tilating, by opening a window or door, although better than none, is also imperfect and objectionable; as the cold air falls directly on the head, neck, and other exposed parts of the body, when every pore is open, and thus causes discomfort, catarrh, and other more serious evils, to those sitting near, besides reducing the temperature of the whole room too suddenly and too low. This mode, however, should be resorted to at recess.

OPENINGS FOR VENTILATION.—There should be one or more openings, expressly for ventilation, both at the top and the bottom of the room, of not less than twelve inches square, capable of being wholly or partially closed by a slide of wood or metal, and, if possible, these openings, or the receptacle into which they discharge, should be connected with the chimney or smoke-flue, in which there is always a column of heated air. By an opening in or near the ceiling, the warmer impurities (and air when heated, and especially when overheated, will retain noxious gases longer) will pass off. By an opening *near the floor*, into the smoke-flue, the colder impurities (and carbonic acid, and the other noxious gases, which at first rise, soon diffuse themselves through the atmosphere, cool, and subside toward the floor) will be drawn in to supply the current of heated air and smoke ascending the chimney. These openings, however, may let cold air in, and will not always secure the proper ventilation of a school-room, unless there is a current of pure warm air flowing in at the same time. Whenever there is such a current, there will be a greater economy, as well as a more rapid and uniform diffusion of the heat, by inserting the outlet for the vitiated air near the floor, and at the greatest distance from the inlet of warm air.

EVILS OF LOW TEMPERATURE.—There is a mischievous error prevailing, that if a room is kept at a low temperature there is no need of ventilation. Dr. Alcott mentions the case of a teacher, who when asked if she did not find it difficult to keep her room ventilated, replied, "not at all, it is one of the coldest rooms in the city." The necessity of ventilation arises from the consumption of the oxygen, and the generation and accumulation of carbonic acid, principally in breathing, and both of these processes can go on and do go on, in a cold room, as well as in a warm one, if human beings are collected in it, and goes on rapidly and fatally according to the number of persons and the size and closeness of the apartment.

IMPORTANCE OF UNIFORM TEMPERATURE.—But whatever may be the mode of warning adopted, whether by open fireplace, or grate, stove wood or coal, or furnace, the temperature of the room should be uniform, and of the proper degree in every part. Not a child should be exposed to sudden and extreme changes of temperature, or compelled when overheated, or at any time, to sit against an inlet of cold air, or, with cold feet. This last is a violation of an indispensable condition of health. To secure a uniform temperature, a thermometer will not only be convenient, but necessary. It cannot be ascertained, for different parts of a room or for thirty or forty persons, differently circumstanced as to heat or cold, or differently employed, some of whom are seated, some standing or changing, their position from time to time, without some less variable and uncertain standard than the teacher's feelings. However anxious he may be to make every scholar comfortable, he cannot be conscious at all times of the differing circumstances in which they are placed. He is not exposed to the rush of cold air, from a broken or loose window, or from cracks in the ceiling or in the floor. He is not roasted by a seat too near the the stove. He is not liable to a stagnation of the blood in the feet from want of exercise or an inconvenient bench. Even though he were capable of thus sympathizing with them, the temperature of the room after the fire is thoroughly going, and the doors closed, may pass gradually from 65° to 70° without change being perceptible. Now though we may breathe freely in such an atmosphere, gradually heated, we cannot pass into the open air 40° or 50° colder, as would be the case on most winter days, and much less receive a current of such air on a portion, and a sensitive portion of the body, without great danger. With a thermometer in a room, the beginning and progress of such a change would be indicated, and could be guarded against.

BEST MODE OF VENTILATION.—The best mode, however, at the same time of warming and ventilating a school-room, especially if it is large, is by pure air heated in a stove or furnace placed in the cellar or a room lower than the one to be warmed. No portion of the room, or the movements of the scholars, or the supervision of the teacher, are encumbered or interrupted by stove or pipe. The fire in such places can be maintained without noise and without throwing dust or smoke into the room. The offensive odors and impurities of burnt air, or rather of particles of vegetable or animal matter floating in the air, are not experienced. The heat can be conducted into the room at different points, and is thus diffused so as to secure a uniform summer temperature in every part of it. A room thus heated, even without any special arrangements for this object, will be tolerably well ventilated, for the constant influx of warm pure air into the room will force that which is already in it out at every crack and crevice, and thus reverse the process which is ordinarily going on in every school-room. By an opening or rather several small openings into the ceiling, or a flue, which in either case should connect with the outer air, the escape of the impure air will be more effectually secured.

