the matter, four do. In two of the four the same author is concerned. The terms used are such as these:

Between the pains the pelvic floor is relaxed, not rigidly contracted; try to deliver between pains, the perineal muscles being then relaxed instead of tightly contracted; spasmodic rigidity of the muscles of the pelvic floor obstructs delivery; during a pain there is contraction of muscles of the pelvic floor and outlet; this makes the perineum more rigid and therefore more liable to tear.

All this may be summarized to mean that whilst the perineum is becoming more and more stretched (that is, during the pains) its muscles and those of the pelvic floor are in a state of spasmodic, tight, or rigid contraction, and that this obstructs delivery and favours laceration. This seems to signify that the mechanism of a physiological function normally so acts as to obstruct its completion and favour its injurious accomplishment—a view hard to accept without very satisfying evidence in its favour.

A little consideration of the conditions of the second stage compared with the effects of contraction of perineal and pelvic floor muscles will serve to indicate the difficulty of accepting this teaching. The coccygei and levatores ani in contracting flex the coccyx forwards and upwards upon the sacrum and raise the ano-coccygeal raphe; during the pains the advancing head forces the coccyx downwards and backwards in extension upon the sacrum and depresses the ano-coccygeal area. The pubo-coccygeal fibres of the levatores ani in contraction oppose bilateral distension of the anal canal; during the pains the advancing head spreads the anal canal bilaterally and forces the adjacent edges of the levatores ani far apart. The sphincter ani in contraction closes the anus; it is precisely during pains that the anus is stretched more and more widely open. The compressor vaginae in contraction constricts the vaginal orifice; this orifice is stretched more and more widely open by the head advancing during the pains.

Thus it appears that during the pains of the perineal "management" stage the muscles of the pelvic floor and perineum are stretched, as indeed are all the perineal tissues. They are not contracted, and therefore it is not true that their contraction opposes delivery and favours laceration. Considering the condition of the perineum during a pain just before delivery—bulging, stretched in all directions, tense as a drumhead—one wonders what is the evidence and how precisely it was obtained for the teaching in question. But on these points the books are silent.

A CASE OF HYDATID PNEUMOTHORAX.

BY

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THE rupture of a hydatid cyst of the lung into the pleural cavity is a rare cause of spontaneous pneumothorax, and it is therefore considered that the case detailed below is worthy of record.

This condition was first described by Fouquier in 1828, two years after the death of Laennec. He states that at the autopsy on a case of spontaneous pneumothorax "the right chest was half filled with a yellow turbid fluid in which floated a sac the size of a large nut, rather soft, of milk-white colour, and semi-translucent, which one could not fail to recognize as a ruptured hydatid cyst." In 1925 Professor F. Dévé of Rouen¹ collected thirty-one authentic cases. Since then one other case has been reported by Bacaloglu and Tanasesco.² The condition occurs most frequently in young adults, and in males twice as often as in females. The rupture is usually precipitated by a sudden effort.

The perforation in the pleura is commonly situated on the inferior lobe of the lung and more often on the right side than the left, thus differing in this latter respect from pneumothorax secondary to tuberculous disease. It may be round or linear, admitting the tip of the finger or measuring several centimetres in length. The perforation leads into a cavity in the lung which is not usually larger than an orange. The cyst itself is commonly found free in the pleural cavity and in most cases is ruptured, but

in the case described by Mercier in 1838 it was intact and filled with a clear yellow fluid. It is sometimes accompanied by daughter cysts, and, rarely, there is a secondary growth of echinococcus on the pleura, caused by the dissemination of parasites at the moment of rupture of a fertile cyst.

By studying sections of the lung of a rabbit in which the condition had been artificially produced Dévé came to the following conclusions as to the course of events which take place. There is not a sudden rupture of the cyst into a bronchus, but a gradual invasion of the bronchus by the cyst wall, followed by necrosis of the wall of the bronchus at one point. A pneumocyst is thus produced. The necrotic plug acts as a valve, the tension in the cyst rises and its wall becomes stretched. Owing to the fact that the part of the cyst wall which is adjacent to the pleura lacks support and that its blood supply is diminished, a slight increase of intrabronchial pressure is sufficient to cause it to rupture.

The hydropneumothorax thus produced may remain sterile for several months. Sooner or later, however, the entrance of organisms from the bronchus, combined with the irritation produced by the presence of the hydatid fluid and the cyst wall in the pleural cavity, leads to suppuration and the formation of a pyopneumothorax.

Case Report.

J. P., a groom, aged 36, had been in South Africa in 1913, and had served in France during the late war. He stated that he had always been fond of dogs and that he kept one in the house. He had suffered from cough since being gassed. There had been no haemoptysis or loss of weight.

