

tension, that it has been named the renal pulse; but the term is extremely objectionable, for, although such a pulse is often at once suggestive of disease of the kidneys, and may facilitate the diagnosis, it is very common when there is no renal change; and, on the other hand, it may be absent temporarily or permanently when advanced disease of the kidneys exists. If tension be permanently wanting, however, it may be a prognostic sign of the worst augury.

2. Gout, again, is so constantly accompanied by high pulse-tension, that the term gouty pulse has passed into currency. It is, of course, open to the same objections as the name renal pulse. Arterial tension is present in both acute and in chronic gout; and the name suppressed gout, so conveniently vague, and open as it is to abuse, might perhaps serve some useful purpose if it were employed simply to designate such states of impaired health in middle and advanced life, as are characterised by the presence of unduly high arterial tension.

The class would correspond very closely with the conditions described by the late Dr. Murchison, in his work on *Functional Derangements of the Liver*, the symptoms being attributed to lithæmia. In gout, the form of nitrogenised waste is uric acid; of some of the states comprehended under the head of suppressed gout, the oxidation in nitrogenised matter has probably stopped short of the stage at which uric acid is formed, and the compounds are even more injurious in their effects on the system. It is not necessary to describe in detail the modes of life which conduce to the accumulation in the blood of this imperfectly organized nitrogenised waste—they are excessive consumption of animal food and alcoholic drinking, sedentary habits, and the like.

I have been greatly struck with the frequency and degree of high arterial tension met with in Englishmen returning from India and other hot climates. My preconceived idea was that the external heat and free perspiration would produce general vascular relaxation, but observation has shown the exact contrary of this to be the usual result. The explanation, no doubt, is that the Englishman carries his meat-eating habits with him to hot climates, and there being here comparatively little need for combustion in order to maintain the temperature of the body, the nitrogenised

food is imperfectly burnt off and eliminated.

3. Lead-poisoning is another cause of high arterial tension, and it is noteworthy that it frequently gives rise to gout and kidney disease, the conditions already spoken of, attended with excessive intra-arterial pressure. Probably the formation of compounds of organic matter with lead salts, albuminates of lead too stable to undergo readily dissociation and oxidation, is the cause of accumulation of imperfectly oxidised products in the blood.

4. Pregnancy is invariably accompanied by increase of tension in the arteries. Whether this arises from a general augmentation of the volume of the blood, or from the presence in the blood of effete matters derived from the fœtus, is, perhaps, not altogether settled. Drs. Mahomed and Galabin have carefully investigated the rise of pulse-tension in pregnancy. It is worthy of note that Bright's disease may be established by pregnancy as well as by lead poisoning.

5. Anæmia, and especially chlorotic anæmia, is accompanied by high arterial tension. This, as I have before said, is an unexpected fact, but it is in my experience constant. Probably the explanation is similar to the explanation of the breathlessness attending this condition—the red corpuscles, the carriers of oxygen, are deficient, and just as they are insufficient to convey to the nervous system the increased amount of oxygen required in exertion, so they do not supply sufficient oxygen for the oxidation of the effete matters in the blood and tissues. The occurrence of dilatation of the left ventricle and mitral regurgitation, as an effect of anæmia, is at once understood when the resistance in the peripheral circulation is taken into account. It is not merely the innutrition of the walls of the heart, due to anæmia, which causes them to give way, but the increased pressure thrown upon the left ventricle by this resistance.

6. In cases of emphysema and chronic bronchitis, and sometimes even in phthisis, the systemic arteries present the signs of increased tension; in emphysema they are specially marked. This might be attributed to general fibrotic change in the tissues as well as in the lungs, but this is not the whole explanation; imperfect aëration of the blood has a share in provoking the