ening, with complete immobility of limb on pelvis, still present. No pain in joint on knocking heel. Ordered to the seaside, a thick leather splint, with an aperture cut in it over the trochanter, having been carefully applied before his departure.

I confess I now looked upon the case, as did also another medical man who saw the patient with me, as a well-marked example of hip-joint disease, having up to this date inclined to consider it as originating in periostitic inflammation ending in caries or necrosis; and from the extremely depressed state of the boy's general health, I had grave doubts as to his ultimate recovery.

Sept. 12th.—I was suddenly called to the seaside to see my patient, having heard nothing of him since he left home. I learned that the leather splint had been discarded two or three weeks after his arrival at the seaside; that he had gradually got from a Bath chair to crutches; that three days before my visit, after an unusually long walk, the swelling over the hip had suddenly become exceedingly painful, rapidly increased in size, and burst, discharging a large quantity of pus.

On examination, I found a circular opening about the size of a shilling, having a quantity of flabby, fungoid-looking granulations protruding from it (the appearance of these growths alarmed the boy's mother very much, and were the cause of my being sent for) over the tip of the left trochanter major. The probe detected no bare bone, but the finger could be passed down to the bone into a cavity of considerable size, extending all round the trochanter, and dipping deeply behind the femur. The tendon of the gluteus maximus could be distinctly felt in the cavity. I was struck with the marked improvement in the patient's general health. The affected limb could be moved freely without giving the slightest pain; and, on being asked if he could walk without his crutches, he quickly threw them aside and went rapidly across the room, showing the least possible halt in his gait. Ordered carbolic acid to be injected into the cavity of the abscess three times daily, and to be applied as a dressing to the external wound; and a prolonged residence at the seaside.

Oct. 10th.—Seen patient to-day. Returned from the seaside a week ago. Wound over hip much diminished in size; granulations healthy; little discharge. Thickening of upper part of femur all but gone. Motions of limb perfect; only a slight limp can be detected in his walking. Advised to continue use of crutches a little longer.

CASE 2.—Mrs. C—, a fair-haired, bright-complexioned, married woman, twenty-two years of age. Has enjoyed good health till about six months ago, when, without being aware of receiving any injury, she became sensible of a severe pain in the left hip over the trochanter major. The pain going on increasing, and being followed in a short time by swelling of the part, she consulted several surgeons, who all pronounced her to be suffering from the first stage of hip-joint disease, some ordering rest and blisters, others leeches and fomentations. Deriving no benefit from the above treatment, she applied for admission to a hospital, and was received as an in-patient on the 3rd of July. Here opinions varied as to the precise nature of her malady; some members of the staff considering the case to be one of deep-seated abscess, the result of periostitic disease in the neighbourhood of the trochanter major and upper part of the femur; others that it was an undoubted instance of morbus coxæ. While in the hospital she was treated by repeated counter-irritation, with chalybeates and cod-liver oil internally. Becoming discontented with the slow progress of her case, she was discharged from the hospital at her own request, and against the wishes of her medical attendant, on Sept. 13th.

On the 15th of September she came under my observation, when her case presented the following symptoms:—Left thigh slightly flexed on the pelvis; hip-joint perfectly fixed, the thigh being firmly grasped by the patient, and moved with the pelvis, on her being asked to attempt to turn herself in bed. Over the trochanter major, and involving the whole of the upper third of the thigh, was a large, tense, acutely painful, and obscurely fluctuating swelling. No pain complained of on pressing the articulating surfaces of the hip-joint together. On supporting the patient in the erect posture the left hip appeared flattened, the trochanter major of the same side being more oblique, bulging out more than the right; and there was well-

marked simulation of lengthening of the limb, the foot being slightly everted. Excruciating pain was complained of on putting the gluteal and muscles of the upper part of the thigh on the stretch by the patient's attempting to rest in the slightest degree on the affected limb. There was great constitutional disturbance. The patient had not slept for several nights; tongue dry; teeth covered with sordes; pulse 130.

