

Pictures to be Regularly Radiated by B.B.C.

ONLY a short while ago, the British Broadcasting Corporation stated that while sympathetic with the development of picture radiation, it could not undertake any such system. The engineers of the corporation have kept themselves in touch with this field, and have now definitely decided to undertake still picture transmission from Daventry, 5XX. The transmissions will, if the public so desire, be included in the regular programme hours. The Fultograph system, as apart from television, is to be employed.

Although picture transmission is still in the experimental stage, this move on the part of a body so conservative as the B.B.C., predicts an important future for this science. American stations have, for some time, been regularly transmitting pictures, although by a different system. Good results have been obtained, but it cannot be said that picture transmission is yet definitely established. This science is to-day where wireless was in 1921, and it is very unlikely that either New Zealand or Australia will undertake anything of the nature until something more definite has been established.

However, this move by the B.B.C., especially in the adoption of the Fultograph system in preference to television, is of no minor significance.

The Fultograph System.

IN discussing the system with an official of the B.B.C., the inventor Captain Otto Fulton, remarked: "My apparatus is as simple as a cart—to a cart there are only wheels and the body, and if you take any of them away it is not a cart any more."

The apparatus is certainly simple. On the top of a box is clockwork which

revolves slowly a cylinder like the cylinder of an old type phonograph cylinder. Semi-absorbent paper, dipped in chemical solution, is placed round the cylinder and a platinum needle traces out in $3\frac{1}{2}$ minutes an easily-recognisable portrait. It is claimed that a one-valve set with a suitable arrangement to replace the loudspeaker can reproduce the pictures a distance of one mile from the transmitting station. Beyond this more valves are required.

When a photograph is to be transmitted a negative is printed on a sheet of zinc or copper foil coated with sensitised fish glue. During the printing the glue exposed to the light becomes insoluble. Washing the glue removes the portion that has not been exposed to the light, leaving an insoluble image. This is hardened and impressed into tin.

The glue picture is wrapped round the cylinder and as the cylinder revolves a metal stylus moves over it. The glue acts as an insulator, but when the stylus touches it a current passes and is transmitted.

A somewhat similar arrangement at the receiving end causes an identical picture to be traced out.

In Use At Vienna.

CAPTAIN FULTON and his fourteen assistants have done their experimental work in Vienna. His aim has been to put picture reception within the reach of the man in the street. "All the time I have tried to simplify radio picture apparatus for the man at

home," he told a representative of the B.B.C. The present Fultograph apparatus will cost about £15, and anyone will be able to use it.

It is already in use in Vienna, where every day a news picture, a sport picture, and a fashion plate or children's joke are broadcast. The received pictures are $4\frac{1}{2}$ in. by $3\frac{1}{2}$ in.

Television.

WITH this term are associated many names, perhaps the best known being that of Baird, the Scotsman. This inventor has evolved an apparatus to enable the vision of living and moving beings, objects and scenes to be transmitted by wireless or land line in a manner similar to that in which sound is transmitted by wireless and telephony.

Four devices are required to adapt the art of radio to television, two the photo-electric cell, and the neon "flash" lamp—are the "eye" and the "paintbrush" respectively, of the radio television apparatus. The other two essentials are the scanning mechanisms of the transmitter and the receiver.

The principle is based on the fact that the human eye can be focused on an area only the size of a pin-prick. To receive a sharp impression the eye must momentarily focus on each point on the object. Television apparatus breaks up into points the image which is to be televised, and restores it again, point by point, into a perfect whole at the receiving end.

We are accustomed to think of the images presented to our eyes as even.

unbroken scenes. Such is not the case. There are minute holes in our field of sight which is composed of a multitude of little impressions fitting closely together. At twenty to thirty inches from the eye a crack of 1-100 of an inch will vanish.

Advantage of this is taken in making illustrations for printing purposes, and this principle has been applied to television. If a scene can be broken before the television transmitter into small dots and reproduced, each according to its corresponding brightness, in the same relative position at the receiver, the picture can be reproduced with such accuracy that it will be acceptable to the eye. If this can be done at the rate of about fifteen times a second, a continuous moving picture can be reproduced at the receiving end. This is television.

