

in the silent, unseen influences, are serving our country and our God, and at the same time learning the useful lesson of how to labour and to wait.

5. ELEMENTARY SCIENCE IN OUR SCHOOLS.

There is not an inventor or mechanic who does not suffer for want of a good elementary training in mathematics and the sciences ; and yet, notwithstanding this notorious fact, it seems impossible to introduce such a reform in our school education as will successfully remedy the evil. The chief difficulty in the way of reform is in the supply of teachers. Our training schools have raised up teachers whose minds run in the same groove, and who have no mental switch by which they can turn off on to a new track. The custom of learning everything by rote and reciting like a parrot, has become so imbedded in our system of education, that it seems almost impossible to find any explosive sufficiently active to blow it up, and no jack-screw or hydraulic ram is powerful enough to move our Boards of Education from their firm foundations. But as the continued dropping of water may wear away a stone, we propose to keep adding here a little and there a little, until some impression has been made and some good has been accomplished. We do not propose to wait until the pupil, by droning over dry facts and abstract principals, has acquired a disgust for every branch of knowledge, but think it wiser to pursue the natural method, and begin when the mind is anxiously inquiring into the cause of things, and the boy takes his watch apart to see what makes it go. The old-fashioned way was to give the boy a sound flogging, to take the watch away, and make him learn by rote the principal of compensating balance wheels. "My dear boy," says the teacher, "the duration of an oscillation depends on the radius of the wheel, the mass of its rim and the strength of the spring ;" which of course, is very intelligible to the lad, and would enable him at once to construct a new watch.

Common sense would dictate the propriety of showing up the parts of a watch, and by degrees expounding the principals upon which the construction is based. Theory and practice is what we want, and not either of them alone. Technical instruction alone will not result in the advancement of science, but that, together with a thorough training in the phenomena of nature, will lead to progress.—*California Teacher.*

6. PRACTICAL LIFE EDUCATION.

The effect of the Vienna Exhibition upon the minds of many of the leading men in England has been to convince them that technical education is a national want. They find that in many ways the continental artisan is outstripping his English competitor, not because he is more skilful, but for the reason that he has been better instructed. In mere book learning he may not have much advantage, but his superiority is seen in having been made acquainted with science as applied to arts and manufactures. Owing to a combination of causes England was able to obtain a great start in the prevailing industrial life. She was first with railways, steamships, and textile machinery, and was able to far out-distance any competitors. But now other peoples are fast creeping up behind her, and even threatening to excel in many important particulars. The Society for the promotion of Scientific Industry has been formed with the view of enabling the artisan classes to improve themselves, by placing before them the best information concerning those matters that more especially concern them, and offering prizes for industrial improvements whether in machinery or in processes, or in the use of new raw materials. Agents are to be sent out to report upon industrial developments in other countries, and exhibitions are to be held, not as mere shows and for superficial observation, but for the purpose of critical examination. The great problem of the day is how to make every man's labour more productive than before. This can only be done through a thorough acquaintance with labour-saving machinery, which requires the exercise of a higher kind of intelligence than mere handicraft. The agricultural operations of the period and the use of the machinery necessary to them, rest upon a very different plane than formerly. In a recent letter to the *Times*, Mr. Caird, the agriculturist, stated that, notwithstanding an unusual scarcity of farming labour, the harvest of last year was got in without any unusual difficulty, the deficiency of hands having been made up by the increased use of machinery. And it is anticipated in England, that by greater attention to grazing and labour-saving machinery the threatened wholesale emigration will not inflict so great a blow as some doctrinaires have anticipated. However that may be, we see that every new mill, every iron work, every locomotive of the present day shows improvements on those which were made twenty years ago. But if the modern system of doing every-

thing by mechanism spares human muscles, it makes a larger demand than before on human brains. Taking charge of a locomotive is a more complicated business than driving a cart, and an Armstrong gun requires a good deal more looking after than an old 24-pounder of Nelson's time. Therefore, as the labourer develops into the skilled artisan, he requires technical training, instead of the simple old rule of thumb. The late Government of Mr. Sandfield Macdonald appreciated the necessity of technical education in Canada, by means of which our young men might have opportunities of a practical kind, so liberally enjoyed by the youth of continental Europe. Yet it is none the less certain, that if Canada is to be "First" she must not neglect those intellectual aids to progress which are forcing themselves upon the attention of the mother country. Mere verbal instruction is not sufficient, and education which stops short at the "third book," or is even carried up into the mysteries of Greek roots is not all that is needed. In a practical country, education should have a practical tendency, or, at any rate those that wish to enhance their knowledge in the direction of every day life affairs, should have as much facility for doing so as those that wish to ascend into classical regions. The information which such instruction would convey would prove of the highest benefit, and who shall say that while digging in the mine of knowledge some bright object might not be struck which would reflect untold benefits upon the country. If the long list of learned men in England is run over, which of them is seen to have have conferred one small fraction of benefit upon the people that an Arkwright did? Of all the political partizans, which has been able to do as much as Stephenson? What warrior can compare the results of his labours to those of Professor Morse, or even in a humble way to those of Elias Howe? The inventors of the reaping machine, of the thresher, of the winnowers, and all the multifarious developments of agricultural machinery have been greater benefactors to mankind than the Pundits of many nations, because they have touched that which concerns the every day life of us all, and have made it easier and more certain.—*London Free Press.*

7. SUNDAY-SCHOOL SUPERINTENDENTS.

Distressing : a fussy superintendent.

Dear *Superintendent*, don't be *super-cilious* or *super-sensitive*.

Don't *buy* scholars from other schools. It's a very mean business.

"But what if they don't re-elect me as superintendent at the next election?" Resign before, or be resigned afterward.

The "model superintendent" has been packed away in the Patent Office as being rare, un-reproducible, and impracticable—so superior an article that he would be useless.

Remember that even though you are a superintendent you are not infallible.

It is not the bell, but the man who strikes it, who commands respect.

One of the best assistant-superintendents we know of is FRESH AIR.

Know when to stop talking, and your school will never wish you to stop.

We plead for more profound and tender piety in superintendents. You may have a large school without it. You may have a good picnic without it. You may have order without it. You may even have well-learned lessons without it. But the truest, highest, most Christian-like success you cannot have unless you have more of Christ in your heart.—*Dr. Eggleston.*

Of a superintendent we know it was once quite wittily, if not truthfully, said, if he should only keep still himself for one Sunday, his scholars would be so surprised that they would not be able to make any noise for a month.—*Erwin House.*

One thing superintendents should cultivate—and it is a difficult one, too—that is, to be willing to *decrease*. We have only one record in the Bible of a man who could say, "He must increase, but I must decrease." Hard as it is, we must learn gracefully and with good spirit to step aside and give place to another better qualified, when such a one is found.—*Henry P. Haven, in Dr. Vincent's Sunday-School Journal.*

He was a wise and understanding teacher who confessed this bit of experience : "I began teaching by thinking I was conferring a great honour upon somebody. I ended by feeling that a great honour had been conferred upon me. For in teaching others I myself learned a still better way, and found out my great ignorance of many things. My real success as a teacher dated from the time I found out that my class was of more importance to me than I was to my class."