would act as a stimulant to the blood-forming organs. It would, however, be very difficult to believe that the marrow of an animal taken into the stomach and digested could form new corpuscles, and, as the only tissue which is supposed to form new red corpuscles in the adult—i.e., the red marrow—is already greatly increased, any substance greatly stimulating this tissue to increased action would be useless. If the other view is taken, that the changes in the bone marrow are in some way the cause of the disease, it might be thought that the administration of marrow extract might supply some deficiency, in the same way as the administration of thyroid gland extract supplies some deficiency in myxœdema. But it is contrary to the general opinion to suppose that the changes in the marrow are the cause of the disease, in the same way that the atrophy of the thyroid gland is the supposed cause of the myxœdema. Supposing it is the cause, the red marrow in these cases is hypertrophied, not atrophied, so that there is no deficiency which can be compensated by giving the extract.

University College Hospital.

A CASE OF HÆMORRHAGE INTO THE GREAT OMENTUM.

By PAUL BUSH, M.R.C.S. ENG., L.S.A.,
SURGEON TO THE BRISTOL ROYAL INFIRMARY.

THE following case is of some interest as an example of peritoneal hæmorrhage.

A young man aged twenty-five years was admitted to the Bristol Royal Infirmary, under the care of Dr. Henry Waldo, on May 16th, 1894, complaining of pain in the left side of the chest, which had commenced four days previously. The temperature was raised, and there was dulness at the base of the left side of the chest. He suffered from varicose veins of the legs, and an ulcer was present above each outer ankle. For six or seven days he remained in much the same condition. The temperature ranged between 100° and 102° F., the respirations were 40 to the minute, and the pulse 120. At the end of that time he commenced to complain of abdominal pain and tenderness. Peritonitis was thought probable, and the question of its being suppurative was considered. Twelve days after admission he was transferred to my care. The following day an incision was made in the middle line of the abdomen about midway between the pubes and the umbilicus. The veins cut by the incision were varicose and there was profuse hæmorrhage. All bleeding having been stopped with artery forceps and the incision slightly enlarged it was found that there was a large dark mass occupying the position of the omentum. It consisted of omentum caked with blood. It was attached to the colon. The veins in the omentum were much dilated, some being as large as the patient's thumb and evidently filled with fluid blood, looking at first sight like gangrenous empty small intestine. On the hand being introduced into the abdominal cavity a quantity of dark-coloured purulent blood escaped. No ruptured vein could be found, and as the hæmorrhage had evidently ceased the omentum was returned into the abdomen. The peritoneal cavity was flushed out with warm boracic lotion by an irrigator; a glass drainage-tube was inserted at the lower end of the wound, and the parietes brought together with silkworm gut. After the operation the patient complained of much less pain, and his general condition improved a good deal for the first twenty-four hours, but after this his pulse gradually failed, and he died of syncope two days after the operation.

Necropsy.—A post-mortem examination was made by Mr. H. F. Mole, house physician to the infirmary, who was acting as pathologist at the time of the patient's death. The great omentum and the surrounding organs were removed and kept. The specimen showed a mass of blood-clot about the size of the closed fist, situated below the great curvature of the stomach and above the transverse colon. This mass was intimately connected with the great omentum, but it was not easy to say between which layers it was confined. Whether situated in some small secondary cavity between the ascending and descending divisions, or whether between the layers of peritoneum that form one of those divisions, was not clear. One point, however, was evident: that the

mass of blood-clot was much more closely connected with the transverse colon than with the stomach, and it seemed probable that the hæmorrhage started between the layers of peritoneum attached to this portion of the large intestine. One feature that was at once obvious was of interest. A large hæmorrhage was situated between the stomach and the transverse colon, and yet did not occupy the lesser peritoneal cavity, to which cavity it now seems the custom to ascribe collections of fluid that present anteriorly between the stomach and the colon. This hæmorrhage was not the only one, others about the size of hazel nuts were situated lower down between the layers of the great omentum, and one much more extensive behind the peritoneum. Mr. Mole thus described this last blood effusion: "A thick mass of firm clot was found overlying the left kidney and surrounding the spleen; the mass was firm and heavy, and a clean section of it could be made." The mesentery was unaffected. No ruptured vessels from which the blood could have escaped were found. Other points of interest were the size of the spleen, which weighed 14½ oz., and the presence of 30 oz. of fluid in the left pleural cavity with adhesion of the lung to the diaphragm and pericardium. The specimen showed no effusion of blood into the coats of the colon, and the post-mortem notes made no mention of the existence of such a feature in other parts of the intestines. This fact seems to exclude thrombosis of the mesenteric vessels as a probable explanation of the hæmorrhage, since in cases of thrombosis of these vessels the hæmorrhage is almost entirely limited to the walls of the intestines. The presence of large veins in the omentum suggest that the hæmorrhage may have arisen in rupture of one of them, but against such a view is the fact that there were other hæmorrhages which had no connexion with the one we have been considering. The obscure illness, with rise of temperature, which existed some days before symptoms of abdominal disease developed seem to point to some pathological series of events less simple than would be occasioned by a primary rupture of an abdominal vein. In our ignorance of its precise nature we may place the case in the category of the ill-understood instances of hæmorrhage into the peritoneum that occur from time to time.