18th.—Feeling convinced from the woman's general appearance, previous and family history, and several of the foregoing symptoms, and having so recently seen such a similar case, that the disease was *not* in the hip-joint, she was put under chloroform, and an incision about two inches and a half long was made a little below the trochanter major, and down to the bone. A pint and a half of healthy-looking pus escaped. Great relief followed the operation. No bare bone could be detected by probe or finger, but a large cavity could be felt over, around, and behind the trochanter major, dipping deeply behind the femur into the adductor muscles on the inner side of the thigh. While under chloroform a careful examination of the hip-joint was made. No disease could be detected, and the thigh could be freely moved on the pelvis in all directions. The cavity of the abscess to be washed out twice daily with carbolic-acid lotion, and carbolic-acid dressing applied externally.

19th.—Patient looking well and cheerful; had a good night. Thigh much diminished in size; pain quite gone. A copious sanious discharge from the cavity of the abscess. Can flex the thigh on the pelvis with considerable freedom. Carbolic-acid dressing and injection to be continued.

22nd.—Still improving; discharge from the wound much less; induration around the trochanter diminishing.

Oct. 11th (three weeks after operation).—Since last date patient has gone on rapidly improving; sits up daily, and, with the aid of a stick, walks about the room. Little or no discharge from the wound, which is contracting and granulating kindly.

It appears to me that the foregoing cases agree in so many points with those recorded by Mr. Teale, that they must be examples of the disease he describes; and although in the first case recovery took place without division of the tendon of the gluteus maximus, the evidently active part it plays in keeping up the disease having been entirely unsuspected by me, in the second, from the position and extent of the incision made, the gluteal tendon must have been divided, if not entirely, at all events in part, and thus account for the speedy cure.

Bury St. Edmunds, October 12th, 1870.

A NEW DIGESTIVE:

BEING A COMBINED SOLUTION OF PEPSINE AND
PANCREATINE.

By RICHARD JOHN KINKEAD, B.A. & M. T.C.D., &c.,
Tuam, Co. Galway.

THE value of pepsine as a remedial agent in cases of indigestion is generally admitted. But practice and experiments prove, what theory would have led us to predict, that it is only in certain forms of indigestion that it is of use.

Food is divided into two distinct classes—nitrogenised and unnitrogenised. The former is digested in the stomach, the latter in the intestine. The former is acted on by pepsine, whilst the latter escapes its action almost altogether. As far as we know at present, the only action pepsine, as it appears in the gastric juice, has on fat is to dissolve the albuminous cell-wall, and so leave the fat free to be acted on by the pancreatic secretion. This action of gastric fluid on fats suggests what may probably cause fatty indigestion, independent of any functional or organic disease of the pancreas. For the gastric fluid being deficient in quantity or quality, the albuminous cell-walls of the fat may not be dissolved; the fat cannot be acted on sufficiently by the pancreatic secretion, the cell-wall intervening, and consequently is not emulsified and cannot be taken up by the lacteals. On the other hand, disease of the pancreas or intestine, functional or organic, checking

the absorption of fat, may cause indigestion, which will not be cured by pepsine.

As pepsine does not cause the fats to be digested, this indigestion, so common in phthisical cases, requires pancreatine, the action of the pancreatic secretion being chiefly the emulsifying of fats. This has long been suspected from the connexion observed between disease of the pancreas and the discharge of fatty and oily matters from the intestines. But latterly its emulsifying powers have been proved by Dr. Dobell, as evidenced in the pancreatic emulsion of fat which he introduced; and I think I am not saying too much when I affirm that the experiments of Mr. Long, which I subjoin, not only distinctly prove its emulsifying powers, but also demonstrate clearly the part it plays in the digestive process. It is evident that, there being two classes of food to be digested, and each by different portions of the digestive tract, the more perfectly one is performed the more easily will the other be effected.

For instance, let us suppose the stomachic digestion to be weak: the fat-granules are not set free as perfectly as they ought from their cell-walls, the fibrine &c. is not as perfectly dissolved as it should be, and in consequence an imperfectly formed and badly mixed chyme is passed into the duodenum; the pancreatic secretion cannot do its work properly; the intestines have a partially formed emulsion presented to their lacteals; and, in addition, undigested lumps of nitrogenised food not only hinder the emulsion being applied to the lacteals, but also the irritation occasioned by these undigested particles causes a quantity of mucus to be poured out, and the contents of the bowel to pass too rapidly along to permit of a proper absorption.

