut short by boiling at the right moment—that is, after the curdling phase has passed away, and before ulterior changes have rendered the milk unpleasant to the palate—the resulting products are liked as well as if they were simple milk-and-water or simple milk-gruel. But if the process be carried too far—or if, on the other hand, the milk be still partially curdled when set before the patient—the product is not liked, and is even apt to cause nausea.

When further experience shall have taught us how to produce a pancreatic extract of constant strength, there will be no difficulty in exactly fixing the proper moment for stopping the ferment-action; meanwhile, the best rule is to allow the process to go on for an hour, and not longer. I have several times seen fractionally digested milk remain on the stomach when nothing else would remain. I have also seen this food tolerated without pain when all other food caused pain.

In the present state of this inquiry, it would not be prudent to say more on the therapeutical uses of peptonised milk and milk-gruel. Any practitioner can easily prepare these articles for himself, and make trial of them among his patients. The pancreatic extracts are made under the personal supervision of Mr. Benger, who has spared neither time nor labour in their preparation, and who, by his skill as a practical pharmacist and his aptitude for experimental work, has rendered me invaluable aid throughout this investigation.—*British Medical Journal*.

#### NOTICE.

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#### Book Notices.

*Responsibility Restricted by Insane Delusions.*  
By T. WRIGHT, M.D., Bellefontaine, Ohio.

*Announcement of the St. Louis College of Physicians and Surgeons—Session 1879-80.*

*A Protest against Meddlesome Midwifery.*  
By H. GIBBONS, M.D., San Francisco.

*Michigan College of Medicine—Announcement for 1880.*

*Ovariectomy—Patient 67½ years—Weight of Tumour, 60 Pounds—Extensive Adhesions—Recovery.* By W. F. McNUTT, M.D., F.R.C.P., Edinburgh.

*Valedictory Address to the Graduating Class of the Medical Department of the University of*

*California.* By W. F. McNUTT, M.D., L.R.C.P. pp. 80.

*On the Internal Use of Water for the Sick, and on Thirst—A Clinical Lecture.* By J. FORSYTH MEIGS, M.D. Philadelphia: Lindsay and Blakiston.

*Paquelin's Thermo-Cautery with Wilson's Antithermic Shield in Epithelioma of the Cervix Uteri.* By H. P. C. WILSON, M.D., Baltimore.

*Malignant Degeneration of a Fibroid Tumour of the Uterus—Large False Aneurism in the Substance of the Growth.* By DRs. ALBERT N. BLODGETT and CLIFTON E. WING, Boston.

*First Steps in Chemical Principles.* An Introduction to Modern Chemistry, intended especially for beginners. By HENRY LEFFMANN, M.D. Edward Stern & Co., Philadelphia. 1879.

This little book of fifty-one pages is intended to introduce those unacquainted with the study of chemistry to the more important principles upon which that science is based. The subjects of notation, nomenclature, and atomicity are unusually well explained, being put in a form that seems admirably suited to the youthful beginner. We think, however, it would meet the wants of our school children in a much greater measure were it enlarged so as to include the principal properties, sources, and preparations of fifteen or twenty of the most useful elements and combinations. This would obviate the necessity of a second primer with its additional cost.

*Diseases of Women.* By T. GAILLARD THOMAS, M.D., &c., &c. Fourth edition, thoroughly revised. Philadelphia: Henry C. Lea; Toronto: Hart & Rawlinson. 1878.

This, which is undoubtedly the most practical and systematic work on the subject at present published, has been so long before the profession that its great merits are well known and fully recognized.

The peculiar arrangement of the work renders it admirably adapted to the wants of the



student, while it will be found sufficiently full of detail for the general practitioner. Thomas and Emmett should both be read by every practising physician; but to the student preparing for examination we would decidedly recommend Thomas. The world is deeply indebted to the Woman's Hospital of New York for the two admirable works of Thomas and Emmett on the Diseases of Women.

*Medical Chemistry, including Outlines of Organic and Physiological Chemistry.* By C. GILBERT WHEELER, Professor of Chemistry in the University of Chicago, and formerly Professor of Organic Chemistry in the Chicago Medical College. Second and revised edition. William Wood & Co., New York. 1880.

