varies within considerable limits as to the diagnosis of nystagmus; County Court judges are also much perturbed in such cases. All these facts indicate that some authoritative definition of the disease and its many phases is urgently required.

Whatever opinion is held as to the causation of nystagmus the pathological entity round which this complex revolves is involuntary oscillation of eyeballs, and that, in my opinion, cannot be explained away on a psychological basis. To the elucidation of the cause of this defect in the minor the expert coal chemist should add his quota to that of the doctor.

ACUTE PANCREATITIS: A METHOD OF TREATMENT.

BY

R. G. HENDERSON, M.A., M.B., F.R.C.S. Ed.,
BOURNEMOUTH.

THE careful study of acute pancreatitis by Mr. Hamilton Bailey in the *JOURNAL* of February 26th (p. 367) recalls my own experience. The chief difficulty in diagnosis arises from not having the condition in mind. I remember well my first experience of this. When engaged with out-patients, I was asked by the house-surgeon to see a case of acute intestinal obstruction just admitted for immediate operation. After examination I came to the conclusion that the case was not intestinal obstruction, but what exactly it was I could not say with certainty. I concluded, however, that the symptoms and signs indicated peritonitis limited to the lesser sac, and that the most likely cause of this was probably a small perforation of the posterior surface of the stomach, although there was no history of previous stomach trouble. When the abdomen was opened the patches of fat necrosis at once proclaimed the pancreatic lesion, which, till then, I had not taken into account.

Surgical writers, of course, advise drainage of the pancreas, and the various anatomical routes of approach to the organ are described. But they are reticent as to what should be done with the pancreas. Many writers appear to imply that it is enough if a drain is introduced down to the pancreas, and the inflammatory exudate present in the lesser peritoneal sac thereby permitted to escape, with precautions against infection of the general peritoneal cavity. But surely that is not enough. The condition of a patient with really acute pancreatitis is desperate; the gland is acutely congested, swollen, and tense, and appears on the high road to total gangrene. The patient is profoundly toxæmic, slowly dying from the absorption of poisons from his pancreas. The obvious indications for treatment are to stop absorption, to relieve tension, and to allow free exit of inflammatory products so that any part of the gland not already dead may have the best chance of recovery. General treatment of a supporting nature will, of course, not be neglected. It appears to me that the only way to fulfil those indications is freely to open up and drain the gland itself. That this can be done with safety and immediate benefit to the patient the following case—the first on which I used the method—will show:

I was called to see a man, aged 30, about 7 o'clock one morning in the early part of 1915. He was healthy, not fat, but given to bouts of drinking, and he had been indulging a few days before I saw him. It was a typical case of acute pancreatitis, and I sent him at once into the Oldham Royal Infirmary, and four hours later, about five hours from the commencement of his illness, opened the abdomen by a median incision. The pancreas was reached through the gastro-colic omentum. It was greatly swollen and deep purple, almost black in colour. My problem was to lay open the glandular tissue freely so as to drain the whole organ efficiently, and to do this without causing undue hæmorrhage or infecting the general peritoneal cavity. I snipped through the peritoneum on the anterior surface of the pancreas, and pushed a finger well down to the middle of the swollen gland. I then worked the finger from one end of the pancreas to the other, allowing it to some extent to follow the path of least resistance, so that eventually there was a kind of trench along the anterior surface of the gland, extending from head to tail, and rather nearer the upper than the lower border so as to avoid injury to the duct of Wirzung. From this longitudinal trench short lateral

branches or diverticula were made at intervals by pushing the finger into the gland tissue, especially at places where it felt softened. The bleeding was free but not excessive, and was easily checked by a temporary gauze pack in the trench. A wide-bore rubber tube was passed down to the pancreas, the gastro-colic omentum snugly adjusted round it with the aid of a stitch, the upper part of the tube wrapped in gauze to shut off the general peritoneal cavity, and the abdominal wall closed above and below the tube. The wound was dressed daily and the pancreas gently mopped through the tube. The patient made good progress without interruption. Five days after operation two sloughs of pancreatic tissue were discharged, each about the size of a walnut. The tube was kept in for about a week and thereafter the wound healed soundly and quickly. No sugar appeared in the urine during his stay in hospital. Some months later he joined the army, served in France, and continued in good health.

