

THE ORGANIC ANALYSIS OF POTABLE WATERS

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649534654

The Organic Analysis of Potable Waters by J. A. Blair

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J. A. BLAIR

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THE ORGANIC ANALYSIS
OF
POTABLE WATERS

BY
J. A. BLAIR, M.B., C.M., D.Sc. EDIN.
L.R.C.P. LOND.

SECOND EDITION



LONDON
J. & A. CHURCHILL
11, NEW BURLINGTON STREET
1891

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PREFACE TO THE SECOND EDITION.

THE favourable reception given to this little work has induced me to bring forward another edition of the work, in the hope that it may prove useful to those who are interested in water analysis. A few changes have been made in the text where clearness of description is gained by these alterations and additions.

The last table in the book contains a further series of analyses, giving the organic carbon found in different samples of water.

Objection has been taken to the work appearing in book-form, but this course has been adopted in order that all, who wish to verify the contained experimental results, may have the working details at hand for easy reference. The verification of a process by other workers is the only true way of arriving at its proper value.

MAIDSTONE;

October, 1891.

PREFACE.

THE greater part of the experimental work contained in the following pages was done in the Laboratory of the Medical Jurisprudence and Public Health Department of the University of Edinburgh. I gratefully acknowledge the kindly interest shown, and encouragement given, by Sir Douglas Maclagan whilst I was engaged with the work.

It was Dr Hunter Stewart, of the Public Health Department, who suggested to me the possibility of proving that Kjeldahl's Process for estimating Organic Nitrogen can be applied to potable waters; and he also pointed out to me the possible utility of a series of analyses of potable waters made by the "Oxygen and Albuminoid Ammonia Processes." I gratefully acknowledge not only these suggestions of him, but also the information given by him, from time to time, on subjects bearing on the work in general, and the references given by him to the literature of the subject in this, and other countries.

J. A. BLAIR.

MAIDSTONE;

July, 1890.

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INTRODUCTION.

THIS branch of analytical work is handicapped by two great drawbacks, namely, the very small quantity of organic matter which has to be dealt with, and the impossibility, in the present state of chemical science, of measuring these organic bodies as such. Much of the organic matter in potable waters is highly complex in composition, unstable, and readily induced to undergo chemical changes, if the conditions of its existence be modified. In order to meet these difficulties, analysts have resorted to analytical methods, whereby these highly complex bodies are broken up into more elementary, and more stable compounds. Nitrogen is a constituent of many organic compounds—more especially of albuminoid bodies,—and, therefore, has been used as a partial indicator of the