300 cubic feet removed per hour. This last sum, divided by the total area, 65,920 cubic feet, shows that the air of the room was being changed at the rate of 4.1 times per hour. Assuming that 30 cubic feet of fresh air ought to be supplied per head per minute, and that 250 persons were present in this room, we find that instead of receiving 7,500 cubic feet of air they would get 4,420 or 58% of the proper quantity. This probably accounts for the large amount of carbonic acid present in the air on December 20th. If the propelling and extracting fans were made to work more actively there would be no difficulty in introducing the proper amount of fresh air, although, in cold weather, it would take more fuel to heat the room.

REPORT ON THE VENTILATION OF THE CENTRAL METHODIST SUNDAY-SCHOOL, CORNER OF BLOOR STREET EAST AND PARK ROAD, TORONTO, DECEMBER 26TH, 1896.

Weather cloudy; wind south-west; temperature 30.2; humidity 71%; barometer 29.945. The room is situated on the first floor and has a gallery; area 70,000 cubic feet; persons present 500; area per capita 140 cubic feet ; temperature at the desk 61° F. Two warm air furnaces supply the heating, and there are ten warm air inlets in the room, most of which discharge at the floor; net inlets 7.81 square feet ; two outlets on the wall and two in front of the stage; net area 1.51 square feet; 650 1/2-inch holes in perforated boards, placed in ceiling and connected with two outlet tubes, which escape through the roof; net area 1.42 square feet. The ceiling ventilators were closed. No estimate of amount of air supplied ; carbonic acid in parts of 1,000 of air 0.806 at the floor; in the gallery 1.61; time of test 3 p.m. The room was crowded, the doors were closed and the windows closed and darkened, as a magic lantern exhibition of scriptural subjects was being given at the time the test was made. On February 9th, 1897, I estimated the amount of fresh air which entered this room, the conditions as to heating and amount of outlet being similar to those obtained December 26th. The supply amounted to 70,260 cubic feet of fresh air per hour, or about one change of air in an hour.

REPORT OF THE VENTILATION OF THE TORONTO CITY POLICE COURT, COURT STREET, DECEMBER 28TH, 1896.

Weather cloudy and hazy; wind south-east; temperature 23° F.; humidity 99%; barometer 30.259.

First floor, north side; area 20,240 cubic feet; persons present 165; area per head 122.50 cubic feet; temperature at the desk 67° F. The room is warmed in cold weather by four steam radiators. Four circular pipes 6 inches in diameter enter the room about 13 feet from the floor. They are intended to act as fresh air inlets. There were two large outlets, each having an area of 256 square inches, one grate-flue having an area of 21 sq. inches, and another of a similar size which was bricked up. Two small windows near the ceiling were open. Three doors were open-two of them double doors opening on the main corridor near the head of the staircase, which starts near the street door. The third door opened into the magistrate's room. There was also in the centre of the room an open staircase leading from the ground floor, through which the prisoners ascended. The available area was thus very much larger than the figures given-20,-240 cubic feet--would indicate. Carbonic acid in parts of 1,000 of air, first test, 0.537; after the three doors had been closed for fifteen minutes, the two windows and central staircase remaining open, carbonic acid in parts of 1,000 of air 0.806. February 6th, 12.30 p.m., I estimated the natural ventilation of the police court, the doors, windows, and the trap-door over the staircase being closed. Only two persons were present.

By 1 outlet " 1 " " 1 grate-flue	30,798.00 24,426.00 1,828.26	c. ft. "	per hour.
" 2 cold-air inlets which acted as out- lets	5,771.28	"	"
Total air discharged	62,823.54	"	
The indraught of air was as follows :			
By 2 cold-air inlets " loosely fitting doors and trap-door, and the spaces beneath the doors	5,771.28	c. ft.	per hour.

and around	d the windows	(estimate).	57,052.26	**	"

Total air introduced 62,823.54 "

The amount of air introduced in an hour, 62,823.54 cubic feet, divided by the area of the room, 20,240 cubic feet, would show that the air was changed 3.1 times in an hour. Allowing 30 cubic feet per minute or 1,800 cubic feet of air per hour to each person present, such an area, doors and windows being closed, would properly accommodate 34 persons, each of whom would then have an area of 600 cubic feet.

