

On the rays emitted by phosphorescence

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translated by Carmen Giunta

In an earlier session, M. Chairman Henry announced that phosphorescent zinc sulfide placed in the path of rays emanating from a Crookes tube augmented the intensity of rays passing through the aluminum.

Elsewhere, M. Niewenglowski recognized that commercial phosphorescent calcium sulfide emits rays which pass through opaque bodies.

This fact extends to various phosphorescent bodies, and in particular to uranium salts whose phosphorescence has a very brief duration.

With potassium uranyl double sulfate, of which I have a few crystals forming a thin transparent crust, I was able to perform the following experiment:

One wraps a Lumière photographic plate with a bromide emulsion in two sheets of very thick black paper, such that the plate does not become clouded upon being exposed to the sun for a day.

One places on the sheet of paper, on the outside, a slab of the phosphorescent substance, and one exposes the whole to the sun for several hours. When one then develops the photographic plate, one recognizes that the silhouette of the phosphorescent substance appears in black on the negative. If one places between the phosphorescent substance and the paper a piece of money or a metal screen pierced with a cut-out design, one sees the image of these objects appear on the negative.

One can repeat the same experiments placing a thin pane of glass between the phosphorescent substance and the paper, which excludes the possibility of chemical action due to vapors which might emanate from the substance when heated by the sun's rays.

One must conclude from these experiments that the phosphorescent substance in question emits rays which pass through the opaque paper and reduces silver salts.