

nervous action. Nor is the idea that the kidney changes depend on the changed condition of the blood excluded. For it is claimed that this fluid in pregnancy contains more water, fibrine, and colorless globules, and less of albumen and red corpuscles, than in other normal conditions. It may be, as Frerichs supposes, that the mechanical obstruction to the circulation and the altered condition of the blood co-operate together in producing the kidney disease. Thus do the explanations differ, though albuminuria has been recognised as a frequent attendant on pregnancy, and puerperal convulsions as dependent on albuminuria since the first was announced by Rayer, and the second by Lever.

The albuminuria of phthisis pulmonalis occurs in the later stages of the tuberculous affection, when the blood has already undergone grave changes, and it is certainly not impossible that the congestion and renal lesions may depend on this unhealthy state of the circulating fluid. But, on the other hand, the lungs have usually already suffered fatal erosion. The nervous sympathies have often been extensively and painfully invoked. That the innervation of the kidneys should be modified by what in this discussion has been called reflected or reflex influences, should not be surprising. A parallel influence, though in the opposite direction, is sometimes very marked. When the peritoneum becomes covered with tubercles, and tubercular peritonitis is well established, the lungs are so far deprived of their usual sensitiveness that large excavations may be formed in them, and yet the alarm-bell is never once sounded; there will be no cough from first to last.

Regarding the diseases of debility and cachexias that induce Bright's kidney, they perhaps act through the changed condition of the blood. It seems to be very generally admitted by physiologists that there is no state of the circulating fluid so favorable to its ready transit through the vessels as its normal state, that is, as when it possesses all its constituents in due proportion. "It is an important physiological and pathological law," says Johnson (p. 248), "that the blood, in order to circulate freely through the capillaries, must be in a normal condition, and that any departure from its healthy composition is associated with more or less of impediment and retardation in the capillary circulation." Assuming the truth of this proposition, though it has been proved of certain unnatural conditions only, we find a reason for embarrassed circulation in every part of the body during the continuance of a cachexia, and in the kidney especially, when this circumstance is aided by some other agency operating upon these organs. But I must confess that this kind of reasoning is very unsatisfactory; and were it not that a study of possible influences sometimes leads us to truth, or excites further inquiry, I should not have taken the time to consider this somewhat extended series of hypotheses.

Among the external agencies which are usually enumerated as capable of producing Bright's disease are cold, alcoholic drink, and diet. The important influence which the temperature and the secretions of the skin exert upon the kidneys, is a part of every man's personal experience. Nothing illustrates this more strikingly, or more appositely to our present purpose, than the experiments which suspend the cutaneous secretions. Carpenter (*Manual of Physiol.*, Para. 746) states that when the exhalant action of the skin is completely checked by the application of an impermeable varnish, the temperature of the body falls, and in a short time fatal results ensue. I had an opportunity of witnessing this experiment last winter at the College of Physicians and Surgeons. Dr. Styles, to aid his teaching, had the fur of a rabbit removed, and covered the skin with a coating of collodion. In an hour or two the urine was albuminous, and the animal survived only a short time. Carpenter adds:—"A partial suppression by the same means gives rise to febrile symptoms and to albuminuria." The opinion is universal that it is exposure of the surface of the body to cold air which produces the dropsy, and other symptoms of Bright's disease, after scarlatina. That this belief is well founded in the main, I do not doubt. At least, so much