

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 the floor. He is not roasted by a seat too near 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 the change becoming 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 the room, the beginning and progress of such a change would be indicated, and could be guarded against.

7. SEATS AND DESKS FOR SCHOLARS.

In the construction and arrangement of the seats and desks of a school-room, due regard should be had to the convenience, comfort and health of those who are to occupy them. To secure these objects, they should be made for the young and not for grown persons, and of varying heights, for children of different ages, from four years and under, to sixteen and upwards. They should be adapted to each other and the purposes for which they will be used, such as writing and ciphering, so as to prevent any awkward, inconvenient or unhealthy positions of the limbs, chest or spine. They should be easy of access, so that every scholar can go to and from his seat and change his position, and the teacher can approach each scholar and give the required attention and instruction, without disturbing any other person than the one concerned. They should be so arranged as to facilitate habits of attention, take away all temptation and encouragement to violate the rules of the school on the part of any scholar, and admit of the constant and complete supervision of the whole school by the teacher.

Seats.—Each scholar should be furnished with a seat and desk properly adapted to each other, as to height and distance, and of varying heights, (the seats from 9½ inches to 15½, with desks to correspond) for children of different age or size. The seat should be so made, that the feet of every child when properly seated, can rest on the floor, and the upper and lower part of the leg form a right-angle at the knee; and the back, whether separated from, or forming part of the adjoining desk behind, should recline to correspond with the natural curves of the spine and the shoulders. The seat should be made, as far as possible, like a convenient chair.

Desks.—The desks for a single scholar should be, at least, two feet long (two and a half is better) by eighteen inches wide, with a shelf beneath for books, and an opening in the back side to receive a slate. The upper surface of the desk, except three or four inches of the most distant portion, should slope one inch in a foot. On the level portion, along the line of the slope, there should be a groove to prevent pens and pencils from rolling off, and an opening to receive an inkstand. The top of the inkstand should be on a level with the desk, and be covered by a metallic lid. The end pieces or supporters of the desk should be so made as to interfere as little as possible with sweeping.

If the desk is made to accommodate two scholars on one seat, a partition, extending from the floor for four or five inches above the surface of the desk, should separate them; and if possible they should belong to different classes, so that one will be in his seat while the other is at recitation.

Injurious Effects of Bad Seats and Desks.—The desk should not be removed from the seat, either in distance or height, so far as to require the body, the neck, or the chest to be bent forward in a constrained manner, or the elbow or shoulder blades to be

painfully elevated whenever the scholar is writing or ciphering. These last positions, to which so many children are forced by the badly constructed seats and desks of our ordinary school-houses, have led not unfrequently to distortions of the form, and particularly to spinal affections of the most distressing character. Such marked results are principally confined to females of delicate constitutions and studious and sedentary habits. While boys and young men engage in active exercise and sport during the recess and at the close of the school, and thus give relief to the overstrained and unnaturally applied muscles, and restore the spring or elasticity to the cushion-like substance which gives flexibility to the spinal column; girls exercise less in the open air, indulge but little in those sports which give variety of motions to the joints and muscles, and are confined to duties and studies which require their being seated out of school hours too much and too long at any one time.

The effects of the posture above described, in writing or ciphering, are increased and even induced by their being compelled to lean against the narrow edge of the writing desk, when their faces are turned towards the Teacher. This edge comes against the weakest portion of the back, and the inconvenience or pain forces those exposed to it to find relief by resting the elbows on the desk, and thus giving an unnatural elevation to the shoulder-blades—or if no support of the kind is provided, they lean against each other, support the back by closing the hands over the knee, or resort to some other awkward or unnatural position, which if long continued will cause more or less of structural deviation, amounting not unfrequently to positive disease or deformity.

Dr. Woodward, in a communication appended to Mr. Mann's Report, remarks:—"High and narrow seats are not only extremely uncomfortable for the young scholar, tending constantly to make him restless and noisy, disturbing his temper and preventing his attention to his books; but they have also a direct tendency to produce deformity of his limbs. As the limbs of children are pliable or flexible, they are made to grow out of shape by such awkward and unnatural positions.

"Seats without backs have an equally unfavorable influence upon the spinal column. If no rest is afforded the backs of children while seated, they almost necessarily assume a bent and crooked position. Such a position often assumed and long continued, tends to that deformity which has become extremely common with children in modern times; and leads to diseases of the spine in innumerable instances, especially with delicate female children."

Dr. J. V. C. Smith, of Boston, in his Anatomical Class Book, says:—"There is a radical defect in the seats of our school-rooms. Malformation of the bones, narrow chests, coughs ending in consumption and death in middle life, besides a multitude of minor ills, have often had their origin in the school-room." Again, "To these wretched articles, viz. badly constructed seats and writing desks, are we to look in some measure for the cause of so many distortions of the bones, spinal diseases, chronic affections now so prevalent throughout the country."

Dr. Warren in his admirable lecture before the American Institute of Instruction, which should be in the hand of every teacher and parent, says:—"In the course of my observation, I have been able to satisfy myself that about one half the young females brought up as they are at present, undergo some visible and obvious change of structure; that a considerable number are the subjects of great and permanent deviations, and that not a few entirely lose their health from the manner in which they are reared." And among the causes which lead to such mournful results, he enumerates the unnatural elevation of the right shoulder, the habit of bending the neck, and the stooping posture of the body when engaged in writing, or similar exercises at school.

Frequent change of Position necessary.—No position, if long continued, is more irksome or more unhealthy, or at least operates so insidiously, and yet directly to derange the circulation and other vital functions, as sitting, especially upright, or with the neck and chest bent forward. To young children, it is cruel in the extreme, and wars directly with all healthy and symmetrical growth, besides ruining the temper, and imparting a lasting distaste to study, the school-room, and the teacher.

Little children are made to suffer, and many of them permanently,