REPORT ON THE VENTILATION OF A ROOM IN THE DUFFERIN SCHOOL, BERKELEY STREET, TORONTO, JANUARY 7TH, 1897.

Weather cloudy; wind south; temperature 27° F.; humidity 67%; barometer 29.891; room 8, 3rd floor, east side; seating capacity 58; persons present 49; net air space 12,163.83 cubic feet ; air space per head 284.24 cubic feet ; temperature at the teacher's desk 69° F.; difference in temperature at the breathing line over the greater portion of the room 1° F.; temperature of the air at the warm air inlet 128° F. Two window sashes were lowered at the top, one 8 inches, the other 5 inches. There was a large foul air duct in one corner of the room, the shaft of which was heated by steam coils. The available area of its opening in the room was 4.27 square feet. When the door and windows were closed 320.25 cubic feet per minute were removed through this opening, or 19,215 cubic feet per hour. Fresh air supply at the inlet, 600 cubic feet per minute or 36,000 cubic feet per hour ; amount of pure warm air supplied per minute per head, 12.24 cubic feet; amount of foul air removed per head per minute through the ventiduct 6.53 cubic feet. When the windows were opened there was no current in the foul air outlet. The open windows acted both as inlets and outlets, but the amount of air introduced and extracted by them was not estimated, as the supply was irregular and capricious. Carbonic acid in parts of 1,000 of air 0.806; time of test 3.15 p.m. Remarks .- The warm air supplied was insufficient in quantity and of too high a temperature, so that cold air had to be introduced in an irregular fashion to supply the deficiencies under both these heads. Even with the open windows the supply of fresh air was small, as was proved by the amount of carbonic acid in the air. The high temperature of the warm air at the inlet, ranging from 120 to 150° F., made it difficult for pupils to occupy the corner where the register was situated. As the air of the schoolroom became superheated, the windows had to be opened, allowing a considerable waste of heat. This room is heated but cannot be ventilated unless the windows are opened.

Dufferin school is an 18-room school-house. Sixteen of the rooms are heated by steam pipes, direct and indirect. The indirect heating consists of pure air, warmed by passing over steam coils in a shaft situated in the basement, and introduced into the room by a register. In very cold weather direct steam coil heating is superadded. In each of these sixteen rooms is a foul air outlet, heated by steam coils; net area of opening 4.27 square feet. In two rooms there are no warm air inlets, the heating being effected by direct steam coils. These latter rooms are provided with skylights, which may also be used as outlets for air. The combined outlets of the north wing of the building discharge through a large covered outlet about four feet above the roof of the north portion of the building. Similarly the combined outlets of the south wing discharge above the roof of the south side. Tested at the roof these outlets seemed to discharge a considerable amount of foul air; but the test made in room 8, which is circumstanced in a manner similar to the other fifteen rooms, shows that these outlets remove only a small percentage of the foul air.

Your committee submit, that of the six buildings examined, the only one which could be considered as satisfactory in the matter of ventilation was the Church street school. In room 2 of this building there was slight overcrowding, and the amount of air supplied each pupil per minute, viz., 26.72 cubic feet, was below the standard. The difference in temperature in different parts of the room at the breathing line, viz., 5° F., was too great, but some of the thermometers were placed near windows. In room 4 the conditions were all quite satisfactory, the amount of air supplied per head per minute being 30.8 cubic feet, and the difference in temperature in different parts of the room at the breathing line 3° F.

At Dufferin school the heating was sufficient, if anything rather too high, but the supply of pure air at the inlet was defective, and was supplemented by the liberal use of windows.

At the Louisa street school-house, in room 1, the difference in temperature between different parts of the room was excessive, viz., 13° , and the ventilation, depending on the open fanlights, was draughty.

At the Sherbourne street Sunday-school the heating was good, but the supply of pure air was not sufficient. This defect could be easily remedied by making the fans work more briskly.

At the Central Methodist Sabbath school the heating was suffi-