between the effects of mechanical power and those caused by other agents.

The experiments of Mr. Hunt have shown the influence of heat in causing the fixation of vapors.

An image of this sort formed on glass by the breath, when examined under the microscope, presents exactly the same appearance as those formed by steatite. The same difficulty is experienced in bringing out, by mercurial vapors, the thermographic images on glass, as is found with the traces of steatite, which possess but in a very slight degree the power of fixing mercurial vapors. It appears therefore that the power which water has of wetting glass, causes it to have a greater tendency to deposit than mercury, which does not wet glass. The cause of the production of thermographic images is evidently similar to that which causes the deposition of a solid body from a solution.

The fixation of the mercurial vapors in the Daguerreotype process, which has excited so much interest, and for which so many theories have been advanced, is but another example of the force which causes the deposition of solid and gaseous particles from a liquid, and which produces so many other effects. In this case the chemical rays of light act in the same manner as mechanical action and caloric in causing a certain molecular disturbance. By the discoveries of Moser, it is shown that these rays possess the power of acting upon almost any body, in such a manner as to render it capable of fixing the particles of various vapors. Thus simple minerals, glass, &c. may be made to fix the mercurial vapor.

It appears, however, that silver, gold, copper, &c., which form amalgams, or in other words, are capable of being wetted by mercury, possess this property in a greater degree than any other bodies which are incapable of being wetted by it; in the same way as we have seen that glass has the greatest power to fix the vapor of water. Admitting the truth of this theory of the Daguerreotype process, we are naturally led to inquire whether the same agent may not likewise cause the fixation of particles in a state of solution or of vapor, in the same manner as by simple mechanical action. After several unsatisfactory attempts I finally succeeded in clearly proving this fact. The solution which shows the influence of light the most evidently, is that of the neutral chloride of gold. A few grains of this salt dissolved in an ounce of water, when exposed to the light, deposits minute crystals of a metallic appearance on that side of the glass nearest the light.

The action of light in causing the deposition of gaseous vapors may be shown by placing some iodine in a bottle closed with a glass stopper. After being exposed to the sunshine for several hours, minute black crystals will appear on the side nearest the light, which will change their position according to the side of the glass exposed. Another substance which shows this action still better, is camphor, a piece of which, merely covered with a glass shade, will give rise to a crystalline deposit, after an hour or two of exposure to light, and which presents the same phænomena as that of iodine. By a prolonged exposure these crystals become very abundant, and are very beautiful*. I have applied this property to the construction of an instrument for measuring the chemical rays of light. As the details respecting this would be foreign to our present subject, I will defer them to another occasion, and confine myself now to prove that these phenomena are independent of the deposits caused by radiation.

1st. The crystals are formed on the side exposed to the action of direct or diffused light.

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* I am informed by a friend, that this action of camphor was mentioned twenty years since by Dr. Hope in his lectures, but I am not aware of anything having been published upon the subject