Bristol.

RECOVERY IN HÆMORRHAGIC SMALL-POX.

By T. F. RICKETTS, M.D., B.S. LOND.,
MEDICAL SUPERINTENDENT OF THE HOSPITAL SHIPS;
AND

W. S. FRITH, M.B., B.C. CANTAB.,
LATE SENIOR ASSISTANT MEDICAL OFFICER OF THE HOSPITAL SHIPS.

IN THE LANCET of Jan. 4th there appeared an interesting communication from Dr. Frank Robinson on a case of small-pox in which hæmorrhagic symptoms developed. The patient was extremely ill, but after a short illness rapidly recovered. The question was raised whether the unusual course of the illness could be explained on the hypothesis that the case was an example of hæmorrhagic small-pox modified by vaccination. From time to time cases of small-pox occur in which the primary illness is unusually severe, and certain symptoms suggestive of the hæmorrhagic variety of the disease are present, yet not infrequently they have a favourable issue. In such cases as we refer to there are no definite signs of hæmorrhage, or if hæmorrhage occurs it is merely in the form of diapedesis in the inflammatory areolæ of the pocks, of a staining of the bases of some of the vesicles, of a few scattered petechiæ in the skin, of some hæmorrhage into the conjunctiva, or of an unusually well-marked petechial prodromal rash over the flexor surface of the trunk. The existence of any of these symptoms does not *per se* imply that a case is of the hæmorrhagic variety, or even necessarily indicate an unfavourable prognosis. Although in such cases the papular rash may be extremely profuse and there may be a fatal issue, on the other hand, the rash may be scanty and convalescence rapid. Between cases presenting such slight signs of hæmorrhage and cases of undoubted and rapidly fatal hæmorrhagic small-pox, according to our experience, no hard-and-fast line can be drawn. This being so, as might be expected, cases occur as to which it is extremely difficult to say whether they would

be more accurately described as cases of hæmorrhagic small-pox or not. Such cases as these usually prove fatal, and then the question is purely an academic one. Sometimes they recover, and one is inclined to look on any slight evidence of hæmorrhage as accidental; but in rare cases the signs of hæmorrhage are very well marked, and yet recovery takes place.

Such a case was that of a man who came under the care of one of us on the fourth day after he was taken ill. He was twenty-one years of age, had been vaccinated in infancy, and had six large vaccination scars. There was present when he came under observation a fairly plentiful, discrete, papular small-pox rash. He had profuse hæmaturia, vomited some slightly blood-stained material, and there was oozing of blood from the gums. He was greatly prostrated and his mental faculties were in partial abeyance. The lower part of the abdomen was covered by a profuse erythematous and petechial rash, which also extended across the back. Although the condition of the patient appeared to be so grave, the facies and general appearance of the patient differed from that usually present in cases of hæmorrhagic small-pox, and a cautious prognosis was given. In the course of two or three days all signs of hæmorrhage disappeared, and the man rapidly recovered, there being no secondary fever. No albumin was afterwards found in the urine. There was never any other sign of nephritis, and there was no history of the patient having previously suffered from hæmaturia. An attack of nephritis occurring in the course of a case of small-pox is extremely rare, and we have never known it to occur at such an early stage of the disease.

It will be seen that this case is very similar to that described by Dr. Robinson. It is suggestive that both patients were vaccinated, and that in neither case was the papular rash abundant. Although it would not be accurate to say that in all cases of hæmorrhagic small-pox the papular rash when it occurs is abundant, such is undoubtedly the case in general. We doubt, however, whether the explanation Dr. Robinson offers is the true one, but we are not prepared to discuss the difficult question whether or to what extent vaccination has the effect of altering the course of events in cases of hæmorrhagic small-pox.

Hospital Ships, near Dartford.

CASE OF CHRONIC TETANUS TREATED BY TIZZONI'S ANTITOXIN; RECOVERY.

By H. EUGENE TRACEY, M.B., L.R.C.P. LOND.,
M.R.C.S. ENG.

