

# GLASGOW LISTENS TO SOUND OF FACES

**Television Inventor Shows How  
Image of Every Substance  
Emits Distinctive Refrain.**

## BAIRD DESCRIBES RESEARCH

**He Says Living Scenes Can Be  
'Stored' in Form of Phonograph  
Records and Recreated.**

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By Wireless to THE NEW YORK TIMES.

GLASGOW, Feb. 3.—John Baird, inventor of television, told the home folks of Glasgow about it tonight. When he ventured to tell some of them several years ago that it might be possible to see through brick walls they answered him with the Scottish equivalent of "What's eating you?" and let it go at that.

Tonight the young man demonstrated his electric eye. The doubting Jaimies themselves saw through walls even if as in a mirror darkly.

"I always said Johnny was a great fellow," they remarked.

Not only could they see through walls with the inventor's electric eye, but they found that Scotch plaid sounds as distinctive as it looks. A derby hat also discourses sweetly. Even Scottish faces talked, for every image when televised, as Baird demonstrated, has its characteristic sound.

Television opens vistas that are wonderful but also rather disquieting, especially for those who often wish things to appear other than what they are. It strikes a blow at privacy even more deadly than that of Strachey-esque biographers.

The public man who is the cynosure of electric eyes must henceforth be careful. The reporter of the future, when electric eyes are synchronized with telephones, will no longer be able to call up his editor from a night club to report that he is in a remote police station. Lovers will find the piercing eyesight useful in seeing through make-ups.

### Inventor Defines Television.

The young inventor reviewed the history of television, giving credit to his predecessors, including the Americans Jenkins and Moore.

"Television," he said, "may be defined as the transmission by telegraphy of images of actual scenes with such rapidity that they appear instantaneously to the eye.

"The eye, fortunately for the success of television, has a time lag, and images, therefore, need not be actually transmitted instantaneously. In fact, if they are transmitted at the rate of eight a second the transmission appears to the eye to be instantaneous.

"These images, it should be clearly stated, are not photographs, but images of actual living scenes. The transmission of eight photographs a second would not give television, but would be the transmission of a cinematograph film, or telecinematography.

"The problem of television has been approached by two different methods. The first and most obvious was to build an apparatus in imitation of the human optical system. The human eye consists essentially of a lens which casts an image of the object viewed upon the retina. The surface of the retina consists of several million hexagonal cells into which lead the endings from the optic nerve. These nerve endings are immersed in a light-sensitive substance, the visual purple. This substance, when ionized by light, changes its color from purple to a grayish yellow.

"The ionization of the visual purple sends impulses along the nerve fibres to the brain. The visual purple in life is continually renewed, so that, in effect, it might be compared to a cinematograph camera, with this difference, that in place of using a moving film coated with a light-sensitive emulsion, the light-sensitive visual purple is continually changed.

"In the human television system the scene viewed is transmitted to the brain as mosaics consisting of an enormous number of little areas, each of these little areas being transmitted simultaneously to the receiving centres in the brain. Here they produce mosaics of electrical impulses corresponding to the images on the retina.

"Artificial television models on these lines were actually made by several early workers, but the stupendous number of cells, wires and shutters required made the development of such a scheme out of the question."

### Problem Seemed Simple.

Mr. Baird then described the second method of approach to television. This was to use one cell only, he said, and cause each of the elemental areas to fall in succession upon this one cell.

It was comparatively easy to invent small machines of this kind, he said, but they failed because even the stupendous amplification now obtainable was insufficient.

Mr. Baird showed on a screen the results obtained by pioneers in television.

"About four years ago," he continued, "I decided to devote my entire time to achieving television. The problem seemed comparatively simple. Two optical exploring devices rotating in synchronism, a light-sensitive cell and a controlled, varying light source capable of rapid variation were all required, and these appeared to be already known.

"The problem of synchronism had apparently been already practically solved in multiflex telegraphy and quite a number of optical exploring devices were already known. The photoelectric cell, in conjunction with the thermionic valve, appeared to offer a ready-made light-sensitive device, and the glow of a discharge lamp an ideal light source.

"In spite of the apparent simplicity of the task none had produced television. The trouble lay in the cell. After six months' work, however, I managed to get shadows through. The step from shadows to images by reflected light proved extremely difficult, but in April, 1925, I had the satisfaction of transmitting simple outlines."

### Phonographs Records of Faces.

The inventor here demonstrated by means of a diagram an interesting phenomenon connected with television.

"If television transmissions are received on a telephone," he continued, "they are heard as sounds, every object or scene having a corresponding sound. I have taken a few phonograph records of the sounds made by different persons' faces. By noticing carefully it is possible to distinguish one face from another.

"A further interesting point is that these records can be turned back into images, so that a living scene can be stored in the form of a phonograph record.

"In the first demonstrations of television it was necessary to use an intensely brilliant illumination, which caused the sitters considerable discomfort. By using infra-red rays, however, I ultimately was able to dispense altogether with light, with the somewhat remarkable result that it is possible to see in total darkness.

"I should like to make it clear that the invisible rays used were infra-red rays, which are, of course, well known and highly respectable, having positively no connection with death rays or any other mysterious rays."

Mr. Baird concluded his demonstration by showing more slides and phonograph records, including some made by inanimate objects.