

hyperhæmic condition becomes less marked. Metamorphosis of the exuded matter follows; the epithelium and the fibrinous-casts of the tubuli break up into fatty molecules. In the Malpighian corpuscles similar exudation and fatty matter are seen lying between the capsule and its contained glomerulus, and then these bodies are raised above their natural size; but as long as the stream of secretion, poured from the glomeruli, is sufficiently powerful to remove the coagula of fibrin, this increase of dimension is not observed. In the urinary canals, especially those of the cortical substance, important changes are in progress; the epithelium undergoes complete transformation, losing gradually the form of its cells, presenting fatty infiltration to a variable extent, and ultimately losing its characteristic appearance and function, and becoming replaced by granular detritus and fat. This second stage was found in 139 in 292 examinations. It embraces the 1st and 2nd forms of Bright; the 2nd, 3rd, and 4th of Rayer and Rokitansky; the 2nd, 3rd, 4th, and 7th of Christison; and the 2nd and 3rd of Martin Solon.

In consequence of the degeneration of fibrin in the urinary tubuli and the Malpighian corpuscles, and the removal of this with the more or less transformed epithelium, the walls of these structures collapse, and part of the kidney is atrophied. It is this which constitutes the third stage of Bright's disease. This atrophy is brought about in some cases by the contraction of plastic matter, when the latter has been exuded into the interstitial textures. This is rare, however, and when present is only a co-operative cause of atrophy. This 3rd stage of Frerichs corresponds with the 3rd of Bright, the 5th and 6th of Rayer, the 5th and 7th of Rokitansky, and the 4th of M. Solon.

Among the not constant anatomical changes of the kidney, Frerichs enumerates and describes—1. Apoplexy; 2. Suppuration; 3. Cystic formations; 4. Calculous deposits; 5. Tubercle, etc. In the paragraphs upon the chemical changes in the kidney, the amount of solid constituents is given, and the proportion of fat in a hundred parts of dried kidney substance. In health the latter varies from 4.4 to 5.05 per cent. In morbus Brightii it was found varying from 4.40 to 13.9. Generally speaking, the quantity of fat was greater when the disease had advanced to the third stage, but this is not invariable; and the fact, that by chemical examination the quantity is often found to be much less than microscopic observation would lead us to expect, must, according to Frerichs, be considered as a proof that we are not justified in naming as fat all those globules which resemble it in form. In the kidney of a cat, and in that of a dog, the fat was found by Frerichs to vary from 27.20 to 32.50 per cent. Both animals were perfectly healthy; their urine