between teacher and employer, the better. Every teacher should be at liberty to leave his position for a more responsible and lucrative one whenever he can, and every Board of Trustees should feel bound to replace an inferior teacher with a superior one whenever they can. Not all changes of teachers are undesirable, but only those which leave the school no better than they found it. The teacher of spirit asks only a fair field and free competition.

Special Articles,

PUBLIC SCHOOL INSPECTOR'S OFFICE.

Ancaster, April 18th, 1885.

To the Trustees, Teachers, and Pupils of the Public Schools of Wentworth:

Last year I ventured to suggest that the first day of May should be set apart and celebrated in our Public Schools as "Arbor Day." The very hearty manner in which that suggestion was acted upon convinced me that this was a step in the right direction, and that the people were both ready and willing to improve and adorn the school grounds. From the most reliable information that I can obtain there were planted on that day over 1500 shade and ornamental trees, besides the equally important work of removing the rubbish that had accumulated during the winter. This is a noble work and worthy of all encouragement. To secure united action among Trustees, Teachers and Pupils, I would recommend Trustee Boards to set apart Friday, the first day of May, as "Arbor Day," and join with the teachers and pupils, not only in planting suitable shade trees, but in seeing that the grounds are properly cleaned up, and that ashes, sticks of wood, and other uncomely objects which have accumulated during the winter be removed from the premises. If the fences, or gates, or outhouses need repairing let it be promptly attended to, for I am fully persuaded that every effort in the direction of improving the appearance of the school premises will have a beneficial influence upon the pupils. It is perhaps unnecessary to refer to the healthfulness of clean premises, as I presume every person is aware that filth of every kind is not only unsightly and repulsive, but positively injurious. I therefore trust that the suggestions I have made will be acted upon in every section, and that May-Day will be spent in making our School grounds attractive. I have a few words to say to the boys and girls attending our schools, for I am very anxious to have them take a part in this good work. In a few years you will bid farewell to schools, and enter upon the active duties of life. When at some future day you re-visit the "Old Schoolhouse," nothing will call up more pleasant memories than to know that you assisted in planting some of the beautiful shade trees under which another generation of school children will be enjoying themselves. You will look back to the time when you played upon these grounds, and will live over again in memory those pleasant days of childhood. Let every boy and girl then do something to beautify the school ground and make school life attractive, and you will never regret the time and labor spent in this way. Lay your books aside for that day and enter heartily, as I believe you will, into the spirit of the occasion. With united effort much can be done, and I look forward with pleasure to the time when every school ground will have its quota of shade trees; and flower beds carefully attended will be the rule and not the exception. In conclusion, permit me to say to the teachers that your position in the section calls for your active co-operation, and I trust each one will be found a leader in this good work.

Yours faithfully,

J. H. SMITH, P. S. Inspector, Wentworth.

Prize Competition.

Errata.—In the Arithmetical problems in last week's issue of the Journal, the following typographical errors occur:—

In No. 9, £18 11s. 6d., should read £18 10s. 6d.
" 17. Ans. $3\frac{3}{5}$ days, should read, ans. $3\frac{6}{13}$ days.
" 5. Ans. $\frac{4}{5} \div \frac{9}{16} \times \frac{1}{4}$, " $\frac{3}{8} \div \frac{9}{16} \times \frac{1}{4}$.
and Ans. $5\frac{1}{3}\frac{3}{4}$.

In No. 1. Ans. $= 26$.

ARITHMETICAL PROBLEMS.

FOR CANADA SCHOOL JOURNAL COMPETITION PRIZES—FOURTH CLASS. —SIGNED NO. 33, A.

1. Find value of a field (square) that a wheel, 22 feet in circumference, makes 4,400 revolutions, in passing around, at $12 per acre.
Solution.—$\frac{22}{7} \times \frac{4400}{1} / \frac{1}{4} \times \frac{22}{7} \times \frac{4400}{1} \times \frac{1}{4} \times \frac{1}{10} \times \frac{1}{12} = \$161,333\frac{1}{3}$.

2. A spent $880 in purchasing equal quantities of tea at 75 cent and coffee at 35 cents per lb. He sells the tea at 85 cents, and coffee at 45 cents per lb., find his net gains.
Solution.—$\frac{880}{75+35} \times 100 = 800 = $ No. of lbs. of each bought the gains.

10 cents per lb. on the tea, and 5 cents on the coffee = 15 cents on a lb. of each, or $120 on 800 lbs. of each.
or $\frac{880}{75+35} \times \frac{100}{1} \times \frac{115}{100} = \$120$.

