

**THE HYGIENE OF AIR AND WATER:
BEING A POPULAR ACCOUNT OF THE
EFFECTS OF THE IMPURITIES OF AIR
AND WATER, THEIR DETECTION, AND
THE MODES OF REMEDYING THEM**

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The hygiene of air and water: Being a Popular Account of the Effects of the Impurities of Air and water, their detection, and the modes of remedying them by William Procter

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WILLIAM PROCTER

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AND THE MODES OF REMEDYING THEM.

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TO

GEORGE SHANN, Esq., M.D.,

THIS SMALL VOLUME IS DEDICATED,

IN GRATEFUL ACKNOWLEDGMENT OF MANY ACTS OF

PERSONAL AND PROFESSIONAL KINDNESS

RENDERED TO HIS OBLIGED FRIEND

THE AUTHOR.

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PREFACE.

THE matter of this small volume was contained in a series of letters which were published by the Author in the York newspapers. It was thought, by some clerical and other friends, that the information contained in them should assume a more permanent place in a manual for general use and parochial distribution. At their request the treatment of the subject has been enlarged for production in the present form. As treated in the following pages, the subject admits of no originality, and the Author claims none; his object has been to deal with it in as simple and popular a manner as possible, and to point out the injurious effects produced on health by impure air and water, the sources and origin of their impurities, with the means for their detection, and the several methods by which they may be removed or remedied.



THE IMPURITIES OF AIR,
AND
THEIR REMOVAL.

Causes of Atmospheric Impurity.—The atmosphere constituting the air which we breathe is a mixture of several gases, two of which are constant in quantity, the others being variable. The two constant constituents are Oxygen and Nitrogen, in the proportions of 21 of the former to 79 of the latter. On Oxygen depend the active properties of air. It is necessary to the breathing of man and animals, its exclusion rapidly produces death, and it is the essential cause of many changes effected by the atmosphere. The variable constituents are watery vapour and carbonic acid gas. The quantity of the former varies from $\frac{1}{4}$ to 2 per cent., and is regulated mainly by temperature. Carbonic acid is a heavy, highly poisonous gas, varying from 2 to 5 volumes in 10,000 volumes of air. Air, which contains 50 to 100 per 10,000 volumes, is fatal to life; but in considerably less quantity it is adverse to comfort and obnoxious to health. In addition to these ingredients, Ammonia, and a very energetic form of Oxygen, called Ozone, are present in small quantities. This latter substance is evolved when the electrical machine is in action, and is most readily prepared by placing a clean stick of Phosphorus, almost covered by distilled water, in a large