

higher velocity than the cathode ray particles. They are readily deflected by a magnet, discharge electrified bodies, affect photograph plates, stimulate strongly phosphorescent bodies, and are of great penetrative power.

The Gamma rays are very few in number, so few indeed, that they have received little attention thus far. They are almost impossible to detect save in a highly radioactive substance such as radium. They resemble in many respects very penetrative X-rays produced at the moment of the expulsion of the Beta or cathode rays. They are uninfluenced by magnetism, pass in straight lines at great speed and possess remarkably penetrative properties, even affecting a photograph plate through a foot of iron.

It gives off a gaseous emanation, as does thorium, which is also a powerfully radioactive substance. The emanations possess all the properties of gases; diffusing through air and porous substances, such as paper, they can be stored like ordinary gas and can be condensed at temperature of liquid air, and are unaffected by chemical reagents.

It ionizes the air, or makes the air (in fact, any gas through which it passes) a conductor of electricity. It discharges negatively electrified bodies. It is, according to Mme. Curie, the first example of a body which spontaneously charges itself with electricity. It acts upon the chemical constituents of glass, porcelain and paper, giving them a violet tinge, changes white phosphorus into yellow, oxygen into ozone, affects photograph plates and produces many other curious chemical changes. It imparts radioactivity to everything surrounding it. It destroys the germinative power of seeds. It likewise destroys various micro-organisms and checks the growth of others. It has given encouraging results in the treatment of certain classes of disease.

It retards the growth of certain forms of life, such as larvae, so that they do not pass into the chrysalis and insect stages of development, as their companions do, but remain larvae.

It causes other forms of life, such as very young tadpoles, to become monstrosities or abnormalities. It causes the hair of mice to fall out, and they run about without a hair on them, and, if the radium is placed closer, the mice are paralyzed and killed. On the other hand, it causes a growth of the hair or fur of rabbits when they are exposed to radium placed at a proper distance.

It has frequently caused serious burns and ulcers when