

**CHEMISTRY OF URINE: A
PRACTICAL GUIDE TO THE
ANALYTICAL EXAMINATION OF
DIABETIC ALBUMINOUS, AND
GOUTY URINE**

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Chemistry of Urine: A Practical Guide to the Analytical Examination of Diabetic Albuminous, and Gouty Urine by Alfred H. Allen

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A PRACTICAL GUIDE TO THE

ANALYTICAL EXAMINATION OF DIABETIC, ALBUMINOUS, AND GOUTY URINE

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PREFACE

A CONSIDERABLE portion of the contents of this book was designed to form part of the concluding volume of my "COMMERCIAL ORGANIC ANALYSIS." Vol. III., Part 3rd, of that work deals mainly with substances of animal origin, and will complete the chief literary work of my life. But, of late, circumstances have led me to devote much attention to the chemical examination of urine, especially in relation to certain pathological conditions of great importance in Life Assurance reports, as well as in clinical diagnosis and prognosis. These examinations have caused me to investigate critically a large number of the analytical methods which are in vogue for the examination of urine, especially for sugar and albumin, and to confirm or disprove certain statements generally accepted as facts.

The results of this extensive laboratory work may be of assistance to many interested in Urinary Analysis. Physicians who are called on to advise as to the acceptance or rejection of candidates for Life Assurance often find this duty very onerous. Prognosis with regard to patients who may be suffering from glycosuria or albuminuria is a difficult and

41763

anxious task ; and the more so as this task is one upon the performance of which the patient's immediate future is to cast so critical a light. Probably, also, there are analysts who will welcome this collection of analytical facts and methods.

While attempting to bring the majority of the tests and processes within the scope of everyday clinical diagnosis, or of the reports required for Life Assurance, I have also described other methods which cannot be applied except by those accustomed to analytical work, and who are possessed of the appliances of a well-appointed laboratory.

While desiring to give special prominence to the methods of examining diabetic, albuminous, and gouty urine, it appeared undesirable to omit all reference to subjects of collateral interest, such as the proportions of urea and total nitrogen in urine, the recent researches on creatinine and on xanthine derivatives, and the behaviour of urinary colouring matters. On the other hand, the book is not planned as a *complete* guide to Urinary Analysis. Thus, I have omitted all mention of the methods of determining phosphates and most of the other mineral constituents of urine ; firstly, because they are not of great pathological interest, and secondly, because I have nothing to say about them which cannot be found in every physician's and analyst's library. Should this production meet with such a reception as to call for the issue of a second edition, it may be desirable to supply this and other omissions.

It is with great pleasure that I acknowledge the valuable assistance rendered me by Dr James Edmunds,

of Dover Street, Piccadilly, to whom I am greatly indebted for the perusal of the whole of the proofs, and for many valuable suggestions, both scientific and literary. I am also obliged to Messrs A. W. Gerrard, F. G. Hopkins, and G. Stillingfleet Johnson for the perusal and correction of particular proof-sheets. Much time and labour have been devoted in my laboratory to the examination of many of the tests and processes described, and my cordial thanks are due to Mr G. Bernard Brook and Mr Arnold R. Tankard for their zealous and painstaking assistance in this arduous work.

The progress of further investigations which I have in hand would be materially facilitated by increased opportunities of examining abnormal specimens of urine. I therefore take this opportunity of soliciting the co-operation of clinical workers, who would greatly oblige me by forwarding for examination specimens of any urines which appear to justify such a course. There is reason to believe that some of the less known constituents of urine, such as glycuronic acid and its compounds, creatinine, xanthine, the indoxyl and skat-oxyl derivatives, and particular pigments, are greatly augmented under certain pathological conditions at present not fully understood, and the systematic examination of urines of abnormal character would probably materially extend our knowledge of this difficult and obscure subject. In sending such samples, I would request that the urine be poured into a clean, strong eight-ounce bottle, which should then be at once securely corked, carefully packed, and distinctly labelled, with the date and hour of passing, and with