

ON SUBTRACTION.

When a person—say, a store clerk—is giving change, does he perform an exercise of subtraction mentally to ascertain the right amount? Suppose he has to make change out of a two dollar bill for a purchase of 37 cents' worth, does he say 37 out of two hundred leaves 163? No, he performs an exercise in addition to equalize the amount of sales and the change with the sum tendered in payment, and will put down 3 cents, saying 37 (cost of sales) and 3 make 40; puts down 10 cents more to make 50 cents; 50 cents additional to make one dollar, and one dollar more to make up the two dollars. This is done rapidly and perhaps with more accuracy than the mental subtraction process. Subtraction is, therefore, performed by addition; that is, it is really complementary addition. Now, is it needful to teach our little ones the mysteries of borrowing and carrying, and burden their immature intellects with the herculean effort to take 8 out 15? Already in their addition exercises they have learned that 8 and 7 make 15, and can tell how much must be added to 8 to make 15, or to 6 to make 10, etc. They have been instructed to carry one for numbers from 10 to 19 inclusive, and the apparently questionable honesty of borrowing 10 and carrying back only 1 instead, is obviated by a consistency between operations in the direct addition and the complementary. Thus:

Find the difference between 8635 and 4321.

8635 1 and what make 5? 4 (put down); 2 and what
4321 make 3? 1 (put down), and so on.
4314

Find the difference between 8635 and 4739.

8635 9 and what make 5? 9 is more than 5; 9 and what
4739 make 15? 6 (down); carry 1; 3+1=4, and what
3896 make 13? 9 (down), and so forth.

In Long Division this process will save time and needless figures, for the multiplication of the divisor and complementary addition of the product may be performed simultaneously, thus:

5836)1875943(321

12514

8429

2587 Rem.

The operation is performed as follows: 3 sixes are 18 and 1 (down)=19, carry 1, 3 threes 9, and 1=10, and 5 (down)=15, carry 1; 3 eights 24 and 1=25, and 2 (down)=27, carry 2, 3 fives 15, and 2=17, and 1 (down)=18, and so on with each line.

Toronto.

SENEX.

Educational Notes and News.

A Teacher's Institute for the Township of Yarmouth and Southwold, will probably be held during May in St. Thomas.

Mr. Donald McCaig, of Rockwood, at one time Inspector of Public Schools for the County of Wellington, has been appointed Inspector of schools for the district of Algoma. *Free Press.*

The vacancy in the division of the Ailsa Craig Public School, caused by the resignation of Miss Jackson, has been filled by the appointment of Miss E. Sproat, of Lucan.

A by-law to grant the sum of \$2,500 to the Collegiate Institute will shortly be submitted to the St. Mary's people. The existence of the school will depend on the result of the vote. *Free Press.*

The Strathroy Collegiate Institute Board are talking about increasing the accommodation by enlarging the Institute building, the probable cost of which would be \$5,000.

D. P. Clapp, B.A., of N. Wellington, has resigned his position as Inspector of the Listowel Public School, and Mr. William Alexander, county Inspector of Perth, has been appointed in his stead.

The third-class non-professional will occupy from 9 a.m. on Tuesday, the 6th July, to 12.25 p.m. on Saturday, the 10th. The first-class grade C commences on Monday, the 12th of July, and grades A and B on Tuesday, the 20th.

A number of the girls attending the Central School, London, have been formed into a floral society, under the direction of Miss Coyne. Each girl will furnish her own plants, and will be responsible for their proper cultivation. Somewhere about the month of June they intend holding a public exhibition of the results of their industry. *Free Press.*

We once heard a man of prominence in the community in which he lived, and of experience in school direction as member of the Board of Education, declare that if God would forgive him for ever proposing to lessen the salaries of teachers he would never be a party to consent to such a plan again, as experience had taught him that of all the methods devised for crippling school work it was the most effectual. He knew it by actual experience. Would that others might adopt the same wise conclusion. *Central School Journal.*

A very successful examination was held at the Coulson Union school on the 22nd ult. The teacher, Mr. F. C. Whitelock, was assisted by the Rev. J. R. Real, Warminster; G. A. Rix, Hobart; E. J. Palk, Craighurst; and E. Wilson, Eady. About 30 visitors were present. After the classes were examined Mr. Real was elected to take the chair, which he accepted; and a number of recitations and readings were well rendered by the pupils, interspersed by some choice glees sung by the school. Addresses were delivered by the trustees, parents, and teachers present, all expressing entire satisfaction with the order and condition of the school.

The North Wellington teachers assemble in council at Mount Forest, 27th and 28th inst. The programme is replete with first-class exercises, and Mr. J. J. Tilley will give his able assistance to make the meeting a success. Arrangements are made for discussion on each of the subjects to be presented. We are sorry that want of space prevents our giving the programme of 28 subjects in full. Dr. H. P. Yeomans is to open a discussion on "School Hygiene." All the classes of the Mount Forest Model School, except the highest, will be present at the several sessions to afford the teachers opportunity for practical illustration. A. M. Shields, B.A., is president, and Miss Carrie A. Jones, of Harriston, secretary.

By arrangement made by the Minister of Education with the authorities of the University of Toronto, the University of Trinity College, Victoria University, and Queen's University, candidates for matriculation will have the opportunity of being examined at each of the High Schools in June and July at the same time as candidates for teachers' certificates, and the Universities will furthermore accept the results of the non-professional examination for teachers' certificates, so far as that examination covers the subjects required for matriculation, so that candidates need only take the additional subjects for matriculation. They may, however, if not candidates, for teachers' certificates, take the University papers all through. Applications for matriculation will be made as heretofore to the registrar of the University at which the candidates propose to matriculate. The papers will be laid before the candidates by the local presiding examiners, and the results returned by the Department to the registrars of the respective Universities. It has already been announced that Victoria, Queen's and Trinity Universities appointed a common examining Board. *Journal, St. Thomas.*

At a recent meeting of the Peterboro' Board of Education Dr. Tassie, Principal of the High School, reported that one of the High School Inspectors had informed him that if the High School pupils did not improve in their writing and reading, especially the former, plucking would be general at the approaching examinations. He thought it was about time the writing of the pupils was improved, and he was pleased to know that more attention was being paid to this branch in the lower classes. He was pleased to make three important announcements to the Board. The Governor-General's medal had arrived and was now in his possession. Mr. J. H. Burnham had offered a silver medal for the Institute pupil who ranks first in the Toronto University matriculations this year; and Mrs. Nicholls generously offers a free scholarship at Queen's University to be competed for by pupils of the Institute. The Principal complained that the Easter holidays had materially interrupted the school work, and advised that as few holidays as possible be granted. Moved by Mr. J. R. Stratton, seconded by H. Denno, "That the thanks of this Board be tendered to Mrs. Nicholls for her liberal grant to the Endowment Fund of Queen's College, Kingston, whereby a free course scholarship in arts is available for a student of the College, and in her liberality in permitting Dr. Tassie, Principal, to nominate the student; and the thanks of this Board be also tendered to Mr. J. Hain Burnham for his gift of a solid silver medal for the pupil of the Institute taking the highest marks at the matriculation examinations of University College, Toronto, and that the Secretary forward a copy of this resolution to the parties above named."—Carried.—*Peterborough Examiner.*