completely obturating the mouth of the bottle. This partition is so delicate, that the slightest agitation will cause it to fall into the liquid.

In all these cases it is found that the fumes possess the power of remaining suspended a much greater length of time than would be expected from the difference of their specific gravity with that of air, which is also the case with the fumes of other substances, and smoke in particular. This can only be accounted for by the continual state of agitation of the air, even within an enclosed space, and by the elasticity of the solid and liquid particles. In the case of solid particles this can be readily admitted, but with regard to liquid globules, there is probably some action similar to that which takes place on the impinging of solid elastic balls, which after becoming flattened rebound in virtue of their tendency to recover their original shape.

The causes which act in fixing different vapors and fumes are the same as those which determine the precipitation of solid particles in solution, such as for instance, sharp points of any kind, minute filaments, and more especially the existence of a crystalline particle to act as a nucleus. Non-conducting substances, as woollen cloth, the nap of a hat, the web of the spider, &c., are covered with aqueous globules when no rain has fallen, and when polished surfaces near present no such deposition.

Having now shown the existence of a crystalline power in vapors, we shall proceed to prove the influence of a force which disturbs this equilibrium in the same manner as in the saline solutions above mentioned. The friction of a solid body on glass will leave traces which are invisible until breathed upon.

Many bodies possess this property, but the mineral steatite or soap-stone, produces the effect better than any other I know. A considerable degree of friction may be used over the traces thus produced by steatite, without affecting the appearance of the traces wh breathed upon repeatedly. The glass m even be heated considerably without affecti them. By examining with the microsco the parts that have been traced upon steatite, we are unable any more than wi the naked eye, to detect any material cau for the deposition of vapors in these place as it probably depends upon the transparen of the mineral, which being so attenuated unable to affect the rays of light. When t traces have been brought out by breathi upon them, they must be covered wi another piece of glass, which impedes t evaporation of the water and allows the to be submitted to the microscope. T parts untouched by the steatite present t appearances that have been already me tioned. On the lines created by the min ral, the drops of water are differently di posed, their long diameters being parallel t the direction of the lines. These minu drops very much resemble the globules gas deposited from a liquid, the only diffe ence between the two consisting in the dev ation from the globular form in the liqui traces, which evidently arises from th power which the water possesses of we ting glass.

It is evident, therefore, that the secondar cause of these images is a difference in th position of the minute drops of water, re flecting the light differently from the othe drops, which are irregularly disposed o the other parts of the glass.

There exists another method of fixing vapors, which has been long known, and t which I believe attention was first directe by Prof. Draper. It consists in merely plac ing a body on a plain surface, such as tha of a metallic speculum, or even of glass; after a short time it is found that simple con tact, such as this, has caused some molecu lar action, as the spot occupied by the ob ject will become apparent by breathing o it in the same way as with the images o steatite. This observation is the more in teresting, as it serves as a connecting link