On December 17th, 1926, at 10.30 a.m., his cough became much worse, and during the next hour and a half he expectorated about two pints of frothy sputum. He felt better during the afternoon, but at 5 p.m., while walking upstairs, he developed rapidly increasing dyspnoea and severe pain all over the chest, not localized to either side. That evening his temperature rose to 102°. On the following day Dr. MacCormack of Steeple Claydon found signs of pneumothorax on the left side. The temperature remained high until December 21st, and then began to settle down. On December 23rd the sputum was purulent. It was examined, and no tubercle bacilli were found. There was never any haemoptysis. On December 28th and January 2nd air was aspirated from the left pleural cavity, giving relief to the dyspnoea. There was no urticaria. There was no family history of tuberculosis.

He was admitted to the Radcliffe Infirmary on January 16th. He was a thin man with flushed face, orthopnoeic, and obviously ill; temperature 100°, pulse 100, respirations 28. The tongue was dry and furred. Cardiac pulsation was visible below the right nipple in the fifth intercostal space. The area of cardiac dullness was entirely to the right of the sternum. The heart sounds were normal. The left side of the chest was larger than the right; movement of the chest was impaired and vocal fremitus absent on the left side. The percussion note was hyper-resonant on the left side down to the seventh rib, and dull below this level. Weak vesicular breathing was present above the seventh rib and absent air entry below. The bell sound was clearly audible on the left side between the fourth and seventh ribs. The liver and spleen were not palpable. The sputum contained pneumococci.

On January 18th the left pleural cavity was aspirated in the ninth intercostal space. About two pints of creamy pus with air were removed. At operation, the same evening, under gas, oxygen, and ether anaesthesia, one inch of the ninth rib in the left scapular line was resected. When the pleural cavity was opened air at first bubbled out, and was followed by about two pints of pus. There was a large cavity the walls of which could not be reached with the finger. No adhesions were felt. A few flakes of fibrin were removed and a tube was inserted.

The pus was found to contain pneumococci, but was sterile. The temperature continued to swing, rising to 100° every evening until January 24th, when a ruptured cyst was discharged through the wound. The temperature immediately fell and remained normal.

The pathological report on the cyst was to the effect that it measured in its collapsed state four inches in diameter, and consisted of a yellowish substance. On the inner aspect were a few small excrescences, but neither in these nor in the scrapings from other parts were any hooklets found. Microscopically the cyst consisted of a laminated, translucent, non-cellular structure. It was undoubtedly a hydatid cyst.

The chest was x-rayed on February 9th, and no evidence of other cysts in the lungs was found. There was no eosinophilia. The patient made an uninterrupted recovery.

According to Dévé the initial cough in these cases is usually dry. The large quantity of sputum expectorated by the patient in the above case might be due to pulmonary oedema caused by hydatid fluid leaking out when the cyst opened into the bronchus.

The noteworthy points in this case are (1) the opening of the cyst into a bronchus, (2) the production of a pneumothorax six and a half hours later, (3) the valvular nature

of the opening in the pleura which led to an excess of air under pressure in the pleural cavity, and which necessitated special relief on two occasions before admission to hospital.

I am indebted to Dr. A. G. Gibson for assistance and permission to publish this case.

REFERENCES.
¹ Dévé, F.: *Rev. de Chir.*, 1925, lxxiii, pp. 81-125. ² Bacaloglu and Tanasesco: *Presse méd.*, 1925, xxxiii, p. 1522.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TWO CASES OF COINS IN THE OESOPHAGUS.

THESE cases, which occurred within three weeks of each other, are published in order to show the size of coin that is likely to become impacted in the oesophagus at different ages. Incidentally they also illustrate the fact that a coin which can pass through the upper end of the oesophagus can pass unaided through the rest of the alimentary tract. In both cases the misfortune was caused through the impish mischief of young children, so that a word of caution may be uttered against giving coins to children as playthings.

CASE I.

T. C., a labourer aged 35, while having a meal at mid-day on September 16th, drank a cup of tea rather hurriedly and then felt something in his throat. It was ascertained that his baby had dropped into the cup a penny it had been given to play with; the father tried to vomit, but did not succeed.

On arrival at the hospital x-ray examination showed a coin impacted at the level of the sterno-clavicular joint. On endoscopic examination the penny was seen, but the area being somewhat fouled with blood from loss of a tooth in a mouth with marked pyorrhoea, it could not be gripped with the forceps, and disappeared. On a second x-ray examination it was seen to move freely with respiration at the level of the cardiac orifice of the stomach.

The patient was again x-rayed on the following afternoon, and the penny was seen to be in the stomach near the pylorus. He was allowed to go home and told to come up in thirty-six hours. This he did, bringing the penny in his hand, and reported that it had been passed in his motions (thirty hours after it had been seen to be lying in the stomach) without any difficulty or any haemorrhage in the stools.

CASE II.

P. K., aged 6½ months, on October 7th, about 5 p.m., swallowed a farthing given to her by her little brother. She went red in the face and nearly choked. She was taken to her doctor, who sent her to the hospital. At 11 p.m. x-ray examination showed the farthing impacted in the oesophagus at the level of the sterno-clavicular joint. On oesophagoscopy the coin was seen and removed with forceps. The child left the hospital three days later in perfect health and with no complications.

