from the amount of regurgitation present as gauged by the pulse, which was typically that of free aortic regurgitation. Epigastric pulsation was also especially well marked. As far as could be ascertained by palpation and percussion the heart was lying almost transversely across the chest. There were no other physical signs of aortic aneurysm with perhaps the exception of indefinite tracheal tugging. In fact, excepting the position of the heart the case might easily have been passed as one of simple aortic regurgitation. Having noticed, however, with the screen this horizontal position of the heart in a previous case of aortic aneurysm, I examined the patient with the screen and saw at once that he had an aneurysm of the aorta. Fig. 1 shows well the transverse position of the heart and aneurysmal sac.

CASE 2.—A man, aged 46 years, came to the out-patient room at the hospital complaining of cough and dyspnoea of three years' duration. The cough was dry and noisy, but it was not typical of an aortic aneurysm. He also complained of some pain in the back. He had never had rheumatism and he denied syphilis. The heart occupied the same transverse position as in the former case. The heart sounds were clear in all areas, but the aortic second sound was very loud and ringing and was heard over a wide area. The pupils were equal. The pulses were equal and were soft and compressible. The vocal cords acted well and there was no tracheal tugging. The urine was acid, with a specific gravity of 1020; there was no albumin. On examination with the screen an aneurysm was discovered, probably of the descending arch. Fig. 2 shows the transverse position of the heart and aneurysmal sac.

FIG. 2.

Aneurysm of aorta with transverse position of the heart.

I have ventured to put these two cases on record as illustrating the diagnostic value of this transverse position of the heart in aortic aneurysm.

Harley-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

AMPUTATION OF THE THIGH IN AN OCTOGENARIAN.

BY JOHN MURRAY, M.B., C.M. GLASG.

I WAS called to see the patient, a hale old man, aged 82 years, on Sept. 23rd, 1902, and found him then complaining of shooting pain of an agonising character in the great toe of his right foot. It had commenced a week or two previously and had become steadily worse. The toe was blanched and colder than its fellow on the other foot and sensation was impaired. There was no sign of injury. The pulsation in the posterior tibial was slight and the artery could be felt as a hard cord. The patient had led an active, temperate

life and had had practically no illness until 12 years before when he suffered from hæmopericardium. There was marked atheroma of the right radial artery and the vessels in the temporal and frontal regions. The heart was feeble and there was a systolic murmur at the apex. The urine contained no sugar and no albumin. Otherwise his general condition was good. The diagnosis of senile gangrene from atheroma was made and expectant treatment was adopted. The foot was cleansed, wrapped in cotton wool, and kept warm; opium and digitalis were administered. In course of time the disease progressed till it involved the whole foot although no line of demarcation appeared. The pain was very severe and could not be controlled by free administration of opium.

Operation was at first refused but on Nov. 10th chloroform was administered by Mr. J. Morgan Evans and, assisted by Dr. A. Miller Kerr, I amputated in the lower third of the thigh. The popliteal artery was decidedly atheromatous, but the ligature held securely. The flaps (long anterior and short posterior) were united by a continuous suture for the sake of speed as the patient was looking very ill. Three pints of hot saline fluid were injected subcutaneously with a marked effect upon the pulse and one-third of a grain of strychnine was given hypodermically. During the anaesthesia the patient's breathing was of the Cheyne-Stokes character and continued so for three days. The cycle of breathing was interesting: on the day of operation the period of respiration was 20 seconds, with 40 seconds apnoea, on the second day the periods were 30 seconds each, and on the third day the period of respiration was 40 seconds and that of apnoea was 20 seconds. Afterwards it gradually improved. Water was the only thing which the patient would take for 24 hours after operation and of that he had as much as he would drink; later he took nourishment well and made an excellent recovery.

At the age of 82 years amputation of the thigh is an uncommon operation and it is unlikely that I would have operated had it not been for the strong desire of the patient to have something done which would relieve him. At the present date—five months after the operation—the stump is perfectly sound. It may be added that just the other day he had a cerebral attack causing aphasia, no doubt due to a thrombosis in one of the vessels in his left frontal convolution.

Llandrindod Wells.

AN ERROR IN THE ESTIMATION OF THE SPECIFIC GRAVITY OF THE BLOOD BY HAMMERSCHLAG'S METHOD.¹

BY A. G. LEVY, M.D. LOND.

HAMMERSCHLAG'S method being rapid and convenient is the one most generally employed clinically, but it is subject to an error of varying magnitude. This error consists of an excessive reading and is found to be caused by the disturbing effect upon the hydrometer of the low surface tension of the mixture of chloroform and benzol employed. The small hydrometers commonly used for this purpose are most affected and in one instrument so large a discrepancy as 14 degrees of the scale was noted; more usually, however, the error varies from three to ten degrees.

It is well to employ one of the following methods to obviate the inaccuracy.

1. The estimation of the specific gravity of the chloroform and benzol mixture by means of an instrument which excludes or minimises the surface tension factors. The most convenient is some such balance as Westphal's, in which the surface of the fluid is intersected by an exceedingly fine platinum wire only. The employment of specific gravity beads is inconvenient on account of the long series required. The picnometer method is not readily applicable in connexion with very volatile fluids.

2. By employing a hydrometer which has been standardised or corrected in chloroform and benzol mixtures, the requisite specific gravities of which have been adjusted by an accurate method. In the absence of the above-mentioned appliances a rough method of correction may be applied to any hydrometer of which the highest mark is 1.000. The method consists of adjusting the proportions of a mixture of chloroform and benzol until a small drop of water immersed

¹ Abstract of a paper read before the Royal Society in December, 1902.