

# MEDICAL SCIENCE

VIDEO MELIORA PROBOQUE

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## ORIGINAL ARTICLES.

### INHALATION IN DISEASES OF THE LUNGS.

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FOR many years the subject of inhalations, in reference to the treatment of diseases of the respiratory tract, has received a large share of medical attention. A considerable part of this, however, has been of a general nature; and considering the immense army of scientific investigators in the arena of medicine, a comparatively small number have given the subject that careful and thorough investigation, which its therapeutic value demands.

When we remember that the diameter of the air-cells, distributed throughout the human lungs, is about twenty times as great as the calibre of the capillaries, which are distributed on their parietes; and that the total number of these alveoli, is in the neighborhood of six hundred millions, we can form some conception of the magnitude of surface which offers itself for direct and immediate therapeutics. That the epithelial lining membrane of the lungs is adapted to direct local treatment, is proved by the fact of the substitution of gases in the ordinary act of respiration; and also by the rapidity with which anæsthesia is produced, when chloroform or any other anæsthetic is administered. Still the amplitude of the opportunity should make us all the more vigilant against the dangers of empiricism.

As far back as 1849, the proprietor of one of the medicinal springs in France, arrived at the conclusion, that, if the waters possessed virtues when taken into the alimentary canal, their efficacy would be increased, if taken likewise into the air passages. He therefore adopted the plan of projecting a number of small jets against the wall of a room prepared for the purpose. By this means the water

was broken up into a state of minute atomization; and the patients, protected by rubber suits, were ushered into the room thus surcharged with the misty atmosphere. The idea being favorably received by physicians, was at once added to their armamentarium, and gave rise to many of the present systems of atomization, which render topical treatment by atomized fluids, cheap and simple, if not as efficacious as the original French method.

The internal treatment of chest affections by inhalations has of late years gradually extended its bounds. Rumboldt's spray tubes date back as far as 1855. Eschscholtz advocated the use of compressed air in his treatise on inhalation published in 1867; while compressed and rarified air, medicated vapors of diverse formulæ, and various methods of application, have been used from that time until now, by Sajous, Mackenzie, Bosworth, Shurly, Salter, Browne, Platt, Major Donaldson, and many others.

The pneumatic cabinet, brochures upon which were published by Isaac Platt of St. Mary's Hospital, Brooklyn, F. Donaldson of University of Maryland, and Martin of Johns Hopkins University, all in 1886, promises to be a valuable addition to the appliances of the physician of the future, particularly in hospital treatment; and these admirable little treatises, on the administration of compressed and rarified air, are inestimable additions to our literature on the subject.

Pneumatic differentiation is the term they apply, to different pressures upon the air surrounding the body, and that entering the lungs. As described by these authorities, the differentiation may be positive, negative, and alternate. Positive, is where the entire air of respiration is maintained at