I have used this method, or assisted colleagues in using it, in three cases of acute pancreatitis, all of whom recovered. The number is small but quite sufficient to demonstrate that the inflamed pancreas can be freely opened up and drained, not only with safety, but with immediate and lasting benefit to the patient.

AN OPERATION FOR HALLUX RIGIDUS.

BY

W. A. COCHRANE, F.R.C.S. Ed.,
ASSISTANT SURGEON, THE ROYAL INFIRMARY, EDINBURGH.

DISSATISFACTION with the functional end-results of the ordinary operations for hallux rigidus has induced me to try what has proved to be a simple, but effective, substitute. When one of the ordinary operations, such as removal of a wedge of bone limiting dorsiflexion or the trimming away of a portion of the head of the metatarsal, is practised, an elastic resistance to dorsiflexion still remains. This is due to the shortened and contracted structures on the plantar aspect of the metatarso-phalangeal joint, particularly the plantar fibres of the lateral ligaments. The spasm of the intrinsic muscles of the great toe, whose tendons are inserted into the base of the proximal phalanx, is also a factor. These features, together with the organization of blood clot and the development of painful adhesions, are responsible for poor functional end-results.

The difficulty being largely and very often wholly extra-articular, it seemed illogical to attack the bony and cartilaginous elements of the joint. An operation was planned, therefore, to divide the shortened structures on the plantar aspect of the joint.

In the first case chosen there was no osteo-arthritis of the metatarso-phalangeal joint, but the rigidity could not be corrected by forced manipulation under the anaesthetic. It seemed eminently suitable, therefore, for what might be termed this intermediate type of operation. A longitudinal incision, one inch long, with its centre over the level of the articulation, was made in the mid-line over the plantar aspect of the metatarso-phalangeal joint of the great toe. The sheath of the flexor longus hallucis was incised in the line of the skin incision and the tendon hooked aside. A strong, narrow-bladed knife was then passed into the joint to divide the capsule on its plantar aspect, along with the tendons of the small muscles attached to the base of the proximal phalanx. The plantar fibres of the lateral ligaments were also divided. Dorsiflexion, full and free, was obtained. The toe was bandaged in moderate dorsiflexion. Active and passive movements were begun on the third day. Full function was present by the time the stitches were removed and full weight-bearing begun on that day.

The operation has been done in a series of twelve cases with equally gratifying results. The patients have all expressed themselves as satisfied and there have been no relapses. Osteo-arthritis was present in three, and a wedge of bone, base upwards, was removed from the dorsal aspect of the joint. An elastic resistance to full dorsiflexion still remained, but disappeared at once on the performance of the small additional procedure here described.

Most cases of hallux rigidus occur in slender feet with a relatively long great toe, and attention must, therefore,

be paid to the fitting of a suitable shoe that is not too short. Measures must also be taken for the treatment of a tendency to faulty statics and flat-foot, which it is usual to find associated with hallux rigidus, and which are concerned in its causation.

TWO CASES OF SPONTANEOUS RUPTURE OF THE HEART.

BY

C. J. THOMAS, M.R.C.S., L.R.C.P.,
ASSISTANT MEDICAL OFFICER,

AND

S. R. TATTERSALL, M.R.C.S., L.R.C.P.,
PATHOLOGIST,
COUNTY MENTAL HOSPITAL, LANCASTER.

In a recent article on rupture of the heart, J. Strickland Goodall and H. B. Weir,¹ after analysing a series of cases, express the opinion that a physical pathological state, and not some emotional strain, is the prime causal factor. The two cases here described corroborate that conclusion, and in addition appear to be of interest, in one case because of the unusual site of rupture, and in the other on account of the unusual nature of the pathological cause of the rupture.

