

aid, &c., in keeping up the roads, millions more are paid, going to the farmers, the merchants, and the mechanic. The fuel alone, estimated as wood in cords, requires a yearly outlay of about six millions of dollars; and at fifty cords to the acre it would require 60,000 acres each year to supply the demand—nearly three six-mile square townships. Part of the fuel, however, is coal; but agriculture feeds the miners and grows the materials to clothe them and to light the underground chambers where they work. It is difficult to conceive of the magnitude of this railroad system. The track laid in the United States is more than long enough to reach round the globe. You might imagine it an iron equator belting the earth, with enough left over for a lateral branch to the North Pole! Or, you may imagine the diurnal rotation of the earth checked for a moment, and this length of railroad set up on end, pointing towards the moon, and it would reach one eighth of the distance to that luminary! The 6,000 locomotives, end to end, would reach fifty miles—say from St. Louis to South Point; and the 5,000 passenger cars would extend to Osage. The 80,000 freight cars, end to end, would reach about six hundred miles—say from St. Louis to Independence and back again. Coupled in a line the locomotives and cars of all kinds would more than reach from St. Louis to Pittsburgh; and if they were all moved forward in procession, at the rate of 60 miles an hour—faster than the average flight of birds—it would require a long summer day for the train to pass any one! What a wondrous and sublime mass of mechanical achievement! and all the creation of about thirty-five years! in a country where different sections now threaten to overturn the Government! What are the Pyramids, the Appian Way, of the Chinese Wall in comparison?

"Suppose these 6,000 locomotives all assembled in a field—their black bodies covering about sixty acres of ground, and then—all to whistle at once! What an anthem to civilization! the *Te Deum* of labour, art, and science! the psalm of progress! But the interesting facts to agriculture are these: that the railroads carry crops to market, and bring merchandise in return; that they economize the time of the people by rapid journeys; and that the human force operating the vast concern must have food and raiment supplied by agriculture. With the extension of agriculture by new and enlarged farms, and better culture, these roads will increase; new lines, new tracks, more tracks, more cars, and a larger number of employees, will inevitably follow. Consumption of farm products will be immensely increased. For transporting facilities create markets; and they not only insure to the farmer better prices for what he sells, but bring to him cheaper what he buys."—*Amer. R. R. Review*.

6. RAILWAYS IN THE UNITED KINGDOM.

Ten thousand four hundred and forty-three miles of railway were open in the United Kingdom of Great Britain at the close of last year. One hundred and sixty-three millions four hundred and thirty-five thousand six hundred and seventy-eight passengers, besides forty-seven thousand eight hundred and ninety-four holders of season tickets, travelled by railway during the course of the year, giving an average of nearly six journeys for every person in the kingdom.

V. Papers on Practical Education.

1. PRIZES—APPROVED MODE OF SCHOOL EXAMINATION.

A person writes to ask which is the best and fairest mode of awarding School prizes. His query having been referred to the Head Master of the U. C. Normal School for reply, Mr. Robertson gives the following as the result of his experience in such matters. It is the plan adopted in the Normal and Model Schools:—

Prizes or Premiums are best decided by written examinations.

A series of questions on the subject on hand is drawn up and a copy given to each pupil, a sufficient time allowed for answering, and the answer written out in presence of the examiner. The questions are numbered and a numerical value affixed to each. In Arithmetic, Algebra and Geometry, any mistake in an answer deprives it of any value; in other subjects, if the value of the question be (suppose) 8, a partial answer may receive some lower amount, say 3, 5, &c., according to its merits. Let the total values of all the questions amount to some specified sum (usually 100) then the total value of all the answers in any paper will indicate the standing of its writer; complete answers to all the questions will amount to 100 and the highest total will mark the best answer.

A prize in reading may best be awarded by the examiner hearing all read and selecting a few best, then the best of these, &c.

The prize for good conduct may be awarded on the recommendation of the teacher based on his knowledge of the pupils during a

given period. This will be aided materially by the practice of keeping (as should always be done) a careful record of the conduct of each pupil as regards *demerit* marks for lateness, absence or any other neglect of duty.

2. PRESENT INCOMPLETE EXAMINATION OF TEACHERS.

Besides the text book examination, we submit the propriety of something additional. I am aware there is no law enabling the examiner to enforce answers in the department proposed; nor would we insist upon answers where reluctance was obvious—yet we propose the asking of these questions, believing the very asking in many cases would accomplish the end proposed. Among others we propose the following:—

1. Do you think the teacher ought ever to allow himself to use profane or vulgar language either in the presence of his pupils or elsewhere?
2. Should the teacher use tobacco in the school room?
3. Should the teacher always strive to present, in his own person and manners, a model for his pupils?
4. Do you attend the Institutes and Associations (if there be any,) of your County?
5. Do you read any works on the Science of Teaching?
6. Do you read any School or Educational Journals?

We suggest that the mere presentation of these and kindred questions, together with the accompanying remarks of the examiners, will do much toward the end proposed. If any examiner is at a loss as to the *how* of applying these questions, we would suggest the writing of them on the black board, then their reading by the examiner, then the vote by the teachers as a body, a visible vote, so that the teachers might learn the sentiments of their co-labourers.

We submit further, the propriety, yea the necessity, of examining the teacher, in some degree, in the Theory of Teaching. On the *how* to do this, we are not yet quite clear. We are however clear on the sequences; first of which would be the begetting of the conviction in the minds of teachers and patrons, that there is a science in teaching.

Secondly, It would lop, or tend to lop from the profession, the Stepping-Stone-Teachers, viz., those who make teaching a stepping-stone to the other professions. They in general have no *theory of teaching*, hence would not get through this department very safely. This might sometimes cut off the worthy, for which we should be sorry, but usually, the unworthy, a result which both the profession and cause demand.

Without elaborating this last point, we may say that we honestly believe that both the profession and the cause of education demand such examinations. Further, it is our firm belief, that only a few years will elapse until this department will form an essential element in every examination.

Examiners, I am aware there is a very slight difficulty with some of you in carrying out this plan, namely—you are not practical teachers yourselves, hence not very clear in the Science of Teaching. It strikes us, that this will be somewhat in the way, but of course you can put the blame on the County Commissioners who made the appointment. We know one county in which the teachers propose to examine the examiner, and the presumption is, that he will have to "stand from under." It is a pity that County Commissioners will subject their friends to such trials.—H., in *Indiana S. Journal*.

3. DISCIPLINE OUT OF SCHOOL.

In the Vermont Supreme Court it was decided, that though a schoolmaster has in general no right to punish a pupil for misconduct committed after the dismissal of school for the day, and the return of the pupil to his home, yet he may, on the pupil's return to school, punish him for any misbehaviour, though committed out of school, which has a direct and immediate tendency to injure the school, and subvert the master's authority.

4. FOUR GOOD HABITS FOR TEACHERS.

There are four good habits—punctuality, accuracy, steadiness, and despatch. Without the first of these time is wasted; without the second, mistakes the most hurtful to our own credit and interest, and that of others may be committed; without the third nothing can be well done; and without the fourth, opportunities of great advantage are lost which it is impossible to recall.

5. APPRECIATION OF A SCHOOL LIBRARY IN MINTO.

A gentleman in Minto, in a recent letter to the Educational Department, writes as follows: "Annexed is a list of books which the School Trustees of School Section No. 8, Minto, will feel