

## MARSHLANDS.

Professor William Konrad Rontgen, professor of physics at the Royal University of Wurzburg. Then Rontgen's own report arrived, so cool, so business-like, and so truly scientific in character, that it left no doubt either of the truth or of the great importance of the preceding reports.

The Rontgen rays are certain invisible rays resembling, in many respects, rays of light, which are set free when a high pressure electric current is discharged through a vacuum tube. A vacuum tube is a glass tube from which all the air, down to one-millionth of an atmosphere, has been exhausted after the insertion of a platinum wire in either end of the tube for connection with the two poles of a battery or induction coil. When the discharge is sent through the tube, there proceeds from the anode—that is, the wire which is connected with the positive pole of the battery—certain bands of light, varying in color with the color of the glass. But these are insignificant in comparison with the brilliant glow which shoots from the cathode, or negative wire. This glow excites brilliant phosphorescence in glass and many substances, and these "cathode rays," as they are called, were observed and studied by Hertz; and more deeply by his assistant, Professor Lenard, Lenard having, in 1894, reported that the cathode rays would penetrate thin films of aluminum, wood, and other substances, and produce photographic results beyond. It was left, however, for Professor Rontgen that during the discharge another

kind of rays are set free, which differ greatly from those described by Lenard as cathode rays. The most marked difference between the two is the fact that Rontgen rays are not deflected by a magnet, indicating a very essential difference, while their range and penetrative power are incomparably greater. In fact, all those qualities which have lent a sensational character to the discovery of Rontgen's rays were mainly absent from these of Lenard, to the end that, although Rontgen has not been working in an entirely new field, he has by common accord been freely granted all the honors of a great discovery.

Among the other kinds of matter which these rays penetrate with ease is the human flesh. That a new photography has suddenly arisen which can photograph the bones, and, before long, the organs of the human body; that a light has been found which can penetrate, so as to make a photographic record, through everything from a purse or a pocket to the walls of a room or a house, is news which cannot fail to startle everybody. That the eye of the physician or surgeon, long baffled by the skin, and vainly seeking to penetrate the unfortunate darkness of the human body, is now to be supplemented by a camera, making all the parts of the human body as visible, in a way, as the exterior, appears certainly to be a greater blessing to humanity than even the Listerian antiseptic system of surgery; and its benefits must inevitably be greater than those conferred by Lister, great