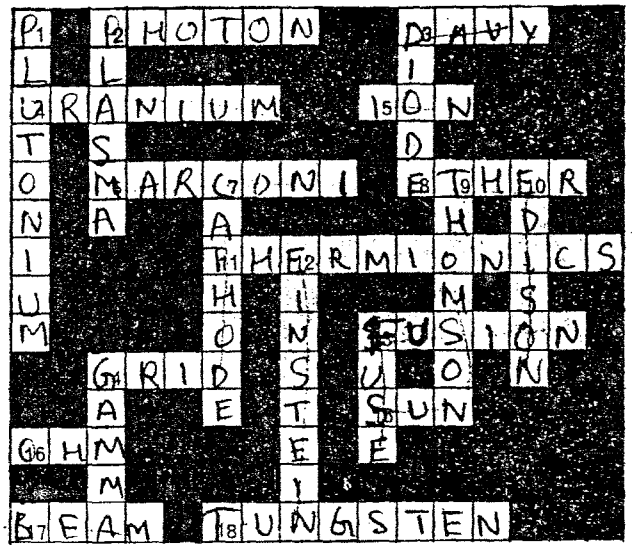
Ramesh Bhandari XIA

the glowing of the screen was something out of the ordinary. He at once appreciated that the screen glowed even though no known radiation was reaching it. Some later critics thought that Rontgen's discovery was fortuitous because the presence of the screen near the blackened tube was a piece of luck. But the real merit of the discovery will be seen when it is appreciated that, as a matter of historical fact, another physicist did have the chance of making the very same discovery earlier but just failed to take the hint. That Oxford scientist when presented with a similar chance of inferring the radiation from the unusual fogging of photographic plates merely removed the photographic plates to a place of safety. He completely missed the bus! Rontgen made the sudden discovery, and followed up the investigation until the important facts came out. He found that the radiation had the power of passing through various substances through which ordinary light does not pass. He wondered whether the radiation was a kind of light or it was some other kind of vibration in the ether. In view of the uncertainty he called it X-ray, and thus made a discovery which was to usher in a new era, the modern era in physics. Moreover, he gave the world a discovery with immense practical uses for examining inaccessible regions of the body, and in X-ray therapy and numerous other interesting applications, including the examination of merchandise for defects and jewels thought to be imitation, and "old master" paintings of questioned authenticity. Particularly important has been the use of X-rays in studying the structure and nature of crystals. The discovery was so sudden and complete in principle that it shocked the then scientific world into a new outlook. It inspired Becquerel to look for yet other new types of radiation and the scientific stimulus led him to the discovery of radioactivity in uranium, the Curies made further investigations of the phenomenon, and thus was set in motion the era of unprecedented progress of modern physics.

R. B. PAI

SCIENCE CROSSWORD PUZZLE (PHYSICS)



Clues:

Across :

2. A light quantum
3. Inventor of safety lamp.
4. The atomic bomb employs the fission process wherein———— nucleus is split.
5. A charged atom or a group of atoms.
6. Italian scientist and inventor who developed practical and commercial applications of wireless telegraphy.
8. It was supposed to fill all space and was also known as the medium for the propagation of light waves.

12. The science dealing with the emission of electrons from hot bodies.
13. It is the process of releasing energy by combining lighter nuclei into heavier nuclei.
14. It controls the flow of electrons to the positive plate in a triode.
15. Its distance from the earth is 93 million miles.
16. Unit of electrical resistance.
17. A collection of light rays.
18. The filament of metal———— is generally used in electric lamps.

Down:

1. A fissionable element with atomic weight 239.
2. The fourth state of matter.
3. A thermionic valve consisting of two electrodes.
7. Electron emitting electrode of a device such as a vacuum tube.
9. He determined the ratio of a charge of an electron to its mass.
10. He invented the incandescent lamp.
12. He gave the famous mass energy equation of a moving body.
13. Easily melted wire put in an electric circuit for safety.
14. —rays are short X-rays, with high penetrating power.

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(Solution to this puzzle will appear in the next regular issue of S.R. —Ed.)