

two divisions into one, certain ions here being continuously forced into infinite orbits, and being subsequently thrown off.

In physics, the question of the actual work of the latent heat has always been rather hazy to the student, the explanation of its necessity to overcome the molecular cohesion being of course true, but not clear and hardly sufficient.

If we accept at least part of this heat as being spent in changing the ionic orbits from finite into infinite, some rather interesting conclusions seem at hand. In changing water into steam, the product becomes expansive, and if one would ask what expansion signifies in view of this new ionic theory, the natural reply would seem to be that it is a state of matter when the ions move in infinite lines, this motion being stopped only by the walls of the surrounding vessel. Hence also it would be fair to assume that all expansive matter is more or less radio-active, depending upon its power of expansion, and again that all elements are therefore radio-active in one state or another. The term "gas" receives from this point of view an entirely new meaning, it being nothing more or less than that particular state of matter when all elliptical ionic orbits have been changed into infinite ones.

It has also occurred to me that the change of a solid element into its "gas" might affect the atoms themselves, causing an atomic movement on similar lines as the one already described for the ions, and that this movement might exist with or without any change in the original ionic orbits, but even in such a case the gases should possess signs of radio-activity, and it would be interesting indeed to test the above suggestions from such a basis.

Yours very truly,

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Notes and Comments.

"BANANA" SOLUTION FOR BRONZING.

The following from the *Druggists Circular and Chemical Gazette* will probably be of interest. The so-called "banana solution" (the name being derived from its odor) which is used in applying bronzes of various kinds is usually a mixture of equal parts of amyl acetate, acetone and benzin, with just enough pyroxylin dissolved therein to give it sufficient body. Powdered bronze is put into a bottle containing this mixture and the paint so formed applied with a brush to the article to be bronzed. The thin covering of pyroxylin that is left after the evaporation of the liquid protects the bronze from the air and keeps it from being wiped off by the cleanly housemaid. Tarnished picture frames and tarnished chandeliers to which a gold bronze has been applied from such a solution will look fresh and new for a long time. Copper bronze as well as gold bronze and the various colored bronze powders can be used in the "banana solution" for making very pretty advertising signs for use in the drug store. Lettering and bordering work upon the signs can be done with it. Several stiff very small painter's brushes are needed for such work and they must be either kept in the solution when not in use, or, better still, washed in benzin or acetone immediately after use and put away for future service. It is needless to add that as the "banana solution" is volatile it must be kept well corked.