

handed it to me. Raw turnip! And touched by those fingers!

"Come, take it, my beauty—a peach ripe and downy as your own cheek. Peaches is dear, too this season; but I give no heed to that. If so be as I find a pretty girl to eat 'em, I don't grudge the money. Come, peck away; or do you want me to feed you? No, you shan't have it without 'Thank you.' After all my trouble, that ain't manners," with a significant look at the knife.

"Thank you!" I said eagerly. I took the slice of turnip—and began to eat it—yes, I ate it all, every mouthful making me feel more ill. Another slice was offered, I took it and began to eat, but my throat seemed to be closing—I could not swallow.

"Come, finish it. Good, isn't it? The ladies are always fond of a bit of fruit. Don't be bashful—I've something here for you to wash it down. Nothing like a drop of brandy to make it agree with you," and he touched the neck of a black bottle which stuck out of his pocket.

What would become of me? I had once seen a dreadful woman for a few moments at home—a new cook she was—who was, oh! so frightful. Nurse told me she had taken brandy and was drunk. I had thought her mad. If he had made me drink it, and if, when Aunt Margery found me, I—but no, this I would not do; he might kill me first. I went on eating the turnip, and all the while I prayed earnestly for rescue. Was my prayer answered? The train began to slacken its speed—it stopped, but there was no station in sight. I think it was a siding, or something of that kind.

At the side of the carriage where I was sitting there was a steep bank which shut out all hope; at the other side were several lines of rails; beyond was the open country. In a pleasant way my torturer was at my window. With an oath he commanded me to "be still, and stay where I was." I heard some one pass, and, in reply to a question, I suppose, say that we had been shunted to allow a special train to go by—it would pass in three minutes. I called, but very faintly, I am afraid, for no one answered, and the "car" turned on me so fiercely that I dare not try again.

The special train swept by, but I hardly saw it—my eyes, my whole soul, were fastened on the figure of a man who just then came down the green bank, which was at some distance. I pressed my face to the glass. Which way would he take? He stood up for a moment, and then slowly, lazily sauntered towards me. The glass was up—my only hope was that he would pass close and see me, for I was past calling or moving now. I noted every trifling detail of his figure and dress; he was a tall, broad shouldered gentleman, dressed in light gray; young, and with a long, golden beard; even the carnation in his button-hole I observed, and the strength and careless ease of his figure as he lounged along. He stopped to whistle to his dogs, and then again strolled on, idly twirling his cane.

I do not know what kind of face was pressed to the glass on my side—it was a wild and scared one, I am sure; but in another minute a pair of great merry blue eyes glanced up in passing, and were startled into earnestness by the eyes they encountered; the whistle sounded, but, even as it did, a strong hand was on the door-handle, the door was wrenched open, the train moved on—he was beside me. I was safe.

I don't know what happened then. My deliverer says that I cried, and held one of his hands tight in both of mine; but that I don't believe. In the first place, we had never been introduced, and, in the second, two of his fingers are about as much as my two hands can contain at once. I know, when I grew calmer, that I found him taking care of me, and that I didn't dislike it as much as one might have expected. I don't remember how I told him all; I suppose the turnip and knife, which still lay on the seat, helped me a little; but I do know that he told me "not to be frightened, for he would not throw the scoundrel from the window, as he deserved"—and that he looked so fierce and so strong that I could quite imagine it was a habit of his to throw scoundrels from windows, and that he rather liked it. What he did was to take the creature by the collar, and force him down on his knees, in spite of his piteous protestations that "he never meant to hurt the lady—it was only a lark; he would not have done it for a ten-pound note, not if he had known."

"Hold your tongue. Swallow this, and think yourself lucky to escape six months on the treadmill. For the lady's sake, I will not prosecute you, and I'll not break every bone in your body, as I should like to do, as it might annoy her to see it done. But you'll eat this to the last morsel—mud and all! I should say it is not the only dirt you will have to swallow in your life! Down with it!"

And when the last atom had disappeared, my deliverer, with a parting shake, flung the creature into a corner, where he lay till the train stopped, and turned to "take care" of me again.

I almost shrank from the stern face to which I now raised my eyes, but it softened in a moment, and I lay back in a corner and rested silently and thankfully, while he interposed his broad shoulders between me and the other end of the carriage, till the train again stop-

ped, and I saw aunt Margery's dear old face on the platform.

