

not all relish for those "feasts of reason" to be found in the works of our best authors.—*Journal of the Board of Arts and Manufactures for Upper Canada.*

2. LOOK TO THE CONDITION OF THE SCHOOL HOUSE.

Teachers and parents should make it a duty to see that the circumstances under which children study are such as shall leave a happy impression upon their minds. Young scholars will gradually and unconsciously become like what they most look upon. Little children are wonderfully susceptible for good or evil.

2. Shabby school houses induce slovenly habits. Unswept floors indicate cobwebby brains. Ill-made benches not only warp and dwarf the body, but, by reflex influence, the mind as well. Why are children so often discouraged and disgusted at school. Because the school house seems to be a prison, and the furniture as instruments of torture.

3. No matter how old or unfashionable your school house—keep it clean. Hide its sombre walls with pictures, embower its weather beaten exterior with flower vines, and decorate its yards with shrubbery. Then the birds will come singing welcome to our children. They will be enchained as if by sweet magic, and their minds will be awakened to learning and virtuous instruction, with links of gold brightening, strengthening, for ever and ever.

V. Papers on the School System and Law.

1. SCHOOL SYSTEM OF UPPER CANADA.

The Honourable Chief Justice Draper, in his recent reply to the Warden and Councillors of the County of Norfolk, at the inauguration of the Court House, thus refers to the success of the public School System of Canada: "All honour to the brave men who, with willing hands and brave hearts, have changed the wilderness into a fruitful field, and, by their example, patriotism, and strict adherence to principle, have left to their descendants a legacy of highborn freedom, moral power and intellectual wealth, which any people might be proud to boast of, and ambitious to possess. He could not forget that the soil of "glorious old Norfolk" was, educationally considered, sacred soil. Several of the sons of Norfolk had earned for themselves a proud position in the councils of their country, while one in particular had woven an imperishable wreath of fame about his forehead as the author of the Common School System of Canada, the equal of which was not to be found in any land or any country. Nor was it the least proud of his recollections that when in political life, thirty years ago, it was his pleasurable duty to introduce into the Legislature of Canada, at the instance of its originator, and framed by him, the bill which was the foundation of that great code of common school education which, in the annals of history, will render Dr. Ryerson's name immortal. Other names and other deeds will fade from memory, but that which pertains to intellectual growth is never lost.—*Norfolk Reformer.*

2. RECENT DECISIONS OF THE COURT OF QUEEN'S BENCH IN REGARD TO SCHOOL MATTERS.

1. *Neglect of city corporation to provide money—Application for mandamus.*—The Consol. Stat. U. C., ch. 64, sec. 79, subsec. 11, which requires municipal corporations to provide the sums required by school trustees "in the manner desired" by them, authorises the trustees to direct at what times the money shall be paid, but not how it is to be procured. The court therefore refused a mandamus to levy a rate, but granted it to provide the money as desired. Where it appeared on affidavit that steps had been taken to provide the sum required, a mandamus nisi was nevertheless granted. The court declined, on the motion for the writ, to consider objections to certain items in the trustees' estimate, as these could form no reason for withholding the whole. *In re Board of School Trustees of the City of Toronto and the Corporation of the City of Toronto*, Q. B. R. xxiii. 203.

2. *Application for mandamus to levy rate—Form of estimate—Waiver of its insufficiency—Proof of by-laws.*—The school trustees of a town applied for a mandamus to the corporation to pay over all monies collected for the erection of school buildings under a by-law of the 21st of August, and to collect the sum remaining; or to provide for the trustees \$1000. It appeared that the trustees had passed a resolution to apply to the corporation for \$3000 for the erection of school buildings, upon which a by-law was passed to raise that sum. This by-law was repealed and another passed to raise the necessary sum, but it was defective. *Held*, that though the resolution of the trustees was not a sufficient estimate, the objection was cured by the corporation having passed a by law in

pursuance of it; but that as that by-law was invalid, the court could not enforce any thing arising under it by mandamus; *Held*, also, that the estimate being insufficient a mandamus could not be granted to provide the sum mentioned in it, as asked by the second alternative of the application.

