

# THE RADIO RECORD

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## The Future of Radio



SCIENCE that is growing side by side with radio is that of picture transmission, including radiovision, radio drama and radio "movies." The

principle of picture transmission has come to perfection more rapidly than that of radiovision and its associated arts. Already, picture transmission has become commercialised, and the British Broadcasting Company radiates pictures regularly on the Fultograph system. The principle of this apparatus is analogous to that of the reproduction of pictures for Press purposes. The photograph is transferred on to a sheet of zinc and copper suitably coated. This becomes soluble when exposed to light, and when washed, the portion not exposed to the light disappears, leaving an insoluble image. Current is transmitted when a stylus touches the metal, and variations in current occur. A reversal of the system at the receiving end allows images to be received on much the same principle.

In 1928 pictures were regularly radiated from 5XX, Daventry, England, and about the same time regular transmission across the Atlantic was established. Facsimiles of cheques, photographs, documents, etc., are now regularly sent from Europe to America.

THE principle of radiovision, usually known as television, is altogether different. By television is meant the transmission of moving pictures, not necessarily over the air. They may be transmitted through a photograph line, but "radiovision" involves the use of the ether. The state of radiovision to-day is the position similar to that occupied by radio in 1900.

Radiovision aims not at transmitting still pictures, but moving images of the objects televised and the system employed is somewhat similar to that used in the ordinary cinematograph. An image is produced on the screen in virtue of the fact that it is divided up into a large number of images each of which may be considered a still picture. Owing to the rapidity of these, the eye translates the movement. To attain this, each image must rest on the screen no longer than  $1/15$ th of a second. In order to obtain this breaking-up of the original object, what is technically known as a "scanning disc" is brought into operation. This is a circular disc in which are a large number of small apertures, usually 48. Behind this is a photo-electric cell and the scanning disc moves in front of the cell so that each small still picture is registered on it.

The construction of a photo-electric cell is such that variation in the intensity of light is translated as variation in electric current. This

With radio is wrapped up the allied sciences of radiovision and picture transmission. The future of these sister sciences will mould the whole communication systems, giving it an aspect yet undreamed of. The wireless set—that noisy, untidy collection of unsightly apparatus in the corner of an obscure room—has disappeared; it has been replaced by a musical instrument to which will some day be added an optical instrument—but the advent of this is not just round the corner. The accompanying are the remarks of our technical editor, to the Wellington Radio Society.

is amplified and put on the air in much the same way as a broadcast station. With radiovision there are certain very baffling obstacles. To obtain a sensible degree of light on the photo-electric cell, tremendous candle power must be thrown upon the object to be televised, though we read in a recent publication that objects have been televised in the open air.

The size of the picture so obtained rarely exceeds two inches square. To reproduce the movement at the receiver end, a disc of 36in. diameter

has to be used. The vibrations are collected from the ether and amplified in an ordinary receiver. This amplified current is passed through a neon cell which translates the electric vibrations in varying intensities of light. To receive an image a scanning disc must move in front of this cell. In dimensions this must be the same as those of the disc at the transmitting end. In addition, its movement must perfectly synchronise with that at the other end. Not only must the two move at the same pace, but they must each occupy the same position at the same time.

Working under this system, radiovision is beset with obstacles, and Hugo Gernsback, until recently Editor of several of the leading American technical publications, has stated that in his opinion an entirely new system is necessary.

Two American experimenters well known to the radio world, De Forrest and Jenkins, are working upon new systems. The Jenkins system employs a very large number of photo-electric cells arranged on a screen, while the De Forrest system is such that the image remains a tenth of a second after the scanning disc has moved on. These new developments seem certainly to be more hopeful, but radiovision, as apart from picture transmission, has not yet passed the experimental stage.

### The Advent of Radiodrama.

ON September 1, 1928, the first radiodrama was broadcast. The radiodrama is a combination of radio and radiovision, and its possibilities in the future seem unlimited. It has been stated that it will almost entirely replace the stage. That it will, to a certain extent, is quite evident, the substitution, no doubt, following closely that of the substitution of radio talkies for orchestras.

Another development is multiple radiovision, by which several screens each viewing the object or objects from different angles can be operated at the same time. It will be possible under this system to see and hear, say, a boxing match in one country, a band contest in another, and an aeroplane landing in another. The use of this system in a future way can likewise be visualised.

—Continued on page 2.