

hydrogen. The three elements when combined in this substance are all solid, but if they are separated, the oxygen and hydrogen take the gaseous form, while carbon continues solid. By the application of heat the vegetable fiber is decomposed, when the oxygen and hydrogen expand into gases. As the hydrogen at the high temperature comes in contact with the oxygen of the air, it combines with it to form water; in other words, it burns in the form of a blaze.

Could the carbon come in contact with the oxygen of the air at the high temperature of red heat, it also would be burned, but the volume of hydrogen envelopes it, thus preserving it from contact with the air. The body of hydrogen itself burns only upon its outer surface.

The heat absorbed by the hydrogen in its change from the solid to the gaseous state cools down the carbon below the temperature at which it will combine with oxygen, so that as the last of the hydrogen passes away, the fire is extinguished, leaving the carbon in the form of tinder. If paper is kindled in sufficient mass to keep up the temperature of the carbon to the combustion point, it also will combine with the oxygen of the air to form carbonic acid, which will pass off as a gas, leaving only the incombustible ash, which is the small quantity of mineral matter contained in the paper.

Travelling Bottles.

Captain Beecher, editor of the *English Nautical Magazine*, has compiled within the last ten years the following curious record of voyages of bottles thrown into the sea by unfortunate navigators:—"A good many bottles, cast into the sea next to the African coast, found their way to Europe. One bottle seems to have anticipated the Panama route, having traveled from the Panama isthmus to the Irish coast. Another crossed the Atlantic from the Canaries to Nova Scotia. Three or four bottles thrown into the sea by Greenland mariners, off Davis Straits, landed on the north-west coast of Ireland. Another once made a curious trip—swam from the South Atlantic Ocean to the west coast of Africa, passed Gibraltar, went along the Portuguese coast of France, and was finally picked up on Jersey Island. One bottle was found after sixteen years' swimming, one after fourteen, and two after ten years. A few only traveled more than one year, and one only five days. This was sent off by the captain of the *Race-horse*, on the 17th of April, in the Caribbean Sea, and was found on the 22d, after having gone through some three degrees of longitude (two hundred and ten miles), western direction. Capt. McClure, of the *Investigator*, threw a bottle into the sea in 1850, on his way to Behring's Straits. It swam three thousand five hundred miles in two hundred days, and was picked up on the Honduras coast."

The Decay of Conversation.

The ancient art of talking is falling into decay. It is an ascertainable fact that, in proportion to an increased amount of population, the aggregate bulk of conversation is lessening. People now-a-days have something else to do than talk; not only do they live in such hurry that there is only leisure

for just comparing ideas as to the weather, but they have each and all a gross quantity to do, which puts talking out of the question. If persons remain at home, they read; if they journey by rail, they read; if they go to the seaside, they read; we have met misguided individuals out in the open fields with books in hand; young folks have been seen stretched underneath trees, and upon the banks of rivers, pouring over pages; and upon the tops of mountains, in desert, or within forests—everywhere men pull printed sheets from their pockets, and in the earliest, latest, highest occupations of life, they read. The fact is incontestably true, that modern men and women are reading themselves into a comparatively silent race. Reading is the great delusion of the present time; it has become a sort of lay-piety; according to which, the perusal of volumes reckons as good works; it is, in a word, the superstition of the nineteenth century.—*Chambers' Journal*.

Why Boots Should be Polished.

Brightly-polished boots are cooler in warm weather and warmer in cold weather than dull and dusty boots; for in warm weather they reflect the sun, which dusty and dirty boots absorb; and in cold weather the clean boot does not allow the warmth of your foot to radiate freely, whereas the unclean boot does. Clean, bright boots are consequently more comfortable, as well as respectable, both in warm weather and cold. Not only will different substances, as iron and wood, give out heat or take it in, more or less, but the same substance radiates heat more or less actively, as it is bright or dull, rough or smooth. Now, dirty boots are rough as well as dull. They have a surface of many little hills and valleys, so that in truth, there is more surface for the heat to pass through either way. As a rough surface is a larger surface, more heat from within and without always passes through dull and dirty boots than polished ones.

Artificial Sunlight.

Undoubtedly the civilized world is on the whole deeply indebted to analytical and experimental chemistry. It is quite true that their disciples very frequently enter with great patience into elaborate inquiries and laborious investigations for the mere purpose, as it seems, of deducing facts which, though startling and curious, have no practical value. Those facts, however, though they may lie dormant for a long time, in the end often fructify, and new experimenters reap from them harvests of knowledge useful to humanity and profitable to themselves. It would not be difficult to sustain this assertion by irresistible evidence gathered from the annals of chemical discovery. As, in regard to mechanical inventions, it is next to an impossibility to apportion to each individual inventor the exact meed of praise due to him, so is it beyond human power to assign exactly to each chemist the precise amount of merit to which he is entitled. A distinguished writer has recently said that, "We know no more of the men who really invented our railway system, or our steam engines than we do of the inventors of Gunpowder, or the Mariner's compass;" and there is much truth in the assertion. The idea of one mind becomes the