

of motion ; and that this action, produced by muscularity, when combined with the *vis-a-tergo*, which is pronounced by other concurrent causes, are quite sufficient to prevent any retrograde course in this fluid, and in case an insurmountable obstacle should occur, will enable it to find other channels by various means, as we find exemplified when any large vessel is tied.

The most certain remote causes of inflammation, and therefore the best to argue upon, are stimulants, and the topical application of cold ; as for instance, allowing a piece of ice to dissolve in the mouth, which I have frequently observed to produce inflammation of the tonsels almost instantaneously.

Take now the simplest case which can occur. Suppose with a needle we prick the eye-ball, or the web of a frog's foot, and inflammation occurs. What is the needle in this case ? It is a stimulus : that is the remote cause. What effect has a stimulus on the part irritated ? It produces contraction of the muscular fibre. Suppose the part irritated to be a capillary (as it must needs be if our microscope informs us rightly, the whole surface of the body appearing to be composed of such), what will be the effect produced ?

Of course the coats contract, and the diameter or calibre is for the time diminished. Now, for simplicity's sake, let us call the trunk of this vessel (that is, so far as it carries red-blood) A, the irritated capillary B, and suppose two other capillaries, C and D, to proceed from the same trunk, A. What will be the action produced during the period that the effect of the stimulus remains on the capillary B ? It will be this : at the instant of the application of the stimulus a certain quantity of fluid arrives in the trunk A, to be transmitted through the capillaries B, C, D, which were exactly of sufficient diameter to allow of the passage in their natural state. But an obstacle is presented to its free transmission ; one of the capillaries is reduced in diameter ; it will not perform its duty ; it is contracted ; and will allow of the passage of little, perhaps none, of the fluid awaiting transmission. What is the consequence ? it cannot retrograde ; the *vis-a-tergo* is greater than the resisting powers of the two other capillaries ; it progresses, and but one consequence can follow, and that is the enlargement of the capillaries C and D to a sufficient extent to allow of the transmission of the whole fluid, that is, of almost, or quite one-third more than the natural quantity. But the enlargement to this extent of these capillaries, produced by the *vis-a-tergo* applied, must allow of the passage to a certain extent, not only of serous, but also of the red-particles of blood, because, if, in the natural state, a passage is allowed to the red-particles to a certain extent, and then further progression is only stopped by a diminution in the calibre of the vessels, most certainly, when that calibre is enlarged, the red-particles will force a way so far as that enlargement will allow of their transmission. The consequence is that these two capillaries, C and D, become engorged with red-particles, forced as it were into them, and not affording a ready passage to the same, the circulation in them becomes labored, and to a certain extent retarded. Meanwhile the effect of the stimulus has been expended on the capillary