I am sure she wondered at the eagerness of my clasp, at my face, which I felt was still white and scared. I made a little motion toward my deliverer, but could not speak a word. He said a few words and gave his card to my aunt, who accepted it and the situation as graciously as she does everything, and looked rather anxious to get me safely to the carriage and home, and in five minutes we were driving away.

"What did he do for you darling?"

"Oh! he was so strong and so good to me—and he made him eat the whole turnip, auntie!"

"The whole turnip! You are ill, Polly. Come, we won't talk or think of it now."

And she quieted and petted me, evidently thinking that I had lost my wits, until I was lying on the sofa in her drawing room able to tell her all.

Well, that was my first and only attempt at "taking care of myself." I never want to do so again. Tom takes care of me now—of course, you understand that it was he who came to my deliverance. Aunt wrote to him that very evening, and my father came down to London next morning on purpose to thank him; then Tom called, and so—and so—the end of my story, or, perhaps, I should say the real beginning of it, is that I am his wife now.

At first I did think it a pity that my husband should be only "Tom," when I had always intended to marry at least three syllables, as I am merely "Polly;" but now I think Tom the most charming name in the world, and would not change it.

I have only one thing more to tell. The old lady with the disagreeable bonnet is Tom's aunt. I am writing this in her house, which is just what I had fancied it, and she is the dearest and kindest old woman in England.

"Una has found her lion," she says.

I don't think I am much like Una; but Tom is a darling old lion, with his tawny beard and splendid strength, on which his wife loves to lean. I hear him calling "Polly!" from the lawn, where he lies, lazily puffing his cigar under the cedar; and as he can growl on occasion, if I keep his majesty waiting too long, I had better go.

"Coming, Lion."—*London Magazine.*

SCIENTIFIC.

SIMPLE EXPERIMENTS FOR YOUNG CHEMISTS.

1. An easy way to prepare an invisible gas, that will burn with an intense heat, is to put some nails or strips of sheet zinc in an old bottle with a good, tight cork. The cork has a hole bored in it, and a clay pipe stem, or better, a piece of glass tubing with a fine opening at one end, is fitted into the cork. The zinc is covered with water and a little sulphuric or other acid added. The effervescence is violent; and if the cork is put in, the gas will escape through the tube. After waiting several minutes, wrap the bottle in a cloth and apply a match to the end of the tube, when the gas will take fire and burn with a colorless flame. If any air still remains in the bottle, an explosion will take place. Hold a cold white saucer in the flame, and it will soon be moistened but not blackened. This gas is called hydrogen, because, when it burns, it forms water.

2. To imitate the delightful odor of rotten eggs, it is only necessary to place some pieces of the sulphuret of iron in an old bottle and pour on water and oil of vitriol. The sulphuret of iron is made when iron filings and sulphur are heated together. If the bottle in which this vilely smelling gas is prepared has fitted to it a tight cork and a glass tube bent so as to conduct the gas under the water in a second bottle, much of it will be dissolved and can be bottled up and preserved for several days. This gas is called sulphydric acid and must always be prepared out of doors.

3. To produce light, flaky clouds in a clear liquid, dissolve a piece of alum in water and to the clear solution add ammonia (spirits of hartshorn) and stir or shake it. The clouds will be colorless and almost invisible. To another solution of alum, add just enough carmine or indigo to color it distinctly, then pour in some ammonia. The clouds will now be red, or blue, and as they gradually sink to the bottom will leave the solution colorless. This illustrates the method of preparing what are known as "Inkas." The clouds thus formed are the hydrated oxide of alumina.

4. To convert a colorless liquid to an orange red, dissolve some tartar emetic in water and drop in some of the solution of the vilely smelling sulphydric acid. (See No. 2.) Next put some tartar emetic into a bottle with zinc and sulphuric acid, as described above (No. 1) for making hydrogen. After waiting long enough for all the air to be expelled, ignite the gas and place a cold saucer in the flame, when it will be blackened; and the spot thus formed, which is metallic antimony, will not dissolve in a solution of bleaching powder.

5. Analogous experiments could be performed with acid solutions of arsenic, but owing to its poisonous nature, we would advise our young friends to avoid its use. The sulphydric acid would form a yellow precipitate instead of a red one, and the black stain on the saucer would be readily dissolved by chloride of lime, or bleaching powder.

