If allowed to stand open, exposed to high temperature, the urine becomes clouded from the large number of bacteria and fungi. At the end of a few days it becomes ammoniacal—the urea changing into ammonium carbonate. Then the urine grows alkaline, and the sediment contains ammonium urates, triple phosphates, and amorphous masses of calcium phosphate. This is known as alkaline fermentation.

Acid fermentation may occur, in which there is an increase in acidity, darkening in colour, deposition of uric acid and urates, with yeast fungi and bacteria. This change is probably caused by mucus. The most practical method of preserving urine is by the addition of one drachm of a cold saturated solution of boric acid to each quart of urine.

Normal Urine.—In a normal urine we often see a filmy cloud of mucus. If the urine is concentrated, uric acid salts separate out, causing a sediment which is brick-dust red or flesh colour.

Continuing decomposition, ammoniacal fermentation goes on, urea changes into ammonium carbonate, and phosphates are precipitated, which will disappear on addition of several drops of acetic acid.

Reaction.—Urine is normally acid, due to the presence of acid sodium phosphate and acid urates. Normal urine turns blue litmus paper red. The acidity varies at different times of the day, diminishes soon after a meal, and reaches its lowest point in three to four hours after meal time.

Freshly passed urine may be alkaline; that is, it will turn red litmus blue; this alkalinity is due to changes in the blood or stagnation in some part of the urinary tract. When urine affects neither blue nor red litmus paper, or turns blue slightly red and red slightly blue, then the reaction is said to be amphoteric.

Specific Gravity.—Normal urine varies between 1.012 and 1.024, averaging 1.020 at 60° Fahrenheit—due to solids, salts, and urea.

Odour.—Normal urine has a peculiar aromatic odour. It may be affected by eating certain kinds of vegetables, notably asparagus and garlic. When alkaline fermentation takes place, we have the development of ammonia, with its known pungent odour.

Sugar or Glucose.—Present in such small amounts in normal urine that it can be disregarded.

Albumen.—Ordinarily not present in health.

Urea.—Dependent on the amount of albuminous food taken, and is derived from the metabolism of the proteids. It varies with the amount and composition of the food, and with the rapidity of tissue waste in health and disease.

Inorganic Salts.—The chlorides are most important, mostly existing as sodium chloride, and small amounts are combined with potassium and ammonium, varying greatly with the kind of food. The chlorides are diminished in all acute processes.

A DEPILATORY FOR PREPARING THE SCALP FOR OPERATIONS.

Major Alexander Don, F.R.C.S.Edin., R.A.M.C. (T.), writes in the *Lancet*:—Those of us who are working at the front are often faced with the problem of how to clean a large area like the scalp in a short time. I can recommend the following as worth a trial, and I believe it is being fairly extensively used at present by those at the base who know the method.

The hair is first cut with a scissors or a clipper, and is next washed to loosen the clotted hair. The depilatory, which is a mixture of sod. sulphide, cold-water starch, and fine unslaked lime, is then mixed to a consistency of thick soup, and is immediately well rubbed into the whole scalp. In seven to ten minutes, which is about the time one takes out here to prepare oneself for a head operation, the whole can be taken off with the back of a spatula, leaving the scalp quite bare, and with no cuts like after many a shave. No further cleaning is required, but the operation area may be further prepared to choice. Such a method ensures that the tiny wound of entrance of a rifle bullet will not be overlooked, as often happens when shaving the area of exit alone is resorted to, no other injury being noticed on account of blood or hair, or both. The preparation is difficult to make up in such a way as to ensure its keeping, but I have always been able to get it from Messrs. Paterson & Sons, Aberdeen, quickly and in good condition.

RESEARCH IN ANTISEPTICS.

In an article on the above question, the *British Medical Journal* points out the interesting fact that Professor Lorrain Smith and others, after investigations conducted in the pathological department of the University of Edinburgh, confirmed the conclusion that hypochlorous acid was a most powerful, effective, and innocuous antiseptic. The investigations carried out independently by Dr. Henry D. Dakin in the University of Leeds, and tested at Compiègne, as reported last week, led him to practically the same conclusion.

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