

yet even here the subject of "Noxious Vapours," is one of practical importance, affecting our comfort, convenience, and health, physically, intellectually and morally: The *Scotsman*, no doubt, rightly attributes the presence of the most prevalent deleterious gases of the atmosphere of their towns to the burning of coal containing sulphur, and to the various industrial manufactories, the former producing immense quantities of sulphurous acid, and the latter plentiful supplies of hydrochloric acid in vapour; but the bad ventilation of buildings, and the great scarcity of healthy plants in cities are also mentioned as auxiliaries in the production and maintenance of foul gases. The carbon dioxide gas added to the air by human respiration, combustion of fuel, of coal oil, gas, etc., ought naturally to be used by the vegetable kingdom, and a supply of oxygen be given in return; but where plants are few and the population crowded, as is the case in too many streets of all towns, there is no sufficient counteracting influence, and the carbon dioxide is permitted to accumulate to an extent totally incompatible with a proper state of health. Carbonic acid gas when inspired by a human being is not *poisonous* but simply *suffocating*, and if one-tenth per cent. of it be present in air, that air should not be respired, while ten per cent. of it completely extinguishes the vital flame. Then, there are always emitted from the lungs and skin, as companions of this gas, certain putrescent organic substances which manifest their presence by an offensive odour when expired air is kept confined in a vessel for a short time.

Whilst fully recognizing the dangers to be constantly and carefully guarded against in the excessive accumulation of sulphurous acid, carbonic acid, and other vapours, through the processes of combustion, respiration and manufacturing, as well as from defective ventilation and lack of plant life, we would do well to recollect that there are, peculiar to towns and cities, several other fruitful causes of disease besides those referred to above, such, for instance, as want of cleanliness on the part of both private individuals and public officials, bad drainage,

and impure water supplies. With respect to cleanliness it may be said that there is as great a want in the country as in the city. This may be true; but it must never be forgotten that very different results are produced by uncleanly habits in the open country and in the crowded city: what may be harmless neglect in rural regions becomes positively destructive where thousands are clustered together. It would be interesting to know what proportion of the noxious gases that contaminate the atmosphere of our towns has its origin in the decomposition of the innumerable kinds and conditions of vegetable and animal matters so frequently to be found in yards and lanes. The evils arising from imperfect drainage, the unwise habit of connecting sewers with the inmost chambers of modern dwellings, and the fever-poisons carried in many waters, need not be dwelt upon. The remedies to be employed, in order to keep in a tolerably pure condition the air we breathe and the water we drink, may be summarised as follows:—The planting of trees on every street; the cultivation of gardens, and encouragement of lawns; ventilation by which not only the injurious gases may be quickly got rid of, but also a continuous and sufficient supply of good air be obtained; the careful and speedy removal of all organic offal to a great distance from human habitations, or to be buried like other remains of animals; instead of being deposited on neighbouring vacant lots, or used in filling up holes within the city limits; also proper drainage; and the thorough filtration of all water used for drinking purposes. The purification of the public water-supply is far too often grossly neglected by civic authorities; therefore, they who are desirous of procuring it free from objectionable substances must make frequent use of the charcoal and sand filter. For clearing the air of the vapours of sulphurous acid, added to it by burning coal, no satisfactory method appears to have yet been made known. With respect to the vapours of hydrogen chloride generated, for instance, in the manufacture of sodium carbonate, a very great deal has been accomplished; in place of allowing them to escape