6. To produce a strong smell by mixing two dry powders, each without a smell, take pul-

verized sal ammoniac and stir in a little dry whitewash lime. A pungent ammoniacal odor is evolved.

7. In one tumbler or wine glass of water, place a single drop of oil of vitriol, in a second place some carbonate of ammonia, in a third some hydro-fluo-silicic acid and alcohol, in a fourth some bichromate of potash. Drop into each of these glasses some barium chloride. In three of them a white precipitate is formed, in the fourth a yellow one. Dip a clean platinum wire in the barium chloride; then hold it in a colorless gas or alcohol flame, and a green color is produced. The green fires in theatres are made with this substance.

8. To convert a fair complexion into one of African hue, persuade some fair lady to improve her complexion with bismuth pearl powder (many do it voluntarily); then let her enjoy the perfume of the sulphydric acid, and she will gradually blacken. A curious instance of the action of water on an acid solution is noticed by dissolving subnitrate of bismuth in muriatic acid, and then pouring it into a glass of water, when it gives the latter the appearance of milk.

9. To prepare a gas heavier than air, place some pieces of chalk or marble in a deep jar, or in a bottle like that used for hydrogen, and pour some muriatic acid on them. Effervescence takes place, a taper lowered into the jar is extinguished; or if the gas, which is called carbonic acid, be collected in another vessel, it may be poured from one vessel to another like water. The substance formed when marble is dissolved in muriatic acid is called calcium chloride, and may be used for some interesting experiments: Fill three glasses with water, and to the first add a little sulphuric acid, to the second some carbonate of ammonia, to the third some oxalic acid and ammonia. On pouring the solution of calcium chloride into these glasses it will in every case form, unless too dilute, a milky liquid.

10. To produce an intensely blue liquid, make a solution of blue vitriol, so dilute as to have but a faint color, then add ammonia, and it becomes intensely blue. To another portion add yellow prussiate of potash and it turns a reddish brown.

11. To make blue glass, bend a piece of platinum wire to a hook at the end and heat red, then touch it on a bit of borax and heat until the latter melts to a little bead. Now dip it into some nitrate of cobalt and heat, when a fine blue glass bead will be formed.

12. To form a yellow precipitate, in a yellow solution, take a weak solution of bichromate of potassium and add sugar of lead; the effect is very pretty.

13. To produce a beautiful purple, take a dilute solution of chloride of gold and add a little chloride of tin; the color formed is known as purple of Cassius.

14. To pour red, blue and black ink from one bottle, fill three glasses with water, and into one put a little sulphocyanide of potassium, in another some prussiate of potash, in a third a solution of gallic acid, or nut galls. Dissolve a small nail in muriatic acid and dilute the solution. On putting a drop of this chloride of iron into each of the glasses, the three colors will be produced.

15. Yellow and white can be formed similarly by pouring acetate of lead into glasses containing bichromate of potash and sulphuric or hydrochloric acid, respectively. The white chloride of lead dissolves in boiling water and crystallizes on cooling. Sulphydric acid blackens lead.

16. Red, yellow and black are produced as follows: put some potassium iodide in one glass, bichromate of potash in a second, and sulphydric acid in a third. Pour corrosive sublimate slowly into each, and the three colors will appear. Into a clean glass put a little corrosive sublimate and add potassium iodide, carefully; the color becomes intensely red, but on adding more it disappears entirely and can be restored by the addition of more of the sublimate.

17. One other way to make a milk-like liquid is to pour phosphate of soda into a solution of magnesium sulphate.

18. When a piece of silver is dissolved in nitric acid and some muriatic acid added, all the silver is precipitated, and the precipitate may be dissolved in ammonia, or a piece of zinc may be placed in it and acidified, when the silver will all be restored to the metallic state as a fine black powder.

We hope the above experiments will prove an amusement for many of our young readers; and when they become experts in exhibiting these "tricks of magic," as we might have called them, they will also have gained some knowledge of the methods employed by analytical chemists in testing for the common metals. Even practical men, who need sometimes to handle chemicals, will find that the above are reliable tests.

THE CONSTITUTION OF THE SUN'S SURFACE.

