

aged 11 years. There was a history of cardiac distress since infancy, but there was no "clubbing" and no cyanosis except on occasions. The dulness of the heart and great vessels was increased to the left. At the apex there was a blowing systolic murmur, and over a localised area in the pulmonary region there was a continuous thrill and a loud "churning" rumble throughout systole and diastole. There was no evidence of enlarged glands.

Dr. PARKES WEBER showed: 1. A case of *Nævus Verrucosus Linearis* in a boy aged 3½ years. The skin of the trunk, neck, and extremities was largely affected with pigmented and verrucose *nævus*. The abnormality began when the child was seven months old. 2. A case of Congenital Transposition of the Viscera in a girl aged 10 years. Clinical signs and a skiagram showed a complete transposition of all the viscera. There was no valvular disease of the heart.

Dr. F. LANGMEAD showed: 1. A case of Rheumatoid Arthritis in a boy aged 13 years. The condition began two years ago and the hips, knees, ankles, elbows, wrists, and hands had been affected. The axillary glands were slightly enlarged, but no enlargement of the spleen had been detected. Skiagrams showed that the enlargement of the joints was periarticular. Improvement had been brought about by treatment with thyroid extract, which was given on account of the mother having had myxœdema for 15 years. 2. A case of Malformation of the Heart in a male infant, aged 8 months, who was cyanosed but did not show any appreciable "clubbing." The heart was enlarged to the left; a systolic bruit was audible over the cardiac area, especially at the xiphisternal junction and was accompanied by a thrill. The condition was possibly one of deficient interventricular septum.

Mr. O. L. ADDISON showed: 1. A case of old healed Tuberculous Disease of Knee-joint with increase in length of the limb. The boy first had signs of tuberculous disease of the knee in 1906. He was treated for six months, and afterwards had a Thomas's splint. For the last eight months he had been walking about and was free from recurrence. Movement in the joint was almost perfect, but the leg was one inch longer than the other, the femur and tibia being each half an inch longer. Skiagrams showed increased translucency of the tibial and femoral epiphyses with some irregularity of outline. 2. A case of Sarcoma of the Femur in a girl aged 1½ years. The growth, which was in the right femur, had been noticed for two months and did not appear to penetrate the bone (X rays). The liver and spleen could both be felt, and there were a few small glands in the left groin. It was not proposed to operate. 3. A case of Interstitial Hernia in a boy, aged 2 years, who had been operated upon for left inguinal hernia. There was a subcutaneous hernia of the size of a pigeon's egg above Poupart's ligament on the same side, and the left testicle was undescended.

Dr. G. A. SUTHERLAND exhibited a case of *Cardiolysis* for Adherent Pericardium in a boy aged 6 years. Eleven months ago the patient was admitted to hospital suffering from subacute rheumatism and rheumatic nodules. There was bulging of the præcordial region and a heaving impulse. The heart was greatly enlarged and a double murmur was audible at the apex. The boy became a chronic invalid, and adherent pericardium with dilatation and hypertrophy was diagnosed. Six months ago Mr. W. H. Clayton-Greene removed parts of the cartilages of the fourth to seventh ribs at the sternal junction to allow more freedom of action for the heart. Since then the boy had had one attack of cardiac failure, but on the whole he had been better and much more active.

The paper and cases were discussed by the PRESIDENT, Dr. J. W. CARR, Dr. SUTHERLAND, Dr. H. D. ROLLESTON, Dr. J. D. ROLLESTON, Dr. J. PORTER PARKINSON, Dr. A. E. GARROD, Dr. T. R. WHIPHAM, Dr. E. I. SPRIGGS, Dr. F. W. HIGGS, Mr. W. MILNER BURGESS, and Mr. J. P. LOCKHART MUMMERY.

MEDICAL SOCIETY OF LONDON.

Heart Strain and Dilatation.

A MEETING of this society was held on Dec. 5th, Mr. CHARTERS J. SYMONDS, the President, being in the chair.

Dr. W. COLLIER (Oxford), in resuming the adjourned discussion on Dr. F. J. Goodhart's paper (see THE LANCET of Dec. 3rd), said that unfortunately heart strain in athletes had been on more than one occasion of late

years the subject of discussion in the columns of the lay press. Anyone would gather from those discussions that the athletic competitions at public schools and universities were a potent cause of life-long injury to many boys and youths. But the real facts of the case were brought out in an inquiry made among the medical officers of schools and universities, who were almost unanimously of opinion that such care was taken in the matter that there was very little injury done.

