but strange to relate, they have hardly thought, except in a few isolated instances, of the need of ventilation of their substantially built, although not architecturally picturesque, schoolhouses.

More than nine-tenths of the rural schoolhouses are rectangular buildings about 28 by 40 feet outside, with blackboard and teacher's desk at one end and an entrance door in the middle of the opposite one. Some of them are built without a thought of ventilation, others have a chimney with a double flue, one being a foul air one whose action in cold weather is seldom positive before 10 or 11 o'clock, and weak even after that; others have a more or less ornamental hole in the ceiling supposed to be a ventilator, but really only a cooler.

Since the more intelligent observers among them have begun to realize that pure air is as needful for the healthy growth of children as it is for horses, various experiments have been tried to ventilate the school-rooms. So far only two methods that I have seen have succeeded—a hot air furnace, and a system of using the stove which applies the furnace principle. Success means maintaining an equable, comfortable temperature in all parts of the room with a sufficient supply of fresh air.

Not every hot-air furnace works well; indeed, in this district, it is the minority of them that have given satisfaction. I have never been in a worse ventilated schoolhouse than a furnace-heated one which was drawing its fresh (?) air exclusively from the interior. The printed guarantee form used by furnace dealers in this country may do well enough for private dwellings. I advise school boards to write the conditions to be guaranteed, including, besides proper material and workmanship, at least: 1st. To heat every occupied part of the room in all winds and weathers up to 67° F. 2nd. To provide for change of air three times per hour. 3rd. To provide for internal circulation as well as ventilation. 4th. To provide for cooling the room when too hot by mixing cold air with the inflowing hot air. 5th. To remove the furnace and repair openings in case of failure to fulfil conditions. This work, including galvanized iron smoke and ventilating shaft, exclusive of excavation, is undertaken here for about a hundred dollars for a one-roomed schoolhouse.

To heat and ventilate by a stove. The plan to be described is applicable to new or old buildings, is economical in its use, and has been installed with slight modifications to suit special circumstances in a number of schools at a cost varying from $25 to $45.

The stove commonly used here in schools is a heavy oblong box; the description and diagrams apply to that form, but are modifiable to suit other forms.

A tight-fitting 24-gauge galvanized iron jacket T is constructed over the rear half of the stove T. The fresh air is brought in by a pipe T of 144 to 200 square inches in cross section (or through a duct made by "underflooring" two of the joists) under the floor from openings, covered with heavy wire screens, in the outside wall to an opening under the stove. If the duct is carried through from side to side of the building, it should be partitioned in the middle, under the stove, so that the air shall come into the room instead of blowing directly through the duct.

The slide T shown under the stove is closed when the school-room is not occupied, and at such times two slides E in the sides of the casing are opened so that the air of the room circulates through the casing.

The jacket being on the rear half of the stove (which should be placed as near the door as possible) serves as a screen from excessive radiation for