Lectures on Elementary Physiology in relation to Medical Nursing.

By Bedford Fenwick, M.D.
Physician to The Hospital for Women, Soho Square.

Lecture IV.—The Excretory Organs.

(Continued from page 431.)

It has been found that by the use of such pure water, the excretion of solids from the kidneys is very considerably increased. And in cases, therefore, of Stone in the kidney, the employment of such water is of manifest benefit.

Returning to the tests employed for the urine, a good method of testing for Sugar is to boil a little Fehling's Solution in one test tube, and an equal quantity of the suspected urine in another, and then mix the two together. If the patient is suffering from Diabetes, a yellow sediment of copper is formed; and the intensity of this will be proportionate to the amount of sugar which is present; sometimes only a faint colouration showing itself in consequence of the quantity of sugar being very small, while, on the other hand, if there be a large quantity, the urine may become almost solid. Another clue to the amount of sugar, is given by the specific gravity of the urine, this being, in extreme cases, considerably above 1030; while the quantity of urine passed in twenty-four hours is also another valuable indication as to the amount of sugar which is being lost from the system.

The presence of *Blood* in the urine is usually first discovered by the appearance of the fluid, this generally being of a brown or black colour in cases where the blood has come from the kidneys, and has, therefore, been more or less acted upon by the urine. When it comes from the bladder or urethra, the blood may be of a deep red and natural appearance, and the condition in which it is passed should therefore be always most carefully noted by the Nurse. In testing urine containing blood it will be found that, on boiling a little in a test tube, the fluid will become thick and white, owing to the large amount of albumen contained in the blood; and if the water be of a dark appearance, the coagulation is certain to be great, because a large amount of blood will, probably, then be present. It is important always to note the precise time at which such urine is passed, because the presence of blood is, in some cases, of a temporary character, and comparatively unimportant. For example, in a form of Malaria, which is common in South Africa, and from which returned Colonists sometimes suffer, the urine will contain blood, on each recurrence of the shivering attacks from which the patient suffers, which will disappear completely as soon as the attack is over. Another form of disease in which blood appears in the urine, and which is due to the presence of a parasite, and not to any gross disease of the kidney, also is cured when the parasite dies or is destroyed. A precaution which must never be omitted when blood is found in the urine is to pass the catheter in order to withdraw some of the fluid direct from the bladder for examination, as this obviates the obvious possibility of any mistake being caused.

The best method of proving the presence of blood is by microscopical examination—in order to discover whether blood corpuscles are present in the urine, and if so, to how large an extent. There is a spectroscopic method of examination which is very valuable, but this will, probably, be unavailable for Nurses in the majority of cases, and attention need not, therefore, be specially drawn to it in this place.

Pus, again, is an occasional constituent of the urine, and almost always one of serious import. When the pus comes from the kidney or the bladder, it is completely mixed with the urine, giving the latter a somewhat cloudy appearance. The best method of testing for this is to pour an equal quantity of Liquor Potassæ and urine together in a test tube and to shake the mixed fluids sharply together, the thumb being placed over the orifice of the test tube so as to prevent its contents from being spilt. The effect of the alkali is to transform the pus into a thick, viscid, ropey material, so that if the test tube is tilted and the fluid allowed to run out into a basin, the contents will come out in the form of a long gelatinous string. Pus in the urine is usually accompanied with more or less fever, and it then generally signifies the destruction of the tissue either of the kidney or of the bladder wall. It may, however, be caused by only temporary ulceration of the urethra, in which case there may be comparatively little fever, and the disease may be easily curable.

(To be continued.)

previous page next page