

if a molecule of wood is made up of charcoal and water the charcoal in the molecule must be smaller than (weigh less) than the molecule. Then there are smaller particles than molecules, and a molecule must be made up of these minuter particles joined together. The minute indivisible (?) particles which make up a molecule are called *atoms*.

By burning hydrogen in the mouth of a bottle of air, it can be shown that water is formed by the union of hydrogen and oxygen. So the molecules of water must be made up of atoms of hydrogen and oxygen. Hence, wood molecules are made up of atoms of three kinds—atoms of carbon, of hydrogen and of oxygen. Chemists tell us that one molecule of wood contains 18 carbon atoms, 30 hydrogen atoms, and 15 atoms of oxygen. Of course, there are no atoms of wood or of water, for molecules of wood do not contain any *atoms* of wood, but only atoms of carbon, hydrogen and oxygen. Similarly, there are no atoms of water—the smallest particle of water is the molecule.

The force which binds molecules together to form a body is called *cohesion*. The force which binds atoms together to form a molecule is called *chemical affinity*.

Stories for Christmas.

A TRUE STORY.

Now, at Christmas time, Atlee's mother trimmed a very pretty tree for him, and Atlee had many presents hung on it. When it was all bare, he still liked to see the tree standing in the corner of the sitting-room; but one day his mother asked him if he wouldn't like to give the birds a treat. She said that he could put the Christmas tree on the piazza, and hang some little baskets of seeds and crumbs on the branches, so that the birds could have a Christmas tree as well as Atlee.

At first Atlee did not feel as if he could spare his tree, for he had grown so fond of seeing its graceful green boughs in the room; but after thinking of the birds, and that they could not get many worms and insects and seeds now that the snow had come, he decided that he would like to have the birds enjoy his tree.

So he and his mother took the tree to the piazza, placed it in the corner, and tied on little baskets filled with crumbs and seeds.

It was not long before the birds spied the seeds, and came twittering to the boughs, cocking their heads on one side to see whether anyone in the house were going to scare them.

Atlee and his mother sat very still and puss was asleep in a cushioned chair by the fire; so the birds ate their fill. When they looked up and said: "Chirp! Chirp!" Atlee told his mother that he thought they said: "Christmas! Christmas!"—*Mary C. Soule, in Kindergarten Review.*

Christmas in the Barn.—*Emile Poulson's, in the Child's World.*

The story of Christmas (The Story Hour).—*Kate Douglas Wiggin.*

Tiny Tim, Christmas Carol.—*Dickens.*

The Fir Tree.—*Hans Christian Andersen.*

Christmas (The Sketch Book).—*Irving.*

The Brownies' Christmas, by *Mary E. Wilkins.*

The Birds' Christmas Carol.—*Kate Douglas Wiggin.*

TO CLOSE A CHRISTMAS PROGRAMME.

Choose seven boys and seven girls. Provide each with a shield, each shield to contain a large letter of those making up the words MERRY CHRISTMAS. Teach the boys and girls to march in perfect step to a Christmas song sung by the remainder of the school. Then as the last two measures are being sung, have them form in a semi-circle, with their joyous motto in full view of all.—*Adapted from School Education.*

Raleigh's homage to his queen in spreading his cloak before her is in a way out-chivalried by the action of a little Scotch urchin of which an Edinburgh paper tells. It was in one of the poorer districts of the city, and a small, poorly clad girl was waiting with a crowd of other children for the opening of the doors of a hall where a meal was to be given. It was bitterly cold, and the child's bare feet were blue with pain. An equally ragged youngster stood at her elbow, and presently he timidly thrust his cap into her hand. "Here, lassie, stand on this," he said. "My hair 's thick, and I don't need it."

Few men know how to take a walk. The qualifications of a professor are endurance, plain clothes, old shoes, an eye for nature, good humor, vast curiosity, good speech, good silence, and nothing too much. If a man tells me that he has an intense love of nature, I know, of course, that he has none. Good observers have the manners of trees and animals, their patient good sense, and if they add words, 'tis only when words are better than silence. But a loud singer, or a story-teller, or a vain talker profanes the river and the forest, and is nothing like so good company as a dog.—*Ralph Waldo Emerson, in November Atlantic.*