absorption occurred. And it is conceivable that they may have been too few in number, or too little varied,—nay, even too unskillfully conducted, to be of much value, and may demand repetition; or, that the circumstances under which experiments of this kind must necessarily be made, are such as to preclude the hope of our ever obtaining satisfactory information through this channel. Yet, even in this event, we may yet obtain the requisite satisfaction. Possibly, nature may herself yet furnish us, in her own way, with the evidence which we cannot extract from her by artificial methods of interrogation. Had we, *e. g.*, undoubted instances of the foetus being tainted with syphilis through the father, and communicating the virus to the mother, we should have all the proof we need desire that matters can and do pass by absorption from the foetus to the mother. Whether such evidence shall yet be had, remains to be seen; but it may be observed, that Mr Paget has suggested the criterion by which the value of alleged instances of this kind may be determined.

(5.) It will be necessary to defer, till after consideration of the next division of the subject, the several suggestions to be offered as to the conducting of experiments in breeding on the lower animals, with the view both of testing the principle of *inoculation*, as held and applied by Mr M'Gillivray, and, if a sound one, of giving greater breadth and precision to our knowledge of it. Meanwhile, assuming provisionally that it is a sound one, I would venture to submit, in illustration of it, whether, as suggested to me by Dr Carpenter, the agency of the foetus on the system of the mother is not *dynamical*, rather than material or organic,—operating, in the first instance, on the vitality of the maternal blood, and through it on the vital powers and susceptibilities of the maternal solids? Such, I apprehend, is all that can be imagined of the influence exerted on the living human body by vaccination, or by an attack of small-pox, measles, scarlatina, &c., whereby an almost perfect security is given against the agency of their specific causes in all time coming,—in explaining the *modus operandi* of all or any of which influences, it may be confidently affirmed that the test-tube, the balance, and the microscope, will afford us no assistance whatever.

(*To be continued.*)

ARTICLE IV.—*On the Treatment of Ascites by Diuretics applied Externally.* By ROBERT CHRISTISON, M.D., V.P.R.S.E., Professor of Materia Medica in the University of Edinburgh.

SOME years ago a short paper appeared in a French periodical, on the treatment of ascites by means of digitalis and squill applied outwardly in the form of liniment; and three cases were given, illustrating the diuretic and curative effects of this treatment, after failure by means of diuretics administered in the usual way, as well as by

powerful purgatives.¹ At the time, I had under my charge a boy, ten years of age, who had laboured under simple ascites,—that is, without any œdema, even in the limbs,—for a period of five or six months, during which the effusion had slowly and steadily increased, notwithstanding the employment of brisk purgatives, various powerful diuretics, and mercurial action. There was great difficulty in referring this affection to any particular organic disease; but, on the whole, a previous chronic peritonitis was suspected to be the cause. When he came under my care, purgatives and diuretics internally were again tried, and especially digitalis and squill, but with no better success than before. On the contrary, the enlargement and tension of the belly became gradually very great, so that the boy was confined in a great measure to bed. The French suggestion came therefore most opportunely. A mixture of equal parts of tincture of digitalis, tincture of squill, and tincture of soap, was rubbed freely and diligently into the skin of the belly morning and evening. At an early period,—so early, if I do not mistake, as the beginning of the third day,—the urine began for the first time to increase; by and by a copious flow was established; the ascites quickly subsided, and in about fourteen days entirely disappeared; the boy at the same time gained flesh and strength under the use of simple bitters and chalybeates, and ere long his health was completely restored. When I last heard of him, four or five years afterwards, he continued well and strong.

The same treatment was tried afterwards in several cases more or less similar to this, but for a time with invariable disappointment. In all, however, the more ordinary measures had previously been exhausted to no purpose; and in most of them decided organic disease of some abdominal organ was ascertained to be the cause of the effusion. At length the following remarkable case revived the hopes excited by the first experiment. A boy, about nine years of age, had been affected with enlargement of the liver and ascites for nearly a twelvemonth. Dr James Duncan, his medical attendant, had employed all the most serviceable remedies, but to very little purpose. Mercury, iodine, purgatives, diuretics, both vegetable and mineral, had been faithfully given, occasionally with partial effect, but not with any satisfactory amendment. At length the ascitical distension became enormous, the integuments acquired a glistening translucent appearance, the respiration was impeded, and the tightness of the skin prevented the nature and extent of the disease of the liver from being ascertained. But there was no œdema, even in the limbs. In this state I saw him for the first time. Before resorting to the temporary expedient of tapping, it was proposed to make trial of the diuretic liniment; but the integuments were so irritable, that the method by friction could not be persevered with. Dr Duncan, however, proposed to substitute a strong infusion of digitalis, four times

¹ I have repeatedly endeavoured, without success, to recover the reference to this paper, and the name of its author.

the pharmaceutic strength, and to apply it continuously by linen cloths covered with oil-silk to impede evaporation. In a few days diuresis set in, and a profuse flow of urine quickly removed the whole dropsical effusion. The liver was soon felt to be greatly enlarged, lobulated, and rugose; which disease, it need scarcely be added, proved fatal a few months afterwards. But it is remarkable that the ascites never returned.

