

Primary Department.

A SUBTRACTION LESSON.

RHODA LEE.

We had been working simple subtraction for several days, and this morning had reached the subject of borrowing. Everything was in order, slates cleaned, pencils, board, and chalk ready for use, and as bright a class of little folks before me as could be found in the country, and yet I dreaded beginning the lesson. It had on other occasions been unsatisfactory. The children had seemed puzzled, and I had determined that this time it should be made clear to them.

On my table were three empty chalk boxes, which bore respectively on the faces next the children the labels HUNDREDS, TENS, and UNITS. I had provided myself with a large quantity of tooth-picks and a number of elastic bands. In preparing for the lesson I had made a number of "ten" bundles, and also "hundreds," which were composed of ten small bundles held together with a strong elastic.

Turning up the boxes I said, "They are empty, children. We will now put in our stock like Mr. Billings did in his new store last week. Here are six loose sticks. Fred may come and put them in the right box. Four bundles of ten to be put in the proper place. Now five big bundles. Write on your slates the number held in the three boxes." The number 546 was, of course, written without hesitation, as they had done the same thing very often in the number lesson.

Writing 546 on the blackboard, I placed below it the number 259. "Nine to be taken away from the 'units' box. But there are only six there. What shall we do?"

Suppose your mother were making a cake, and just at the last minute, no one being at home to go to the store, discovered she had no baking-powder. What would she do? Up went the hands promptly. That was something they understood. "Borrow some" was the reply from several children. "Would she go five or six doors down the street?" I asked. Of course this elicited the answer, "Next door." "Well, that is what we will do in our trouble. We will go to the next box and borrow a bundle of ten. Removing the elastic we drop in the ten loose sticks. Now we have sixteen, and can take away nine, leaving seven in the box.

"How many tens have we left now? We had four, and we borrowed one, so that we have only three, and we want to take away five." I did not have to question long before the answer came to borrow a big bundle from the "hundreds" box. Removing the large elastic, the hundred bundle fell into ten small ones (bundles of ten each), and placing these with the others we had thirteen tens. Taking away five from thirteen left eight in the "tens" box. Then, as we had borrowed one of the hundred bundles, there were but four left. Removing two, the

problem was finished. We repeated this and a number of similar problems several times with the actual things before working in the abstract. This was one of my early plans of teaching subtraction, and I have never found any better way of making clear the borrowing process.

THE FROGS WERE TALKING.

At close of the day,
As I went walking,
This is the way
The frogs were talking.

"Croak, croak"—the big one spoke,
"Climb up, little frog,
If your legs are able;
You will find this log
Is very comfortable."

"Croak, croak"—the little one spoke,
"Oh, my darling Pappy,
Aren't we gay and happy?
Oh, my pretty Mammy,
Aren't we cool and clammy?"

"Croak, croak"—the big one spoke,
"Can you tell me whether
We shall have clear weather?
All the stars to-night
Are especially bright."

"Croak, croak"—the big one spoke;
"Mercy! How it shines,
Up above the pines,
That little moon, so high
In the crystal sky."

"Croak, croak"—the jolly one spoke,
"Let us make a noise.
There are not any boys;
I dearly love a riot,
And the lake's too quiet."

Splash! dash! away with a crash,
Off of every stump,
Each one gives a jump,
And, diving as they scatter,
Put an end to their chatter.

That was the way
The frogs were talking,
At the close of the day,
As I went walking.
—Blanche Nevin.

A DEVICE IN COMPOSITION.

BY KITTIE L. KOUFAL.

In most second and third grades a little written composition is expected from pupils. I believe every teacher finds that, no matter how much the subject is discussed in an oral recitation, the pupils seem at a loss as to *how* and *where* to begin, and *what* to write next.

One day my class was talking about domestic animals, and I do not know or remember how it came about, but I asked one of my little boys this question: "Paul, if you had a horse, how would you care for him?" That question seemed to illumine his countenance, so that I knew there was much he wished to tell, and of course I asked him some questions as to what kind of a horse he would like—a black, white, bay, roan, etc.—and what he would call it, how he would treat it should it be inclined to be stubborn, and what he would expect of the horse; and thus one question led to another, showing me that the little fellow knew more about a horse than I expected, and probably he found out that he knew more than he thought he did.

The next day, instead of the regular writing lesson, I wrote this question on

the board: "If you had a pet dog, how would you care for him, and what would you expect of him?" (I did not ask about the horse again because I feared some might be led by Paul's thoughts of the previous day, and kept that subject for another day.)

After I had written the question I gave the children paper and pencil, and told them to tell me nicely, in writing, their full answer to that question. That was a fifteen-minute exercise. Their spelling was not perfect, of course, much less their composition; but to read over the thoughts (some very amusing ones) of the children was enough to convince one that if the children had the power to write words and sentences correctly, they could write quite pleasing articles because they were so childlike and original.

It seems to me that here is a plan for good work in that line. So far I have taken up three subjects in this manner—the "dog," "horse," and "sheep"—and I find that our "stories" are improving in spelling, language, and length; indeed, some are too long.

As yet not one has told me "they didn't know what to write."—*Teachers' Institute.*

POPPY-LAND EXPRESS.

The first train starts at 6 p.m.
For the land where the poppy grows;
The mother dear is the engineer,
And the passenger laughs and crows.

The palace-car is the mother's arms,
The whistle, a low, sweet strain,
The passenger winks and nods and blinks,
And goes to sleep in the train.

At 8 p.m. the next train starts
For the poppy-land afar;
The summons clear falls on the ear,
"All aboard for the sleeping-car."

"But what is the fare to poppy-land?
I hope it is not too dear."
The fare is this—a hug and a kiss,
And it's paid to the engineer.

So I ask of Him who children took
On His knees in kindness great,
"Take charge, I pray, of the trains each day
That leave at six and eight.

"Take charge of the passengers," thus I pray,
"For to me they are very dear,
And special ward, O, gracious Lord,
O'er the gentle engineer."

—Edgar W. Abbott.

Attention is called by a recent writer to some of the remarkable effects produced by low temperature upon the physical properties of matter. Among the phenomena of this class mentioned is the fact of the vigor of chemical action decreasing and the elements apparently losing their ability to combine as their temperature is lowered. Thus, phosphorus and oxygen, which so energetically combine at ordinary temperatures, become more and more chemically inert as this temperature is decreased, until at 200° below the freezing point of water they appear to be unable to unite—in other words, there is in the absence of heat no chemical affinity. As heat is known to consist in the internal vibratory motion of atoms and molecules of matter, it appears that in the absence of such vibratory motion there is no possibility of such chemical action, while on the other hand, as the temperature falls, the magnetic and electrical qualities of some or all of the elements are exalted in a proportional way. Thus oxygen, which is feebly magnetic at ordinary temperature, becomes strongly magnetic at 200°, and when liquefied, as it easily may be, behaves like iron to a magnet, and will adhere strongly to its poles.