of water, the irregular crystals are mostly carried away while the images are left almost intact. It is therefore evident that the same power which causes this deposit, renders them more adherent to the surface of the glass than the other crystals. Another method of demonstrating the difference of their adherence, is by allowing the solution to dry on the glass, when by brushing it slightly with the feather of a pen, most of the irregular crystals are taken off and the images remain.

Other substances capable of forming a like deposite.—Chloride of platinum and nitrate of potash, mixed together, form a double chloride, with which images can be obtained with as much ease as with the double phosphate. The only difference is, that the double chloride precipitates in the shape of octahedrons, &c. Solutions of tartaric acid and nitrate of potash deposite chystals of bitartrate of potash, which are capable of forming upper and lower images with nearly as much facility as the double phosphate. The lower images formed by the bitartrate differ in one respect from those by the phosphate, for shortly after their formation they appear to lose their adhesion to the glass, and the slightest agitation of the liquid causes them to be detached; and if a sentence has been written, the curious appearauce is presented of fragments of words and letters floating about in confusion. Under the microscope also they differ, fewer parallel lines are perceived, and the crystals are larger and unequal in size. Liquor potassie added to a solution of tartaric acid will form images exactly similar to those just mentioned. Caustic soda and tartaric acid produce the same result, but the solution must be much more concentrated.

Images formed by gaseous bodies.—These traces are formed in the same manner as those which are crystaline, by passing a solid body over a piece of glass covered with a liquid containing a gas in solution, when they are immediately perceived by the bubbles which are deposited. On account of the specific gravity of the gas, these images are not very durable, for after a short time the gas which composes them arises to the surface. As a general rule, the ingredients, whose combination causes the formation of the gas, should be added together gently, and so diluted that whatever gas is formed they remain dissolved in the liquid. I have been surprised to find how much gas may be in this way made to remain in solution; and as most of them appear capable of being dissolved in this unstable manner, traces may be obtained from them all; and I have ascertained by experiment, that such is the case with carbonic, acetic and hydrochloric acids.

To obtain carbonic acid, I have generally used subcarbonate of soda and tartaric acid. Acetate of ammonia was employed to liberate acetic acid, and hydrochloric acid was obtained from common salt and sulphuric acid. A mixture capable of forming traces has the property of disengaging its gas in bubbles, whenever it is brought in contact with any dry surface; as for instance, when a mixture of this sort formed on a slip of glass is caused to spread over a part of the surface which has not previously been wetted, bubbles of gas are immediately evolved on that spot, although none are perceived elsewhere. This effect is also produced with champaigne, seltzer and other effervesing waters, which however have not the property of forming gaseous traces. Any surface, whether metallic or non-metallic, will be found to effect the separation of the gas from the liquid; and I have not perceived that there was any difference from the surface being perfectly polished or rough.

The immersion of a piece of bread in champagne to renew the effervescence, is merely an example of the contact of a fresh surface with the gas; in a short time it ceases to have this effect, but if a fresh piece is used, the effervescence is renewed as before. The difference of effect between this and a piece of metal arises from the superior