RADIO

Home Television Pictures Shown to Radio Engineers

A SCIENTIFIC idea that figuratively almost went into the wastebasket because it seemed too difficult to work out has now produced bright, clear television images of such size that they appear to meet the potential requirements of home users.

At the meeting of the Institute of Radio Engineers in New York scientists of the Radio Corporation of America demonstrated television pictures, 18 by 24 inches in size, that compare favorably with home motion pictures in brightness and detail.

This area of viewing screen may reasonably be supposed to represent the television set owners' wishes for size, since it is probable that future commercially-available sets will be about as large as the larger radios today. A few people may wish to devote the whole side of a room to a television screen but the feeling is that a picture about two feet square, visible across an ordinary living room, will meet the greatest demand.

Dr. V. K. Zworykin, W. H. Painter, and Dr. R. R. Law described the new type projection tube which makes possible the bright images in "living room" size. Idea behind the work is that a controlled stream of electrons strikes a fluorescent screen and by bombardment makes the screen shine so brightly that an ordinary optical system can enlarge the image to its 18 by 24 inch size.

Electrons Form Picture

These flying electrons, which ultimately form the television picture, have to pass through four "gates" before striking the fluorescent screen.

Through the first three the electrons are packed into a pencil of rays about the size of a real leadpencil. But in going through the last "gate" they must pass through a hole too small in size to allow the passage of a human hair. Getting the electrons through this tiny opening without loss and obtaining something on the opposite side was one of the "kinks" in the original idea that almost led to its abandonment before being tried.

The television engineers are now continuing their work ironing out one hampering factor in their development; that the bright, clear image can only be obtained with special laboratory equipment and with technical operators.

Science News Letter, June 26, 1937

TELEVISION IMAGE GROWS

Clear, detailed television images 3 by 4 feet in size were demonstrated at the recent meeting of the Institute of Radio Engineers. Dr. R. R. Law of the Radio Corporation of America stands beside the large image on the screen.

MINING

Decade of Stable Prices Foreseen For Mining Trades

DESPITE warning that the price of coal, and other mineral resources will sometime rise, economists of the U. S. Bureau of Mines and the WPA believe that in the next decade applied science can so lower costs of production that industry and the ultimate consumer will find they are paying prices prevailing in the 1920's.

But if the price stays the same, the nation and the world, too, must be prepared for accompanying problems. In some regions mineral supplies will be exhausted and stranded mining populations will have to be shifted. And increased mechanization may create local unemployment.

Worst of the new mining techniques, from the miner's side, is that of strip mining where mighty steam shovels find it economical to dig through 50 feet of soil and rock to reach a 5-feet thick seam of coal. Only a half or a third as much labor is required by this method.

Mechanical loading, too, is entering the last stronghold of hand labor in the mines. Ninety per cent. of Wyoming's mineral output is now machine-loaded, 62 per cent. in Indiana and 56 per cent. in Illinois.

The effect of increased mechanization in mining, on the short-time view, is to "inject an element of technologic unemployment in an industry where other factors have already reduced the number of jobs," says the report.

Science News Letter, June 26, 1937

PHYSICS

Further Studies Fail to Show Neutron Refraction

FURTHER experimentation on the possibility of refraction of neutrons in the passage through lenses of paraffin (SNL, March 13, 1937) has disclosed that the effect is absent when the research was carried into the open air to avoid spurious scattering from the laboratory. This new report of Prof. G. N. Lewis and Philip W. Schutz of the University of California is presented in the *Physics Review* for June 15.

Science News Letter, June 26, 1937