Two copies of by-laws put in not being proved under sec. 190 of the Municipal Act could not be read, but the same by-laws were set out at length in affidavits filed, the deponent swearing that a by-law was passed by the town council "in words following," which was held sufficient for the purposes of this application. Sec. 190 provides for the proof of by laws in general cases, sec. 195 for the special case of an application to quash. *In re the Board of School Trustees of the Town of Sandwich, and the Corporation of Sandwich*, Q. B. R. xxiii., 639.

3. *Colored people—Separate schools.*—*Held*, that upon the facts apparent on the affidavits in this case, either no separate school extending to the applicant had been established for colored persons within the statute, or it had been discontinued, and that he was therefore entitled to a mandamus to the trustees to admit his daughter to the common school.

The erection of a separate school suspends but does not annul the rights of those for whom it was established as regards the common schools. When it is no longer kept up these rights revive. *In re George Stewart and the Trustees of School Section No. 8 of the Township of Sandwich East, in the County of Essex*, Q. B. R., xxiii., 634.

VI. Papers on Practical Science.

1. HOW WE KEEP OURSELVES WARM.

Take a little bit of good fresh lime, such as they make mortar with, and put it into a bottle with a good lot of water; shake it up well, and then let it stand till the water is left clear. A small portion of the lime will remain dissolved in the water. We shall call this water, then, lime-water. Now get a tumbler, and pour a little of this lime-water into it, roll it round so that all the sides may be moistened, and then hold it for a minute, mouth downwards, over a clear fire free from smoke. On turning your tumbler up again, you will find that the few drops of lime water that run together in the bottom, are no longer clear, but milky. The reason is this: the lime is very fond of that carbonic acid, which we saw last week coal and coke, and such like, burn away into; and when it gets hold of this carbonic acid, it turns into chalk, or carbonate of lime, which, as it will not dissolve in the water, makes it milky. You will get the same effect if you hold your tumbler, moistened with lime-water, over a gas-flame, or a candle, because here, too, carbonic acid is being produced by the burning. This turning lime water milky may be used, then, as a test for carbonic acid; we can tell whether there is carbonic acid coming away from any burning substance, by seeing whether the smoke that it produces will make lime-water milky. The carbonic acid is formed, it will be remembered, by the carbon of the coals or coke, or other fuel, uniting with the oxygen of the air; and this union or combination is the cause of the heat.

Now let us try another experiment. Take your tumbler, wipe it out quite dry, and then hold it for a moment, mouth downwards, over the flame of a candle. You will find the inside instantly covered with moisture. If you had any means of keeping the tumbler cold, this water would go on accumulating till it ran down the side in drops. Get a bit of ice, or some snow, and put it into a good sized spoon (silver is best), and hold this over the candle flame. The ice will keep the spoon cold, and you will very soon see a great drop of water hanging underneath the spoon. Hold it away from the flame, and nothing of the kind takes place. This water, then, has clearly come from the flame; yet there is no water in the candle. It must be a product of the candle's burning, one of the things that the candle has turned into by uniting with the oxygen of the air.—You may get the same effect by holding your tumbler or spoon over a gas-flame, or over the bright flame of a coal fire. Hold, them, however, over a coke or charcoal fire, or a cool one when it is burning quite clear, and no water will make its appearance. These things turn into carbonic acid only; coal gas, fatty matters, and such like, turn into carbonic acid and water. Here is the reason. In coke, or charcoal, or cinders, there is only one element to be burnt—carbon; in coal-gas and candles, there are two—carbon and hydrogen. Now, water, as we noticed last week, is a compound of hydrogen and oxygen; when, therefore, anything is burnt which contains hydrogen, it must burn into water. It is because these things—such as coal-gas, or tallow, or wax—contains hydrogen as well as carbon, that they burn with a flame, and do not merely glow away like coke or charcoal, which are all carbon. Hydrogen, like carbon, produces a great deal of heat when it is united with the oxygen of the air.