So far for the effects of stomachic indigestion. Now let us see what may be the result of intestinal indigestion on stomachic digestion. The emulsifying of the fats, as they pass from the stomach, being imperfectly performed, the emission of the fat through the pylorus is checked, and consequently the food is detained longer in the stomach than is right; the proportion of fat to fibrine is increased, the fat enveloping the nitrogenised food hinders the action of the gastric juice, and acidity and stomachic indigestion are produced.

It is evident therefore that, in treating stomachic indigestion, it is important to accelerate the digestion of fatty and saccharine portions of the food: and in intestinal, to accelerate and perfect the digestion of the albuminoids. There are also cases in which digestion of both the nitrogenised and unnitrogenised food is at fault.

Accordingly, being impressed with these ideas, when some time since my friend Mr. Long sent me a sample of his solution of pepsine in glycerine, asking me to try it in practice and give him my opinion upon it, it appeared to me that a solution of pepsine and pancreatine, combined in suitable proportions, would fulfil the conditions necessary to form a perfect digestive. I therefore wrote to Mr. Long, and suggested to him the preparation of a combined solution of pancreatine and pepsine. The results of our correspondence and conversations on this subject I can best lay before the profession by publishing the following letter from Mr. Long. My own experience of the combined solution is limited but satisfactory.

Dublin, Sept. 12th, 1870.

MY DEAR DR. KINKEAD,—Following up the subject of our conversations some time since, I have been making experiments on pancreatine obtained directly from the fresh pancreas of the calf. The result has been quite what might have been expected from *a priori* reasoning, as you will see from the subjoined statements.

Some difficulty was experienced in obtaining the solution of pancreatine in an eligible form for administration; but at last I succeeded in producing what as closely as possible represents the digestive fluids found in man. It is composed of pepsine and pancreatine in suitable proportions, using for the former a solution of pepsine introduced by me some time ago, and adding the solution of pancreatine as now prepared.

In the experiments made to test its effects a very curious result was observed. Meat—beef and mutton—digested in pepsine alone was found to be entirely dissolved with the exception of the fat, which floated as a film on the surface, and this film was entirely emulsified when a proper quantity of pancreatine was added, and the usual conditions as to temperature &c. attended to. This is exactly what we

would expect, reasoning from known physiological principles. The fibre of meat, gelatine, &c., are dissolved in the acid secretion of the stomach, and pass with it through the pylorus into the duodenum, where the fatty matters, already softened or melted, are emulsified by the secretion poured from the pancreatic duct, converting the whole into the milky fluid, chyle, fit to pass into the lacteals.

I need not expatiate on the benefit of having at command a remedy of this kind in cases of emaciation, depending on any cause, but more particularly on mal-assimilation; any remarks of this kind will more properly come from the practising physician. I will merely observe that, as one of the principal difficulties in treating functional or organic diseases of the stomach is the almost impossibility of affording the rest so essential for repair or recovery, the next best thing is, obviously, to give that organ as little to do as possible. By means of the combined solution of pepsine and pancreatine we can artificially digest a considerable quantity of the necessary food, and by so much diminish the work to be done by the part requiring time to recruit.

Pepsine in an effectual form has been a great boon, but, as I have shown above, it will not digest the oily or fatty aliments; and we fail thus to supply the system with those substances demonstrated so clearly by Dr. Horace Dobell and yourself to be vitally necessary in strumous diseases. It is very obvious how desirable the action of this fluid will be as an addendum to the use of cod-liver oil. Many patients will be able to take it with benefit without those horrid eructations hours after being taken, arising from the inability of the stomach to digest it, thereby causing dyspepsia instead of increased nutrition.

