

than it seems to be. How often you have seen the needle-pointed uric acid crystals and the milky way of myriads of oxalate of calcium crystals; and how long will these hard foreign bodies, with their infinite needle points and their keen knife edges, be poured down the urinary tubules before some real mischief is set up. We feel it surely cannot go on indefinitely; nay, we see spurious cylinders in numbers in these conditions, and no one will deny that they are evidence of renal unrest. You say to me that I cannot prove these crystals are in the urinary tubules during life? Well we *do* find them in the kidney in the form of calculi, and when the crystals are present in the urine for any prolonged period you will always find truly formed hyaline casts, and that without much difficulty.

The causes of such a urinary exhibition are generally a condition of habitual meat eating three times a day, indefinite indigestion and constipation. In addition to this history the patient will often complain of general depression and often of precordial distress and shortness of breath on exertion. On examination you will find high tension and a noticeable amount of edema.

I believe this is often the early stage or business end, so to speak, of granular kidney. Perhaps I should say the prophecy of granular kidney. We should all heed the warning and apply proper prophylaxis before irreparable damage is done.

If you follow your cases through a few years you will find that there is a first stage when as yet there is no albumin, no rising at night, no lowered specific gravity, but you will find frequently edema and casts.

The destruction to be meted out to the renal system is a question of degree, and may be overshadowed by cardiac distress, misinterpreted as a rapid oncoming old age or cut short by death through some other disease more apparent in its symptoms.

With the causes mentioned above of course go habitual drinking of malt liquors; chronic poisoning, such as lead or mercury; chronic infection, such as syphilis or tuberculosis, or, in short, any other habitual cause of kidney or arterial overstrain. Any condition or combination of conditions producing and maintaining an excessive high arterial tension will produce pathological results, and it is a matter of individual peculiarity whether the clinical manifestation shall be most apparent in the failure of the circulatory or the renal systems.

In regard to the diagnosis you will note that it will depend largely on the initiative and clinical skill of the physician. To review in detail is unnecessary.