This work contains over 400 pages, has good print and binding, and presents a neat and creditable appearance.

We regret that time has not permitted us to peruse its contents more carefully; but from reading a considerable portion of this volume we are led to regard it as an excellent text-book for the use of students of medicine and organic chemistry in general. Several points have struck us as being but feebly elucidated in the other text-books of organic chemistry that have come under our notice, and in scanning the pages of Professor Wheeler's book we are forcibly reminded that these very difficulties are satisfactorily cleared up. With respect to the chemistry of physiology, it may be said that the author's treatment of the blood, the theory of respiration, and the urine, is at once concise and comprehensive, and exhibits the results of the most important recent scientific researches.

*The Science and Practice of Midwifery.* By W. S. PLAYFAIR, M.D., F.R.C.P. Third American Edition. Revised and corrected by the Author, Philadelphia: Henry C. Lea; 1880; Toronto: Hart & Rawlinson.

The appearance of a third edition of a medical work within little more than three years is almost inexplicable, but from those who have been fortunate enough to obtain a copy of former editions the enigma disappears. In our opinion, this stands first among the obstetric works of

the day. Since the appearance of Tyler Smith's admirable lectures we have met with no work on midwifery so charming in its style and so clear in its precepts. It may not be better in principles and practice than Leishman, although in a few points we think it is; but its manner of stating them is so captivating and easy that when the reader opens the book he is very loath to close it.

Few men have the faculty of stating their opinions in so few words without their writings having a cramped or jerky style; but in Playfair, while his periods are short they are always smooth. The whole work, the author tells us, has been revised, and a notice of the more important additions to obstetric science introduced, prominent among which is a full chapter devoted to the discussion of Gasto-Elytrotomy and the Cæsarean Section. The American editor, as usual, has introduced in brackets a number of points more particularly connected with American practice, and this, coupled with the fact that the author has revised the edition specially for this country, will show its adaptation to the needs of Canadian and American readers.

*4 System of Medicine.* Edited by J. RUSSELL REYNOLDS, M.D., F.R.S., with numerous additions and illustrations by HENRY HARTSHORNE, A.M., M.D. In three volumes. Philadelphia: Henry C. Lea; 1879; Montreal: Dawson Bros.

An American reprint of this inestimable English publication, only completed about a year ago, is to be placed within the reach of the practitioners of this continent at a price which must prove fatal to the Old Country edition. With the morality of such a procedure we have not here to concern ourselves, but merely to announce the receipt of the first of the three volumes constituting the American reprint, and to acquaint our readers with its characters and contents.

Volume I. contains the English prefaces to all the volumes and the introductory chapter by the English editor. It is then divided into two parts; the former being devoted to the consideration of "General or Systemic Diseases," as in the English edition, and containing supplementary chapters by the American editor.

on "Rötheln," "Chlorosis," and "Scrofula." Dr. Hartshorne has also inserted (within brackets) in the body of each article whatever annotations or addenda the late progress of science or special American experience has appeared to render necessary in order to make each article *au courant* with the times. Part Two commences the consideration of Local Diseases, and, in this volume, deals with "Diseases of the Nervous System." Here the American editor has intercalated sections upon "Hystero-Epilepsy" and "Athetosis." Of the individual articles we need scarcely speak, and shall content ourselves with saying that each is excellent throughout. Indeed, in view of the names of their authors (including Aitken, Anstie, Bastian, Begbie, Bristowe, Buzzard, Chambers, Fox, Garrod, Gee, Gull, Harley, Hutchinson, Hughlings Jackson, Maclean, Maudsley, Parkes, Radcliffe, Russell Reynolds, Ringer, Wm. Roberts, and Henry Sutton), further criticism would seem to savour of temerity. The publisher's work has been, in all respects, done well. The office of American editor has been no sinecure; but we cannot congratulate Dr. Hartshorne upon the self-imposition of a task so unfair in its outcome towards the Old Countrymen.

In view, therefore, merely of the merit of the articles themselves we would strongly advise all those who have not the English edition, and whose consciences are not tender on the subject of literary piracies, to possess themselves at once of this invaluable work now offered at an astonishingly low figure.