Professor Young, in a brief extemporaneous address placed before the American Academy of Science his latest views on that subject. Every one is aware, he thought, of the fact that in the present state of science, it is impossible to regard the sun as anything but a gaseous body; the law of density, it seemed to him, could not be reconciled with the solid constitution of that body; and it is difficult to say how it could be liquid, as the liquids of which we know it must be composed are largely metallic liquids. It is safe to say that it is mainly gaseous. Another thing might be

said. The luminous surface from its appearance has something of the nature of a cloud. We find rapid changes in the appearance and constitution of the surface. It is impossible to consider it anything but flocculi floating in gas. But when we come to examine the overlying chromosphere with the telescope, we find evidence of violent outbursts from beneath, of extreme intensity. At first sight, it was thought that it might be only an apparent motion, or the same kind of motion that we see when a flame jumps up from a coal fire, and simply is communicated among particles already in position. But that would not account for the disturbance of the spectrum lines. It is not uncommon to find displacements of the spectrum lines indicating motion (in a line that joins the mass with the observer) of one hundred, and sometimes two or three hundred, miles per second. There is every reason to suppose that these masses, which we see—masses thrown vertically from the sun,—have really velocities of a corresponding magnitude. The question that pressed upon his mind was to reconcile that with the cloudy character of the photosphere. If anywhere the explanation, he thought, was to be found in the condensation that goes on the photosphere. If the heat of the sun is anything very great (it would melt about 40 feet of ice a minute over the whole surface), the amount that is turned from vapor into liquid, that is, the amount of condensation over the surface of the sun, is something very enormous. On the surface of the earth a shower that gives us two inches in an hour is something tremendous. The rain descends in buckets. But the rate is exceedingly small compared with the rate of condensation on the surface of the sun.

Now these droplets so produced would at first descend in fillets, with an accelerated velocity, and therefore growing slenderer as they fall. But soon they would come down to a place where the atmosphere and gases are denser. The materials they would encounter in the first 300 or 400, and still more in the first 3,000 or 4,000, miles would become denser and the motion would be retarded. They would thicken in it. Besides whatever weight of liquid drops down from the clouds in a minute, that amount of gas must travel upward in order to maintain an equilibrium. That would cause the currents passing upward to be extreme in their rapidity, and the retarding effect would be still greater. It is probable that a good deal of the descending liquid would be evaporated at that point. But it seemed to him likely that the fillets would thicken and begin to coalesce, in which case they would form sheets. In that case we might get a surface something like a sheet of water at Niagara. The mass of the whole sheet would be vertical, and descend until a portion of the sun would be reached where the rapidity of the evaporation would equal the rapidity of the descent. Then it would be something like a series of descending ponds without any bottom to them. If their velocity were retarded entirely, their whole weight would be supported by the underlying atmosphere. The pressure would be something enormous. The gases would be forced up through them, the whole being in the condition of a liquid breaching up, the gas probably taking portions of the liquid and throwing them up. This theory is compatible with that of the gaseous constitution of the sun. But we do not know what to do with the sun spots on this theory any better than on any other theory. Possibly they may be partly solid matter, as has been asserted. In that case, you might get a mass floating on the top of a more liquid portion. One element, which we are much at a loss about at present, is to determine what amount of the sun's mass is to be referred to condensation and what to dissociation.—*Scientific American.*

THE JOURNEY OF LIFE.

Beneath the waning moon I walk at night,
And muse on human life, for all around
Are dim, uncertain shapes that cheat the night,
And pitfalls lurk in shade along the ground,
And broken gleams of brightness, here and there,
Glance through, and leave unwarmed the
death-like air.

The trampled earth returns a sound of fear.—
A hollow sound, as if I walked on tombs;
And lights that tell of cheerful homes, appear
Far off, and die like hope amid the glooms.
A mournful wind across the landscape flies,
And the wide atmosphere is full of sighs.

And I, with faltering footsteps journey on,
Watching the stars that roll the hours away,
Till the faint light that guides me now is gone,
And, like another life, the glorious day
Shall open o'er me from the empyreal height,
With warmth, and certainty, and boundless light.

RELIGION AND MORALITY.

