

participation of this texture in the disease is that afforded by the similarly distributed œdema which results from retention of urine, independently of any renal disease. This curious phenomenon has been particularly investigated and described by Trousseau. Its symptoms consist in an enormous distension of the bladder, with frequent or continuous dribbling of healthy urine and anasarca. Trousseau imagines that a flow of urine may take place backwards through the ureters into the kidneys distending these organs and impeding their functions. It has suggested itself to me that part of the urine may be absorbed by the distended bladder; but, anyhow, the fact remains that the anasarca is unattended by any disease of the kidney.

The very fact that the results of experiment on healthy animals bring into such bold relief the results of disease in the human subject suggests the greatest caution in dealing with them as standards of reference in pathological questions. Such ingenious theories as those referred to, which have been constructed to reconcile the dissimilar phenomena, are thus *a fortiori* liable to be impeached as tending only to obscure the light which these experiments convey. And such truly I believe to be in great measure the case. When critically examined, the chief value of these experiments seems to consist in their leading to the reflection that disease does not shoot out its phenomena in an hour or two, but that it works long and often silently, is recondite in its nature, complex in its affinities, and usually fertile in its resources; that is to say, they indicate that in the elucidation of the phenomena it is necessary to look deeper and more antecedent. And with respect to renal dropsy, I think there can be little doubt that its chief vital predisponent is that condition of the blood to which the term "anæmia" is conveniently applied. Clinical experience confirms this. "How is it," says Sutton, "that œdema is so prevalent in some cases and not in others? Frequently the renal symptoms—albuminuria, hæmaturia, giddiness and shortness of breath—have come on, but with no appreciable dropsy. The dropsy is augmented with the increasing loss of red corpuscles, the colored respiratory organs; and it may be plausibly suggested that to the anæmia of Bright's disease as to chlorosis certain retained products of the organism, or their costic derivatives, stand in a casual relationship. But, however originated, one of the most palpable facts in connexion with anæmia is failure of the blood adequately to carry on the circulation. Then, when to anæmia an hydræmic plethora is added, the conditions for the production of renal dropsy are fulfilled, whilst its distribution is regulated by physical laws. Consider the condition of matters. The blood, as already stated, is suffering intrinsically in progressive deterioration of its vital energy, particu-

larly from progressive diminution of its corpuscles, which, by their mutual actions of the normal state, is, moreover, as Hamilton very appropriately insists on, signally impeded in its functions by alterations of its specific gravity. The plasma has become specifically lighter than the red corpuscles, which consequently cease to float with ease in the centre of the stream. Hereby the corpuscles, instead of assisting, only serve to retard the blood current, leading to increase of tension and the pressing out of a greater quantity of fluid than usual. But, further than this, the specific gravity of the blood as a whole, from the advancing attenuation of its proteid constituents, is altered relatively to that of the plasma in the surrounding lymph-canalicular system, which will constitute another condition favourable to the transudation of the fluid within the blood vessels, and such transudation will be rendered still greater by the loss of tonicities which the vessel wall shares in common with the rest of the tissues in this cachexia.

Now, in this hydræmic plethora, with its attendant difficulties of circulation, it is in accordance with dynamical principles that in those parts most remote from the heart—in the periphery of the body, namely—will the impediment be greatest; and, in accordance with the laws of gravitation, the most dependent and the most lax of these parts will be specially involved. There the *vis a front* is greatest and the circulation is slowest; the venules become over-distended, and are unable to absorb and transmit the lymph which pours forth excessively from the capillaries. Should this state of matters continue, the circulation will fail nearer to the heart, until the fluid accumulates internally, in the serous cavities, lungs, and other organs, when death is imminent.

On the other hand, with regard to the phenomena which appeared in the subject of Cohnheim's experiment, their explanation may not be so far to seek when it is considered that the blood and internal organs were vigorous and healthy to begin with. A continuous effort would naturally be made by the healthy organism to rid itself of the superabundant fluid by means of the natural channels. This would lead to venous engorgement in and around those organs whose functions were exalted. Such would notably take place in the abdomen where excretion has its seat, and hence the resultant ascites. But in disease these conditions are reversed, and the organism perforce seeks relief through other channels, for the excretory organs are appealed to in vain towards the riddance of a foreign element whose invasion they have been powerless to resist, and under whose yoke they are paralysed.—*Lancet*.