Vivacity in the Schoolroom.

We hear of a "kindergarten smile," why not a primary-teacher smile. They are one and the same when they are forced, and both pitiable enough. How can one detect whether the smile be true or made-up, whether of the heart or of the muscles? It tells itself.

How must the little children feel under the relentless influence of a false, make-believe vivacity day after day? How utterly weary they must be of the rarified atmosphere of high-wrought cheer to which the determinedly vivacious teacher lifts them and pitilessly holds them day after day! How they must long to be "let alone."

"Good morning, dear children. I hope you are all very well this morning. Shall we sing a song to show how happy we are?" This in a high-pitched, rattling, tin-pan voice, equally devoid of agreeableness and sincerity. The dramatic teacher in the happy role then breaks into a jingling motion-song and sweeps the children along with her until they nearly lose their breath in the swift current of over-happiness. Without a second for the song to leave an influence upon the happy victims, the teacher pounces upon another delightful thing to *do*, and the children are whirled into a game or an exercise as if carried along by pitiless machinery that had been set going and could'nt be stopped. From this they are dashed into a reading, writing, or made-to-order "observation" lesson, with that never-dying, vivacious voice, that will not, will not, *will not* stop ringing in their ears as they try to think and work.

And all this is to make the children happy, alert, spontaneous, wide-awake! Does the child-mind never need rest and quiet and time to unfold as do plant-buds? Must the teacher keep up an everlasting drum-beat for the development of the child-soul? If the primary teacher could believe that the spirit of harmonious, happy work must be first of all and most of all, the radiation from her own soul, and that this spirit is best fostered by the low, kindly tone, the genuine smile, the timely word, the timely touch, and the *timely silence* that falls like a healing balm, she will learn some of the best things she can ever know about the training of children.

The American child with his fearful inheritance of nervous rush needs the cooling, quieting touch on the restless pulse far more than he needs the prod of the vivacious spur.—*Primary Education.*

HOME LIBRARIES.—It may be of interest to the exponents of the Home Library system to know of the work being done by the Children's Aid Society. There are sixty-six home libraries placed in the homes of the children, each under the charge of a child librarian. Ten children meet a friendly visitor weekly in the living room of the family, where books are distributed, exchanged, and discussed, home amusements taught, and penny savings encouraged. This purpose is to foster a natural, wholesome home life, and to strengthen family and neighborhood ties, and to bring fresh and enlivening influences into daily life.

"A torn jacket is soon mended, but hard words bruise the heart of a child."

THE 'ROUND TABLE TALKS

BETWEEN EDITORS AND READERS.

R. B.—Please solve in the REVIEW the following exercises in Hall's and Knight's Elementary Algebra: Ex. (*a*) 13, (*b*) 15, (*c*) 25, (*d*) 27, page 266; Ex. (*e*) 23, p. 272; Ex. (*f*) 31, (*g*) 32, (*h*) 33, (*i*) 35, p. 292.

(*a*) If a, b, c be three proportionals, show that

$$(b^2+bc+c^2)(ac-bc+c^2)=b^4+ac^3+c^4.$$

If $a:b::b:c$, then $ac=b^2$.

Then

$$\begin{aligned}(b^2+bc+c^2)(ac-bc+c^2) &= (b^2+c^2+bc)(b^2+c^2-bc)\\ &= b^4+b^2c^2+c^4\\ &= b^4+ac^3+c^4.\end{aligned}$$

(*b*) If $a:b=c:d$, prove that

$$a^2+ac+c^2 : a^2-ac+c^2 = b^2+bd+d^2 : b^2-bd+d^2.$$

Let $\frac{a}{b}=\frac{c}{d}=k$, then $a=bk$, $c=dk$.

$$\text{Then } \frac{a^2+ac+c^2}{a^2-ac+c^2}=\frac{b^2k^2+bdk^2+d^2k^2}{b^2k^2-bdk^2+d^2k^2}=\frac{b^2+bd+d^2}{b^2-bd+d^2}$$

Therefore

$$a^2+ac+c^2 : a^2-ac+c^2=b^2+bd+d^2 : b^2-bd+d^2$$

(*c*) If b be a mean proportional between a and c, show that $4a^2-9b^2$ is to $4b^2-9c^2$ in the duplicate ratio of a to b.

Let $\frac{a}{b}=\frac{b}{c}=k$, then $\frac{a}{b}\times\frac{b}{c}=\frac{a}{c}=k^2$,

$$\frac{4a^2-9b^2}{4b^2-9c^2}=\frac{4b^2k^2-9c^2k^2}{4b^2-9c^2}=k^2=\frac{a^2}{b^2}$$

Therefore $4a^2-9b^2 : 4b^2-9c^2=a^2 : b^2=$ duplicate ratio of $a:b$.

(*d*) If $a+b : b+c=c+d : d+a$, prove that $a=c$, or $a+b+c+d=o$.

$$(a+b)(d+a)=(b+c)(c+d)$$

$$ad+bd+a^2+ab=bc+c^2+bd+cd.$$

$$d(a-c)+(a+c)(a-c)+b(a-c)=o$$

Therefore $a-c=o$, or $a+b+c+d=o$.

(*e*) The value of a silver coin varies directly as the square of its diameter, while its thickness remains the same; it also varies directly as its thickness, while its diameter remains the same. Two silver coins have their diameters in the ratio of $4:3$. Find the ratio of their thickness, if the value of the first be four times that of the second.

With the same thickness the ratio of their values would be $16:9$.

This ratio must be increased so as to become $36:9$; that is, the thickness must be in the ratio of $36:16=2\frac{1}{4}:1$.