(*b*) Exfoliation of the layer.
(*c*) Hyaline thickening of the capillary walls.
(*d*) Plugging of the capillaries with micrococci and leucocytes.
(*e*) Amyloid deposit.

(*a*) Œdema of the glomerular epithelium will occur very often in death from any acute disease, but fatty degeneration and other necrotic changes are much more advanced, and are always accompanied by similar changes in the epithelium of the convoluted tubes. It has been asserted that the change may be limited to the glomeruli, but I have not found any kidney showing such a change, and, what is more, I cannot see how such a state of affairs could exist.

(*b*) Exfoliation of the epithelium. Its most marked examples appear in the scarlatina kidney; but as the ptomaine of this fever, in the process of excretion, is very probably the cause of the necrotic change, the same condition must necessarily accompany—and does, too—other toxic blood conditions, as diphtheria, erysipelas, fatal jaundice, etc. The exfoliation may be so complete as to fill up by crescents the capsule, and press upon the tuft, diminishing the vascular supply to the convoluted tubes. Our clinical history will read here, suppression of urine. This exfoliated mass with a necrosed tuft may fall into hyaline material and be mistaken for amyloid deposit.

(*c*) Hyaline thickening of the capillary walls is a very frequent change. This is accompanied by a disappearance of the nuclei (often an increase of them), and some authors believe the capillary endothelium is frequently cast off. The change tends towards the obliteration of the lumen of the capillary, and again a consequent impoverished vascular supply for the convoluted tubes.

(*d*) The plugging of a capillary loop by micrococci is attended with the following peculiar changes: The wall of such a capillary seems to lose its nuclei, and even looks thin (possibly from the loss of endothelium); the neighboring capillaries, although holding no micrococci, undergo a similar change, and, in addition, all the capillaries are crowded with leucocytes, a virtual capillary thrombosis, yet no leucocytes can be seen free in the tissue without the capillary walls.

This formation of thrombi by the leucocytes, of course, tends to arrest the circulation through the tuft, and again we have necrosis of the convoluted tubes.

While this is going on within Bowman's capsule, in all the surrounding tissues we have a round cell infiltration most marked at the part where the vessel enters and departs. Here I might emphasize the fact that the earliest appearance of cirrhosis (likely from arteritis) is often outside where the efferent vessel leaves, and the afferent enters, Bowman's capsule. These round cells, seen flooding the neighboring tissues, may dissolve the capsule and swarm into the tuft; but generally the capsule will resist the invasion of leucocytes, and while the tuft, which may have already undergone necrosis, atrophies, the round cells crowding will cause collapse of its capsule.

(*e*) The first deposit of amyloid material in the capillary wall is patchy. This irregular deposition will continue till all the capillary walls are involved. This deposit leaves an irregular lumen to the vessel and diminishes its calibre in places, and in this way very slight deposits are attended with necrosis of tubular epithelium. I do not believe any quantity of amyloid material can occur without nephritis. I have never seen amyloid material outside the vessel walls, and I am strongly of the belief that there never was such a thing as amyloid casts; the compound hyaline casts that have been misnamed waxy are not even pathognomonic of this form of nephritis, but will frequently appear in samples of urine from any form of chronic Bright's disease. Nothing will resist the action of suppuration like amyloid material, and it is never absorbed, even after the cause of its deposition is removed.

I shall leave any other change in the tuft, and hasten on to the consideration of the tubular contents. We have seen that on accouut of the intimate relation of the vascular supply of the tuft and convoluted tubes, pathological changes in the former run concurrently with those of the latter. It is a common thing while in health for the lumen of the uriniferous tubes to give a perfect cast of themselves. These are long, stringy, and wavy, and were formerly called "mucus cylinders." Their supposedly mucus origin is erroneous, and they