

The influence of the base is demonstrated by the tests on zinc ointment U. S. P. and calamine ointment N. F. The calamine ointment, which contains about 17 per cent of zinc oxide in an ointment (chiefly lard) base, is antiseptic, while the zinc ointment, containing 20 per cent of zinc oxide in a paraffin-petrolatum base, shows no inhibitory action. These results show that, owing to the influence exerted by the base, it is impossible to predict the antiseptic value of a product from the antiseptic value of its constituents.

SUMMARY.

Only six of twelve U. S. P. X and four of fourteen N. F. V ointments were found to have antiseptic action under the conditions of the tests conducted on them. Furthermore, it was shown that the antiseptic action of such a preparation cannot be predicted from the action of its constituents.

A SIMPLE METHOD TO DETERMINE THE TOTAL VOLUME OF URINE VOIDED IN TWENTY-FOUR HOURS FROM A FRACTIONAL SPECIMEN.

BY HENRY J. GOECKEL.*

No doubt many clinical analysts are occasionally confronted with the same problem as the writer has been from time to time, namely, of receiving fractional parts of a twenty-four-hour specimen of urine to be analysed for the total quantity of some substance eliminated in the twenty-four-hour period, and the person submitting the same has failed either to carefully measure the total volume or has failed to note it down and has forgotten what the quantity was. It may be of interest to learn of the technic evolved and employed by the writer to determine the probable total volume.

When for dietary or other control it is important to know the total volume or the total quantity of sugar, urea, chlorides, etc., this enables you to save time, salvage the labor and to furnish the desired information with a fair degree of accuracy.

TECHNIC OF METHOD.

Several specimens of urine which by examination have been found to be practically normal are mixed together. The specific gravity and the urea content are again determined on this mixed specimen to be sure they are normal. The figures taken as normal are about 1.020 for the specific gravity and two per cent for the urea which figures hold for the section in which these tests are made by the writer under average temperature and humidity. When environmental conditions vary from this average the correct average volume, specific gravity and urea content is readily noted by observing these factors on the specimens received.

A measured volume of this mixed urine, namely, one hundred cubic centimeters is taken and compared colorimetrically with the urine of which the total volume is to be determined. They are compared in matched test-tubes or cylinders of equal diameter and equal thickness of the glass. Messlerizing tubes can be used for this purpose if at hand.

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If the standard is found to be the darker it is diluted with distilled water until the two specimens match in color. The volume of the diluted urine is then carefully measured to find out how many cubic centimeters of water were added to the one hundred cubic centimeters of the standard. This number is then multiplied by twelve and the product is added to 1200 which will give the probable volume in cubic centimeters for the total twenty-four-hour specimen.

The figure 1200 cc. is taken as the average normal volume. The figure twelve (1200 divided by 100 cc.) is used to determine the volume of water that it would be necessary to add to the 1200 cc. of the standard to make it of the same volume as the urine being tested.

Example.—Diluted matched 100 cc. of the standard measured 122 cc.; then 22 cc. of water was required for the diluting and 22×12 gives 264 cc. for the total 24-hour standard. 1200 cc. plus 264 cc. gives 1464 cc. as the probably total volume for the specimen under examination.

When conditions are not average, or differ for the section of the country in which the examination is made, the normal volume and the fractional part factor will differ from 1200 cc. and for twelve and can be readily substituted for these.

This is especially serviceable for urine from diabetic patients. In these the total twenty-four-hour pigments are normal, the pale color of the urine is due to the excessive volume dilution.

Should the tested specimen be found to be darker than the standard, it is diluted in the same way until it matches the standard in color. The number of cubic centimeters of water required is determined in the same manner as above but the method of then determining the twenty-four-hour figure is not quite as simple as when the specimen under examination is more dilute than the standard. If 22 cc. of water were required to dilute the 100 cc. of the specimen under examination then the figuring is 100 plus 22 cc. or 122 cc., or the 100 cc. of urine tested is equivalent to 122 cc. of standard. Then the formula is $100/y:100 :: x:1200$ $y = 100$ plus cc. water added, or $100/122:100 :: x:1200$ or x equals 983.6 cc. which is the twenty-four-hour total volume for this specimen.

Any standard type of a colorimeter can be used for matching the colors if one is available and the analyst is familiar with the technic for the given instrument.

A TIME-SAVING METHOD FOR USING THE DOREMUS UREA-NITROGEN DETERMINATION APPARATUS.*

BY LEAH G. GOECKEL.¹

In a busy laboratory service where many specimens of urine are subjected to complete clinical urine analysis the newer side arm ureameter (Nitrometer) is not entirely satisfactory if the side arm burette is used for measuring the urine to be run into the hypobromite solution within the ureameter column proper. The preparation of the apparatus is too wasteful in time. For this reason we have preferred to employ the old style apparatus by which the one cubic centimeter of urine is run into the hypobromite by means of a curved tipped pipette.

* Scientific Section, A. Ph. A., Portland meeting, 1928.

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