

Explain the reason of this? If the lower sash be open, cold external air will rush freely into the room and cause a great draft inward; but if the upper sash be open, the heated air of the room will rush out, and of course there will be less draft inward.

By which means is a room better ventilated. By opening the upper sash, because the hot vitiated air, which always ascends towards the ceiling, can escape more easily.

Why does the wind dry damp linen? Because dry wind, like a dry sponge, imbibes the particles of vapor from the surface of the linen as fast as they are found.

Which is the hottest place in a church or chapel? The gallery.

Why is the gallery of all public places hotter than the lower parts of the building? Because the heated air of the building ascends, and all the cold air which can enter through the doors and windows, keeps to the floor till it has become heated.—*Dr. Brewer's Guide to Science.*

SPEED OF THE HORSE.

The maximum speed of the race-horse appears to be at the rate of a mile a minute; for few, if any horses can retain the full velocity of this rate for even that time. It is said, but never was proved, that *Flying Childers* ran at Newmarket one mile in the minute; certain it is that this celebrated horse, when carrying nine stone two pounds, ran over the round course, which is three miles, six furlongs, and ninety-three yards, in six minutes and forty seconds. Bay Malton ran four miles at York, in 1763, in seven minutes and forty-three seconds and a half. Eclipse also ran the same distance, on the same course, in eight minutes, with twelve stone. The most extraordinary instance on record of the stoutness as well as the speed of the race-horse was displayed in 1786, when Mr. Hull's Quibbler ran twenty-three miles round the flat at Newmarket in fifty-seven minutes and ten seconds. The speed of the greyhound, and that of the hare, is but little inferior to that of the race-horse, but their powers of endurance at their utmost velocity are not equal to his.

The racing gallop is evidently but a succession of leaps, in which the fore-legs and hind-legs start in pairs, each pair acting simultaneously. The hand-gallop is not so rapid a movement; in it the right-legs are a little in advance of their fellows. It is well ascertained that a horse can never pass at once from a state of rest into the gallop of full speed, but must begin with the hand-gallop; and cunning jockeys sometimes derive profit from this circumstance by wagering with the unwary, that no horse shall be found to gallop one hundred yards while a man runs fifty, the two starting together. In this the man is sure to win the race, for the horse has not time enough to acquire the necessary momentum, as he would do if the race were for a hundred and fifty yards.

A bet against time was won in July, 1810, by an Arab horse at Bangalore, in the presidency of Madras, to run four hundred miles in four consecutive days. Mr. Frazer relates, in his "Tartar Journey," a still more striking instance of the

speed and bottom of the Arab; a horse of that breed carried him from Shiraz to Teheran, five hundred and twenty-two miles, in six days, remained three at rest and went back in five days, remained nine at Shiraz, and returned again to Teheran in seven days. Another high-blooded Arabian carried Mr. Frazer from Teheran to Koon, eighty-four miles, in about ten hours. A courier, whom Major Keppell fell in with between Kerinshaw and Hamadan, *pieces one hundred and twenty miles' distance* from each other, performed that journey, over a rugged mountainous tract, in little more than twenty-four hours; and the next morning set off on the same horse for Teheran, two hundred miles further, expecting to reach it on the second day.—*English Paper.*

VEGETATION OF THE FROZEN REGION.

The following extract is from Seaman's "Botany of the Voyage of H. M. ship 'Herald,' under the command of Captain Kellet," in search of Sir John Franklin. The accounts of the remarkable phenomena exhibited in those icy regions will be found new and exceedingly interesting:

"The soil is always frozen, and merely thaws during the summer, a few feet below the surface. But the thawing is by no means uniform. In peat it extends not more than two feet, while in other formations, especially in sand or gravel, the ground is free from frost to the depth of nearly a fathom, showing that sand is a better conductor of heat than peat or clay, and corroborating the observation of the accurate J. D. Hooker, who, after a series of experiments in India, arrived at the same conclusion. The roots of the plant, even those of the shrubs and trees, do not penetrate into the frozen subsoil. On reaching it, the recoil as if they touched upon a rock, through which no passage could be forced.

"It may be surprising to behold a vegetation flourishing under such circumstances, existing independent, it would seem, of terrestrial heat. But surprise is changed into amazement on visiting Kotsbue Sound, where on the tops of icebergs, herbs and shrubs are thriving with a luxuriance only equalled in more favored climes. There, from Elephant to Escholtz Point, is a series of cliffs from seventy to ninety feet high, which presents some striking illustrations of the manner in which Arctic plants grow. Three distinct layers compose these cliffs. The lower, as far as it can be seen above the ground, is ice, and from twenty to fifty feet high. The central is clay, varying in thickness from two to twenty feet, and intermingled with remains of fossil elements, horses, deer, musk-oxen. The clay is covered by peat, the third layer bearing vegetation, to which it owes its existence. Every year, during July, August and September, masses of ice melt, by which the uppermost layers are deprived of support and tumble down. A complete chaos is thus created; ice, plants, bones, peat and clay, are mixed in the most disorderly manner. It is hardly possible to imagine a more grotesque aspect. Here are seen pieces still covered with lichens and masses, there a shoal of earth, with bushes of willows; at one place a lump of clay