

into the capillaries. The external coat is composed of connective and white fibrous tissue with longitudinal striation, and there are no elastic fibres. Robin described a lymphatic sheath over the arterioles, which strengthens them and helps to supply the place of the defective adventitia.

These vessels are not very contractile, and take no part in regulating the general arterial pressure. Owing to the stress and strain to which they are frequently submitted they are very liable to antheromatous and calcareous degeneration of the internal coat, and thickening or periarteritis of the external coat; there are also frequently small miliary aneurysms. Physiologists, as a rule, do not admit that these vessels possess any vasomotor nerve fibres, but Dr. Alexander Morison says that he discovered their presence; if so they must be very scanty, and perhaps only serve a trophic function. There is not a very great amount of muscular fibre on which they can act, and adrenalin does not cause any contraction of these vessels, of the coronary, or pulmonary arteries, as has been shown by Schäfer, Dixon, Brodie, and Elliott. The capillaries are small, short, well-supported vessels, which seem to be able to bear a considerable amount of strain, as Leonard Hill has shown that sometimes the pressure may be at zero and at other times when the head is down it may rise to 100 mm. of mercury. This latter condition must, however, be rather exceptional, as the carotid arteries have great contractile power. Professor MacWilliam has shown that *post mortem* the carotid can be easily made to contract to half its former diameter, and any one can easily satisfy himself as to the great variations which occur in life. Under these circumstances the circulation in the brain becomes largely kinetic, the velocity is enormously increased, but not the lateral pressure. The cerebro-spinal fluid is very deficient in proteid, from which we may infer that under ordinary circumstances the capillary velocity is relatively great and pressure slight. In cases of meningitis the proteid in the cerebro-spinal fluid is increased.

THE CORONARY VESSELS.

The arteries and arterioles which supply the heart closely resemble the cerebral vessels in being thin-walled, rather deficient in muscular fibre, and in having very few, if any, vasomotor nerves. They are also exceedingly prone to atheromatous and calcareous degeneration of the intima. Newell Martin, Roy, and Adami, and Alexander Morison have found some evidence of vasomotor nerves, but on the other hand, Schäfer, Dixon, Brodie, and Elliott have failed to get any response to adrenalin which acts on all muscular fibre innervated by the sympathetic. The portions of the arteries which are not subject to muscular compression,