*A System of Midwifery, including the Diseases of Pregnancy and the Puerperal State.* By WM. LEISHMAN, M.D. &c., &c. Third American edition, revised by the author; with Additions by John S. Parry, M.D. Philadelphia: Henry C. Lea; Toronto: Hart & Rawlinson. 1879.

That this book possesses real merit is sufficiently attested by the call for a third edition in so short a time, and those who have read the former editions will not be surprised at the general praise it has received. But while there is much in it that is worthy of admiration, yet we must take exception to some points in which

we think the author is not as positive as he should be in fundamental matters of doctrine. We are glad to find the plates representing the positions of the child's head in the pelvis correctly numbered, as from a mistake in that respect the works of Hodge, Tyler Smith, and even Playfair, are all calculated to mislead the student; but when the author says that "albuminuria of pregnancy is comparatively an innocuous disease," we hardly think he does justice to himself, for in the next line he says "that childbed mortality is directly or indirectly increased in some measure by the presence of albumen in the urine is a fact which no one in these days will gainsay;" and when he goes on to say that albuminuria not only increases childbed mortality but is supposed to be a factor in the production of such childbed accidents and complications as convulsions, hæmorrhage, headache, disorders of digestion, phlegmasia dolens, perimetritis, and possibly puerperal fever, we submit that it can hardly be considered such a harmless or innocent complication. Again, we think the author is too sweeping in the assertion, that in cases in which the expulsion of the placenta is left to nature it will almost invariably be found that it is not the foetal surface but the edge which presents, as described by Lemser, Cazeaux, and Matthews Duncan.

We are satisfied, from repeated observation, that in quite a large number of cases the foetal surface of the placenta does actually come first, inverting the bag of membranes precisely as if withdrawn by traction on the cord, and we are inclined to believe that the position of placental attachment determines whether the foetal or uterine surface comes in advance, when no traction is made on the cord.

In speaking of the treatment of funis presentation he does scant justice to Dr. Thomas, by leaving the inference that nothing but position is recommended by him in his postural treatment; and in speaking of post-partum hæmorrhage, in September, 1879, we think he might have been more definite in regard to the value of hot water injections, than to say incidentally that "in some cases in which cold has failed the injection of water at 110° F. will sometimes produce the most favourable results."

We have tried the hot-water injections into the uterine cavity often enough to satisfy ourselves both of their safety and value, and that by their use the perchloride of iron, as recommended by Barnes, may often be dispensed with.

One great advantage in the use of hot-water injections into the uterus is the promptitude with which reaction takes place and, as far as we have seen, the absence of that jactitation or restlessness which is so often associated with loss of blood.

We are sorry to find so good a writer give so uncertain a sound in regard to plugging for post-partum hæmorrhage; for although he does say, "as it has proved inefficacious it has been abandoned . . . and in no sense does it benefit the patient," yet his whole statement is so undecided that the reader is in doubt as to whether he would condemn or approve the practice. If there be one thing more than another in which the obstetric teacher should be decided, it is in condemnation of plugging for the arrest of post-partum hæmorrhage.

Nevertheless, the work may be regarded as one of the standard authorities on midwifery of the present day, and we can heartily recommend it to the notice of the general practitioner as a safe and reliable guide to modern obstetric practice. In the interest of humanity we would suggest to publishers the advisability of using less highly glazed paper in the printing of medical works, as we have found the reading of Leishman by night to be very trying to the eyes, and it is well known that medical men do most of their reading by artificial light. Commend us to such paper as the *Obstetrical Journal* is printed on.

FORMULÆ.—ERGOT IN PHARYNGITIS.—In chronic pharyngitis, where the blood-vessels of the pharynx are enlarged and tortuous and the secretion moderate, Mr. Dabney reports (*American Journal of the Medical Sciences*) excellent results from the following:

R Ergotine . . . . . gr. xx;  
Tinct. Iodinii . . . . . fl.ʒj;  
Glycerinæ . . . . . fl.ʒj. M.

Sig. Apply to the pharynx freely twice daily with a camel's-hair brush.