3. A does $\frac{2}{3}$ thirds of a work in 8 days, B does as much in 18 days as A can in 12 days. C does as much in 14 days as A and B do in 8 days. In what time will B and C (separately) do a work that A does in 60 days?
Solution.—$\frac{2}{3}$ in 8, or whole in 12 days by A, and 12 days as = 18 days B's, therefore B can do the whole in 18. Again A does $\frac{1}{12}$ in one day, or $\frac{8}{12}$ in 8 days similarly. B does $\frac{1}{18}$, then $\frac{8}{12} \times \frac{8}{18} = $ part C does in 14 days, or $\frac{10}{9}$ in 14, or $\frac{8}{9}$ in $12\frac{3}{5}$ days, and $\frac{48}{12} \times \frac{18}{1} = 90$ days B's, and $\frac{60}{9} \times 12\frac{3}{5} = 63$ days for C's.

4. If it cost $11.75 to burnish a plate, $\frac{3}{4}$ of an inch thick, at 25 cents per square foot; find its weight. Sp. gr. 7 ($7 \times 62\frac{1}{2}$ lbs.)
Solution. $\frac{\$11.75}{225} \times \frac{3}{4} \times \frac{7}{12} \times \frac{7}{1} \times 1\frac{3}{4} = 1,285\frac{5}{12}$ lbs.

5. When wheat is selling at $2 per bushel, the 4 lb loaf costs 17 cents. What should I pay for 3 tons 6 cwt. 2 qrs. 10 lbs. wheat, when 75 lbs. of bread cost 3.37\frac{1}{2}$.
Solution.—4 lbs. cost 17 cents, 1 lb = $\frac{17}{4}$ cents; again 75 lbs. cost 3.37\frac{1}{2}$, the 1 = 4$\frac{1}{2}$ cts., therefore, prices are as 17 : 18 and $\frac{202}{18} \times \frac{18}{1} = \$2.11\frac{13}{18}$ per bushel, and 3 tons 6 cwt. 2 qrs. 10 lbs = 111 bushels, and $111 \times \$2.11\frac{13}{18} = \$235.05\frac{15}{17}$.

6. If $\frac{1}{10}$ of a lb. of tea cost as much as $3\frac{3}{4}$ lbs. of wheat, and 40 lbs. of each cost $90; find value of 9 bushels 20 lbs. of wheat and 10 lbs. of tea.
Solution. $\frac{3}{10}$ lbs. of tea = $\frac{33}{4}$ lbs. of wheat = $\frac{110}{4}$ lbs. of tea = 44 lbs. of wheat, therefore, 40 lbs. of tea × 40 lbs. of wheat = 1800 lbs. of wheat = 30 bushels, and 30 bushels cost $90, 1 bushel will cost $3, and 9$\frac{1}{3}$ bushels = $28; again 60 lbs. of wheat cost 300 cents, 1 lb. 5 cents, and 44 lbs. = $2.20, price of 1 lb. tea, then 1 lb. costs $2.20 — 10 lbs. = $22 and 28 — 22 = $50.

7. A rows down a stream in 3 hours 30 minutes, and back in 5 hours 10 minutes. If the rate of the stream is 2 miles per hour. In what time, at the same rate of rowing, will he go from H to K, a distance of 120 miles in still water.
Solution.—The stream helps him 2 miles in 3, or 7 miles in 8$\frac{1}{2}$ hours. In coming back the stream will retard him 7 miles, therefore, 14 miles is rowed in (5 hours 10 minutes—3 hours 30 minutes) and 43$\frac{3}{4}$ miles in 5 hours 10 minutes. Again 5 hours 10 minutes + 3 hours 30 minutes ÷ 2 = 4 hours 20 minutes = time required to row 43$\frac{3}{4}$ miles in still water; then 43$\frac{3}{4}$ miles in 4 hours 20 minutes, or 120 miles in 11 hours 58 minutes 53$\frac{11}{17}$ seconds.

8. If 3 men do $\frac{2}{3}$ as much in 5 days as 8 women can in three days, and 5 women can earn as much as 13 children in 1 day. In how many days will 4 men earn as much as 12 children in 60 days.
Solution.—If 3 men do $\frac{2}{3}$ in 5 days, 5 men will do $\frac{2}{3}$ in 7$\frac{1}{2}$ days. 1 man will do $\frac{2}{3}$ in 22$\frac{1}{2}$ days; again 8 women do the whole in 3 days, or 1 woman in 24 days; then a man : woman, as 22$\frac{1}{2}$: 24 or 15 : 16, and 5 men, 13 children, 16 women =