

pale as marble. These patients do not require a cylinder of oxygen, with which they are frequently plied, but the judicious application of a little common sense, such as the intravenous injection of small doses of adrenalin or some cardiac tonic. In cases of Raynaud's disease the local syncope is ascribed to vasomotor spasm, but really the spasm, if it exist, is a very mild affair. In these cases the arterioles shut down because there is not sufficient blood pressure to keep them open. The arterial pressure is always low, and the blood is deficient in lime salts and viscosity. In the case of local asphyxia the arterioles are not closed, but the arterial potential is low, the velocity in the capillaries is defective, and the *vis viva* is not sufficient to drive on the blood stagnating in the veins. In cases of erythromelalgia the reverse happens; the velocity and pressure are both increased in the large engorged capillaries.

In many cases of pneumonia with low blood pressure, the vasomotor taps in the splanchnic area are all open, and the aorta is drained before it terminates in the iliac arteries; the bulk of the blood is retained in the chest and abdomen, and the quantity supplied to the lower limbs is diminished. Moreover, the extremities are often colder than the body, and the arteries contracted. The lower level of the limbs increases the velocity in the capillaries and veins, and consequently the capillaries of the foot and leg are often blanched and the veins comparatively empty when the upper part of the body appears congested and purple.

VISCOSITY OF THE BLOOD.

The viscosity varies greatly, and is no doubt the great cause of resistance in the capillaries. Normally it is about five times that of distilled water. In many diseases the viscosity is nine or ten times that of distilled water. The coefficient of viscosity in the tarry blood of Asiatic cholera is often so great that it will not pass through the capillaries. It has long been a disputed point as to whether the resistance to the arterial flow, and consequently to the heart, is situated in the capillaries or arterioles. Sir. W. H. Broadbent, I believe, even now throws the weight of his deservedly great name in favor of the resistance being in the capillaries; and in cases of vasomotor paralysis no doubt such is the case, but in ordinary circumstances I agree with the majority that there is an earlier barrier to the outflow from the heart in the arterioles and small arteries which are governed by vasomotor nerves.

It is extremely fortunate that there is this first line of defence created by the action of the vasomotor nerves in the small arteries