

Robert Kerr  
(1755-1813)

PREFACE TO LAVOISIER,  
*ELEMENTS OF CHEMISTRY IN A NEW SYSTEMATIC ORDER*  
[1789]

The very high character of Mr Lavoisier as a chemical philosopher, and the great revolution which, in the opinion of many excellent chemists, he has effected in the theory of chemistry, has long made it much desired to have a connected account of his discoveries, and of the new theory he has founded upon the modern experiments written by himself. This is now accomplished by the publication of his *Elements of Chemistry*; therefore no excuse can be at all necessary for giving the following work to the public in an English dress; and the only hesitation of the Translator is with regard to his own abilities for the task. He is most ready to confess, that his knowledge of the composition of language fit for publication is far inferior to his attachment to the subject, and to his desire of appearing decently before the judgment of the world.

He has earnestly endeavoured to give the meaning of the Author with the most scrupulous fidelity, having paid infinitely greater attention to accuracy of translation than to elegance of style. This last indeed, had he even, by proper labour, been capable of attaining, he has been obliged, for very obvious reasons, to neglect, far more than accorded with his wishes. The French copy did not reach his hands before the middle of September; and it was judged necessary by the Publisher that the Translation should be ready by the commencement of the University Session at the end of October.

He at first intended to have changed all the weights and measures used by Mr Lavoisier into their correspondent English denominations, but, upon trial, the task was found infinitely too great for the time allowed; and to have executed this part of the work inaccurately, must have been both useless and misleading to the reader. All that has been attempted in this way is adding, between brackets ( ), the degrees of Fahrenheit's scale corresponding with those of Reaumur's thermometer, which is used by the Author. Rules are added, however, in the Appendix, for converting the French weights and measures into English, by which means the reader may at any time calculate such quantities as occur, when

desirous of comparing Mr Lavoisier's experiments with those of British authors.

By an oversight, the first part of the translation went to press without any distinction being preserved between charcoal and its simple elementary part, which enters into chemical combinations, especially with oxygen or the acidifying principle, forming carbonic acid. This pure element, which exists in great plenty in well made charcoal, is named by Mr Lavoisier *carbone*, and ought to have been so in the translation; but the attentive reader can very easily rectify the mistake. There is an error in Plate XI which the engraver copied strictly from the original, and which was not discovered until the plate was worked off at press, when that part of the Elements which treats of the apparatus there represented came to be translated. The two tubes 21. and 24. by which the gas is conveyed into the bottles of alkaline solution 22. 25. should have been made to dip into the liquor, while the other tubes 23. and 26. which carry off the gas, ought to have been cut off some way above the surface of the liquor in the bottles.

A few explanatory notes are added; and indeed, from the perspicuity of the Author, very few are found necessary. In a very small number of places, [...] some parenthetical expressions, only relative to the subject, which, in their original place, tended to confuse the sense. These, and the original notes of the Author, are distinguished by the letter A, and to the few which the Translator has ventured to add, the letter E is subjoined.

Mr Lavoisier has added, in an Appendix, several very useful Tables for facilitating the calculations now necessary in the advanced state of modern chemistry, wherein the most scrupulous accuracy is required. It is proper to give some account of these, and of the reasons for omitting several of them.

No. I. of the French Appendix is a Table for converting ounces, gros, and grains, into the decimal fractions of the French pound; and No. II. for reducing these decimal fractions again into the vulgar subdivisions. No. III. contains the number of French cubical inches and decimals which correspond to a determinate weight of water.

The Translator would most readily have converted these Tables into English weights and measures; but the necessary calculations must have occupied a great deal more time than could have been spared in the period limited for publication. They are therefore omitted, as

altogether useless, in their present state, to the British chemist.

No. IV. is a Table for converting lines or twelfth parts of the inch, and twelfth parts of lines, into decimal fractions, chiefly for the purpose of making the necessary corrections upon the quantities of gasses according to their barometrical pressure. This can hardly be at all useful or necessary, as the barometers used in Britain are graduated in decimal fractions of the inch, but, being referred to by the Author in the text, it has been retained, and is No. I. of the Appendix to this Translation.

No. V. Is a Table for converting the observed heights of water within the jars used in pneumato-chemical experiments into correspondent heights of mercury for correcting the volume of gasses. This, in Mr Lavoisier's Work, is expressed for the water in lines, and for the mercury in decimals of the inch, and consequently, for the reasons given respecting the Fourth Table, must have been of no use. The Translator has therefore calculated a Table for this correction, in which the water is expressed in decimals, as well as the mercury. This Table is No. II. of the English Appendix.

No. VI. contains the number of French cubical inches and decimals contained in the corresponding ounce-measures used in the experiments of our celebrated countryman. Dr Priestley. This Table, which forms No. III. of the English Appendix, is retained, with the addition of a column, in which the corresponding English cubical inches and decimals are expressed.

No. VII. Is a Table of the weights of a cubical foot and inch, French measure, of the different gasses expressed in French ounces, gros, grains, and decimals. This, which forms No. VI. of the English Appendix, has been, with considerable labour, calculated into English weight and measure.

No. VIII. Gives the specific gravities of a great number of bodies, with columns, containing the weights of a cubical foot and inch, French measure, of all the substances. The specific gravities of this Table, which is No. VII. of the English Appendix, are retained, but the additional columns, as useless to the British philosopher, are omitted; and to have converted these into English denominations must have required very long and painful calculations.

Rules are subjoined, in the Appendix to this translation, for converting all the weights

## ELEMENTS OF CHEMISTRY IN A NEW SYSTEMATIC ORDER

and measures used by Mr Lavoisier into corresponding English denominations; and the Translator is proud to acknowledge his obligation to the learned Professor of Natural Philosophy in the University of Edinburgh, who kindly supplied him with the necessary information for this purpose. A Table is likewise added, No. IV. of the English Appendix, for converting the degrees of Reaumeur's scale used by Mr Lavoisier into the corresponding degrees of Fahrenheit, which is universally employed in Britain.

This Translation is sent into the world with the utmost diffidence, tempered, however, with this consolation, that, though it must fall greatly short of the elegance, or even propriety of language, which every writer ought to endeavour to attain, it cannot fail of advancing the interests of true chemical science, by disseminating the accurate mode of analysis adopted by its justly celebrated Author. Should the public call for a second edition, every care shall be taken to correct the forced imperfections of the present translation, and to improve the work by valuable additional matter from other authors of reputation in the several subjects treated of.

Edinburgh, Oct. 23. 1789.

The Translator has since been enabled, by the kind assistance of the gentleman above alluded to, to give Tables, of the same nature with those of Mr Lavoisier, for facilitating the calculations of the results of chemical experiments.

---