



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



II. Radiology: Glass vacuum tubes were initially produced by Heinrich Geissler (1814-1879). Later Johann Hittorf (1824-1914) defined numerous properties of cathode rays in his experiments with these glass tubes, and in 1897 Sir William Crookes (1832-1919) found that such rays could be deflected by a magnet.

Meanwhile several other scientists were experimenting with Crookes-Hittorf vacuum tubes and induction coils. Among them was Wilhelm Konrad Röntgen (1845-1923), who, on November 8, 1895, accidentally discovered that barium platinocyanide crystals, dispersed near a vacuum tube, fluoresced when the rays emanating from the cathode tube fell upon them. Within a few weeks, Röntgen had proved that this fluorescence was caused by a new type of ray. He noted, too, that when he held his hand between the tube and a fluorescent screen, the skeletal outline became visible; he used the mathematical symbol "X" for this unknown quantity and termed his discovery "X-rays". On December 28, 1895, he presented to the President of the Würzburg Physical-Medical Society a preliminary written communication ("On a new kind of rays") in which he discussed all the important physical features of the new rays. The contents of Röntgen's "Preliminary Communication" leaked out to Vienna press almost immediately. It was copied on January 6, 1896 and the London Standard dispensed a world cable on the subject. The first X-ray photograph for clinical purposes was made by A. A. Campbell Swinton (1863-1930), a London electrical engineer who became a consultant on X-ray plants on January 7, 1896.