

of gin; especially the nitrogen, for its principal use in the atmosphere, of which it forms almost four fifths, is to temper down the oxygen, and prevent the violence and universal ruin which, but for its associate, it would produce to our earth.

Nitrogen not only constitutes the greater part of the air we breathe, but it is an essential ingredient in all animal substances.

CARBON.

I have heard of Mount Carbon, in the coal regions in Pennsylvania. I suppose some chemist gave it that name, because the combustible substance in the anthracite coal, is almost entirely carbon. The bituminous coals contain a great deal of hydrogen, which you have just heard is combustible, and is almost always present where you witness a blaze. It is the addition of hydrogen that constitutes the principal difference between the bituminous and anthracite coals, which two classes comprehend all, or nearly all the mineral coals in use.

It has already been said, that oxygen, and hydrogen enter into all vegetable and animal substances; and to the latter, nitrogen is added. The other ingredient, which enters into both, is carbon. This constitutes a considerable part of wood, in all its forms, and when reduced to coal or deprived of its hydrogen, and a part of its oxygen, carbon is the principal ingredient. Carbon sometimes forms a part of rocks, and is one ingredient of all the limestone mountains, and every particle of limestone upon the earth.

You see, then, that four of the most common things in the world, have rather uncommon names; and still it is highly desirable, and even necessary, amidst the present diffusion of knowledge, to become acquainted and familiar with them. Perhaps one reason why the names of these four elementary substances are not more common, is because they are seldom found separate, but almost always combined, and in so many different forms and proportions as to produce all the variety of animal and vegetable substances found in nature or the arts.

Sugar and starch, for example, are not only composed of the same ingredients, viz. oxygen, hydrogen, and carbon, but in very nearly the same proportions. Hence the process of changing starch into sugar is not only practicable but easy, and is now carried on with great success.

These four substances, together with the metals, are so elementary, and constitute so large a part of the material universe, that they almost deserve to be called the alphabet of science. And certainly until those are familiar, we can hardly consider ourselves as having read the first letters in the great volume of nature.

Industry invigorates both the body and the mind, and is the spring of prosperity to families and to nations.

MISCELLANEOUS.

BRAVE BOBBY.

There was an American ship called the Washington, bound for China, filled with passengers, and a valuable cargo. Among the passengers on board this ship was an officer of the army and his wife, with their only child, a little boy of five years of age, and a large Newfoundland dog, called Bobby.

Bobby was a great favourite of all the people in the ship, because he was so brave, so good tempered, and so funny and playful. Sailors as well as passengers all liked brave Bobby. He would romp on the deck with any body that chose. Sometimes when the wind was calm, and the ship was going slow, he would jump overboard, and dash through the sea after a biscuit, or any thing else, that might be thrown in for him.

But his constant playmate was the little boy, the son of his master. This boy was a merry little fellow, and as fond of Bobby as Bobby was fond of him. They used to make a fine noise in their droll games of play, rolling over and over each other like a couple of young porpoises. And though the little boy was sometimes rather rough in his frolics with Bobby, and hit him on the head and back, yet Bobby was always gentle as a lamb to him.

The voyage had been very safe and pleasant until within three days sail of the Cape of Good Hope. Evening was coming on—the sun was setting in dark clouds, so that the dusk had commenced unusually early.—The night watch of the ship had been set and the wind had risen so that the ship was sailing very fast. The boy and the dog were romping together, tugging each other, when on a sudden the ship gave a heavy roll and the child fell overboard splash into the deep sea!

It had by this time become so dark that objects could not be distinguished many yards distant. A general cry of 'A hand over! a hand over! a hand over!' was made by the men on deck who saw the boy fall. Two or three men ran heaving down lines, and a stray coop that was found lying near the capstan, while the officer of the watch sang out to stop the ship. 'Bring the ship too,' cried he, or the boy is lost!

This order was scarcely given, when Bobby, now for the first time missing the child, gave a loud bark, and seemed to guess what had happened, cleared the taffrail like a shot; and the captain and the boy's parents with the other passengers, who had come on deck to learn the cause of the outcry and bustle, saw the dog swimming away like a mad creature in the direction of the stern.

It was too dark to see him distinctly, however he was dimly perceived to dive, and then dimly appear again above water, and snatch at something. It was however, too

dusky for any body on deck to be quite sure what it was that he really saw. The dog was now out of sight, and nothing was visible but the surface of the water. The mother covered her eyes with her hand, and not daring to look out, fearful lest she should see the corpse of her darling child floating on the waves; while the father equally unhappy, jumped into the jolly boat which the men in all haste had been getting ready, that he might spare no effort to recover his beloved son.

It was many minutes before the jolly-boat could be lowered and manned, for the Washington being a merchantman had not many hands to spare. But when the boat was lowered and manned, the men rowed with all their might in the direction they had seen the dog take at first. The darkness however, had so much increased, that the sailors could hardly see, and began to give the child up for lost.

The father, in great misery, sat at the head of the boat, trying to see through the surrounding gloom, and listening anxiously to every sound. 'I hear a splash on the larboard quarter,' cried he, starting up; 'pull on, be quick, it must be my child.'

The helmsman turned the tiller, the men pulled with redoubled force, and in a moment, Bobby with the child in his mouth was along side! Poor creatures. They were nearly spent when they were hauled into the boat. The father took the child in his arms, and the faithful Bobby sank down to the bottom of the boat, panting and almost lifeless.

The men then rowed back to the ship.—Great, indeed, was the mother's joy when she saw her child, that she thought was gone for ever, in the arms of his father, and good Bobby with him also. They all got safe on board the ship again; and the father thanking the sailors for helping him recover his son, went down into the cabin with the mother, child, and dog. Every remedy was used that the doctor of the ship advised, to make the half drowned boy quite well again.

Bobby, after he had shaken the water from his thick shaggy coat, could not be persuaded to leave the child's side. There he stood licking one of his little hands till the child became so much better as to be able to stroke and hug him as usual. Brave Bobby seemed as happy as any body, when both the father and mother hugged and praised him too. And when the boy could speak again, they made a happy little party in the cabin, where, but a few minutes before, all had been so sad.

After this circumstance of saving the child's life in so brave a manner, there was not a man on board that ship but loved the dog as a father might love his child, and well did Bobby deserve it.

At the Cape of Good Hope some of the