ORIGINAL CONTRIBUTIONS.

THE PHENOLSULPHONEPHTHALEIN TEST FOR ESTIMATING RENAL FUNCTION.*

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INTRODUCTION.

In July, 1910 (1), we presented our original communication on the results obtained on our experimental and clinical studies of the functional activity of the kidneys by means of phenolsulphonephthalein. Some additional data were presented in subsequent papers (2). The present communication is a resume of our experience with the test during the past two years (3) and deals particularly with its value in relation to nephritis, the study of which was undertaken at the suggestion of one of us (R).

Phenolsulphonephthalein (4) (which was first prepared by Remsen) is a bright red crystalline powder, somewhat soluble in water and alcohol, but readily soluble in the presence of alkalies. The drug as determined by Abel and Rowntree (5) is non-toxic, non-irritant locally, and is excreted practically entirely by the kidneys, with extraordinary rapidity, appearing in the urine normally within a few minutes of injection. In alkaline solution a brilliant red color is produced which is ideally adapted for quantitative colorimetric estimations.

TECHNIQUE.

In our earliest work only the time of appearance, the time of maximum intensity of excretion, and the time of gross elimination were considered. In the course of the work it becomes evident that the color properties of this substance make it peculiarly well adapted for colorimetric methods of estimation, and for this purpose the Duboscq colorimeter was employed and has proven of the greatest value.

In order to obtain data of real value it is essential to any functional test to know not only the time of appearance of the drug in the urine, but to know exactly what part of the drug, a known amount of which has been administered, is recovered in a definite period of time.

Twenty minutes to half an hour before administering the test, the patient is given 300 to 400 c.c. of water in order to insure free urinary secretion, otherwise delayed time of appearance may be due to lack of secretion.

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