The pancreatic emulsion, which has been of such signal benefit in your hands and others since first introduced by Dr. Dobell, has never seemed to me the nicest or most eligible mode of effecting what is desired. It is nauseous to the taste of many, and often keeps badly; and the quantity of mutton suet employed, which may be supposed to be all the fatty matter the pancreatine present is capable of emulsifying, is not as much as might be desirable in many cases. In some, suet at all may not be the most suitable form of fat. The fluid I now describe is very palatable, as you may observe, and will keep almost any time. It may be given with any kind of food. My experiments were made with fat mutton-chops and rich beef-steaks, as typical aliments, with most satisfactory results. I append a brief statement of the quantities, which you can use in any way you like, as also this note.

The first experiments, thrice repeated, were made with muriatic acid, water, and the combined solution, to represent the gastric juice, and pancreatic secretion. The second, with solution of pepsine alone, with acid and water, followed by the addition of the plain pancreatic solution after an interval of two hours. Both were entirely satisfactory; but the latter were peculiarly interesting in a physiological point of view, as stated above, and tend to show the exact part played by each fluid in the animal economy. But as the administration of two fluids in succession would be troublesome in practice, and be scarcely attended to by patients (at all times averse to trouble), I have thought it desirable to mix the two in one fluid. This has the advantage of being quite agreeable, as liquor of pepsine always is; while liquor of pancreatine not being so, its taste is entirely concealed by the former. Some medical friends of mine, to whom I have given a little of the small quantity made hitherto, have, you will be glad to hear, reported most favourably, after trial in practice. I also sent a bottle to you some short time ago, which I hope you have had an opportunity of testing fairly.

The experiments in the laboratory were as follows:—

No. 1.—Mutton (fat and lean about equal parts), one ounce; water, one ounce and a half; muriatic acid, fifteen minims; solution of pancreatine and pepsine, one drachm. Digested at 100° for four hours, this was converted into a homogeneous pulp, and, when diluted with a little water, presented quite a *chylous* appearance.

No. 2.—Beef (fat and lean), an ounce and a half. Treated in same way, with same result, the pulp being much deeper in colour.

Nos. 3 and 4.—I then operated on the same quantities of each, first digesting with pepsine solution alone, as intimated above, and then adding the liquor pancreatine—keeping up the heat. In these latter experiments the re-

sult seemed more perfect, but, as I have said, the same procedure would be rather inconvenient in practice.

The results were found to be identical in three successive experiments, at intervals of several weeks.—Yours faithfully,
EDWARD LONG.

ON A CASE OF

INDUCTION OF PREMATURE LABOUR,

AND EXTRACTION OF THE PLACENTA TEN DAYS AFTER
THE EXPULSION OF THE FÆTUS.

BY CHARLES ROBERTS, M.R.C.S., &c.

THE following case tends to prove the great advantage to the poor of cottage hospitals; and also helps to bear out the remarks of Dr. Playfair at a meeting of the Obstetrical Society, reported in THE LANCET of Oct. 22nd, that "retention of secundines was most likely to occur in the third and fourth months."

The patient, aged thirty-nine, has for years had contraction of the pelvis, and of four of her children that are now living she has been delivered by forceps. More than two years since, having gone her full time, it was found impossible to deliver with forceps, and craniotomy had to be performed, after which she was delivered with difficulty. About fifteen months ago, being then five months pregnant, premature delivery was induced by puncturing the membranes, and all went well.

On the present occasion, being again gone in the family-way between three and four months, I introduced on the 26th of July a sea-tangle tent into the os uteri. This was retained till the 29th, when it was expelled. Next day I introduced another, which was expelled the following day. On August 1st I introduced a third, and in the evening the membranes ruptured, and liquor amnii escaped. Ergot was then given every four hours; but it was not until the 4th that regular pains made their appearance, and the funis descended into the vagina. On the 5th I sent her to the Hillingdon Cottage Hospital, and on that day soon after admission the fœtus was expelled. I saw her within an hour, and found there was no effort to expel the placenta, and the os uteri so closed as to barely admit the tips of two fingers. Not a drop of blood had escaped. All my efforts to get at and remove the placenta failed, although I tried again that evening and also the following morning; so I had to content myself with giving several doses of ergot, and await the course of events. Things went on in this condition for six days. She improved in health, and there was not the slightest bloody or fetid discharge. On the night of the 11th July, however, some considerable quantity of blood and several clots passed. The nurse did not call me, thinking the placenta was among the clots. This, however, I found not to be the case, and gave her directions to send immediately if fresh hæmorrhage occurred, in the hope that from loss of blood the os might yield, so as to admit of my extracting the placenta. At 11 p.m. on the 15th, fresh hæmorrhage to a considerable extent took place, and she became faint. I was then able to introduce two fingers into the uterus with much difficulty, and found the placenta firmly attached on the left side of the fundus, but succeeded in detaching and removing the whole piecemeal. The operation took two hours. On the evening of the next day symptoms of peritonitis showed themselves, but were quickly allayed by opium and turpentine stupes. From that time she made a rapid recovery, due in a great measure to the constant attention, good nursing, and diet, which she could not have had at home.

