

process is ordinarily confined to, or greatest, near the neck, the perineal and perirectal tenderness are usually found to be the greatest.

In these last cases the vesical irritability is more marked. The chief symptoms complained of are irritability, straining and scalding in urethra as the urine flows in small quantities, and in case the *bas-fond* is much involved, there may be some tenesmus, which in one case I saw was extreme. The pain and uneasiness are alleviated after urination and commence again as soon as urine accumulates, the interval of rest being shortened according to violence of attack, and the closeness of the inflammatory process to the neck of the bladder.

Should resolution set in, these symptoms gradually subside and nothing is left but a condition of occasional irritability, which, as already stated, ends when there has been time for the formation of a new set of mucous elements. But should the inflammation continue, ordinarily, in two or three days, the urine is changed much in character; it is ammoniacal, and contains large quantities of mucus, also pus corpuscles and occasionally blood globules. Ammonio magnesian phosphate is found plentifully and is recognized by the microscope; carbonate of ammonia and amorphous phosphate are present, as also occasionally sulphuretted hydrogen in small quantities. The sediment forms thickly with the pus in an opaque yellowish layer on top, and the clear supernatant fluid having often a yellowish tinge. Later on, if the disease pursues a severe course, the urine assumes a darker color, caused by the disintegration of the blood corpuscles by the carbonate of ammonia, and has a highly ammoniacal and foetid odor.

How the urea becomes converted into carbonate of ammonia does not appear to be decided. There exist two or three theories in the matter. Dr. Rees thinks that secretion being abnormal, on account of diseased and hyperæmic mucous membrane, this degenerated mucus acts as a ferment. Others suppose that some hitherto undiscovered ferment enters from the blood, while it is imagined by the majority of observers that bacteria play an important part in the process. I heard of an incident that occurred before much deference was paid to the pranks of these little bodics, that bears somewhat on this matter. In the good old days, when the rite of initiation, with all its mysteries, was a *sine qua non* in a certain medical school, one of the im-

pressive ceremonies in the chamber of horrors was the passing of the catheter, ostensibly to investigate the physical competency of the timorous candidate. This delicate operation was, I suppose, relegated to the most experienced of the inquisitors, and I believe the instrument used was the gum elastic; therefore it is likely that no undue violence was used towards the victim. The inference was that he had been continent, at least there was no stricture, and the catheter entered the bladder easily; but a magnificent sample of cystitis was the result. Of course it is barely within the limits of the possible that some of the august tribunal may have had an attack of gonorrhœa, and hence the consequence. But at any rate, Niemeyer records cases where the introduction of a dirty catheter has resulted in inflammation. The presence of pus or blood is easily recognized by the microscope and by the tests for albumen.

(To be Continued.)

THE SEWERAGE OF SMALL CITIES AND TOWNS.

BY WILLIS CHIPMAN, B.A., SC., READ BEFORE THE LINDSAY MEETING OF THE ASSOCIATION OF HEALTH OFFICERS.

IT was with considerable diffidence that the writer consented to prepare a paper to be read before this association, composed almost entirely of medical men; for our special work is the designing and constructing of systems of public water supply and systems of sewers for the removal of the refuse and filth from populous districts, while the work of the medical health officer is the enforcement of statutory enactments, chiefly governing the individual, and the investigation of the causes of contagious and infectious diseases and the means of checking their ravages.

The Province of Ontario is comparatively a new country; our oldest inhabitants can remember when our largest cities were but small towns, our towns villages, and our best agricultural lands forests.

In the older parts of our Province the population of towns and cities is rapidly increasing, while the population of the rural districts shows but little increase. In Great Britain, the continent of Europe, and the United States it is equally true that the urban population is increasing at a more rapid rate than the rural population.

Although for many years the attention of sani-