

to ventilation in Pullmans and in public buildings. Outlining the conditions in a parlor car, he notes that most uncomfortable hours are spent in a berth closed by green curtains, which shut out whatever little air we think there may be in the aisle. At the end of the journey there is often a headache and at least a very dull feeling. "We blame the ventilation of the sleeping car for all the discomfort and ill effects of traveling."

Mr. Norton goes into the question quite systematically and finds out what we are breathing. In this he arrives at the conclusions determined by others, including Angus Smith, who shut himself in a room, remaining there with a lighted candle till the candle went out for lack of oxygen, that the carbon dioxide up to this limit at least produces no ill effects. Like the bacterial content of milk, the content of carbon dioxide is taken as a measure of the purity of the air, although not itself harmful. Another consideration is that of "crowd poisoning," the idea that organic matter from individuals is harmful to others in the room. It has been shown, however, that these minute floatings are not poisonous, and while they may have marked odors, the real quantity involved is excessively small.

The items actually of consequence in this discomfort it proves to be are temperature and humidity. "These factors affect the rate of removal of heat from our bodies and it is this heat that makes us uncomfortable," writes Mr. Norton. Humidity must be maintained within certain rather narrow limits, and temperature affects the individual in ways related to the humidity. To be comfortable the heat must be carried away from the body at a certain rate and this is dependent on humidity, temperature and motion, the latter being necessary continually to supply other air.

Mr. Norton then considers the different systems of ventilation in use in railway cars. First there is the old type of cars with no provision other than the deck windows in the monitor of the roof. This is surprisingly efficient in regard to the ventilation, especially when the car is moving at high speeds, but the circulation is very uneven and drafts are produced. The type of ventilators in general use in Pullman cars is of the injector principle. Air

is forced through a duct on the top of the cars, and this by suction draws the air from the car through different apertures. It is estimated that such a system as is usually installed should change the air in the car every four minutes. No inlets are provided for the air, which leaks in through casings of doors and windows. The Pennsylvania uses a system of ducts which catch the air, carry it down under the car, where it is heated and delivered to the car through pipes beneath the seats. This system is supposed to change the air completely in three or four minutes.

In these systems there is one common difficulty, that they work in proportion to the speed of the car and do very little when at a standstill. Those who are obliged to spend three or four hours in a car at a terminal before it has started are particularly affected by the conditions of stagnant air. For these times it has been suggested that fans be installed. Mr. Crowder's investigations of the quality of the air in Pullmans, in which samples of the air were taken from different parts of the car, in occupied and unoccupied berth spaces, in motion and at rest, with the result as published by him that even when standing still the contamination of the air is not sufficient to be dangerous to the public health. The stuffy feeling that is associated with these cars, then, according to Mr. Norton, must be looked for in the relations of temperature to humidity and motion. The main difficulty is in the lack of means for controlling the humidity, and to-day no acceptable way of doing this seems to exist. But so long as attention is directed to it as the crux of the problem, it will doubtless be solved in the near future. It is evident that here as in the schoolhouse and the home, the question of proper humidity is the essential one under present conditions.

An Opinion on Tonsil Surgery.

Removal of tonsils, which has been a familiar practice among surgeons for many years, is condemned by Dr. John N. Mackenzie in the current number of the *Maryland Medical Journal*. Dr. Mackenzie is a professor in Johns Hopkins University and is laryngologist to the Johns Hopkins Hospital Baltimore. He calls the wholesale