

ditions peremptorily exclude long seats or benches for several scholars, and desks of equal length; and that they absolutely demand a plan and construction conformable to anatomic and hygienic principles. Desks for more than two should never be allowed, and, except in advanced schools, where habits of self-control and self-reliance have been established, nothing can compensate for the loss of the advantages accruing from the use of single desks. The additional cost is not much while the gain in time, and in all the essentials of efficient study and teaching, is beyond computation. The oblique or diamond-shaped arrangement of desks is the best, in primary schools, whether they be single or double. By this arrangement, no two pupils can be immediately contiguous and opposite to each other, affording very much less opportunity for communication.

*Light.*—The question of light must next be considered. See that there is not too much, or too little, and that it is properly adjusted and equalized. Never compel a child to study with the glare of the sun in his face or on his book, or in the dimness of perpetual twilight, or under the painful distortion of vision caused by cross-lights. Neglect of the common principles of optics in providing and arranging the light in school-houses is a common evil, and one that often causes not only temporary discomfort, but serious and permanent injury to sight. The pupils should, if possible, face a dead wall—cross lights are painful and dangerous. The windows should be long, not reaching nearer to the floor than three or four feet, and should be provided with blinds, both for their own protection and for the regulation of light. Since scholars cannot change their position with the sun, nor with the transitions from bright to dark days, the supply of light should be adequate steady and uniform, all day, and every day. When practicable, the building should front south, with a dead wall to the north, and windows on the east and west. The light will then fall upon the pupil's right hand in the forenoon, and gradually pass around, till in the afternoon it rests upon his left hand, while during the whole day the eyes will be relieved, when lifted, by resting upon the dead wall in the north.

*Heat.*—How shall the school-house be warmed? This important matter will next require careful attention. The aim here should be to make the atmosphere of the whole room comfortable, to its remotest corners, and to keep it so from the first hour of school to the last. Remember, that at home and elsewhere, children can approach to or retire from the fire at pleasure, and thus regulate the degree of warmth for themselves; while in school they cannot do this—the teacher must do it, or cause it to be done, for them. But this is out of the question unless the means of regulation have been provided. The proper work of the school can not go on successfully if teachers and scholars are annoyed by either too much or too little heat. Neither shivering nor scorching is a condition of body compatible with successful mental exertion, or with a proper equanimity of temper; and yet in many of our school-houses, well arranged in other respects, the children, in the winter terms, vibrate between the extremes of heat and cold from morning till night, disqualified nearly all the time for calm and effective study. Then, too, there is great confusion and loss of time, caused by changing seats, moving to and from the fire, and a general feeling of uneasiness and discomfort. Such school-houses might almost as well be closed for the cold term, so far as profitable teaching and learning is concerned; and when the effect upon the health, of young children especially, is considered, the matter is sometimes of so grave a character as properly to invite the interposition of boards of health, or other competent civic authorities. Taking all these interests into the account, the duty of providing suitable warming apparatus is most imperative—it can not cost too much. And the best is usually, in the long run, the cheapest. Good furnaces, with registers, should be used if possible. Of these there are now several new and superior kinds, which are not only immeasurably better than ordinary stoves, but much more economical. If stoves must be used, spare no expense to have them so constructed and placed as to secure a steady and uniform warmth throughout the room.

*Ventilation.*—But it is not enough to see that your school-house is well lighted and warmed; it also must be well ventilated. The public seems slow to perceive or to allow the baneful effects of impure air upon the health of children; and, hence, upon the efficiency of the schools. It would be different if the actual truth, the full extent of the evil, were known. No hygienic or scientific fact has been more surely demonstrated than that the continued breathing of impure air is a prolific cause of dangerous pulmonary and other diseases, especially in young children. All know the depressing, enervating effects of close, stifling air. The physical and mental powers speedily grow languid and droop under its influence. No one can be mistaken in the symptoms: the face flushes, the head burns, the blood becomes feverish, the eyes assume an unnatural brightness, and in extreme cases vertigo, nausea and faint-

