of hepatic or renal calculi, or when over the splenic region, to tumours of that part.

Diagnosis is difficult only when there are paroxysmal crises. In such cases the intensity of the pain, the feverish conditions, and the vomiting may make one mistake them for appendicitis, hepatic or renal colic, or ovarian pain.

PROGNOSIS.

It is rarely a fatal disease, but it is an affection of long duration, difficult to cure and causing numerous complications; amongst others it induces cachexia accompanied by a neurasthenic condition of great gravity.

In children there is loss of flesh and appetite, low spirits, and a general want of development. In the case of girls, the appearance of the menses is delayed.

TREATMENT.

We must take into account the previous treatment. Almost all the patients I have attended had used purgatives much too freely. In the first stage of the illness purgatives appear generally to be of some service; but in the course of time their good effects diminish and their prolonged use irritates the mucous membrane, and thus augments the constipation and the secretion of mucoid matter. This is especially true of drastic purgatives and saline purgative waters. All the patients I have attended have previously been subjected to milk diet, but without good results.

The diet ought to be the same as is given in gastrointestinal dyspepsia or in dilatation of the stomach. In the first place, it is most important that all food which leaves residues after eating, such as tendons, fibrous tissues, grains, and those which the juice of the stomach and intestine are incapable of dissolving and digesting, should be avoided. Their passage keeps up the inflammation of the intestinal mucous membrane and their presence provokes sometimes peristaltic contractions which are often painful, but which produce an action of the bowels. From this action arises the reputation of salads, green vegetables, and fruits as having a laxative action, but often they do not act in this manner and on the contrary the constipation increases. It is easy to demonstrate in what state the residue of such food after having passed through the intestine, is evacuated. If the faeces are placed on a fine sieve and water is poured on them sufficient in quantity to break them up and one continues to pour it till the water which is passed on the faecal matter has ceased to be coloured and has lost its odour, we then find on the sieve the residue of the food, that is to say fibres of salads, of French beans and tendinous fibres of meat and the skin of farinaceous vegetables.

It is especially necessary to advise such patients to eat slowly, to masticate their food carefully in order that it may be thoroughly broken up and well mixed with the saliva. Food should be taken in small quantities but of a very nutritious kind, such as eggs prepared in any way except hard boiled. Light meats, whether roasted, grilled, or baked with their gravy, may be taken, but without any sauce. If the patient has not good teeth he ought to have the meat hashed or even passed through a masticatory. All high meats or these badly cooked, and especially all kinds of food which are in a state of decomposition (such as certain cheeses), which are in consequence full of toxins and microbes, must never be eaten.

We may allow white fish, boiled or fried, but if fried the skin should not be eaten. Farinaceous vegetables (potatoes, peas, French beans, lentils, chestnuts), if passed through a sieve, may also be allowed. I recommend my patients to eat the tables with their meat, and to be careful not to swallow their food too quickly. If kept some time in the mouth, the effect of the saliva on them will be to help their digestion. Macaroni and rice are also permitted. Toast in small quantities may also be given, but I prefer breakfast biscuits. Also milk soups, thickened with pastes, also such fruits as have no pips, peaches, apricots if quite ripe, especially when cooked, may be allowed; but, on the other hand, fatty foods, sour fruits, underdone food, sauces, ragouts, game, shellfish, pork (excepting the lean part of ham), must be forbidden; also wine, beer, and all alcoholic drinks are not allowed.

A small amount of water or tea taken at meals is useful and we are in the habit of prescribing at Plombières before each of the two principal meals a glass of the water of the Source des Dames (125° F.). For patients whose dejections are wanting in colour, and who have a sluggish liver, I add to the glass of water 1 gram (15 gr.) of Carlsbad Sprudel salts. The two glasses of water contain, therefore, 2 grams

(30 gr.) of Sprudel salts every day. In eight or ten days the faeces have a natural colour, and the fetid odour has disappeared. It is necessary in these cases to insure a regular action of the bowels either by laxatives or enemata. One of the best laxatives is castor oil but when it is not tolerated, we must have recourse to magnesia, sulphur, cream of tartar, either separate or mixed in equal quantities. Sometimes when purgatives which are generally successful fail some other medicine will succeed; sometimes one must have recourse to cholagogues, and often to calomel, especially in cases of sluggish liver. Often glycerine suppositories are very useful or, when there is a spasmodic condition of the rectum, suppositories of belladonna. Sometimes when the constipation is very marked we have to use all these remedies combined.