ON Nov. 16th, 1894, I was summoned to see a girl aged seven years who was supposed to have "something wrong with her face." I ascertained that a fortnight previously she had sustained two slight burns, one on the forehead and the other on the left leg, the scars of which were still visible. On Nov. 14th it had been noticed that the child could not fully open the left eye and that she appeared to be smiling continually. On examination I found tonic spasm of the orbicular muscle of the left eye, which was marked enough almost to bring the eyelids together; well-developed risus sardonicus, more marked on the left side of the face; rigidity of the muscles of the neck, back, legs, and abdomen, producing extension of the head, and moderate opisthotonos. The patient could separate her teeth for almost half an inch, could swallow small quantities of liquid, and speak indistinctly. The temperature was normal. I prescribed bromide of potassium (ten grains every four hours) and absolute rest and quiet. On Nov. 17th the patient had a severe spasm in which the chest was fixed and the face black, the temperature rising to 99.8°F. On the 18th another convulsion had occurred during the night, and one also occurred in the afternoon. The temperature was 99°. In the evening I administered hypodermically one-eighth of a grain of sulphate of morphia as she refused to take medicine by the mouth. On the 19th she had been taking very little nourishment. This induced me to try to pass a soft red rubber tube by the nose for feeding purposes, but as this attempt immediately produced a convulsion I had to desist.

In this convulsion the body was held rigid, the face was contorted and livid, and the respiration was suspended. I succeeded in giving a nutrient enema of milk treated with Fairchild's powder, which was retained, and during the day I administered hypodermically two tabloids, each containing one-eighth of a grain of sulphate of morphia. On the 20th the patient had been taking more nourishment during the night, but during the day she was not so well, having had two serious convulsions. On the 21st, at 6 A.M., I was summoned, as the patient had had two further convulsions. I administered a quarter of a grain of sulphate of morphia. At 5 P.M. she had another convulsion, and at 8 P.M. yet another, owing to changing the draw-sheet. I then administered the first dose of Professor Tizzoni's antitoxin (obtained from Messrs. Allen and Hanburys), injecting one and one-eighth of a gramme under the skin on the inner side of the thigh, using a syringe kindly lent to me by the British Institute of Preventive Medicine. On the 22nd, at 8 A.M., I was again summoned, and found that the patient had had nine convulsions during the night, recurring (according to the attendant's statement) at almost exact intervals of one hour. I witnessed a fit myself, the pulse being 80 before and 150 afterwards. I injected a second and similar dose of antitoxin. The child was somewhat delirious after this injection, and continued to have fits all day at intervals of from five to ten minutes. I was sent for again at 5 P.M., and the patient had a fit just after my arrival. By holding her hand and speaking soothingly to her when the clonic spasms were beginning to spread over the muscular system I succeeded in so far modifying their severity that there was no recurrence of the lividity of the face, foaming at the mouth, or rigidity of the chest walls. The temperature was 100.8° and the pulse 116. Before leaving I succeeded for the first time in moving the child on to a sofa in order to have the saturated bed linen changed. I again injected one-eighth of a grain of sulphate of morphia, but administered no antitoxin. On the 23rd, at 11 A.M., the pulse was 112 and the temperature 102.5°. No fits had occurred during the night, but frequent clonic spasms. At 5.30 P.M. the pulse was 80 and the temperature 100.5°. No recurrence of fits supervened. I injected five-sixteenths of a gramme of antitoxin. On the 24th the pulse was 68 and the temperature 98.6°. Frequent clonic spasms were occurring. I administered one-eighth of a grain of sulphate of morphia. At 8.30 P.M. I administered five-sixteenths of a gramme of antitoxin. On the 25th, at 10 A.M., the clonic spasms were of frequent occurrence. From 8 to 10 P.M. they recurred every quarter of an hour. I injected the sulphate of morphia as before, and five-sixteenths of a gramme of antitoxin. From the 26th to the 30th, the supply of antitoxin being exhausted, the treatment resolved itself into the daily injection of morphia and atropine, but the child made little or no progress. On Dec. 1st, having obtained another bottle of antitoxin, I recommenced the daily injections, administering five-sixteenths of a gramme every evening for a period of seven days. Meanwhile the condition of the patient improved rapidly, the clonic spasms diminishing both in force and frequency and some relaxation of the tonic contractions of the muscles taking place, specially of those of the neck, jaws, and face generally. At the end of the week the improvement was so marked that I ceased to inject either antitoxin or sulphate of morphia. Recovery was completed without further incident, the rigidity of the muscles disappearing some days after she had ceased to be troubled with clonic contractions.

Apparently in this case the most noteworthy feature of the action of the antitoxin beyond its general beneficial and curative effect was the strong reaction the first large subcutaneous injection caused, the pulse and temperature of the patient rising and the fits being temporarily increased both in virulence and frequency.

Willand, Cullompton, Devon.

MISSION TO THE DEEP SEA FISHERMEN.—Mr. F. W. Willway, M.R.C.S., a Bristolian, who has recently returned from Labrador after spending eighteen months in medical mission work there, gave an interesting lecture in Bristol last week, narrating some of the difficulties and hardships of the work. He described the coast journeys in the mission vessel in these dangerous waters, and his itinerary mission journey of last winter, when with sledge and dogs he covered 1200 miles.