Dr. SAMUEL WEST said that strain was a term in common use. A man was said to be working under great pressure or strain, nervous or physical, and when overworked to be suffering from nervous or physical breakdown. Strain in its clinical sense was that breakdown or overstrain. Cardiac strain in the same way might be nervous or physical. The two groups should be sharply distinguished, for the physical strain had its seat in the heart and nervous strain outside the heart in the nervous system. It might be stated that those in whom the nervous symptoms were most marked were least likely to show signs of organic disease. It would be well if the distinction could be marked by different terms, for heart strain was generally assumed to imply muscular failure. For the nervous group there was no satisfactory name. Functional affection or cardiac neurosis were at once too indefinite and too wide. The diagnosis between the two groups was of great importance, but it was just there that the difficulty came in, and mistakes were common enough to destroy confidence and necessitate caution. The cardiac symptoms were the same in both groups—viz., pain, palpitation, and shortness of breath. To those were added in the cardiac group the physical signs of dilatation—viz., displacement of the apex, increase of cardiac dulness and movement. The difficulties of diagnosis were increased by the fact that the two classes cut into one another. Thus the general ill-health accompanying a nervous breakdown might affect the heart muscle and make it to be feeble and to dilate. On the other hand, nervous symptoms might be added to the symptoms of organic disease and greatly aggravate the patient's suffering. No organ was more subject to nervous influence than the heart. Every one was familiar with the bursting feeling in the chest, the choking in the throat, and the violent palpitation of a nervous man who had to speak in public. Training was not merely muscular but nervous too, and in that case the nervous system began its work too soon. It was not till the heart was hard at work that it steadied down and relief was obtained. That was a good illustration of the beneficial effect of treating nervous cardiac over-action by work.

Dr. WALTER BROADBENT said there was one interesting method of examining a case of supposed heart strain which had not been referred to—that was by taking a tracing of the jugular pulsation in the neck with Mackenzie's polygraph. As far as his experience went, he had found that in cases which were functional or due to some form of dyspepsia there was no variation from normal in the jugular tracing, but in genuine cases there might be one of two conditions—either a very large auricular wave or a ventricular wave higher than the auricular. When the auricular wave had been large, presumably showing hypertrophy of the auricle, relief of symptoms had quickly followed the giving up of violent exercise for a week or two and the taking of a tonic. The patient had been able gradually to resume his old mode of life and the playing of games with only a little moderation. When the ventricular wave had been higher than the auricular, though rest, graduated exercise, and treatment had changed the character of the jugular curve and made the ventricular wave much smaller than the auricular, there had been great liability to relapse on any unusual exertion. Those jugular tracings were particularly useful when there was very little dilatation of the heart, and that perhaps masked by emphysema. When there was definite dilatation, it seemed to him better to put the patient to bed and give calomel and cardiac tonics, in order to see how much the heart would contract. He had seen the apex beat come in over an inch in a week. Massage was useful to keep the muscles in condition. As soon as the size of the heart appeared to be stationary, the patient could be gradually got on to his feet while the massage was continued. Afterwards he had a great belief in the Oertel system of graduated walking up hill. That was very easy to carry out in a hilly place like Brighton, every day one lamp-post further up the street, or, if the hill was steep, taking two to three days to reach the next

lamp-post. He had seen a gentleman last week who for a year up to last January had not walked 200 yards without getting out of breath; he was only 40 years of age, but had a dilated heart, said to have been brought on by sudden exertion. He had followed the Oertel system diligently, and now told him that he had reached 500 feet of altitude and six miles of distance daily. During the whole time the size of the heart had steadily decreased. That was an infinitely cheaper form of treatment than the Nauheim, and in his experience had given quite as good results.

Dr. ALEXANDER MORISON thought that Dr. Goodhart had rendered a public service in opening this discussion. He considered that the public had been unduly familiarised with the ideas of cardiac dilatation and strain during the last 20 years. While, however, he deprecated the attitude of the alarmist in medicine, he thought there was also some danger in that of the optimist. Hearts did dilate or become inefficient without gross organic disease, and it was quite possible unduly to minimise the importance of such conditions. Variations from the normal standard had to be examined carefully before being dismissed as unimportant. He did not think the argument from the right to the left heart was on all fours. The conditions involved were so different. While he regarded with suspicion all mitral leakages, he considered tricuspid leakage and right ventricular distension common and often physiological. He agreed with Professor Keith that left and right apical displacement was usually governed by the distension of the opposite auricle. Right auricular engorgement was common and often physiological, even in the presence of left ventricular disease; and the displacement of a variable apex beat to the left, also frequently physiological and of little moment. On the second head of the discussion concerning the neural origin of some persistent irregularities of the heart, he agreed with Dr. Goodhart, but considered that the question was now so much debated and of so interesting a character that it could not be adequately discussed as a rider to the general theme under consideration.

