

creasing danger of becoming idle and reckless, and consequently vicious and destructive. Having no ability to read and thus beguile his hours of leisure in the pleasing task of self-instruction, he is likely to be a wanderer from his home at nightfall, and therefore a fit and easy prey to every selfish and criminal propensity of his own nature or of his neighbor.

These are the evils—described in short, and imperfectly—of entire absence from schools. The evils springing from only partial absence or irregular attendance at school are in many respects kindred to them. But it should be here remarked, that as all vices have a tendency to produce results apparently greater than we can reasonably expect, while virtues strangely seem to produce less striking effects than reason would lead us to anticipate, so the evil effects of a few absences from school or of small irregularities in attendance will of course always be greater than their apparent insignificance would warrant us to look for. We must in this place take an account of the loss of time—whether the child is employed in work or otherwise—of the disrelish of mental application contracted during that absence, and, in consequence of it, of the fearful proclivity of vice and crime, stimulated if not produced in the absentee's nature by his neglect of privileges; and in addition to all these—necessary results of any amount of irregular attendance—we must look at the effect produced upon those who are not absent. For in this world we are all so closely connected one with another, that no one of us can sin or neglect duty, or fail to improve, without inflicting a serious injury on our fellows.

If four children from a class of sixteen—which is about the ratio of absenteeism among those who are enrolled on the school registers—are absent every day, there is, besides the loss of just one-fourth of the teacher's time, and the school expenses, a fearful drawback on the industry and progress of the scholars who are present. Of the twelve present to-day, four, that is one third, were absent yesterday, and having not heard that lesson recited and explained, they are not

fitted to understand the present lesson. The teacher must therefore go over it rapidly to them, and this will cause a loss of time to the other eight, and being done rapidly will not be fully understood by the four absentees. Here then are three losses—no one of which is inconsiderable—the time and strength of the teacher—the time and patience of the scholars who were punctual—and the loss of the absentees themselves—resulting from the imperfect understanding of the previous lesson, and all these are in addition to those enumerated above. As this twenty-five per cent. is the constant ratio of absenteeism, these losses are every day losses, and their amount in a year is fearful.

The effect of these is to introduce discouragement into the breast of the faithful and courageous teacher, and confusion and loss of interest into all the classes and exercises of his school.

Thus it appears that the child, whoever he may be, that is enrolled on the register of the public school, and then is often absent, not only squanders his own precious time, but does actually retard the intellectual progress of the whole school; and is therefore, in truth, depriving others of the power to reap their full due share of the liberal provision which the State makes for the education of all its sons and daughters. And the parent or guardian who demands or expects that the Commonwealth shall assist him in the noble work of education is, if he allows or commands this absence, defrauding the child, wasting the money of the public treasury, and placing obstacles in the way of each of his neighbors and their children, to hinder them from the full enjoyment of one of their natural and just rights. Ought this to be submitted to with patience? Has not the body politic a right to demand that these causes of hindrances to the profitable use of the treasures devoted to public instruction be removed? There can be in the mind of any far-seeing philanthropist and statesman, no question as to this right. And as to the duty of enforcing it by all suitable means, there must be quite as little question.

R. I. Schoolmaster.

#### SCHOOL ARCHITECTURE.—(Continued.)

#### PART IV.—INTERIOR OF THE SCHOOL-HOUSE: HEATING AND VENTILATING.

We now proceed to make some remarks on the interior construction and arrangements of the School-house.

1. **SIZE.**—Each School-house should be sufficiently large to allow every pupil; 1. To sit comfortably at his desk; 2. To leave it without disturbing any one else; 3. To see explanations on his lessons, and to recite, without being incommoded or incommoding others; 4. To breathe a wholesome atmosphere. For the accomplishment of this last, not less than 150 cubic feet of air should be allowed for every pupil.