The Systems Compared, and Contrasted.

WITHOUT having to go into the details of the television equipment, it will be clear that there are remarkable differences between the two systems. In that both are a modification of the wireless waves and result in the transmission of pictures the systems are alike. Beyond this the similarity does not exist. One transmits still pictures and the other moving ones.

The system to be used by the B.B.C. has much in its favour. It is efficient and cheap, and can be used now. Television is a science of the future. New publications are pregnant with fresh ideas, but few are, at the present time, workable. Moving pictures, sporting everything is within the range of television and imagination is reluctant to remain in any one field, so great is its scope—but its realisation is yet to be.

Mr. Baird's Progress.

A £700,000 Company.

RECENTLY Baird International, Ltd., a company having a share capital of £700,000 with Lord Amptill as chairman, was floated in London. The company acquires the rights in the Baird inventions and patents held by the Baird Television Development Co., Ltd., a company having a nominal share capital of £125,000. The Baird inventions are stated to embrace:—

(1) Television to enable vision of living and moving beings, objects and scenes to be transmitted by wireless or land-line in a manner similar to that in which sound is transmitted by wireless and telephony.

(2) Noctovision—a name applied to the application of infra-red rays to the Televisor to enable vision in total darkness to be demonstrated.

(3) Phonovision—the recording of a "television sound wave" in conjunction with music and reproduction from the record on a "Phonovision" screen of the actual moving scene as originally recorded.

(4) Facsimile Telegraphy—the sending of pictures by a slowing down of the television equipment.

(5) Automatic synchronism—a device whereby the transmitting and receiving apparatus are automatically kept in step.

The directors preferred not to state any definite estimate of profits accruing from the sale of television receiving equipments. Success attended the issue of the 1,000,000 "A" shares of the company of 5s. each, offered at a premium of 1s. per share, and the lists were closed at 10.30 a.m. on the day of issue.

Mr. Baird predicts that complete "seeing-in" sets will be available this month for £25 each, and that they will receive pictures from the company's broadcasting station.

RECENT cable messages, however, indicate quite clearly that Baird is making steady progress in important points and is even tackling the simultaneous transmission of voice and vision. A measure of success would seem to have been achieved which augurs astonishing things in the future—just how astonishing remains yet to be seen.

According to a recent issue of the "Morning Post" "A big stride forward was demonstrated at the Baird Laboratories, Long Acre, W.C. One of the party went on to the roof of the building, where a transmitting televisor

had been set up, and the rest of the party went with Mr. Baird into a room where there was a receiving apparatus.

"The receiver gave an image, about half as large again as an average cigarette card, but the detail was perfect."

"When the sitter opened his mouth his teeth were clearly visible, and so were his eyelids and the white of his eyes and other small details about the face."

"He was a dark-eyed, dark-haired man, and appeared in his natural colours against a dark background. He picked up a deep-red coloured cloth and wound it round his head, winked, and put out his tongue. The red of the cloth stood out vividly against the pink of his face, while his tongue showed as a lighter pink."

"He changed the red cloth for a blue one, and then, dropping that, put on a policeman's helmet, the badge in the centre standing out clearly against the dark blue background."

"The colour television proved so attractive that the sitter was kept for a long time doing various things at the request of the spectators. A cigarette showed up white with a pink spot on the end when it was lit. The finger nails on a hand held out were just

visible, and the glitter of a ring showed on one of the fingers."

A DEVICE has been invented by which aeroplane pilots can be directed from a base without the use of headphones and a trailing aerial. The headset is replaced by a visual indicator which shows when a plane is on or off its course marked by a directive aerial beacon. A short vertical rod displaces the dangling wire which frequently lashes itself to pieces and is a constant source of trouble to the pilot. The receiver weighing only 15lbs. is designed to be tuned from 285 to 350 kilocycles and may be used for the reception of radio telephone and telegraph messages, being arranged for remote control of tuning and volume. It is doubly shielded, and shielding of the engine ignition system is also employed.

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