## Meetings of Medical Societies.

### TORONTO MEDICAL SOCIETY.

The Society met at 8 p.m., January 15th, the President, Dr. Workman, in the Chair.

Dr. Graham presented a patient, A. B., a painter, aged 23, admitted into General Hospital, January 12th, 1880. Had pneumonia and endocarditis ten years ago. Healthy after this until eighteen months ago, when he had an attack of hemiplegia which lasted about four weeks. Had a second attack six months ago, but ill only one day. About seven weeks ago had a third attack, and fell down while painting. At present he has partial paralysis of the right side of the body and face—the tongue when protruded inclines to the right side. Sensation is much impaired, is unable to taste with right side of tongue and palate, has difficulty in swallowing, is unable to articulate distinctly, has aphasia; eyesight bad; memory considerably impaired. Physical examination showed apex beat of heart to be a little to the left and one and a half inches below left nipple; action irregular; a mitral regurgitant murmur can be distinctly heard. Diagnosis, slight paraplegia and aphasia from embolism of the left middle cerebral artery. The patient is taking potas. iodid. and tr. calumb.

Dr. McDonald presented a portion of epithelioma removed from Mrs. K., aged 35. Had two children. Had pain in back last two years. About two months ago had severe uterine hæmorrhage, returning every two weeks after this. On examination last week found a large growth of epithelioma involving a portion of vagina, the cervix, and extending well up into uterus. On January 11th, removed as much of growth as possible, using the knife, scissors, and curette; then applied nitric acid. Prognosis bad, as growth will probably recur.

Dr. Graham reported a case. Male, aged 38. Had disease of rectum thirteen years. There was a stricture commencing about one inch above sphincter and extending upwards one and a-half inches. He had had syphilis. His father died from some disease of rectum (probably cancer). The Doctor asked: 1st. If in such a case there was any certain means of ascertaining whether the disease was syphilitic or

malignant? 2nd. Supposing it to be malignant, would it be advisable to attempt to remove it? The President suggested the result of treatment as an aid to the diagnosis, and Dr. Covernton mentioned some reports of cases of excision of rectum.

Dr. White reported a case. Mr. A., aged 40, a grain dealer, in jumping off a train felt a sudden severe pain in right groin. The pain partially passed off, and he went about for three days, when the pain again became severe, and on examination the Doctor found a small swelling in the right inguinal canal, and the patient had all the symptoms of strangulated hernia. All attempts to reduce it by taxis failed. After a consultation with surgeons it was decided to operate. On opening the inguinal canal, a tumour was discovered about  $1\frac{1}{4}$  inches. There was doubt as to its nature, and a fourth man (a "brilliant" surgeon) was called in. The majority decided that it was better to remove it (Dr. White alone dissenting) and it was cut off. It was then discovered to be a portion of the appendix vermiformis. The patient died in three days from peritonitis.

Dr. Nevitt presented an encephaloid liver. T. M., aged 52. Had been a soldier. Enjoyed good health until August, 1879, when he began to be troubled with dyspeptic symptoms. About November he noticed a smooth, firm tumour in the middle line of abdomen, and shooting pains extending from tumour to spine. Appetite became poor. Lost flesh, no vomiting; pains increased. A week before death became slightly jaundiced. Died January 14th, 1880.

P.M. twenty-six hours after death. Body exceedingly emaciated. Abdomen opened. Liver enlarged, adherent to the peritoneum, stomach, pancreas, diaphragm and other parts surrounding. In front, the adhesions were recent and easily broken down; behind they were very firm, requiring considerable force for their separation. The posterior portion of right lobe was softened—the left firmer. The entire surface was spotted by yellowish-white patches in size varying from a speck to a small orange, more or less roundish in form, radiated in appearance, and with a slight cup-shaped depression in the centre. Some of these spots broke down and showed a soft mass of encephaloid matter. The

pancreas was implicated. Large indurated glands could be felt along side of the vertebral column on each side. The cardiac end of the stomach was occupied by a villous growth of some magnitude, the spleen was normal in appearance, though small. The left kidney was pale and rather large, weighing eight ounces.

At a meeting, January 29th, the 2nd Vice-President, Dr. Riddell, in the Chair.

