

## POPULAR ESSAYS ON SCIENCE.

ALTHOUGH the pressure of the atmosphere prevents the rapid vaporization of water until it is hot enough to force the air aside, as in the process of boiling, yet we know, that vapour is constantly forming *at all temperatures*, because we find fluids, when exposed, gradually to disappear. In these cases, instead of *removing* the air, the vapour creeps up into the space between the particles of the atmosphere, and in this way, the whole ærial mass is constantly acting as an immense sponge to suck up the rising vapour from every part of the earth's surface, and the process is technically termed *evaporation*. As its effects produce some of the more remarkable of the natural phenomena, we will consider them in detail.

*Evaporation* is then, that process in nature and art, by which vapour is formed *quickly*, and, often *insensibly*, and, therefore, at a temperature below the boiling point. It takes place when the temperature of the fluid is *above* that of the *surrounding air*, and, also, when *below* it. In *all cases*, however, the law of evaporation is, that it accords with the quantity of heat which influences the fluid. The presence of the atmosphere does not determine the *quantity* of evaporation, but only the quickness or slowness of its operation. This will be evident if we consider the remarkable fact, that *as much vapour*, at a given temperature, occupies the same space in the air as it would in a vacuum, the difference only being the rapidity with which the latter is filled, whilst vapour can but slowly creep up among the ærial particles to occupy their interstices: Instances of evaporation constantly present themselves. When water is exposed in a shallow vessel to the air, it will gradually diminish, and, in a few days, disappear entirely. In domestic purposes it is familiarly termed "drying," as when wet clothes are hung upon lines, in order that the water they contain may slowly pass away. A washerwoman is seldom aware, that, in this part of her occupation, she is taking advantage of one of the most beautiful and useful of natural operations—the rising of vapour in the atmosphere.