When there is diarrhoea bismuth salicylate should be used, and the intestines should be washed out and mild antiseptics given; when there are paroxysmal crises hot compresses on the abdomen, poultices and frictions with belladonna should be prescribed.

Baths also are a source of great relief. The baths of Plombières water of 40 minutes to an hour duration at 35° to 37° C. have a great and sedative effect both on the nervous and circulatory system. They are of great use in cases where there is spasm of the colon or crises of enteralgia. Their first effect is to produce sleep, often they cause a disappearance of the mucoid matter, regulate the action of the bowels and diminish the attacks of diarrhoea.

Together with the laxatives washing out of the intestine ought to be resorted to. These washings not only help the discharge of the faecal matters and the muco-membranous secretions, but they also soothe the pain due to intestinal irritation and spasm. They are not given only as a mechanical means of evacuating the intestine, but as a therapeutical agent, which, thanks to the specific power of the Plombières water, acts on the intestinal mucous membrane. These douches must, however, be given with great care. The pressure must not be too strong, or it will provoke painful crises or exaggerate the spasms. The vessel which holds the water should be placed at 40 or 50 cm. above the patient's bed. The temperature of the water should be from 38° C. to 45° C. The amount introduced into the intestine ought not to be very large, the injection of 1½ to 2 litres into the intestine at the same time will often provoke pain and spasm. I generally prescribe only ½ litre for each injection. It should be retained for some minutes, but no great effort ought to be made to retain it. The patient should lie first on the left side, then on the back, then on the right side, so as to enable the water to circulate through the whole of the colon and caecum. When this water has been rejected, and after resting for a few minutes the same amount of water should be reinjected, I always advise my patients to take this washing out after they have had an action of the bowels, because it is not to be looked upon as a mechanical means of evacuating the intestine, but as an intestinal bath.

In each bathroom at Plombières there is a sofa on which the patient lies, and at the foot of the sofa is the recipient for the water fixed at a height indicated by the doctor. There is also a thermometer with a dial which gives the temperature of the water in the recipient. Attached to this vessel containing the water is a tube which descends as the water in the vessels lowers; there is also attached to the tube a little instrument which descends with the water. This has the advantage of enabling the patient to know exactly how much water has been injected into the bowel. The number of these bathrooms at Plombières in 1897 was 15, now there are 100. During the last six years the number of baths has increased from 3,000 to 28,000.

In the treatment of muco-membranous colitis we must not forget to consider the special indications to which the different complications give rise. The more frequent are gastric affections, hyperchlorhydria, floating kidney, uterine or utero-ovarian affections, and neurasthenia.

CASE OF PERFORATION OF THE AORTA BY A PIN ACCIDENTALLY SWALLOWED.

By SIR ISAMBARD OWEN, M.D.,

Physician and Lecturer on Medicine to St. George's Hospital.

THE accident which occurred in the following case, though not unprecedented, is decidedly rare:

A stone-carver, aged 53, was admitted into St. George's Hospital, under my care, for haematemesis, on January 24th, 1903.

Condition on Admission.

