

tory equilibrium save some periodical attacks of diarrhoea. These attacks cannot be traced to errors in diet or any local causes in the intestinal canal. The patient is a student, tall and spare, chest long and narrow, bulging of the costal cartilages of the left side from the 10th to the 6th rib. Apex beat punctuate, in the sixth interspace in the nipple line. Short purring thrill felt on palpation, also slight diastolic shock. Cardiac dullness extends from the third rib downwards, laterally from the middle of the mediastinum to the nipple line. Auscultation reveals an occasional irregularity, but very seldom. First sound loud and snapping in quality, no trace of murmur; second sound accentuated and reduplicated, heard most loudly at the pulmonary cartilage, and transmitted quite distinctly beyond the area of cardiac dullness. No enlargement of the spleen, no enlargement of the liver, no oedema.

The first count of the pulse was 49, the second count gave from 50 to 54. The character of the pulse is that it is of small volume, but usually quite regular. Respirations were 16 to the minute; temperature not taken at the time; but subsequently it was found to be subnormal throughout most of the day. During a period of ten days, during which his temperature was taken three times daily, it only reached the normal point on three occasions. A tracing of a normal pulse with a fairly high tidal wave and a fairly high secondary wave was shown to compare with the tracing of the patient's pulse when it was beating at 54. It shows very typically that this tidal wave is short (that the artery is not very actively filled, a common condition in obstructive disease of the mitral orifice), it shows besides a very long diastolic period during which the ventricle is filling, and that is succeeded by the next systole. A tracing taken after exertion was also exhibited, the pulse here is more rapid, nearly 80; it has the same characters as the previous tracing, with the exception that the second wave is very well marked,—in fact, it approaches the condition of dicrotism. When the heart is beating rapidly it cannot be so well filled, on account of the obstruction at the mitral orifice.

This condition of bradycardia (slow heart) has been known for a long time; but until quite recently no attempt has been made to collect and tabulate a number of cases. At the meeting of the American Association of the Medical Sciences at Washington recently, Prentiss collected over 100 cases in which the pulse beat below 60. The symptom of bradycardia may arise under any varied conditions of disease indeed; and, although attempts have been lately made to classify them, notably in the large series of cases collected by Riegel, so far they have arrived at no very satisfactory results. The principal conditions under which one meets with it are (I) injuries to the central

nervous system, in injuries of the head slow pulse is often a very conspicuous phenomena; (II) conditions associated with organic heart disease, fibroid disease, fatty degeneration, and much more rarely valvular disease; (III) toxic cases, poisoning by lead and arsenic, eating bad fish, etc.; (IV) anæmia and the cachectic conditions generally; (V) catarrhal jaundice; whether this is one of the toxic cases or not is not clear. The tendency is to group them under two heads: (a) where there is organic heart disease; (b) where the nervous mechanism is at fault.

Progress of Science.

THE ARTERIO SCLEROTIC CONTRACTED KIDNEY.

Leven (*Deut. Med. Woch.*, May 29th, 1892) says that Zeigler first suggested this name, and that he was also among the first to define this disease sharply from other forms of chronic nephritis. The relation of the vascular disease to the renal affection is a fairly constant one. It is not necessary that it should extend to the whole vascular system; indeed, it is mostly limited, and the heart has been pointed out as the organ in which the vascular lesion is almost constantly present. Even more characteristic and hardly ever absent is the marked affection of the arteries of the pia mater. In the author's experience, the spleen has always been involved. The small arteries show marked sclerotic changes. The splenic reticulum is considerably thickened, and the cells exhibit commencing degeneration. It is the picture of a fibrous induration, the cause of which is to be found in the vascular disease. The cardiac hypertrophy, almost limited to the left side of the heart (while the muscle itself shows early degeneration) is no real objection to this view, for the hyperplasia of the left ventricle is due to the increased vascular resistance, and takes place when the heart is as yet well supplied with blood. The author says that the changes in the kidney itself are the typical manifestations of a degeneration brought about by deficient blood-supply. The changes in the arteries in the kidney affect chiefly the intima and the middle coat only slightly. The adventitia is also much thickened. Leven states that the urine has been in all his cases diminished in quantity (without corresponding dropsy). Eye changes are uncommon. The author says that this form of renal disease exists mostly in the case of men without previous evidence of acute nephritis, who present in the course of time slight albuminuria, passing oedema, a diminished quantity of bright urine, hypertrophy of the heart, and slight uræmic symptoms.—*Brit. Med. Journal*.