PART V.—INTERIOR OF SCHOOL HOUSE; SCHOOL FURNITURE, SEATING, &c.

In the selection of plans for and the construction of school furniture, it is recommended that Trustees consult some experienced teacher on the subject, and visit schools which contain articles of an appropriate kind. Having thus made their selection, the furniture should either be constructed by some person engaged in the business, as in Toronto, Markham and Oshawa, or according to the plan and form of a model article of each kind, procured for that especial purpose.

For the arrangement of furniture no specific directions can be given which will meet all cases. Most houses and schools will require certain modifications to suit local or peculiar circumstances. Here again, the experienced judicious teacher will be found to be the safest adviser.

There are, however, certain general principles both of construction and arrangement, governing this subject, which should never be violated. These will be indicated in their proper place; leaving details to the circumstances of each case.

The accommodations for a school-house, embraced under the head of furniture, may be divided into three classes. 1. Those relating to the general care of the building, which chiefly have their place in the entry and clothes-rooms. 2. Those connected with the purposes of the principal school-room. 3d. Those of the gallery or class-rooms.

ENTRY AND CLOTHES ROOM FURNITURE.

THE SCRAPER.—The space immediately in front of every school-house should be paved with brick or stone, covered with plank, or the surface, by some other appropriate means, rendered smooth and so hard as to resist the action of the rain and frost. On this space the steps or platform leading to the door will be placed, and either will be incomplete without a strong, convenient shoe-scraper at each side. Two will be required, for the reason that the pupils enter the school, morning and afternoon, about the same time, and if there be only one scraper, it will either cause delay or compel some to enter the building with soiled shoes. Cleanliness and neatness are amongst the cardinal virtues of the school-room; and every means of inculcating and promoting them should receive the earliest and most constant attention.

THE MAT.—After the rougher and heavier portion of the mud has been scraped from the feet, a good rubbing on a coarse mat will not only remove the balance, but aid in drying the shoes, so that there will be less danger from wet and damp feet than would be experienced without this precaution. In addition to this, there will thus be less of that annoying dust in the school-room, which, when present in large quantities, is constantly kept afloat in the air, to the great discomfort of the inmates and to the injury of clothes, books and lungs. A pair of mats, or two pair in a large School, to be used alternately—one to be dried and beaten free of dust while the other is in use—may be made of corn-husks or straw. If the teacher manage properly, mats, quite sufficient for the purpose, will be readily made or provided by the larger pupils in turn, if they can be had in no other way. These rough mats should be placed just inside the main entrance door; and if the female pupils were to prepare a rag mat to be laid inside of or near the door leading from the entry or vestibule into the school room, for a second wiping of the feet, the precautions against dust in the room would be complete. The use of the scraper and mat should in all cases be insisted on, and every pupil entering with soiled feet should be sent back and made to clean them.

THE WASH-BASIN.—Children often soil their hands in play, and some even come to School with unwashed hands and faces and uncombed hair. Such should never be permitted to enter the school-room, till all the requirements of outward decency are complied with. In the country it will generally be too far to send them home again for that purpose; and therefore preparation for it should be found in the school. Hence, a tin basin on a shelf in the corner of the entry of a small school, a wash-stand in a larger building, or a regular wash-closet in one of the highest class, becomes proper. Soap and towels will also be indispensable; and if not provided by the section, they should be by the pupils, for whose use and benefit they are alone needed.

BUCKETS.—Every school should have two buckets—one for drinking water with cup near it, and one for washing and scrubbing purposes.

BROOM AND BRUSHES.—No school however small or plain, should be without a broom for sweeping the floor at least twice a week, and if daily, the better. Large buildings should also have a hair sweeping or floor brush, and a cobweb brush or ceiling duster with a long handle.