asthmatic attacks, it is necessary that an air filter, to be of full value in the treatment of asthma, must remove all dusts and pollens regardless of size or amount. An electrostatic cleaner has proved extremely efficient in removing particles of 15 to 20 microns and smaller, besides dusts and smoke[19].

Although the chief remedial factor in the treatment by conditioned air is the filtration of pollen, a certain amount of cooling and dehumidification appears to be desirable. A comfortable temperature between 70 and 75 F and a relative humidity well below 50 per cent proved satisfactory[20]. Direct drafts, overcooling or overheating are apt to initiate or aggrevate the symptoms.

Limitations of Air Conditioning Methods

The results obtained with air filtration or other air conditioning processes in the control of allergic conditions are fairly comparable to those obtained by desensitization treatment so long as the patients remain in the pollen free atmosphere. But while specific desensitization is preventive and in a few instances curative, for all practical purposes filtration gives only temporary relief. With rare exceptions, the symptoms recur on exposure to pollen laden air. Moreover the usefulness of air conditioning methods is limited because all cases are not caused by air-borne substances. Cases of bacterial asthma do not respond at all to the treatment with filtered air.

Despite these limitations air conditioning methods possess definite advantages in the simplicity of treatment, convenience, and under certain conditions almost immediate relief. Pollen cases are usually relieved of most of their symptoms within 1 to 3 hours after exposure to properly filtered air.

A pollen-free atmosphere is especially valuable in cases where desensitization has given little or no relief, and where desensitization is not advisable owing to intercurrent illness. On the whole, conditioning methods are considered to be a valuable adjunct in medical diagnosis and treatment of allergic disorders.

OXYGEN THERAPY

Oxygen therapy is the principal measure employed for preventing and relieving the distressing symptoms of anoxemia, which is a deficiency in the oxygen content of the blood. Some of the more important conditions in which oxygen treatment is believed to be beneficial are pneumonias, anemia, heart affections, post-operative pulmonary disturbances, certain mental disturbances, asphyxia, asthma and atelectasis in new-born infants.

The necessity of air conditioning in oxygen therapy arises from the fact that oxygen is too expensive a gas to waste in the ventilation of oxygen tents and oxygen chambers. The oxygen rich atmosphere in these enclosures is therefore reconditioned in a closed circuit by removal of excess heat, moisture, and carbon dioxide given off from the occupants being treated.

[19]Air Cleaning as an Aid in the Treatment of Hay Fever and Bronchial Asthma, by Leo H. Criep and M. A. Green (*Journal of Allergy*, 7: 120, January, 1936).

[20]The Effect of Low Relative Humidity and Constant Temperature on Pollen Asthma, by B. Z. Rappaport, T. Nelson and W. H. Welker (*Journal of Allergy*, 6: 111, 1935).

Oxygen Tents

In oxygen tents the air enriched with oxygen is usually circulated by means of a small motor blower which sends the air over soda lime to remove carbon dioxide and then over ice to remove excess heat and moisture. The concentration of oxygen in the tent is regulated by means of a pressure reducing valve and flow meter. In an inadequately cooled tent, high temperatures and humidities are inevitable, increasing the discomfort of the patient and imposing an added strain on an already overburdened heart. Oxygen therapy under such conditions may do more harm than good. An ice melting rate of approximately 10 lb per hour gives satisfactory results in patients with fever in a medium size oxygen tent.

Oxygen tents are somewhat confining to the patient; the restless type of person is difficult to control, and the delirious, impossible to control. Medical and nursing care is complicated, as the tent must be opened or removed with attendant loss of oxygen. Oxygen concentrations of 50 per cent or more are difficult to maintain, and it is a problem to keep the temperature and humidity low enough in hot weather. The direct advantages are portability and low cost.

Oxygen Chambers

The conventional oxygen chamber is an air-tight sheet metal enclosure of fire-proof construction, large enough to accommodate one or two patients. Trap doors or curtains are provided for the personnel, food and service, to avoid loss of oxygen. Glass windows in the ceiling and walls admit light from outside the chamber.

The air conditioning system may be of the gravity type, or of the fan type using mechanical refrigeration or air drying agents. The gravity system includes a bank of cooling coils controlled thermostatically, which dehumidify and cool the air. The cool air falls over trays of soda lime at the bottom of the coils, to remove the carbon dioxide given off by the occupants. A heater at the base of the opposite wall warms the air to the desired temperature. Ordinary industrial oxygen is introduced from storage tanks outside the chamber and the concentration is regulated according to the prescription of the physician. The only change of air in the chamber is that taking place by air leakage through the trap doors.

The chief objections to the gravity circulation system are stratification of cold air near the floor and accumulation of odors, which may require the use of activated charcoal, or an excess of oxygen for dilution of the air in the chamber.

The fan circulation systems include compact extended surface coolers, heaters, and sometimes air-drying beds installed outside the chamber for the removal of moisture.

The temperature and humidity requirement in oxygen therapy depend primarily upon the physical condition of the patient, and secondarily