Sir JOHN BROADBENT agreed with Dr. Goodhart that the importance of percussion of the area of cardiac dulness as a means of estimating strain or dilatation of the right ventricle was greatly over-rated. It was not rational on percussing out the area of cardiac dulness for the first time in a new patient and finding that it exceeded somewhat the normal limits to say that the heart was necessarily dilated and required treatment. An athletic individual would naturally have a larger heart than an ill-developed book-worm, the increase in size being the physiological response to the increased demand. It was not the size of the heart as estimated by percussion that mattered, but its functional capacity that was all important. In aortic incompetence a certain amount of dilatation followed by hypertrophy was a part of the compensatory change. In diphtheria, in which a fatal syncopal attack was especially liable to occur, there was frequently no appreciable evidence of cardiac dilatation as shown by percussion. More valuable evidence as to the functional capacity of the heart could be gathered from the pulse, the character of the heart sounds and of the apex beat, or from symptoms such as breathlessness or præcordial pain on exertion, than from mere mapping out of the cardiac dulness. It was advisable in speaking of cardiac dilatation to distinguish between dilatation of the right side of the heart and that of the left. As a result of severe exertion the right side of the heart might temporarily be over-distended and a systolic tricuspid murmur make its appearance, but equilibrium would soon be restored in a healthy heart. It was a more serious matter when a systolic mitral murmur set in after exertion, as that indicated dilatation of the left ventricle. The important etiological factor in dilatation of the heart was loss of tone in the cardiac muscle. Such loss of tone might result from various toxæmias, and the dilatation of the right ventricle that ensued might be very considerable. This was especially the case in rheumatism, and here there was frequently not merely loss of tone, but extensive damage to the cardiac muscle, which would account for the extensive degree of dilatation met with in this affection. Ptomaine poisoning and auto-intoxication might also be responsible for such loss of tone. An atonic condition of the cardiac muscle might also be part and parcel of the general loss of tone throughout the muscular system due to exhaustion of the nerve

centres from overwork or prolonged mental anxiety and strain, or some severe shock. In such conditions undue exertion might readily give rise to acute dilatation. The following were instances he had seen. A solicitor, greatly overworked, found that he could not play golf as usual on a Saturday without getting short of breath and very soon tired. He was found to have a soft systolic mitral murmur and an apex beat half an inch outside the nipple line. A strong athletic man after an accident in which a depressed fracture of the skull necessitated trephining, found that after his recovery from this he was short of breath on slight exertion and generally slack. On examination a similar condition of heart was found. In both these cases change to a bracing climate with rest at first, not in bed but simply taking things easy, followed by graduated walking exercise, led to complete recovery and all disappearance of the cardiac murmur. A large proportion of symptoms often attributed to cardiac dilatation, such as palpitation and other disorders of rhythm, fainting attacks, and various subjective sensations of pain and discomfort in the præcordial area were "neurons" of the heart or reflex disturbances which were commonly met with in highly strung individuals or in cases of nervous breakdown after prolonged strain or anxiety.

Dr. CHARLES W. CHAPMAN said the importance of dilatation depended upon (1) the age of the patient; (2) the general physical condition; and (3) the previous history. When the patient was young and vigorous and had his heart strained then, although he had some dilatation, irregular action, and possibly a soft systolic mitral murmur, a short period of rest would in most cases be all that was necessary. In patients past middle life, although they might up to the time of the strain hold a clean bill of health, the prognosis and the length of rest necessary would depend upon the state of the vessels and of the more important viscera, especially the kidneys. He had recently seen a gentleman about 60 years of age, who had severe cardiac symptoms after dancing. He had never been ill. The serious nature of the case was not recognised and he was allowed to travel. On his arrival home he was very ill, and when seen by Dr. Chapman in consultation his heart was greatly dilated, and he had all the signs of back pressure, to which he rapidly succumbed. Had that patient been put to bed at once and had complete rest he would in all probability have got better. With reference to the previous history, that of syphilis was of paramount importance, particularly if aortic as well as cardiac dilatation existed, when prolonged rest, in conjunction with treatment, was of vital importance. As to whether the limits of cardiac dilatation could be defined with any approach to accuracy, he was confident it could by percussion properly performed by one practised in the art, though something of a musical ear was a great assistance. At the same time, to pretend to make measurements to a hair's breadth was as ridiculous as it was useless.

