

direct relationship to those respective elements in the arteries. These two conditions (velocity and pressure) might be said to stand, within certain limits, in an inverse ratio to one another, the more rapid the flow, the less the lateral pressure, and vice versa. The lateral pressure depends on the statical condition of the blood, and just in proportion as you introduce movement you convert the force of pressure into that of velocity.

The capillary pressure in the foot even when immobilized is often less than that in the hand, and much less than that in a grog-blossomed nose. This is entirely due to the wonderful mechanism of the vasomotor system. Some people are very liable to cold feet in bed, and such appendages to a lady seem to have led up to a divorce in the United States of America. In such cases the part may be fairly comfortable before going to bed, but once the horizontal posture is assumed the arterial pressure and capillary velocity fall, there is not a sufficient amount of fuel carried to the extremities to keep the large cooling surface warm. Here the defect is in the initial energy, and besides improving the general arterial pressure it would be advantageous to keep the feet much lower than the head and shoulders. Possibly if the lady had been under medical treatment she might have conserved her own comfort, preserved the affection of her husband (though she might not have thought the affection of the brute worth preserving), and saved the notoriety of the divorce court.

The velocity of the blood in the capillaries is, if possible, even more interesting than the pressure. It varies enormously in different individuals under different conditions. As I have before said, the range of my observations has been from less than 0.5 to 25 mm. per second.

When the velocity in the capillaries is reduced to one millimetre or less per second, the blood becomes surcharged with carbonic acid, and the skin or organ supplied becomes of a dusky hue. This appearance immediately disappears if you increase the capillary velocity; for example, when the hand is blue and passively congested from cold, or the so-called local asphyxia, if you let it hang down you increase the velocity, and you quickly see bright red spots intermingled with surrounding lividity, and soon the color of the whole hand improves. In the cold livid dependent hand the color of the fingers is better than that of the back of the hand. When you get cardiac failure, with or without any obstructive lung disease, you frequently see the upper part of the body and the hands quite dusky, while the legs and feet, which are at a lower level, may be pale. In one marked case of cardiac failure where the upper part of the body was livid, I saw one foot and part of the leg in a state of local syncope and as