

or detached parts of the elementary fire that go out the moment they are kindled, nor yet a quantity of air bursting out from some compression and taking fire in the upper regions, but that they are really heavenly bodies which have some relaxation in the rapidity of their motion or by some irregular emission are lessened and fall, not so much upon the habitable part of the earth as into the ocean which is the reason of their substance being so seldom seen." An opinion strikingly in accordance with modern views.

Humboldt says, "The Germans call these meteors 'star stuff,' an expression well suited to the views of the vulgar in former times, according to whom the lights in the firmament were said to undergo a process of *stuffing* or *cleaning*." In a work on German Mythology we find a more dignified explanation. "The Pærezæ weave in heaven for the new born child its thread of fate, attaching to each separate thread a shining star. When death approaches, the thread is rent, the star wanes and sinks to the earth."

But beautiful as some of these thoughts of the vulgar are, we are now able to give a more intelligible explanation of phenomena which lose none of their beauty by being understood.

To bestow a passing glance at some of the theories which have been proposed to account for the phenomena presented by these mysterious visitants of our earth is now all that can be allowed us.

The first theory we may notice represents them as thrown from volcanoes. A sufficient refutation of this may be found in their composition—different from that of any terrestrial mineral, and especially in their great height and independence of the earth's motion. It has been proposed to consider them as merely the passage of electricity and the combustion attending it through inflammable gases exhaled from the earth; and learned experiments have been instituted to prove the similarity of the phenomena of meteors and those that would occur were the theory correct; but stones fall, crystals; and it seems hardly consonant with our ideas of crystallization that the process should be so abrupt as to take place almost instantaneously as required by this theory.

It was a theory formerly extensively held by the savans of the United States, that these shooting stars were "terrestrial comets," i. e. cometary bodies revolving, like the moon, around the earth as a centre. These, by the disturbing influence of the moon's attraction and other causes, were precipitated to the earth, and became incandescent from the friction resulting from their great velocity through the air.

A simple mathematical calculation is the reply to this. A body revolving with the attraction of the earth as a central force, must move at a rate not higher than four hundred miles per minute.

These fireballs are observed to move with

a velocity even ten times greater than this, which fact seems to exclude them from the benefits of the apology this theory would offer for their conduct.

It was the theory of the renowned astronomer, La Place, that these masses of heated, luminous stone were thrown from the volcanoes of the moon. It was at first thought impossible that anything should be thrown by volcanic force from the moon with sufficient velocity to be projected to the earth. For twelve years this ballistic problem engaged the attention of astronomers, and it was at length decided that with an united velocity five times that of a cannon ball, a mass would be thrown beyond the sphere of the moon's attraction, and hence fall to the earth.

The moon being acknowledged of a fiery nature, it was not deemed incredible that she should in some extra spiteful moment, bombard her larger but more phlegmatic consort with blazing fireballs and heated stones projected from her arid volcanic sides at this enormous rate. True, fears might be entertained that at the present rate of annual fall the moon would soon belch herself away, and lovers in future years must walk, and vow, and sigh, with no "pale, witching moon," shining serenely o'er them. But, notwithstanding this lamentable prospect, you may find men of profound science still expounding the theory. But Olbers showed that an initial velocity *nearly* times that of a cannon ball would be necessary to account for their extraordinary rapidity of motion.

This seems more than can be believed of volcanic force, and the theory has fallen into disrepute. The ancient notion that these stars are loosened and dropped from this fiery globe, the sun, is quite as probable.

The last theory we shall present, and this we deem the true one, is that aerolites or by whatever name they are called, are small bodies moving in rings around the sun in groups of greater or less numbers.—That these are attracted from their orbits by the disturbing influence of the earth and are rendered incandescent by electrical currents from the earth as they near our atmosphere.

It is contended that this alone will account for their great velocity, their independence of the earth's motion, their great numbers, their periodic occurrence in brilliant showers. In short for the many perplexing phenomena they present. This theory if not the true one has at least the support of great names; Olbers, Humbolt, Herschel, Arago. But after all our knowledge of these strange forms is yet limited. Much remains to be learned respecting the frequency of their occurrence, when they may be expected, the direction of their motion, and many points on which the enquiring mind seeks light. These, time will show. *Æneas reserves her favours* for those who report their visits.

A PICTURE OF THE WOODS.

The following descriptive passage from the "Professor's Story" in the July number of the Atlantic Monthly, is one of the finest pictures Dr. Holmes ever painted:

"The woods are all alive to one who walks through them with his mind in an excited state, and his eyes and ears wide open. The trees are always talking, not merely whispering with their leaves, (for every tree talks to itself in that way, even when it stands alone in the middle of a pasture,) but grating their boughs against each other, as old horn-handed farmers press their dry, rustling palms together—dropping a nut, or a leaf, or a twig, clicking to the tap of a woodpecker, or rustling as a squirrel flashes along a branch. It was now the season of singing-birds, and the woods were haunted with mysterious, tender music. The voices of the birds, which love the deeper shades of the forest, are sadder than those of the open fields; these are the nuns that have taken the veil, the hermits that have hidden themselves away from the world, and tell their griefs to the infinite listening Silence of the wilderness,—for the one deep inner silence that Nature breaks with her fitful superficial sounds, becomes multiplied as the image of a star in ruffled waters. Strange! The woods at first convey the impression of profound repose, and yet, if you watch their ways with open ear, you find the life which is in them, restless and nervous as that of a woman; the little twigs are creaking, and twining and separating like slender fingers that cannot be still, the stray leaf is to be flattered into its place like a truant eurl; the limbs sway and twist, impatient of their constrained attitude; and the rounded masses of foliage swell upward and subside from time to time with long soft sighs, and, it may be, the falling of a few rain-drops which had lain hidden among the deeper shadows. I pray you, notice, in the sweet summer days which you will soon see among the mountains, this inward tranquillity that belongs to the heart of the woodland, with this nervousness, for I do not know what else to call it, of outer movement. One would say that Nature, like untrained persons, could not sit still without nestling about or doing something with her limbs or features, and that high breeding was only to be looked for in trim gardens, where the soul of the trees is still at ease, perhaps; but their manners are unexceptionable, and a rustling branch or leaf falling out of season is an indecorum. The real forest is hardly still except in the Indian summer, then there is death in the house, and they are waiting for the sharp shrunken months to come with white raincoat for the summer's burial."

SELF-GOVERNMENT.—The poorest education that teaches self-control is better than the best that neglects it.

TO TEACHERS.

TEACHERS, FRIENDS OF EDUCATION,
—every one, should have a Prospectus of the
American School Institute.
Also a Specimen Number of the Educational Reform.

Address, with two stamps,
SMITH, WOODMAN & CO.,
63 Chestnut St., Philadelphia.