Dr. LEONARD GUTHRIE agreed with Dr. Goodhart that the physical signs supposed to indicate heart strain and dilatation—namely, slight displacement outwards of the apex beat, an impulse varying in force and direction and speed, irregular and intermittent action, together with the presence of bruits, systolic in time over the pulmonary valves, and sometimes audible from the apex to the level of the pulmonary area, varying with the patient's position, were unreliable as evidence of cardiac dilatation. He thought, however, that they might be regarded as evidence of past strain and dilatation, and of potential dilatation should the patient indulge in over-exercise. It did not follow that because signs of dilatation were absent at one time that they had not been and would not be present at another. He agreed again with Dr. Goodhart that the symptoms—fainting attacks, pains over various parts of the præcordial area, sighing respiration, palpitation, collapse with sensation of impending death, and extreme lassitude after smallest exertion—were not those met with in cases of cardio-valvular disease. Still, the symptoms were no doubt of cardiac origin in spite of the fact that the patient was as a rule neurasthenic to an extreme degree. He did not think it altogether safe to treat such patients as neurasthenics without reference to their cardiac condition. If one reassured them and said there was nothing the matter with their heart they were extremely likely rashly to over-exert themselves and thus make matters worse, as in one of Dr. Goodhart's own cases. He believed that the most frequent cause of cardiac strain and primary dilatation was

over-exertion following an attack of influenza. Although, as Dr. Goodhart stated, treatment by rest might be overdone, he was convinced that in all acute cases it was necessary for at least a month. Gentle and graduated exercise might then be prescribed, but athletics and all prolonged or severe physical exertion should be forbidden to those who had once suffered from definite symptoms of cardiac strain and dilatation.

Dr. F. PARKES WEBER having spoken, Dr. GOODHART replied, and the meeting concluded.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Transperitoneal Cystotomy, with Report of a Case.—Diagnosis of Renal Calculus.

A MEETING of this section was held on Nov. 18th, Mr. R. H. WOODS, the President, being in the chair.

Mr. SETON PRINGLE read a paper on Transperitoneal Cystotomy for Tumour of the Bladder, with Report of a Case. He gave a history of this operation, and compared the results obtained by it with those obtained by operating by the suprapubic route. He advocated this method in all cases of tumour, except those situated at the apex of the bladder. He described the operative technique in detail, and illustrated the various steps by lantern slides. The paper concluded with a report of a case of papilloma successfully dealt with by this route by Mr. Pringle.—Mr. A. J. BLAYNEY said that he had used the method twice, and he could confirm what Mr. Pringle had said with regard to the excellent view of the bladder obtained. The after-treatment he had used was to drain the bladder for a few days, and afterwards urine was passed quite readily.—Mr. JAMESON JOHNSTON said he had not done the operation, but it appealed to him as being scientific, and based on anatomical principles, and one certain to be very useful in the future, but he would not use the transperitoneal method unless he thought the other method was not sufficient.—Mr. C. A. K. BALL said he had attempted to do transperitoneal cystotomy in the case of a man, aged 56 years, who had a malignant tumour of about the size of a five-shilling piece involving the left ureter. On opening the abdomen it was found that there was a mass of secondary growth completely adherent to the iliac vessels. The case was therefore inoperable and the abdomen was closed. He was much struck with the splendid access to the bladder that was obtained. Although in a thin patient it was one of great ease, in a fat person there was difficulty in keeping the intestines back before opening the bladder, but when opened the tumour was easily removed and the result was satisfactory. He did not gather whether Mr. Pringle had used the valuable aid of the electric head-lamp which had been brought to his notice by the President. With the head-lamp one was able to work with a smaller incision in the bladder, and the interior was readily illuminated.—Mr. W. I. DE C. WHEELER said that, considering the mortality of the removal of benign tumours, it was time some new methods of technique were developed. He had been impressed with Mr. Pringle's work, and on his advice had used the transperitoneal method. The operation had great advantages over the ordinary suprapubic method, and he would be inclined to use it in every case of tumour of the bladder where there was any difficulty in the removal of the tumour.—Mr. K. E. L. G. GUNN asked if Mr. Pringle meant that the operation was to be done in all cases of the bladder or only in carcinoma. He had operated on eight cases of malignant growth in the bladder. In one of the cases he had not recognised malignancy before the operation and found the growth too late to do anything. In two cases he did the transperitoneal operation, and in one case had to replant the ureter higher up in the bladder wall. The patient died five years after the operation. The second survived the operation, but died from recurrence five months afterwards. In four cases of radical suprapubic operation, one died 12 months later, one died in nine months, one was still alive three years after operation, and another four years. One should adopt whatever method was most convenient to get at the growth. No matter how carefully they sutured, there was a danger in the