I have often used the same method since, both in simple ascites, and likewise where that affection formed a prominent part of a more general dropsy. The issue has of course been variable, and more frequently unfavourable than successful. But on the whole the results of my own observation, and the experience of others in Edinburgh, who have also tried the practice, lead to the conclusion, that digitalis not unfrequently succeeds in this way, when not only it, but likewise all other diuretics, taken internally, as well as the purgative method of cure, prove of no avail. It has likewise been tried with success in a few cases of obstinate excessive oedema of the limbs, in connection with general anasarca and Bright's disease of the kidneys, after diaphoretics, purgatives, and diuretics internally, had failed to give relief.

The late invention of the texture called Spongio-piline has facilitated the application of this treatment. A large sheet of spongio-piline soaked moderately with a strong infusion of digitalis, made with one ounce of powdered leaves to twenty fluid ounces of boiling water, may be applied to the whole abdomen, or to each limb, and worn constantly without any material inconvenience to the patient. I lately met with a case of Bright's disease, in the University wards of the Royal Infirmary, in which considerable general anasarca, developed to a great extent in the limbs, and concurring, as sometimes happens, with a natural diuresis, was for a time reduced almost entirely by the soaked spongio-piline applied to both legs, although every other customary remedy had been administered unsuccessfully. In another case, that of a dissipated middle-aged woman, who presented all the characters of the variety of Bright's disease which is supposed to depend on chronic inflammation of the kidneys, diuretics given internally removed almost entirely the general anasarca, after diaphoretics had completely failed; the patient thereupon was speedily relieved also of an obstinate chronic bronchitis, liability to vomiting, and tendency to diarrhoea. But the ascitical effusion, which had been predominant from the first, was not reduced at the same time. On the contrary, it went on increasing till the integuments became tense. The foxglove infusion was then applied by means of the spongio-piline, with the effect of augmenting the flow of urine in a few days; and then the ascites decreased, at first quickly, afterwards more slowly, till at length all dropsical effusion had disappeared, so that the woman, after seven months of treatment, left the hospital in a fair state of health to outward appearance, and with the urine much less albuminous, and much less loaded with the debris of tube-casts and epithelial cells.

I have tried to ascertain the description of cases in which this treatment is most likely to prove successful, but without any satisfactory result. The pathology of ascites indeed is still not sufficiently understood to allow of an accurate inquiry as to the influence of remedies. Simple ascites, or that along with œdema of the legs and lower half only of the trunk, is known to be a symptom, or rather a sequela, of various organic diseases, such as existing or previous chronic peritonitis, cirrhosis and other organic derangements of the liver, enlargement of the spleen, diseased pancreas, enlarged mesenteric glands, malignant disease of the abdominal lymphatic glands near the great abdominal vessels, or of any other organ or texture so situated that the tumour thus arising exerts pressure on the great veins. But the physician cannot always distinguish during life, among all these causes, what is the real source of the dropsical effusion; and, on the other hand, several at least of these organic diseases are known to occur not unfrequently without being attended with ascites at all. In these circumstances it is not surprising, that a difficulty is encountered in ascertaining the description of cases in which the ascites is most likely to yield to a particular mode of treatment.

An analogous method, by means of a poultice made with the *Marchantia hemispherica*, or common liverwort, was recommended in 1833 by the late Dr Thomas Shortt of this city, for the treatment of dropsies in general.¹ I have not found this remedy so generally serviceable as Dr Shortt seems to have expected, and his method of applying it is irksome to the patient.

ARTICLE V.—*On Uterine Hemorrhage.* By GEORGE HAMILTON, M.D., Falkirk.

IN the July Number of the Edinburgh "Monthly Journal of Medical Science," at the conclusion of a short extract from the *Journal de Médecine*, giving an account of a new vaginal plug, invented by Dr Gariel, of Paris, it is stated, that "a similar application of caoutchouc, as a simple and perfect vaginal plug, was, we know, made some time ago by Dr Hamilton, of Falkirk."

As this allusion gives no practical information, and as a short description of the instrument mentioned will easily enable its merits to be tested, I have thought that an account of the case, in the treatment of which I had to get it constructed, may prove not unacceptable to the profession.

In July, 1849, I prescribed for a lady in this neighbourhood, who had been subject for some months to a bloody vaginal discharge, which, however, she was very averse to have stopped, as she thought it gave relief to headaches, to which she had long been subject. In October following I again saw her, and,

¹ Edin. Med. and Surg. Journ. xxxix. 129.