ness ensue. Proper mental application is impossible under such physical conditions, and to require it would be cruelty. Uneasiness, restlessness, irritability, loss of the power of attention, accompany the progress of atmospheric contamination in the school-room, as surely as the obscuration and final stupification of the intellect attend and follow the successive stages of inebriation. Mental activity and energy are as impossible when the lungs and blood are poisoned with foul air as when the stomach and brain are on fire with alcohol. Great progress has been made toward a better knowledge and practice in regard to school-house ventilation; but the evil still exists to an alarming extent in our State, affording every year a terribly abundant harvest for the reaper of death. When disease invades our herds, state legislatures and national conventions make haste to investigate the cause and remedy the scourge; and they do well—gigantic pecuniary interests are involved—and yet, consumption no more surely visits ill-ventilated and over-crowded stock-yards and cattle-trains than it does our school-houses when subject to the same conditions. Keen-eyed self-interest watches the progress and ravages of the cattle-plague, counts the beasts it destroys, and with a loud voice tells the public of its loss; but who notes the insidious forms of disease which makes victims of our children in the very places where physical education, as well as intellectual, should be realized? or who counts the little graves, or tells the people of their danger? Many a parent lays his little darling in the dust, and, in desolation of soul, muses upon the ways of Providence, when the stifling terrors of the place which for weary months or years had been silently sapping the pillars of the little one's life, should have suggested more earthly themes of meditation to the sorrowing father. There is no excuse for unventilated or badly-ventilated school-houses. Other school accommodations and comforts are more or less expensive; this is not. Every school-house, large or small, humble or elegant, costly or cheap, may have a plentiful supply of pure fresh air, almost without money and without price. If provided for in the original plan of the building, good ventilation may be had with very little, if any, additional cost; and even in most existing buildings the consequences of neglect upon this vital point may be remedied, partially at least, with but a small outlay. But, be the cost what it may, pure air is a necessity of health, both mental and physical, and no board of school directors in the State should be allowed to neglect it with impunity.

*Blackboards.*—Again, no school-room can properly be said to be furnished, without blackboards; they are a necessity. A good teacher would rather dispense with all text-books than with his blackboards. A zone of blackboards, of width and height from the floor to correspond with the grade of scholars using it, should extend continuously around the room. An ample supply of blackboard surface duplicates and reduplicates the amount of time that can be given to the effective instruction of each class; it affords the means of visible illustration and analysis, now demanded by the best methods of teaching the elements of nearly every science, and indispensable in elementary instruction, object lessons, etc.; it affords a pleasing variety to the school, and promotes health by allowing frequent changes of posture, from sitting to standing. No school-room, it is repeated, is prepared for its work without an ample supply of it.

*Miscellaneous.*—Of the many minor points that should receive attention from those having the oversight of new school-houses, the proper limits of this report will not allow me to speak in detail. I will barely enumerate a few of them. The teacher's platform should be at the front, or entrance-side of the building, for convenience in speaking with pupils as they enter or retire, conferring with visitors, securing order in entries, halls, etc. There should be a convenient wood or coal-house; a clothes-room and wash-room, with the necessary accompaniments to secure neatness and cleanliness of person; a basement, or other suitable place, for use, in cold or stormy weather, during intermission and recesses; a good clock to regulate the time and secure habits of punctuality. There are, finally, other necessary appurtenances, in devising and furnishing which whatever is not conformable to the strictest requirements of modesty, propriety and delicacy should be inexorably forbidden. It is most lamentable to think of the many shameful departures from these conditions in the private arrangements of district school-houses. As already stated, the proportion of new school-houses which, in the characteristics that have now been specified or hinted at, are all that could be desired is constantly and rapidly increasing, and never so rapidly as during the past two years. It is to contribute toward the early extirpation of all remaining school-house abominations, and the complete conquest of better adaptation and purer taste in school architecture, that a few of the common essentials have thus been again brought to notice, and their importance urged.—From report of Hon. N. Bateman, State Superintendent of Schools for Illinois.