

practically normal tension, some of them with most serious symptoms of failing compensation. One, a female aged 45, had pressure of 190 and chronic nephritis. Although diagnosed and classed as valvular disease, it is quite possible that she has only relative insufficiency. It is exactly in patients such as this that I think that the tonometer is of assistance in arriving at a diagnosis. Where we find a blood pressure decidedly high, an enlarged heart and a systolic murmur, with chronic nephritis, there is, in the great majority of cases, no valvular disease, the nephritis being primary and the murmur a danger signal of dilatation and failing cardiac power. This patient showed disappearance of headache and malaise whilst her arterial pressure rose 15 mm. under digitalis. Nitroglycerine, 1/100 grain three times daily, did not lower her blood pressure. In this group were also two readings of 100, one with good and the other with bad compensation.

Aortic insufficiency, 3 cases:—One well marked case, compensation good, pressure normal. One male, aged 39, pressure three days before death 135, five hours before death 120. Post mortem—heart very large, 500 grammes, vegetative endocarditis chiefly about aortic orifice, perforation of one aortic cusp, many infarcts in viscera, superior mesenteric artery occluded by embolus two inches from its origin, thrombosis of portal vein, peritonitis. One of 100, exquisite *pulsus celer*, orthopnoea, cedema, heart muscle enlarged, died two days after observation suddenly. Post mortem showed aortic obstruction as well as insufficiency, relative insufficiency of mitral, lumen of one coronary artery much diminished.

Two of these cases, then, were normal, and one subnormal. If this tonometer merely shows maximum pressure, as many contend, it appears that in these three cases the large pulse wave (arterial excursion), did not give a high reading. In many other patients with pulse beat small, feeble, intermittent and irregular, the reading has been normal or even over the normal. Possibly in pulses of large volume the maximum pressure is not really high, even in the water-hammer pulse. If the highest point of pressure coincides with the passage of a reflected wave centripetally (as contended by Ewart\*) and is due to the interference of the primary and first secondary wave, then possibly the duration of the true maximum is too brief to be recorded by the instrument, and the reading obtained is approximately that of the mean pressure.

Disease of Aortic Valves and of Mitral Valves, 13 cases:—Six were normal, some with bad compensation. Four moderately high, 150,

\*Ewart, Pulse Sensations, Baillière, Tindall & Cox.