

**THE ANALYST'S LABORATORY
COMPANION: A COLLECTION OF
TABLES AND DATA FOR THE USE OF
PUBLIC AND GENERAL ANALYSTS,
AGRICULTURAL, BREWERS' AND
WORKS' CHEMISTS, AND STUDENTS**

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The Analyst's Laboratory Companion: A Collection of Tables and Data for the Use of Public and General Analysts, Agricultural, Brewers' and Works' Chemists, and Students by Alfred E. Johnson

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ALFRED E. JOHNSON

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OF PUBLIC AND GENERAL ANALYSTS, AGRICULTURAL,
BREWERS' AND WORKS' CHEMISTS, AND STUDENTS*

BY
ALFRED E. JOHNSON, A.R.C.S.I., F.I.C.

SECOND EDITION, ENLARGED AND IMPROVED



LONDON
J. & A. CHURCHILL
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PREFACE TO SECOND EDITION.

In this Edition numerous additions and improvements have been made, of which the following are the chief:—

The list of multipliers required in gravimetric analysis has been largely extended and entirely re-cast. Five-figure logarithms have, after consideration, been adopted in place of the seven-figure logarithms given in the first edition, as they have been found to be quite sufficient for all practical purposes. As an improvement in detail it may be pointed out that, to facilitate reference, the factors have now been printed in sets of two or three, instead of *en bloc*. My thanks are due to Mr E. W. T. Jones, F.I.C., for kindly supplying several of the new factors given.

Instead of the table of seven-figure logarithms of numbers 1 to 1000 only, a table of five-figure logarithms is given, by means of which percentages can readily be obtained correctly to two decimal places. This will probably be considered one of the most important improvements in the book. The table given is taken, by kind permission of the authors, from Geipel & Kilgour's *Pocket Book of Electrical Engineering Formulae*; the stereotype plates were supplied by the *Electrician Publishing Company*.

The section devoted to weights and measures has been entirely re-written, the new values adopted being those given in H. J. Chaney's standard work on *Our Weights and Measures* (1897).

The pages dealing with the specific rotatory and cupric reducing powers of the carbohydrates have also been entirely re-written and much extended. The papers by O'Sullivan & Stern (1896), and especially the valuable series by Brown, Morris, and Millar (1897), all published in the *Jour. Chem. Soc.*, have been freely drawn upon in the compilation of this part of the book.

The table for conversion of nitrogen into albuminoids has been re-calculated, using the modern factor 6.25 in place of the ancient 6.33.

The new table for the Kjeldahl process will be found a time-saver by all who use that beautiful method of determining nitrogen.

The Baumé's hydrometer table 'for liquids heavier than water' has been replaced by an abridged form of the very complete table given in Lunge & Hurter's *Alkali Makers' Handbook*.

At p. 80A will be found two simple and useful rules for obtaining the degree of dilution in the case of watered spirits; and at p. 80B an exceedingly useful table for correcting the sp. gr. of dilute alcohol for temperature.

This latter table—by J. F. Liverseege—has just appeared in the *Analyst* (June, 1897), and it has fortunately been found possible to insert it, with an additional column giving the correction for 1° C.

The sp. gr. tables, pp. 81-84, remain as in the first edition. If anything further than these is required, the exhaustive tables given in Lunge & Hurter's *Alkali Makers' Handbook* should be consulted.

The tables for butter analysis are new. The milk table on p. 93 is taken from Dr Muter's *Manual of Analytical Chemistry*.

The "table of reciprocals" (p. 94) will be found of great value in numerous calculations, as by its division becomes converted into simple multiplication.

The glycerine table is new.

The table on p. 96 will be of service in all exact volumetric work.

In addition to the above, the whole book has been very carefully revised throughout, and several other additions and improvements in detail have been made, which will, no doubt, be appreciated by those who use the book regularly.

I trust, therefore, that this Second Edition may be found distinctly more useful to chemical workers than its predecessor.

A. E. JOHNSON.

155 LEA ROAD,
WOLVERHAMPTON, August, 1897.

CONTENTS.

	PAGE
Atomic Weights,	1
Notes on Indicators,	2
Precipitating Powers of Common Reagents,	3
Molecular Weights and Percentage Composition of commonly occurring Compounds,	4
Weight of one Litre of various Gases,	13
Multipliers and their Logarithms required in Gravimetric Analysis,	13
Multipliers and their Logarithms required in Volumetric Analysis,	22
Notes on Logarithms,	25
Table of Logarithms,	28
Useful Factors,	33A
Weights and Measures,	33
Signs used in Medical Prescriptions,	39
Useful Data (areas and volumes of bodies),	39
Percentage into cwts., qrs., and lbs. per ton, &c.,	40
Drams per lb. into Percentage, &c.,	41
Tables required in Water Analysis,	42
Estimation of Nitrates in Water,	49
Volume and Density of Water at various Temperatures,	53
Barometric Tables,	54
Correction of Volumes of Gases for Temperature,	55
Tension of Mercury Vapour,	58
Tables for Beer Analysis,	59
Specific Rotatory Powers of the Carbohydrates,	61
Cuprio Reducing Powers of the Carbohydrates,	63
Phosphate Table,	64
Ammonia and Albuminoids Table,	71
Kjeldahl Process,	72A
Quinine,	73
Chicory in Coffee, estimation of,	73

	PAGE
Quinine Sulphate,	73A
Baumé's Hydrometer,	75
Alcohol Tables,	76
Specific Gravity Tables (H_2SO_4 , HCl, etc.),	81
Thermometric Scales,	85
Butter Analysis,	91
Milk Analysis,	93
Reciprocals,	94
Glycerine,	95
Correction of Standard Solutions for Temperature,	96
INDEX,	97

