

DEW.

How it is Formed.—During a summer's day, all bodies, such as the soil, the grass, and the trees, have become warm. But as soon as the sun's rays cease to fall upon them, they begin to give out the heat they have received, and become colder than the surrounding air. Now the heat of the sun during the day has evaporated, or sucked up, a large portion of the moisture on the earth's surface, and, in consequence, the air is loaded with this in a state of vapour. This vapour, as it surrounds cool objects, even blades of grass and leaves, is condensed, or again changed into water. Hence we find that the whole surface of the country is speedily covered by minute dew-drops.

When is there most Dew Formed?—Dew is formed most copiously on calm and still nights. If the night be windy, or if wind arise after much dew has fallen, no more is formed, and the soil gets dry before morning.

Why is this?—When the air is in constant motion, as it is during a wind, fresh and warm portions are constantly brought to the grass, and these hinder its cooling; for the same reason the dew which has been formed evaporates, or is carried away by the currents of fresh air.

Hoar-Frost.—Hoar-frost is frozen dew.

Honey-Dew.—Honey-dew is the name applied to a sweet and sticky moisture occasionally deposited upon the leaves of plants. It is, however, an error to call it dew, as it is the production of a class of insects termed *aphides*. These insects inhabit the under side of leaves, and when this honey-dew drops from their bodies, it falls upon the upper surface of the leaves below. This liquid is hurtful to plants. It stops up the pores of the leaves, and soon makes them look yellow. Ants are greedily fond of it, and may be seen scaling the loftiest trees to get at it.

Dew an Emblem.—Of God's Word, Deut. xxxii. 2; of prosperity, Gen. xxvii. 28; Deut. xxxiii. 13; Job xxix. 19; of spiritual blessing, Hos. xiv. 5—7; of brotherly love, Ps. cxxxiii. 3; of short-lived goodness, Hos. vi. 4.

WONDERFUL CALCULATION.

A writer thus undertakes to convey some idea of the greatness of the population of China; "The mind cannot grasp the real import of so vast a number. Four hundred millions! What does it mean? Count it. Night and day, without rest, or food, or sleep, you continue the weary work; yet eleven days have passed before you count the first million, and more than as many years before the end of the tedious task can be reached." He also supposes this mighty multitude to take up its line of march, in a grand procession, placed in single file at six feet apart, and marching at the rate of thirty miles per day, except on the Sab-

bat, which is given to rest. "Day after day the moving column advances; the head pushing on far toward the rising sun, now bridges the Pacific, now bridges the Atlantic. And now the Pacific is re-crossed, but still the long procession, marches on, stretching across high mountains, and sunny plains, and broad rivers, through China and India, and the European kingdoms, and on the stormy bosom of the Atlantic. But the circuit of the world itself affords not standing-room. The endless column will double upon itself, and double again and again, and shall girdle the earth eighteen times before the great reservoir which furnishes these numberless multitudes is exhausted. Weeks, months, and years roll away, and still they come, men, women and children. Since the march began the little child has become a man, and yet they come, in unfailling numbers. Not till the end of forty-one years will the last of the long procession have passed." Such is China in its population; and if Homer could preach eloquently on the vanity of man as a mortal, with equal eloquence, had he seen or contemplated the millions of China, could he have preached on the vanity of man as an individual!

A SCIENTIFIC BALLOON ASCENT.

Mr. Glaisher, of the British Association for the Advancement of Science, has supplied the following account of a balloon ascent, on the 21st July, 1863:—

Mr. Coxwell having informed me that he intended to ascend from the Crystal Palace on Tuesday, July 21, and the weather having changed so that rain was falling and the wind rising, I availed myself of the opportunity to investigate some points on the formation of rain in the clouds themselves and its precipitation. My principal objects may be stated to have been—1. To determine whether there was another stratum of cloud above that from which the rain was falling, to confirm the accuracy of Mr. Green's deductions relative to rain, namely, "That whenever a fall of rain happens, and the sky is entirely overcast, there will invariably be found to exist another stratum of cloud at a certain elevation above the former." 2. To examine the size of the drops of rain at different elevations, as from all results hitherto obtained the amount of rain collected in a gauge placed near the surface of the earth is larger than in any gauge placed above it, and that the higher the gauge be placed the less water is collected. 3. To determine the temperature of the dew point in its rela-

tion to that of the air below, in, and above the clouds, &c.

We left the earth at 4h. 52m. p. m.—In 10 seconds we were in a mist, and in 20 seconds on a level with the clouds.—At 4h. 53m. the earth was out of sight. At this time we were 1200 ft. high. At 4h. 53m., at the height of 2200 ft., we passed out of thin rain. When at 2500 ft. the clouds surrounding us were very white, and it was with difficulty I read those thermometers which had ivory scales. At 5h. 4m. we passed above the clouds, and saw at a considerable distance above us another stratum of darker cloud. Presently the docks were visible through a break in the lower clouds. At 5h. 7m. we saw clouds below us moving in a different direction to that of the balloon, and those near the earth with great rapidity.

We then began to descend, and at 5h. 11 1-2m., at the height of 1100 feet, sand was below, and the earth was visible with rain falling fast upon it, though none was falling upon the balloon. We then ascended, and at 5h. 20m. were 3500 feet high, but still below the higher stratum of cloud; at 5h. 22m., at 2700 feet high, we entered a dry fog; the grapnel, hanging by a rope about 100 feet in length, was just visible; at 2600 feet we were in wet fog; at 2000 feet very fine drops of rain were falling; the clouds beneath were black; at 5h. 28m. a thick mist surrounded us, and the grapnel was scarcely visible; at 5h. 30m. we saw Epping Forest, and heard the noise the rain made falling on the trees 1000 feet below us; at 5h. 33m. we again lost sight of the earth, and two minutes afterwards could see only a small portion of the grapnel line; at 5h. 37m. we saw an open country, and then were enveloped in mist, and three minutes afterwards we descended to the earth in a squall of wind and rain, the grapnel catching on the bank of a piece of water, and landed without breaking a single instrument. From the existence of the two strata of clouds it would seem to be an established fact that whenever rain is falling from an overcast sky there is a second stratum above. Last year in the ascent on the 1st of September I was between two layers of cloud at the time rain was falling from the lower. These experiments therefore confirm the accuracy of Mr. Green's observations and deductions. It would also seem that when