I am indebted to my clinical assistant, Mr. Lindenbaum, for his notes on these two cases.

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HAEMATURIA TREATED BY INJECTION OF SERUM.

THE following case is of some practical, apart from a possible theoretical, interest.

A boy, aged 3½, had an attack of haematuria after tonsillotomy about a year ago. I am informed that, apart from one or two intervals of a few days, during which the urine appeared to be free from blood, it had persisted in varying degree ever since. The greater part of the year was spent in hospital, where the urinary tract was carefully investigated and an exploratory nephrotomy performed on the left side. Apart from an impression gained that the left kidney was somewhat large, the result of the operation was negative, and the child was discharged from hospital uncured. When I first saw him, in December, 1926, he was still passing bloody urine, was markedly anaemic, and his general condition was very miserable. On examination no abnormality of the kidneys could be detected, and I made the diagnosis of essential haematuria precipitated by septic absorption following tonsillotomy.

I decided to treat the child by injection of horse serum. The first dose of 10 c.cm. was followed by acute urticaria. As the degree of haematuria seemed to have decreased I gave a second injection of 20 c.cm. one week later, both injections being given intramuscularly into the buttocks. After the second injection the haematuria disappeared, and has not since returned. It is, of course, too early to speak of a permanent cure, but as the child had previously been free from haematuria for a few days at a

time only, the outlook seems hopeful. The improvement in the general health has been very noticeable, the whining child being now normally vigorous and lively.

Apparently the haematuria was due to absorption of toxins from the cut surfaces of the tonsils. Why these toxins should have attacked the endothelium of the renal vessels is an interesting question. The necessary antitoxins seem to have been produced in the child's body by the injection of the proteins contained in the horse serum. The injection of these proteins produced an attack of urticaria, as is known sometimes to happen, and apparently a by-product of the reaction was the required antitoxin. The sequence of events in this case supports the view that a bodily reaction is necessary for the production of antibodies. On the other hand, the occurrence of haematuria after the operation of tonsillotomy may have been quite fortuitous and in no way due to sepsis, and the cessation of the haematuria may be attributable to coagulants contained in the horse serum. Were it practicable, a bacteriological examination of the remains of the tonsils would be of interest.

London, N.15.

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DEATH FROM HAEMORRHAGE FROM THE AORTA INTO A BRONCHUS.

THE following case is an instance of what must be an unusual cause of death.

An old woman, aged 81, died at the Tooting Bee Mental Hospital on December 20th, 1926; she was admitted on January 27th, 1922. She suffered from senile dementia with marked loss of memory for all recent events, but a remarkable recollection of the past. She could repeat pages of Shakespeare's plays.

She had arterial degeneration to a moderate degree, and experienced several cerebral attacks with transient paralysis. After one of these attacks she lost voluntary control of the right arm, which used to execute all sorts of movements of its own accord, much to the annoyance of the patient, who would lay hold of it with the left hand to keep it in order. These movements ceased when the patient was asleep.

At the time of her death she was seen by a medical officer, who reported that arterial blood had gushed out of her mouth for about ten minutes before she died. At the *post-mortem* examination it was found that a patch of adherent pleura had attached itself to a hard plaque on the aorta. A communication had formed between the aorta and a rather large bronchus, and after filling up the lung the blood had poured out of the mouth till the patient was dead.

London, S.W.

THOMAS LINDSAY, M.D., F.R.C.S. Ed.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

GLOUCESTERSHIRE BRANCH.

The Blood Picture in Various Diseases.

A MEETING of the Gloucestershire Branch was held at the General Hospital, Cheltenham, on March 10th; Dr. J. RUPERT COLLINS presided, and Dr. J. B. DAVEY read a paper entitled "Some interesting blood pictures."

Dr. Davey described the source and antecedents of the cells of the blood. In spite of the multitude of names used by various workers for the same cells, a common ancestor for all the various blood cells was now accepted by the majority. This cell, found both in marrow and in lymphatic tissue, somewhat resembled the large lymphocyte and was named the haemocytoblast. From this cell were formed in the marrow the erythrocytes by loss of nucleus and elaboration of haemoglobins; the myelocytes by development of granules; the large lymphocytes and thence the small lymphocytes, and the megacaryocytes. In lymphatic tissues it formed the large and small lymphocytes. As regards pathological conditions, the most familiar was probably the rapid increase of polymorphonuclears in the circulating blood in septic processes. Many of these cells were of immature type. The marrow was very susceptible to toxic influences, and it was not difficult to conceive that some toxic process was at work in myelocytic leukaemia, where very primitive forms, the myelocytes, were poured into the circulation, their conversion into polymorphonuclears being largely inhibited. In such cases the marrow, at the necropsy, showed clear evidence of great myelocytic activity. In lymphatic leukaemia the process was not so