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CHAPTER 7

AIR CONDITIONING IN THE PREVENTION AND TREATMENT OF DISEASE

Sanitary Ventilation, Control of Airborne Infection, Value of Air Cooling Under Tropical Conditions, Treatment of Disease, Operating Rooms, Nurseries for Premature Infants, Fever Therapy, Cold Therapy, Allergic Disorders, Oxygen Therapy, General Hospital Air Conditioning

THE late war caused an increase of interest in the preventive aspects of air conditioning. It re-emphasized the importance of the control of airborne infection and demonstrated the value of air cooling under tropical conditions for the prevention of heat rash, for promoting proper rest and sleep, and in the convalescence of patients.

SANITARY VENTILATION

During the last 15 years great popular interest has been aroused in the spread of respiratory infection indoors and control by ventilation or its sanitary equivalent by air disinfection. Three important documents have appeared in English, Swedish and French literature in the last year.

In this country, where the study initiated, the Council of Physical Medicine of the *American Medical Association* approved the radiant disinfection of air in 1943, and two sub-committees of the Committee on Research and Standards of the *American Public Health Association* have reported favorably upon the control of airborne infection by sanitary ventilation and on air sanitation, respectively.

The work of a Technical Advisory Committee on Air Sterilization of this Society has from time to time reported progress in the Journal since 1944, and has approved a set of definitions, formulations and factors which is now being reviewed by the Committee of Research and Standards of the *A.P.H.A.* with the purpose of joint adoption by the Association and the Society.

Since this important new field of sanitary ventilation is yet in its infancy, just emerging from the research and development stage, it has not been possible to prepare a comprehensive treatment in the Guide. Those professionally interested must still refer to the official publications of the organizations listed, and the enormous technical literature on the subject which they review. The following section on Control of Airborne Infection gives some idea of the scope of the subject.

CONTROL OF AIRBORNE INFECTION

The majority of airborne diseases are spread indoors where people gather. Any program of air sanitation is influenced by a number of factors. In the winter months, the closing of doors, windows and other means of access to the outside air to conserve warmth, as well as the crowding of persons indoors, provides conditions conducive to a high incidence of contagion. This seasonal phenomenon, illustrated in Fig. 1 which represents a study made by the *U. S. Public Health Service*, will concern the ventilating engineer in so far as air quality (determined by temperature, humidity, air replenishment and type of air movement and by freedom from contamina-