

NEW IDEAS OF LIGHT DECLARED IRRECONCILABLE WITH PAST

The new light on light gained by recent experiments is irreconcilable in many cases with the nineteenth century conceptions of the nature of radiation, Dr. Robert A. Millikan, director of the Norman Bridge Laboratory of Physics, Pasadena, revealed during the course of lectures at Cornell University.

"Very recently there has come into the possession of the race," said Dr. Millikan "knowledge of the relation between the frequency of ether waves and the energy of the electrons which emit or absorb these frequencies. This relation was not only undreamed of twenty years ago but it is completely irreconcilable with nineteenth century conceptions of the nature of radiation and the nature of the changes in the material bodies giving rise to ether waves."

The light that the human eye sees, the radio waves, the X-rays, the ultra-violet and infra-red rays are all ether waves that are radiated by electrons. And electrons are both matter and electricity and the stuff out of which the world is made.

Three Nobel prizes have been awarded, at least in part, for the development of this relation between the frequency of the ether waves and the energy of the electrons. The relation is expressed in the mathematical equation which states that half the mass multiplied by the square of the velocity, an expression that represents the energy of the electron, is equal to a constant of energy emission multiplied by the frequency of the radiating body minus the work necessary to get the electron out. This formula is the one for the first conception of which Einstein was given the Nobel prize in 1921; for the most important theoretical application of which Bohr was given the Nobel prize in 1922; and in part for the exact experimental proof of the validity of which the same prize for 1923 was awarded to Millikan.

Dr. Millikan in explaining this new conception stated that its correctness has been substantiated by very recent evidence furnished by experiments of Prof. A. H. Compton at Chicago, Profs. Bothe and Geiger at Berlin and E. C. Watson at Pasadena.

HOW ATOM SHUDDER CREATES LIGHT CALLED DEEPEST MYSTERY

One of the deepest of scientific mysteries today is the as yet completely unknown way in which the atom is able to transmute the energy of an atomic shudder into an ether or light wave of a single color. Dr. Robert A. Millikan, director of the Norman Bridge Laboratory of Physics, Pasadena, and Nobel prize winner, has declared in lectures recently before Cornell University that the way that the atom gives off light or other radiation does not consist, as nineteenth century physicists always assumed, in the vibration of particles synchronously with the frequency of the emitted ether wave.

The physicist is now perforce obliged to forego the attempt, at least at present, to find a mechanical picture of the act of radiation," Dr. Millikan explained, "an act which, however, ejects a ray from the atom which has a definitely measurable frequency and the frequency which is a definite measure of the energy lost by the