ON BEDSIDE URINE TESTING: INCLUDING QUANTITATIVE ALBUMEN AND SUGAR. SECOND EDITION

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INCLUDING

QUANTITATIVE ALBUMEN AND SUGAR.

BY

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1884.

PREFACE.

TWELVE months have now elapsed since it occurred to me to facilitate urinary examination at the bedside by means of test papers.

Last June I published my notes on the qualitative testing of albumen and sugar by this simple method. Since then the generous encouragement of my professional friends, as well as the growing conviction that the thought I was putting into practice will really contribute—in however small a degree—to the convenience of those whose clinical work lies mainly at the bedside, have stimulated me to push forward that portion of my task left over.

I therefore now bring forward those quantitative methods for the estimation of albumen and sugar provided by the test papers,

which I have found useful. They undoubtedly possess the recommendations of quickness and simplicity.

Quantitative Albumen.—The method proposed for quantitative albumen, I am persuaded, will not merely be found convenient in the daily round, but may supply a want long felt in the consulting room: for the graduated tube with its accompanying standard can define with precision at once the proportions of albumen which can only be gauged by other methods after considerable delay, and even then with less approach to accuracy.

At the present time there is no procedure for the quantitative determination of albumen which can be regarded as at once easy quick, and exact.

Heat and acetic acid, while furnishing the very inaccurate, though generally adopted, method of subsidence, requires time.

Heller's Nitric Acid mode of testing provides merely a general impression of quantity —such as the two deductions of Hoffman and Ultzmann drawn from the density and other physical qualities of the zone of albumen, viz.: "less than half one per cent." "one to two per cent.": and even the plan followed by Dr. W. Roberts, of diluting the urine until *almost* the vanishing point of albumen (·0034 p.c.) with Nitric Acid is reached, though an advance on other procedures, is somewhat tedious from the many consecutive testings required.

Then again, the weighing of the dried albumen after precipitation by heat is not a practical method for medical men; for it consumes too much time, and after all, "the results obtained are only moderately accurate with every care."[1]

The determination by the polariscope is

1. *Urinary and Renal Diseases* by Dr. W. Roberts.

acknowledged, even by its introducer, Becquerel, to be of very limited clinical use—for it cannot be accurately applied to moderately and feebly albuminous urines.

Finally, the volumetric methods (Iodomercuric and Ferrocyanic) have rarely found their way beyond the laboratory, and are by no means so accurate as might be supposed from the nature of a chemical process.

Quantitative Sugar. — A large number of observations have satisfied me that the Indigo-carmine test paper possesses a quantitative power which can be readily and usefully applied in the course of clinical work. So far, I have neither had the time nor the inclination to elaborate a precise analytical method, such as I am persuaded the Carmine test can provide: but I regret this omission the less, because there are already at least three good procedures (Johnson's, Fehling's, and Roberts' differen-

tial density), and the test papers appear to me to afford that practical quantitative information—approximative though it be—which, I think, busy men will be glad to compass without loss of time.

Extension of the Method.—The advantages of this mode of testing are so considerable that one would wish to see them extended beyond the borders indicated by the following pages; and I trust that further enquiry and experiment may permit the application of it to the estimation of other constituents of the urine of clinical interest.

Harrogate,
January, 1884.

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