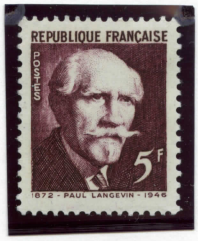
THE HISTORY OF THE ATOMIC ERA, RADIOLOGY, AND ATOMIC ENERGY IN PHILATELY



III. Atomic Energy: Early in the present century, a number of complex and intensive studies were undertaken to determine the nature of the atom. By 1895 the growing bulk of evidence and the successful application of the kinetic theory in dealing with large numbers of particles had left little doubt that atoms and molecules were real. Jean Perrin (1870-1942), in his book "Les Atomes" (1913), provided experimental confirmation of the theoretical studies in which Einstein had demonstrated that these particles conform to the laws governing the passage of electric currents through gases at low pressure. The theory of Paul Langevin (1872-1946), which assumed that each molecule had a definite magnetic movement tending to be oriented to the applied field and at the same time disturbed by thermal agitation, was validated by the recognition of atomic structure (1905). The Nobel Prize winner for physics in 1918, German physicist Max Planck (1858-1947), formulated the Quantum Theory in 1901, thereby laying the foundation for Albert Einstein's theory. The "h" symbol represents Planck's constant -- the basis of the Quantum Theory -- the "quantum" being the pocket of radiant energy emitted by radioactive substances.

In his electron theory, the Dutch physicist Hendrik Antoon Lorentz (1853-1928) arrived in 1904 at the Lorentz transformation which forms the basis of Albert Einstein's (1879-1955) restricted theory of relativity.