Dr. Graham reported a case of death from progressive muscular atrophy. Mrs. M., aged 56. Was ill  $1\frac{1}{2}$  years ago. Had darting pains throughout the body, and some swelling of joints, supposed to be rheumatism. Two months before death her friends noticed that she was unable to hold her head up properly. She grew worse rapidly. Four weeks after this she began to have difficulty in swallowing. When he (Dr. Graham) saw her a few days before death, she appeared very ill, was emaciated; pulse, 110; breathing, 40 shallow; unable to swallow solids; the trapezius especially, and also other muscles of neck, right shoulder, and thorax were atrophied. No stricture of œsophagus; no loss of sensation. The fifth and sixth cervical vertebræ were very prominent. Previous to her illness she had received two injuries, one from falling down stairs, another from a blow on the head.

Also a case in practice showing the importance of the sphygmograph as an aid to diagnosis. Mr. M., two years ago had acute rheumatism lasting 8—10 weeks. Never got very strong after this. Became ill in July last. When seen in September he was anæmic, quite yellow, had palpitation of heart, and a blowing systolic murmur heard at base, liver slightly enlarged, spleen normal, had hæmorrhoids. Diagnosis, serious disease of aortic valves. A few days after this the sphygmograph was used and showed a normal pulse tracing. The prognosis became therefore more favourable, and in the supposition that the disease was to a large extent anæmia. Tr. ferri was prescribed, and he has taken this constantly since (over three months). When seen again by the Doctor a few days ago he was very much improved. There was still a slight but indistinct murmur.

Dr. Winstanley reported a case. Mr. A., said to have had a fit a week before death.

Had another on the morning of the day he died. When seen by Dr. Armstrong, he was very pale and perspiring freely. Was told to keep quiet, but he did not do so; and a few hours after he became suddenly weak, got pale, and died in a few minutes. The post-mortem examination showed heart flabby but otherwise nearly normal. The aorta was much dilated at its commencement, and had considerable atheromatous deposit in its walls. Valves healthy, but insufficient on account of the dilatation of the aorta. The edge of the liver showed incipient cirrhosis, a clot was formed in its substance, partly an old one about the size of a hen's egg, and another smaller one quite fresh. Kidneys congested. Skull not opened.

The Doctor also gave an account of two cases of purpurà occurring after measles.

Dr. Covernton reported a case of writer's palsy. Treatment: rest, tonics, and faradisation. The patient is growing worse. Dr. Cameron thought the treatment by faradisation was wrong, as it tended to stimulate muscles already worn out; and in such a case as this, the continued current which acted as a tonic, was indicated.

Dr. Nevitt presented a specimen with a report of case. Mrs. C., aged 64. Previously in good health. On January 1st, 1880, while eating her dinner, suddenly complained that something had stuck in her throat. Probangs were passed, but nothing discovered to account for symptoms. The feeling of having something in her throat continued for four days, when she vomited a quantity of blood, about twelve ounces, of a bright red colour. At this time there was a diffused rather firm swelling on right side of neck. The attacks of bleeding continued, and after a profuse hæmorrhage on the morning of the 6th, she fell back dead. P.M. 38 hours after death. Trachea filled with a clot. Larynx healthy. There was a small hole on right side of pharynx, leading to a cavity containing some dark clots. An orifice was found in superior thyroid artery communicating with the cavity. No foreign body was found.

Mr. Thos. H. Monk presented some charts showing the extent of various diseases during the last few weeks; and also read a draft of a bill which it is proposed to ask the Dominion Parliament to pass.

Dr. Covernton then read a paper on "Perforating Ulcer of the Stomach."

## Miscellaneous.

PROLAPSUS ANI.—Dr. T. M. Lownds, in *British Medical Journal*, says that if a grain of Barbadoes aloes, with two or three grains of pepsin, in a pill every evening after the last full meal will usually give immediate relief.

THE THERAPEUTICAL ACTION OF COLD.—Dr. W. H. Thompson, in *Medical Record*: Therapeutically cold has five actions: (1) tonic, (2) styptic, (3) antiphlogistic, (4) anesthetic, (5) antipyretic. In the first three cold acts only on the vasomotor system as a pure irritant neurotic. In the last two it acts simply upon physical principles.