CASE I.

A woman, aged 53, was admitted in April, 1918, in a restless, excitable condition. In April, 1920, she had crossed paralysis of the right arm and left leg, with slight facial paresis, but consciousness was not lost. She was up and about in December, 1920, and continued to lead a quiet, aimless life, doing no work of any description. There was evidence of myocardial insufficiency shown by slight oedema of the lower extremities. On April 11th, 1922, the patient was taken ill at 8.40 a.m. (one hour after rising), and expired almost immediately. There was a suspicion that the patient had recently visited the lavatory, but we were unable to get any definite evidence on this point. It is to be noted that in Goodall and Weir's series of eighteen cases three occurred in connexion with visits to the lavatory, the strain of defaecation apparently being the effort which precipitated the final catastrophe.

The autopsy revealed signs of passive congestion in all the viscera. The oedema of the legs was still noticeable. The cranial cavity contained an excess of cerebro-spinal fluid, ventricles were dilated and the convolutions wasted. The pia mater was thickened, and there was an area of old softening in the motor area of the left cerebral hemisphere. The pericardium was distended by blood and blood clot. The right auricle was dilated, and showed a large tear posteriorly, about 4 cm. in length. The edges of the rent were ragged, irregular, and ecchymosed. The heart muscle was soft and flabby, and there was considerable sclerosis of the coronary arteries. The heart weighed 266 grams.

CASE II.

A man, aged 62, a shoemaker by trade, was admitted in June, 1906, in a state of noisy excitement with acute hallucinations of sight and hearing. For many years prior to his death he had been in a state of progressive dementia, confused, idle, solitary, and unresponsive. He was known to be the subject of cardiovascular degeneration. His death occurred suddenly one morning, whilst still in bed.

The autopsy revealed a large flabby heart, weighing 420 grams, the pericardium again being distended with blood and blood clot. The left ventricle was found to be ruptured posteriorly, the external opening of the rupture being about 2 cm. long. It resembled a clean-cut surgical incision, and ran in a direction parallel with the muscular fibres. Further inspection of the site of the lesions showed that the ventricular wall was diffusely affected by a gummatous condition. The tear on the inner surface of the ventricle showed ragged edges, and the haemorrhage had extended laterally for some distance in the wall of the ventricle. On one side it had pursued a U-shaped course, and had almost penetrated again into the ventricular cavity. The coronary arteries were sclerosed, and in the aorta were patches of atheroma sharply limited to the points of origin of the intercostal arteries. A feature of interest was that the thymus had not undergone its usual atrophic changes, but extended downwards as far as the base of the heart.

It is possible that rupture of the heart is a more common mode of death in cases of cardio-vascular degeneration than is commonly believed. Neither of the deaths here recorded could be said to be unexpected, and it is certain that in the absence of permission for a *post-mortem* examination no difficulty in assigning a cause of death would have been experienced, and the ruptures would have been undiscovered. The strain in Case i was at the most a physiological one, and in Case ii the entire absence of any strain is noteworthy. Auricular rupture is uncommon, for while it is conceivable that degenerative processes may occur in the wall of any of the chambers of the heart, it is obvious

that the walls of the ventricles will be more likely to rupture on account of the extra strain to which they are subject. Quain,² in a summary of cases collected from various sources, gives the frequency of sites of rupture as: left ventricle 76 times, right ventricle 13 times, right auricle 7 times, left auricle twice; the interventricular septum was ruptured in four cases. Elleaume,³ quoted by Quain, found the right auricle ruptured in 3 out of 55 cases. The age of both our cases was over 50, as it was in over 80 per cent. of the recorded cases. Syphilis of the heart is well known as a cause of sudden death, and cases of rupture reported by Dandridge and Nalty are mentioned by Osler.⁴ Stott and Blair,⁵ in a recent article, note the apparent predominance of the female sex in cases of ruptured heart. From an examination of the records of a large number of cases it would seem that the reverse is true, although not to the extent of the predominance of male cases recorded by Strickland Goodall and Weir (16 male to 2 female).

