

will not fall perpendicularly to the earth, but incline a little towards the mountain.

If the air did not impede the fall of bodies, attraction would make them all descend with equal velocity. It may be objected, that since attraction is proportioned to the quantity of matter which a body contains, the earth must necessarily attract a heavy body more strongly, and consequently bring it to the ground more rapidly than a light one. In answer to this, it must be observed that bodies have no natural tendency to fall any more than to rise, so that the force which brings them down, must be in proportion to the quantity of matter it has to move. Thus a body consisting of a thousand particles of matter, requires ten times the force of attraction to bring it to the ground, in the same space of time, that a body consisting only of a hundred particles does.

There are some bodies which do not appear to gravitate; smoke and steam, for instance, rise instead of fall, but it is still gravity which produces their ascent. The air nearer the earth being heavier than smoke, steam, or other vapours, not only supports these light bodies, but, by its own tendency to sink below them, forces them to rise. The principle is just the same as that by which a cork, if forced to the bottom of a vessel of water, rises to the top as soon as it is set at liberty. Balloons ascend upon the same principle, the materials of which they are made, are heavier than the air, but the air within which they are filled is considerably lighter; so that, on the whole, the balloon is lighter than the air which is near the earth, and consequently rises.

RISE FROM A HUMBLE CONDITION.

In a speech delivered by the Hon. and Rev. the Dean of Ripon, at a late soiree of the Mechanics' Institution, Leeds, a few passages occur worthy of being widely circulated:—

"I like to think with pleasure, and satisfaction, and wonder, of the extraordinary advancements which in the providence of God, particular individuals have made, who have just been able to apply the operations of their minds according as they were able to exercise them, and thereby to place themselves in extraordinary positions both in relation to their own prosperity and to the advantage of the country. It may be a very familiar subject, but it is one which I do like to think of, and I will just allude to it. There was a young man who was the youngest of thirteen children, and his father a very poor man; and the best his father could do with him was to apprentice him to a barber. In that humble and praiseworthy class of public life, that respected individual demeaned himself honorably, as long as he chose to continue in it. He then bestowed his care and enterprise upon preparing the beautiful hair of our heads—improving it to that degree that it should be fit to make a wig of. In that he excelled also. Then, gentlemen, he betook himself to a weed which I have seen, and which is a little more than like a weed—I mean the cotton plant of Carolina. He betook himself to the manufacture of cloth made out of that weed. He gained a great success, adding merely to the acquirement which he possessed—which you may suppose were slender—the knowledge which he could pick up by associating with his fellow-men, he gained that success which enabled him to decide the ware of the linen and the cotton, so that a vestment should be made all of cotton. The barber's apprentice, gentlemen, that honorable improver of our hair, for the purpose of a wig, was Sir Richard Arkwright, afterwards high sheriff of his county, and who left his family half a million of money. Well, gentlemen, I only put this as one instance of a simple, plain man, honestly following the call of Providence, using the mind according as God's Providence gave him the opportunity of drawing forth its resources—throwing himself into the opening which was

prepared for him, and thus gaining a prosperity exceeded by no man in this country; and I am sure that language is not equal to say the advantage which our nation has received from his invention, enabling him thus to show the benefit of the exercise of the mind, and talent, and energy and reflection, and desire for improvement in the humblest station of life. I will mention another case, because I do dwell upon it, I confess, with exceeding interest, from my personal acquaintance with the individual. Gentlemen, it is no more than forty years since, in my travels in America, I came to New York, and I called upon the famous Gen. Moreau, with whom I had the pleasure of being acquainted. He said to me, 'Well, here's a strange thing! here's a ship to go by hot water! and to-morrow the trial is to be made, and I am invited to be of the party, and my friends. Will you go with me?' I accompanied Gen. Moreau in the first steam vessel that sailed on the Hudson, in America, under the auspices of Mr. Fulton, the inventor—a man of similar caste of Arkwright, perhaps with some greater advantages from early education, but of a similar tone and cast of mind; unsatisfied with what he had done, and what he could do, and always thinking that he could do something better, and thankful for every information he received, and every opportunity he could gain in making progress in some improvement; so that from a painter in portraits, from a designer in a variety of ways, at last he arrived at the extraordinary eminence and success of making the first practical steam vessel which could navigate so severe a river as the Hudson.

Now, gentlemen, I remember with pleasure standing upon the deck with Robert Fulton, and dwelling with him upon the subject. I remember asking him, "Do you think it will ever be of any good?" I recollect his countenance lighting up almost with indignation at the idea that any invention of his could fail of being useful. I remember very well, just as we approached the mouth of the Hudson, just as it sits on the Atlantic, saying—"What will become of us if we drift out to sea? How is it possible that a vessel of this sort can stand the waves of the ocean?" Well, now, gentlemen, when I compare and bring together that day, with the fact of the steamers now crossing the Atlantic in eleven or twelve days, with a regularity and precision which is always marvellous—why, how is it possible not to see and to be persuaded that there is not a man that lives, and comes within the arena of popular and scientific institutions like this, who has not an opportunity of being distinguished, by giving his talent, industry and energy, to whatever subject in the course of his investigation the finger of Providence may point out to him? It is impossible to say, unless we believe that we have arrived at the acme and fulfilment of everything for the good of man—it is impossible not to think that we may be conferring some great blessing upon our own country—that we may, through the means of some individual in the very humblest class, whose mind we may touch, by just giving him a perception and an intuition of combination connected with science and art—we may render him an instrument of great good to his country and the world, and a source of great happiness and pride to himself."

WASHING LIQUOR.—A correspondent who calls himself the 'Washerwoman's Friend,' says, 'There is now a washing liquor sold in Sheffield at the most extortionate price, beautifully labelled;' but for the benefit of washerwomen, who are generally the really deserving poor, we will impart the wonderful secret which has been obtained from hard-quarters, viz., Mr. Twelveteens:—1 lb. of soda, 1-2 lb. of lime, and 1-2 lb. of soap. The soda and soap are boiled together, and the lime alone in two quarts of water; and then, after, being boiled, are used as required. The receipt can be as well manufactured by a poor washerwoman as by a scientific chemist.