Uxbridge, October 31st, 1870.

AUTOPSY OF A CASE OF CYANOSIS.

BY W. H. SHEEHY, L.R.C.P. ED., M.R.C.P., &c.

M. M.—, aged sixteen, was seized, in going upstairs, after she had partaken of supper, with a fit of giddiness with sickness and vomiting. She was assisted into her room, and on being placed on the bed fainted, as her mother thought, and I was at once sent for. I found her dead, with dark

purplish-blue colour of body and face generally. From the parents' statement I gleaned that she had been examined by two medical men at separate intervals, both pronouncing her case to be heart malformation, due to the existence of "a passage between the auricles." I had never attended her. Owing to some opposition on the part of the parents, the post-mortem was delayed, and decomposition had set in considerably.

Autopsy, seventy-two hours after death.—Rigor mortis almost complete. Body apparently well nourished. No marks of violence. Intense purplish-blue colour of face and body. Venous blood oozing from mouth and nose. General emphysema of subcutaneous areolar tissue; felt like lung-tissue. Scalp deeply congested. On removing the calvaria there was an escape of a large quantity of black, venous blood,—nearly a pint I should think. Dura mater contained extravasated blood; brain-substance less firm than in health; sinuses contained black blood. The pleuræ were adherent throughout. Lungs congested and emphysematous. Areolar tissue of mediastinum emphysematous. Pericardium contained about a teacupful of dark-coloured fluid. Heart congested, large, and flabby, and was empty, with the exception of a small clot in right ventricle, weighing twenty ounces. Foramen ovale closed, having two transversely oval foramina, about the size of a large blanket-pin's head, about its centre; on making the membrane tense transversely, their edges were brought into apposition. Ventricles considerably hypertrophied, with some degeneration of the substance of the walls. The septum was occupied superiorly by an abnormal aperture the size of a florin, allowing communication between the ventricles. This foramen was partially closed during systole by a membranous prolongation of the lining membrane in the form of a lunated valve, the concavity being directed towards the apex, and connected to the walls of the ventricle at its free edge superiorly by fasciculi resembling cordæ tendinæ. Valves healthy, but somewhat thickened; pouch of Valsalva enlarged. Abdominal viscera generally congested.

There can be no doubt that death was caused by the exertion of walking up-stairs (having always been carried previously), paralysing the heart with præcordial oppression, &c., which, from the distended state of the stomach with food, produced vomiting, by irritation of pneumogastric nerve; the effort rupturing the already over-distended superior longitudinal sinus, causing extensive extravasation of blood between surfaces of the dura mater, and pressure of brain (venous apoplexy).

Claremont-square, September 1st, 1870.

A Mirror

OF THE PRACTICE OF
MEDICINE AND SURGERY
IN THE
HOSPITALS OF LONDON.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. GEORGE'S HOSPITAL.

THE OPERATION OF SKIN-TRANSPLANTATION; CLINICAL
REMARKS.

By Mr. POLLOCK.

On the 3rd inst. we were present while Mr. Pollock performed the operation of skin-transplantation which he has introduced into this country. He pointed out that the sore on which he was about to operate, which was a rupial ulcer, presented a feature which was, in his experience, frequently to be observed in ulcers of that nature, and possessed a special interest in connexion with the question of skin-grafting—namely, a number of central points of cicatrisation pre-