We are indebted to the medical superintendent of the hospital, Dr. R. P. Sephton, for permission to record the foregoing cases.

REFERENCES.

- ¹ Goodall and Weir: BRITISH MEDICAL JOURNAL, May 7th, 1927, p. 834.
² Quain: *Dictionary of Medicine*, Div. II, p. 839. ³ Elleaume: *Moniteur des Hôpitaux*, No. 58, 1858. ⁴ Osler: *Principles and Practice of Medicine*, eighth edition, p. 275. ⁵ Stott and Blair: BRITISH MEDICAL JOURNAL, May 14th, 1927, p. 876.

SPONTANEOUS RUPTURE OF THE RIGHT VENTRICLE OF THE HEART.

BY

B. LLEWELYN HODGE, M.R.C.S., L.R.C.P.,
HOUSE-PHYSICIAN, ESSEX COUNTY HOSPITAL, COLCHESTER.

THE following case shows several unusual features, which are worthy of record.

An unmarried woman, aged 57, was admitted to the Essex County Hospital, Colchester, complaining of a swelling of the abdomen, first noticed one month before admission. It was causing slight abdominal discomfort, and there was some oedema of the legs, most marked at the end of the day. There had been no nausea or vomiting, and no jaundice. She had dyspnoea on exertion, but no cough, no difficulty of micturition, and no cramping pains in the legs. She had been losing weight for the previous two months. Menstruation had ceased at the age of 48, but there had been a slight "show" four months previously.

There was impairment of the percussion note at the bases of both lungs, presumably due to the liver being pushed up by the abdominal contents; otherwise, the lungs appeared healthy. The apex beat was in the fourth space, 2½ inches from the mid-sternal line. The impulse was poor, and the area of cardiac dullness was not increased. The first sound at the apex was very faint and prolonged; the other sounds were faint, but no murmurs were heard. There was some oedema of the legs and lower part of the back.

The abdomen was distended, and the umbilicus protuberant. There was marked shifting dullness in the flanks; a fluid thrill was perceived on palpation. In the right hypochondrium there was a mass the size of a foetal head, hard, fixed, and apparently smooth. In the left hypochondrium there was a smaller mass, the size of a Tangerine orange, which could be pushed easily towards the mid-line. The liver was apparently pushed up by the abdominal contents. The spleen and kidneys were not palpable. The uterus was small, senile, and freely movable, and the cervix was healthy. The mass on the right side was free from the uterus; that on the left, from its mobility, was thought to be a subperitoneal fibroid. The urine was normal chemically and microscopically, and the Wassermann reaction was negative. A diagnosis of right-sided ovarian cyst, with free ascitic fluid, was made, and a pedunculated fibroid was suspected. About two hours before the contemplated operation, after the usual routine preparation of the abdomen, the patient complained of sudden nausea and slight precordial pain. She tried to sit up in bed, but collapsed. Her face was pale and clammy, but there was no cyanosis; she became unconscious in about five minutes, and died about ten minutes after the onset of the symptoms.

At the necropsy death was found to have been due to a rupture of the right ventricle. The lungs were compressed, and congested at the bases; there was no evidence of pulmonary embolism. The pericardium was full of blood. The heart was small, and was coated with bright yellow fat, which also covered the aorta. At the apex of the right ventricle there was a definite perforation, the size of a small knife-stab. The musculature of the heart generally, was extremely thin, that of the apex of the right ventricle practically consisting of the endothelial lining of the heart, with an outer covering of about three-quarters of an inch of fat. The walls of the auricles were exceptionally thin. The aortic valves showed slight atheromatous changes, but the other valves were normal.

The peritoneum contained a large quantity of dirty green fluid with flakes of free lymph; there were no miliary deposits. The