

foul air alarm will be a great benefactor to the human race. What a blessing it would be to have an instrument hanging in every church, school-house, public hall and sleeping-room, which would, as soon as the foulness reaches, say 10 or 12 parts of carbonic acid in 10,000—*i.e.*, two or three times the normal quantity—set up a ring-ding-ding-ding, like a fire alarm. The preacher and the teacher would be silenced, and the snorer disturbed until pure air be supplied by some means.

EXPEDIENTS FOR VENTILATION.

Medical and scientific authorities agree that school-rooms should be provided with 1,000 cubic feet of air space per pupil, and also with the means of changing that amount three times per hour. I do not know of any school-house so well provided. The average cubical capacity of the rural schools in this division is 267 cubic feet per pupil. Thirty-two per cent. have ventilators in the ceiling. The chief purpose served by these is to make the school cold in the winter. Nine per cent. are fitted with flues or ventilators in the walls or chimneys. I have tried to get trustees to have the upper window sashes adjusted so that they can be lowered and closed. Seventy-nine per cent. of the schools are now fitted with movable upper window sashes, but only about fifty-five per cent. with window sashes hung by weights over pulleys, and I find in practice that it is only the latter which are made really effective for the purposes of ventilation. It is not indispensable that the weights be hung in the inside of the frame. If it is too much trouble to put the weights there after the house is finished, let the pulleys be fixed to the top of the frame, and the weights move up and down in front of the sides of the sashes. Two schools have stoves enclosed in jackets which

are supplied with currents of fresh air by ventiducts leading from the outside. Ventilation by the windows is the most common method. Unfortunately some teachers exercise but little judgment in using this means. Occasionally one finds a window opened on the windward side of the school house, and the breeze blowing strongly against the heads of the children sitting near it. Teachers should ever hear Dr. Angus Smith's warning ringing in their ears: "Though foul air is a slow poison, a blast of cold air may slay like a sword." The death of a delicate child attending a school adjoining the city resulted from exposure to draft. A few weeks ago I was informed of the case of a boy who contracted congestion and inflammation of the lungs by sitting near a drafty window in our city High School. The case was so serious that for several days the doctor and friends despaired of his recovery. Windows should always be opened on the leeward side of the house, unless they are provided with appliances that will give the draft a sharp upward deflection. The latter object is accomplished by placing a strip the length of the window frame, the width of the opening, and the thickness of the frame under the lower sash (see Diagram A). The raising of the under sash accomplished in this way makes an entrance for the air between the sashes. It is less trouble to fix a strip of board under the top of the frame at a sharp angle with the top bar of the upper sash (see "AA" in Diagram B), and then lower the sash. If the window is on the windward side the sash may safely be lowered an inch or two, or if on the leeward side, pulled down to make an opening of eight or twelve inches.

Ventilation, by heating air drawn by flues from the outside in a chamber constructed round the stove, is an excellent method, but the chamber should be fitted to the stove in such