KEITH, of Edinburgh, has performed ovariectomy seventy times in succession without a fatal result, and one hundred times with only three deaths. In his hands the operation has thus become less fatal than amputation of the leg or even of the arm. Why is this operation so safe in the hands of one man and so fatal in the hands of others?

MALARIAL BRIGHT'S DISEASE.—By malarial albuminuria I understand (says Prof. Da Costa) a condition characterized by albumen in the urine, with granular and hyaline tube-casts coming on slowly, associated with dropsy, and as gradually passing away. In the long run, and with proper treatment, such cases usually recover. Their very essence consists in their gradual development, with impaired blood, dropsy, and bloody urine. Such cases have no acute stage.

M. GRASSET made a communication on the *Comparison of the Lesions of Leprosy and Scleroderma*. M. Grasset has at present in his service one patient attacked with leprosy and another with scleroderma. He has studied these two diseases with great attention, and has thus been able to draw a comparison between the two diseases: this comparison eventuated in the finding of striking analogies. M. Grasset thinks that in leprosy is to be seen only a form of scleroderma. So he proposes

to compare the tubercular leprosy of our day with scleroderma, and to the single disease thus constituted to give the name of tubercular scleroderma.—*Le Prog. Méd.*

**A CURE FOR NETTLERASH.**—Dr. Schwimmer (*Pest. Med.-chir. Presse*) gave in a case of urticaria of one year's duration the following prescription: R Atrop. sulphat., gr. .01; aq. destil., glycerin, āā gr. 2; pulv. tragacanth., q. s. F. pil. x. S. A pill morning and evening. By the third day remarkable improvement was noticed and a rapid cure followed. In another case of chronic urticaria with hyperidrosis one milligram of atropia daily for eight days made a perfect cure. A third obstinate case yielded rapidly to the same treatment.

**PREMATURE LABOUR INDUCED BY HOT WATER INJECTIONS.**—Prof. Benicke gives an account in the *Berliner Klin. Wochenschrift*, No. 52, 1879, of a case of hydramnion in the eighth month of utero-gestation in which he found it necessary to induce premature delivery. The douche was employed and the water used at a temperature 120° F. This was repeated at intervals of five or six hours for one day and a half, when strong labour pains came on and an easy delivery was effected. Benicke prefers this method to all others on account of its absolute safety to both mother and child. He claims that there are on record but two other cases (by Runge and Waechter) in which this plan was solely relied upon!

**THE EVIDENCE OF STILL BIRTH.**—Dr. Abbott, after an elaborate and careful consideration of all the points in connection with this subject, sums up the results of his investigation in the following words:—"The medical man may infer that a child has lived during and after its birth (1) when the diaphragm reaches only to the fifth intercostal space; (2) when the lungs more or less completely fill the thorax; (3) when the ground colour of the lungs is broken by insular marblings; (4) when by careful experiment the lungs are found to be capable of floating; (5) when a bloody froth

exudes from the cut surfaces of the lungs on pressure; (6) when the air cells are visible to the naked eye. These proofs, complete as they are, may be strengthened by the cicatrization of the umbilicus, the healing of the epidermis, the closure of the foetal ducts, and the size of the osseous nucleus of the inferior epiphysis on the femur. The existence of milk, sugar, starch and medicines in the stomach, determined by the appropriate chemical tests, and by the presence of faecal matter other than meconium in the lower intestines of course show that the child has lived.—*The Boston Med. and Surgical Journal.*

**BROWN PAPER AGAINST THE COLD.**—The "old woman's" remedy for a "cold on the chest," a sore-throat, or a bruise, which consisted in an application of brown paper steeped in beer or vinegar, owed its efficacy to the heat-retaining properties of the paper. A wet pad of this material, so far as the surface next the skin was concerned, acted almost as well as a layer of wet linen-rag protected with a thick covering of flannel. In short, stout paper of the commonest sort is an effective non-conductor, and may be most advantageously employed as covering for beds or to eke out scanty clothing. If this were generally known among the poor, strong sheets of thick paper would be stitched to the back of ragged quilts, with the result of rendering many a poor family comfortable because better protected from the bitter weather of these winter nights. A piece of thick paper inserted between the lining and the cloth of a waistcoat, or in the back of a thin coat, will render it warm as well as light. The suggestion is a small one, but is simple to carry into effect, and will be found effective.—*London Lancet.*

**INTRAVENOUS INJECTIONS OF MILK AND OF SUGAR.**—Mm. Montard Martin and Ch. Richet have made a series of experiments upon this subject, of which the following are the conclusions:—

1. The injection of a great quantity of milk kills by bulbar anæmia.
2. The introduction of lactic ferment into a vein appears to be without effect.

