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DARKEST DARK ROOM

Apartment in Washington Arranged for Interesting Experiments

For certain novel experiments Prof. Elmer Gates, of Washington, has newly constructed a room which is beyond question the darkest place in the world. Ordinarily when one speaks of darkness it is in a comparative sense. The darkest night is not very dark out of doors. The depths of a cavern or coal mine are darker, but not so dark as the so-called "dark room" of a photographer. Yet a very sensitive plate exposed in a photographic dark room is quickly spoiled because some light is present. On the other hand the darkness obtained by Prof. Gates is absolute. . . .

Prof. Gates' dark room is constructed like a box, the walls of which are of wood, saturated with paraffin, to fill the pores. There is a lining of tar paper, and then come layers of orange-colored paper, gray felt paper, and lead foil. The purpose of these linings, of course, is to exclude all light rays. Inside the box described is another box similarly made and lined, and within the second box is a third box, which has walls of sheet lead and of wood painted black. But lead is not wholly opaque to X-rays, and so a fluoroscope screen is placed beneath the sheets of that metal. Such X-rays as get through the lead are stopped by the screen and turned into light, and the latter cannot penetrate the black painted wood. The wood is covered with 12 layers of paper saturated with chemical substances that are opaque to light of various colors. These are overlaid by three additional layers containing salts opaque to the invisible rays of the spectrum beyond the violet, and finally there is a coat of lead foil. The innermost room rests on rubber cushions; the second room is similarly supported, and the third or outermost is insulated and rests on posts which go deep into the ground. Electricity is conveyed into the innermost box by a wire cable from a friction machine outside. Thus the whole affair is a great Leyden jar, within a Leyden jar, within a Leyden jar.

The innermost box, which is the dark room, is so absolutely dark that the most sensitive photographic plates exposed there for 48 hours have not undergone the slightest

alteration. It is likewise impenetrable to X-rays, to the dark heat rays below the red spectrum and to the invisible rays above violet. It is proof even against sound waves of certain classes, such as musical tones. The dark room is entered by a sort of labyrinthine passage, which winds around the nest of boxes until the entrance to the innermost one is reached. It is brilliantly illuminated by electricity, but a touch on the button brings instantaneous blackness. After getting used to it you are able to distinguish a finger before your face very faintly. This is due to a phosphorescence in the eye; after awhile it fades out and you can see nothing whatsoever.

Certain sense perceptions seem to be more delicate in the dark than in light, and Prof. Gates wants to measure them. This is one of the purposes for which his black room is built; but its construction renders practicable the solution of the other important psychological problems. As has been said, the room is actually a big Leyden jar; it can be charged with electricity. Already it is more than suspected that the mind works quicker and better when the electrical "potential" of the surrounding atmosphere is high and contrariwise when it is low. There is no difficulty in raising the electric potential of the dark room as high as may be desired. Then exact tests may be applied for ascertaining if the senses are rendered more keen and the mental processes more rapid.—*St. Louis Globe-Democrat*.