transperitoneal method of leakage of urine.—The PRESIDENT said that, in his opinion, no cavity operation could be as well done without an electric head-lamp as with it, but for the purpose they must have a theatre that was not too highly lighted. If they had a subdued light sufficient to enable the assistants to do their work, and others to see what they wanted to see, and they used a suitable lamp with a large concave reflector that could be varied, he was of opinion that, no matter what the operation was in a cavity, they would be able to see ever so much better, and they would never go back to the old plan that compelled them to put their head between a light and the cavity.—Mr. PRINGLE, in reply, said he did not advocate the operation for all tumours. He thought it had not been done often enough to be quite sure of its mortality. He was inclined to advocate it in all cases except those of tumour situated near the apex of the bladder. One would think that with the transperitoneal operation, even with the risk mentioned by Mr. Gunn, they should have a less mortality than the immediate mortality of 10 per cent. with the suprapubic method. One could form a fair idea of malignancy with the cystoscope, but it was not sure, and the transperitoneal method enabled them to deal much more radically and rapidly with the tumour. He had good light in his case, and he thought the chief point was to get the patient into a very high Trendelenburg position so that he was almost vertical, and the light of the theatre window shining in. He did not personally feel the need of a head-light. As regards the risk of the operation, a great many of the 23 cases reported by him, from American literature, were septic bladders. Richardson in America had taken out two large stones in two cases in which the bladder had tightly contracted down. He did the transperitoneal operation in both cases, the bladder being intensely septic, and both recovered without peritonitis.

Mr. MAURICE R. J. HAYES in a paper on X Rays in the Diagnosis of Renal Calculus laid special stress on the necessity for thorough evacuation of the intestines in order to obtain a satisfactory radiogram. A description of a simple method of obtaining compression of the kidneys by means of an ordinary girth was given. The various causes to which errors in diagnosis may be due were discussed, and radiograms illustrative of these were shown. The use of radiography as the only method of diagnosis of calculi was not recommended, but taken in conjunction with the ordinary methods of diagnosis it furnished more valuable information than could be obtained in any other way.—Dr. W. S. HAUGHTON said he did not think that X rays should be used to replace the ordinary methods of clinical examination, but rather to confirm them. He had never known a Roentgen picture to make a mistake with regard to a stone in the kidney. With regard to controlling the respiratory movement of the kidney, the strap mentioned was an admirable addition to the work. There were other methods of extreme usefulness.—Sir JOHN LENTAIGNE said the X rays were so valuable a help that they were tempted to drop the more laborious methods of diagnosis.—Mr. HAYES, in reply, said he had invested so much in apparatus that he was afraid to put more money into the Albers-Schönberg compressor. He thought it was a cumbersome and heavy affair, and everything could be obtained by a contrivance at an expense of 3s. 6d. He had recently used a rubber air-pillow, and found that he got the shadow of the air-pillow transversely on the plate. One disadvantage of the air-pillow was that the position of the patient changed during exposure. He expressed his thanks to the speakers for their kind remarks.

Mr. GUNN read a short paper on the Diagnosis of Renal Calculus, giving briefly the chief symptoms and the relative values of such symptoms in diagnosing renal calculus. Mr. Gunn then discussed the question of how far the opinion of the radiographer should influence the surgeon in his treatment of the patient.—Dr. W. G. HARVEY supplemented Mr. Gunn's paper with a few remarks on the X Ray Diagnosis of Renal Calculi. He agreed with Mr. Gunn that the radiographer should examine the whole urinary tract. In the great majority of cases a negative diagnosis was justified by the absence of a shadow in a sufficiently good negative. Such a negative should show (1) the last ribs; (2) the tips of the transverse processes; (3) the line of the ilio-psoas muscle; and (4) the outline of the lower pole of the kidney. He then showed some lantern slides illustrative of these points.—Dr.