2. **PLATFORM AND SHELVES.**—The master's platform may be raised about eight inches; and the end of the room occupied by him should be filled with shelves for a library, and for philosophical apparatus and any collections of natural curiosities (such as rocks, minerals, plants, shells, &c.) which may be made in the neighborhood, or obtained from abroad. The books, apparatus, and collections should be protected by doors, which may be made perfectly plain and without panels, so as to be painted black, and serve as blackboards if necessary. They may be conveniently divided by pilasters into three portions—the middle one for books, the other for apparatus and collections. On one of the pilasters may be a clock; on the other a barometer and thermometer; on shelves in the corners, the globes; and over the library, in the centre, may be the time table. One of the pilasters may form part of the ventilating tube. The space for the platform, shelves, &c., between the front range of desks and the north wall, should be from seven to ten or twelve feet, according to the size of the room and the number of pupils contemplated. The sides and front of this space should be furnished with seats, ten or eleven inches wide, for very young pupils when the school is large, and sometimes for classes reciting. By means of a large moveable blackboard, this space may be in case of need, divided into two, so that two classes may recite at a time.

3. **ENTRY, &c.**—The entry should be lighted by a window, and furnished with books or pins, for the accommodation of hats, bonnets, and cloaks; and a wood-closet, large enough to contain one or two cords of wood. By making the ceiling of the entry and wood-closet only seven feet high, two commodious rooms for recitation may be formed above them, lighted from the windows over the front door, and accessible by stairs from within the school-room.

4. **LIGHT.**—The windows should be on the east and west sides of the room, and on the right and left of the pupils. Windows on the north, although they admit too much cold in winter, give an agreeable light, from the south the light is too intense. The eye is often materially and permanently injured by being directly exposed to strong light and if the light come from behind, the head and body of the pupil; interposed, throw the book into their shadow. The windows should be set high enough to give an uninterrupted light, and prevent pupils sitting at their desks from seeing persons or objects on the

ground without. The windows should be furnished with blinds or curtains, and should be made to open from the top as well as from the bottom; so that in the summer season when the ventilator will not act, they may supply its place.

5. **HEATING.**—There are two common modes of warming school-houses in this country,—by means of open fire-place and stove. The former is preferable with reference to health, and by a little pains in the construction, may almost equal the stove in economy of fuel—furnishing the room at the same time with an ample supply of fresh, warm air from abroad. In a suitable position, near the door, (see F in the following Figure 1.) let a common brick fireplace be built. Let this be enclosed, on the back and on each side, by a casing of brick, leaving, between the fireplace and the casing, a space of four or five inches, (see Fig. 2, Sec. A.) which will be heated through the back and jambs. Into this space let air be admitted from beneath by box 24 inches wide by 6 or 8 deep, leading from the external atmosphere by an opening beneath the front door, or at some other convenient place. (See t in Fig. 1.) The brick casing should be continued as high as six or eight inches above the top of the fire place, where it may open into the room by lateral orifices, to be commanded by iron doors, through which the heated air will enter the room. (See e e, Sec. A, Fig. 2.) If these orifices are lower, part of the warm air will find its way into the fireplace. The brick chimney should rise at least two or three feet above the hollow back, and may be surmounted by a flat iron, soap-stone, or brick-top, with an opening for a smoke-pipe, which may thence be conducted to any part of the room, the same as a common stove-pipe. The smoke-pipe should rise a foot, then pass to one side, and then, over a passage, to the opposite extremity of the room, (when its heat having been exhausted) it should ascend perpendicularly and issue above the roof. (See i in Fig. 2, C C in Fig. 3.)

The following are some of the advantages of this double fireplace;

1. The fire, being made against brick, imparts to the air of the apartment no deleterious qualities which are produced by the common iron stove, but gives the pleasant heat of an open fire place.
2. None of the heat of the fuel will be lost, as the smoke-pipe may be extended far enough to communicate nearly all the heat contained in the smoke.
3. The current of air heated within the hollow-back, and constantly pouring into the room, will diffuse an agreeable heat throughout every part.
4. The pressure of the air of the room will be constantly outward, little cold will enter by cracks and windows, and the fire-place will have no tendency to smoke.

If instead of this fireplace, the common stove be adopted, it should be placed above the air-passage, which may be commanded by a valve or register in the floor, so as to admit or exclude air. The stove should be placed a little in front of the position assigned to the fireplace in Fig. 1.

6. **VENTILATION.**—As the best possible ventilator is an open fireplace a room warmed by such a fireplace as that just described may be