

taken as certain indications that the hæmorrhage is from the kidneys. In one of my cases in which Dr. Cummings demonstrated the calculus in the lower end of the ureter, both hyaline and granular casts were repeatedly found in the urine.

The predominating type of epithelium is even a much less reliable guide than the presence of casts. Those who speak of the value of this sign do not seem to take into account the transitional character of the epithelial lining of the urinary passages, the type of cell depending on the layer from which it is derived. Moreover, if the nature of these diseases is considered it will readily be seen that the epithelial lining of the whole tract is often subjected to at least superficial irritation and often multiple involvement. My opinion however is not based on theoretical considerations, but on disappointment at the practical assistance afforded by a study of the character of the epithelium in the deposit. I have never found it of the slightest value in a difficult case and believe it is one of those signs passed from text-book to text-book which is so useless in practice that it might well be discarded. As to the presence of crystals they may occasionally offer a hint as to the underlying condition, but crystals of various kinds are so commonly found in urine in ordinary routine examinations where there is no evidence of any renal disease, that one would be very careful in attaching much importance to their presence in an obscure case. Bits of tumor may occasionally be found and assist in diagnosis, but in practice this is not common, and moreover they would usually give no clue to the seat of the trouble. As to the reaction of the urine, where it is ammoniacal, the disease is most likely to be in the bladder, but we are not equally warranted in excluding the bladder because the urine is acid in reaction. The urine may become ammoniacal in any situation where there is retention and infection with bacteria capable of producing decomposition of urea, so that the reaction of the urine is only of relative localizing value.

An excess of albumin compared with the amount of blood would be suggestive of renal involvement, but that this inference is not always warranted was shown in the case of a lady who consulted me a few days ago on account of a profuse attack of hæmaturia which she had had about a month previously. The urine at the time of my examination was practically free from blood, but contained 3% albumin by bulk, some pus cells, hyaline and granular casts and some calcium oxalate crystals. Cystoscopic examination by Dr. Geo. E. Wilson demonstrated a small sessile tumor near the left ureteral orifice. This tumor, by back