He was suffering from severe pain in the left half of the thorax, shooting from the spine along the track of the intercostal nerves from the fourth to the sixth; most severe in the flank and inframammary region, and shooting across the epigastrium. The pain was said to vary by change of posture, being relieved by turning on the left side and aggravated by lying on the back, but it was doubtful if this was the fact. In person, on admission, he was well nourished, but was pale and looked very ill. The tongue was greatly furred and coated with grey, the pulse was small and contracted; it became hard when the pain was especially severe. There was slight tenderness on percussion over the lower dorsal vertebrae, and marked tenderness in the left flank and inframammary region of the chest; none in the epigastrium. The lung signs and heart sounds were natural; a weak apex beat was felt about $\frac{1}{2}$ in. to the left of the normal situation; the left inframammary region was hyper-resonant; nothing abnormal was detected in the abdomen; abdominal breathing was intact.

History.

The pain precluded any extended inquiry into past history. The patient said it had attacked him suddenly on the 17th, and had continued ever since, lessening when he kept still, and increasing when he moved about or lay in certain positions. On January 22nd he had attended the hospital as an out-patient. He then complained also of "soreness of the chest," and some catarrhal sounds were heard over the lungs; but no physical signs were found to account for the pain. Later in the day he vomited about half a pint of blood. This was repeated once on the same day, twice on January 23rd, and once on the day of admission.

Treatment and After-History.

The most plausible presumption, notwithstanding the absence of direct evidence, being that there was an intrathoracic aneurysm, oozing into the oesophagus, the patient was placed on rectal alimentation and morphine administered subcutaneously. At 8 p.m. he vomited 14 oz. more of blood; and another 5 oz., bright red and frothy, at 4 a.m. Morphine was again given hypodermically, and Ruspini's styptic internally. The patient sank and died without further symptom.

After his death, his wife informed us that the onset of the illness was sudden pain in the chest and difficulty of swallowing, coming on as he was eating a potato.

Necropsy.

A necropsy was made by Dr. Salusbury Trevor, who reported to the following effect: On the anterior wall of the oesophagus were two injected areas, each about the size of a sixpenny bit, one at the level of the cricoid, and the other $\frac{2}{3}$ in. lower. In the middle of each a scratch could be seen with a hand lens. Below the lower injected area was a longitudinal scratch, leading downwards towards a traction diverticulum in the usual situation above the right bronchus. Opposite this pouch, on the left postero-lateral aspect of the oesophagus, was an oval opening, nearly $\frac{1}{2}$ in. long and $\frac{1}{4}$ in. across the centre, where the edges were ragged, from which projected, with the head towards the mouth, an ordinary pin $\frac{1}{2}$ in. in length, blackened, roughened, and a little bent. The pointed end was engaged in the hole. In the wall of the aorta (descending part of the arch), at a slightly lower level than the hole in the oesophagus, was a small ragged opening, to which clot adhered, and from which a probe could be passed directly into the oesophagus. The aorta and oesophagus were adherent along the left side of the latter from the wound downwards, and the tissue between them infiltrated with blood nearly down to the diaphragm. The aorta was rather atheromatous and partly dilated. The alimentary canal was otherwise healthy, but the stomach contained a pint of blood, and the whole intestinal canal was full of blood, emitting an offensive odour.

Dr. Trevor concluded that the pin had been swallowed head downwards, the head being arrested in the pouch and the point accordingly tilted against the opposite wall, in which it stuck. Death was obviously from loss of blood.

As no inquiry obtained from the patient elicited the necessary clue subsequently furnished by his wife, so exceptional a lesion was undiagnosed during life. The seat of the disease could be surmised without much difficulty; the sensory nerves of the parts affected are partly derived from the vagi and partly from the first four or five dorsal ganglia, chiefly of the left side, which are in direct communication with the adjacent intercostal nerves of the same side. The source of pain was presumably the stretching of the parts infiltrated with blood, which had extended as low down as the diaphragm. The subsidence of the blood downwards probably accounted for the fact that it was the intercostal nerves connected with the lower of the said dorsal ganglia which were the chief seat of pain.

The specimen, which was shown by me at a meeting of the West London District held at St. George's Hospital on March 25th, will shortly be placed in the Hospital Museum as No. 5328.