3. Injections of concentrated solutions of sugar kill by bulbar anæmia.

4. Milk injected into the venous system has no immediate action upon the pulmonary circulation, nor upon muscular contractility, nor upon the cerebral nervous centres of the nerves.

5. Sugar injected into the veins is very rapidly extracted by the urine, and provokes an intense polyuria, and an abundant intestinal flux.

6. The symptoms which follow massive injections of milk are: Vomiting, polyuria, deglutitionary movements, and later acute cries, defective respiratory innervation, contracture of the limbs, and arrest of the heart.

7. At the autopsy of animals killed by injections of milk or sugar, there is found marked intestinal congestion, and very constantly sub-endocardial ecchymoses.

8. From a therapeutic point of view the injection of milk is a useless and dangerous operation, which it is absolutely necessary to proscribe.—*Gazette des Hôpitaux*.

ESSENTIAL ASCITES. — (Professor Potain, Hospital Necker, *Jour. de Med. et Chir. Pratiques*, Oct., 1877). Ascites may show itself in certain cases without it being possible to consider it other than of essential origin. A case was presented of a woman with enlarged abdomen, which dated back a fortnight, during which time she had had considerable fever. Neither the heart nor liver were affected, while the rapid progress of the disease eliminated such causes as tubercule and cancer. In such cases, in the absence of all other causes, we are obliged to admit a primitive ascites. This sometimes follows a chilling, especially if the belly itself be exposed to cold. This is observed in drunkards who sleep off the effects of drink extended flat upon the earth. The patient in question is a laundress, consequently she is often exposed to having her abdomen wet. It is true that she has been long exposed to this influence, but it must also be admitted that often in these subjects an unknown modification of the organism may occur which lessens their resistance to continued causes. Her age and general enfeeblement, which is marked, and probably due to her mode of life, may also be

involved as causes. However this may be the prognosis in this form of ascites is much less grave than when it is symptomatic. The effusion may last a long time. At the outset it was a subacute peritonitis, which accounted for the excessive tympanites, and resulted in paresis of the intestines. This, with the febrile state, calls for local blood-letting; at a more advanced period, she should be put upon purgatives and diuretics only.—*St. Louis Globe Record*.

HYDRATE OF CHLORAL.—Dr. H. H. Kane of New York City, U. S. A., specially requests members of the profession with any experience whatever in the use of the Hydrate of Chloral to answer the following questions, and give the information they may possess in reference to the literature of the subject:—1. What is your usual commencing dose? 2. What is the least amount you have administered at one dose and the largest amount in twenty-four hours? 3. In what diseases have you used it (by mouth, rectum, or hypodermically), and what results? 4. Have you known it to cause eruptions produced by it? 5. Have you ever seen cutaneous eruptions produced by it? 6. Do you know any instances where death resulted from its use? If so, please give full particulars as to disease for which given, condition of pulse, pupils, respiration and temperature; manner of death; condition of heart, lungs and kidneys; general condition, age, temperament, employment, etc., etc., etc. If an autopsy was held, please state the conditions there found. 7. Have you seen any peculiar manifestations from chloral—as tetanus, convulsions or delirium? 8. Do you know of any cases of the chloral-habit? If so, please state the amount used, the disease for which the drug was originally administered, the person's age, temperament and the present condition of the patient. Physicians are earnestly requested to answer the above questions, in order that the resulting statistics may be as full and valuable as possible. All communications will be considered strictly confidential, the writer's name not being used when a request to that effect is made. Address all letters to Dr. H. H. Kane, 366 Bleecker street, New York City.