

ently occur in many diseases, but in our experience with a large number of cases using the older methods and also Marshall's<sup>2</sup> new urea method, we feel that no great prognostic significance is to be attached to concentrations of urea less than 0.55 gm. and incoagulable nitrogen 0.50 gm. per litre. Greater concentrations than this, together with a serum freezing point lower than  $-0.60$  are of the greatest prognostic importance. Evidences of retention reaching this degree we refer to as cumulative phenomena.<sup>†</sup>

These tests all prove of value prognostically, but some much more so than others. Those of most importance in Group I are the dye substances, especially the phthalein, and of Group II cryoscopy, total incoagulable nitrogen and urea. The phthalein test is of prognostic value in all pathological conditions, whereas certain cases of severe nephritis even in uremia show no marked increase in incoagulable nitrogen or urea. So the presence of cumulative phenomena is of the greatest prognostic significance, while their absence is not.

Functional studies reveal only the excretory capacity of the kidney. By themselves they do not make the diagnosis or settle the prognosis. Just as routine blood examinations occasionally reveal an unsuspected leukemia, the routine use of functional tests brings latent kidney involvement to light. These tests should be used routinely in conjunction with other procedures to aid in diagnosis, prognosis and selection of lines of treatment. Their importance in different cases varies. "It is possible that a series of ten or twelve different tests may add little or nothing to our knowledge of the condition after a careful clinical study, whereas after equally as careful a clinical study one test, verified, may change all of our ideas concerning the diagnosis, prognosis and treatment; as for instance, in one of our cases where a boy prior to functional studies was considered the subject of a diabetes insipidus with an excellent immediate prognosis, and after one phthalein test, was recognized as a case of advanced chronic interstitial nephritis verging on uremia, which was substantiated at autopsy within two weeks. Because of our inability to determine in advance in what cases the functional studies will be of value, *their routine employment becomes of permanent importance.*

<sup>†</sup> The urea concentration in the blood may be very high in pneumonia as shown by Herter.<sup>3</sup> Throughout this article, in speaking of its prognostic value, we refer only to uncomplicated cases of renal or cardio-renal disease.