REQUESTS TO HOSPITALS.—Among the legacies bequeathed under the will of the late Mr. Henry Noble, Norwegian and Swedish Consul in the Isle of Man, are £1,000 each to the Seamen's Hospital and the Eye and Ear Infirmary in Liverpool.

THE EPIDEMIOLOGY OF PLAGUE: NOTE ON THE FLEAS OF RATS.

By FRANK TIDSWELL, M.B., CH.M.SYD., D.P.H.CAMB.,
Principal Assistant Medical Officer to the Government of
New South Wales.

IN opposition to Simond's hypothesis that bubonic plague is disseminated by fleas from infected rats, it has been urged that the fleas of rats will not bite human beings. Simond himself, whilst admitting his inability to pronounce upon the species of the fleas found by him upon rats, nevertheless clearly states that they bit human beings upon whom they were placed. Professor Galli Valerio, of Lausanne, has reported that the species of fleas found by him upon rats are *Typhlopsylla musculi* and *Pulex fasciatus*, and that neither of them will bite man. Simond's observations were made in India and Galli Valerio's in Europe, and it seemed by no means improbable that their conflicting results were due to the fleas found by them being of different species.

It does not follow that the fleas harboured by the rats in two widely different places would be exclusively of the same species. With a view to determine this point a collection of fleas was made from the rats coming under my examination during the recent epidemic of plague at Sydney. Of 100 fleas obtained, 10 were identified as *Pulex fasciatus*, 8 as *Typhlopsylla musculi*, 1 as *Pulex serraticeps*, and 81 as *Pulex pallidus*. It will be seen that no less than four species were represented, and most abundantly one (*pallidus*) not hitherto mentioned, as far as I am aware, as occurring on ordinary rats. Its stated hosts are *Mus albipes* of Socotra and *Herpestes ichneumon* of Egypt. This species bit us in laboratory trials, as did also *Pulex fasciatus* upon one occasion. *Pulex serraticeps* is well known to attack man. The remaining species, *Typhlopsylla musculi* did not bite us. The details of the observations form part of a forthcoming official report, but in the meantime it may be noted that they tend to remove an otherwise fatal objection to Simond's views.

POTASSIUM PERMANGANATE IN THE TREATMENT OF LUPUS.

By J. HALL-EDWARDS, L.R.C.P.,
Surgeon Radiographer to the General Hospital, Birmingham.

DURING my observations of a large number of cases treated by means of the x rays I have tried the action of a number of drugs in conjunction with the rays. Some have been used for the purpose of bringing about a more speedy reaction; others with the object of limiting the dermatitis. During these experiments I was early struck by the good effects produced by potassium permanganate, not only as an adjunct to x-ray treatment, but in clearing up patches left after the administration of the rays.

After having used the drug for a considerable length of time, and in a variety of ways, I discovered that the treatment of lupus by this means was not new; and my attention was drawn to an article in the BRITISH MEDICAL JOURNAL, April 5th, 1902. It appears that the use of this drug for the treatment of lupus vulgaris and erythematous was first suggested by Butte. In the article mentioned Dupuy gives the results of his observations on a number of cases treated by Butte's methods. Butte used a compress of a 2 per cent. solution of potassium permanganate, which was applied for twelve to fifteen minutes daily, for about a fortnight, or, in non-ulcerative patches, the powdered drug was spread over the part with a spatula, a piece of dry absorbent wool applied, and the whole left on the part for a quarter of an hour. This latter method is somewhat severe, and produces a considerable amount of inflammation. Dupuy maintains that the action of permanganate is more rapid than scraping, and the resulting cicatrices are softer, flatter, and less likely to contract than those following other methods. One disadvantage (he says) is that the tissues are considerably stained.

After trying many methods I have now for some time used one, with such good results, that I make no apology for bringing it before your readers. I use a saturated solution of the salt, which is made by dissolving a drachm in an ounce of distilled water. In non-ulcerative cases I first wash the patch with carbolic or ichthyol soap, and afterwards wipe it over with a pledget of cotton wool moistened with methylated spirit. When dry I apply the solution of potassium