There is one city of the East, of biblical and historical renown, which is surrounded on all sides by deserts; but which, to the astonishment of the traveller who has been toiling for days over burning sands to reach its gates, presents to the eye, as he enters, a wonderful succession of gardens gay with the richest verdure and the most gorgeous blooms. Above that city—the most ancient, perhaps in the world—above that desert-girdled city

Damascus—towers the lofty Lebanon, with its snow clad head piercing the fleecy clouds of a summers sky. It is in its lofty summit that the secret of this wonderful verdure lies. There, in those snows that mingle with the clouds, are the inexhaustible fountains of innumerable rills of water, by which, in Damascus, the desert has been turned into a garden, and the wilderness made to blossom as the rose. All history proves that it is only from the fountain of a religion which, like Lebanon, lifts its head above the ground, and represents the aspirations of the soul after the unseen and eternal, that the sustenance which is needed for the purest and heavenliest virtues of humanity, the truest and noblest morality, can ever flow.—*Good Words.*

A BOY'S IDEAS OF HEADS.

"Heads are of different shapes and sizes. They are full of notions. Large heads do not always hold the most. Some people can tell just what a man is by the shape of his head. High heads are the best kind. Very knowing people are called long-headed. A fellow that won't stop for anything or anybody is called hot-headed. If he is not quite so bright, they call him soft-headed; if he won't be coaxed or turned they call him pig-headed. Animals have small heads. The heads of fools slant back. Our heads are all covered with hair except bald heads. There are other heads besides our heads. There are barrel heads, heads of sermons—and some ministers used to have fifteen heads to one sermon; heads of cattle, as the farmer calls his cows and oxen; bull heads, heads of families, but the worst kind of a head is the *best-head*."

WANTS TO SELL.

Any body wishing to speculate in real estate can buy a house uptown cheap. It is situated between two churches that have clocks; and that's the reason Mr. Johnson wants to sell it. One of these is invariably a second or two behind the other; consequently when Johnson stops out until one o'clock, as he often does, Mrs. J. says to him as each of the clocks strike one,—

"There! A nice time for a married man to come home—two o'clock!"

Johnson, like the gay old sport that he is, thought he might as well stay out until two, inasmuch as he got the blame for it. So he stayed, and Mrs. Johnson stayed too—she stayed up until he got in, and made him listen as the clocks struck four. Then she threatened to go to her mother or get her ma to come and live with her, as it was impossible to live all alone in the house. This kind of frightened the old fellow; so he came in the next night before twelve o'clock, and as those clocks commenced a duet at twelve and jingled out twenty-four strokes, he looked at his wife with a smile, as if to say,—

"Now I've got you!"

She began to cry, and said he stayed out until "all hours." Thus it is that Johnson is grieved and wishes to dispose of his property.

A GIANTIC SLIPPER.

Henry has for some time been attentive to a young lady cousin, whom he has noticed on several evenings, when he called, busily engaged on a beautiful piece of embroidery, which, perhaps accidentally, or perhaps comparing it with the size of his own foot he had concluded was one of a pair of slippers that were no doubt intended for a present; and Henry had once or twice allowed himself to wander into the pleasing suspicion that they were intended for him, although nothing had really transpired to justify such a belief.

Well, one evening Henry called, for the third time during the week, and, as usual, the slipper was progressing nicely. It was held up for his inspection, and he pronounced it beautiful, this being perhaps the thousandth time he had expressed the same sentiment.

But some evil genius put it in poor Henry's head to be inquisitive. He was quite sure the slippers were intended for him, but he was anxious to draw the acknowledgment from the "dear angel" who was laboring so industriously for his benefit, and he was not unwilling to draw at the same time another implied acknowledgment of her devotion for him. Of course he began cautiously.

"Some one you are very fond of is to become the possessor of those slippers, I imagine?" said he.

"What slippers do you refer to?" inquired the fair laborer.

"Why, those you are working at so industriously," replied Henry.

"Slippers!" almost shouted his astonished companion. "Slippers! Do you mean to tell me that you took this for a slipper?"

"Why not?" returned Harry, inadvertently moving one of his ponderous pedal appendages.

The movement, though unintentional, drew the lady's attention to Henry's feet, at which she gazed for a moment, and then at the supposed slipper; then, raising her eyes to our hero, she said:

"Well, Henry, you are not so much to blame, after all; but this was really intended for a sofa cushion."

New additions of the latest styles of fancy types at the WORKMAN Office, 124 Bay Street.