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WIRELESS TELEGRAPHY.

A large audience was attracted to the lecture given in the University library on Wednesday evening by Professor Bragg on "Wireless telegraphy," and the discourse was intensely interesting. The lecturer said that wireless telegraphy depended upon ether and wave motion. Ether was an important thing in nature, filling all space and permeating all bodies. By it light, heat, and energy came from the sun, and without it this world would be a dead globe. Since it was the carrier of light it was our usual means of inter-communication, and therefore it was no surprise that in wireless telegraphy it should be made use of. Professor Bragg explained the different properties of wave motion, illustrating his remarks by means of a ripple tank and a torsion model. Light waves were very short, whereas waves used in wireless telegraphy were long. Light waves being short, moved forward in straight lines, and could hardly bend around obstacles, but the long waves used by Marconi could easily swing around great obstacles, so that, for example, it was possible to signal around or over a hill. These waves were incapable of going through metal or any conductor of electricity, so that none could penetrate a sheet of metal, though they might go around it. The lecturer intimated that in the next lecture he would discuss the way in which large ether waves were produced, and how they were detected, while in the last lecture he would show how signalling without wires could be accomplished.

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Few developments of scientific discovery have obtained such a firm grip upon the public, the professional, and the commercial mind as those of electricity. When telegraphy without wires was first made public the imagination of the people ran riot with speculations upon its possibilities; and South Australia, though so far away from the centre of operations, quickly caught on the fascination. With two such enthusiasts as Professor Bragg and Sir Charles Todd immediately and directly interested in the subject, Adelaideans had cause to feel that in any advance they would not be left far behind. Little wonder, then, that when Professor Bragg was announced to give a course of lectures to the public at the University he should be met in the library of the halls of learning by the largest crowd of earnest and intelligent people that has yet gathered since the extension system of lectures has been in vogue. With characteristic frankness of manner the lecturer started right into his subject, and explained that we could know nothing of wireless telegraphy without first mastering some knowledge of the medium employed to work it. This medium, he said, was ether, and his first lecture must necessarily be some illustration of what ether was, and what it did. He explained that ether extended throughout space and throughout all bodies, and was capable of carrying waves, like a jelly. The waves were light and heat energy all in one. By them all the heat energy of the sun was sent to us and distributed. Light was a manifestation of the wave motion, and our eyes were simply the receivers of short waves. These waves were so important to us that we actually lived upon them, and they were our means of communication. All our intentions were betrayed to those about us by sight and the use of these ether waves. They were the medium used as a universal carrier of energy and of signals—in short, the postal system of the universe. If they and the air-waves known as 'sound' were taken away, the lecturer mischievously suggested that we should have no other means of communication short of throwing things at one another. He then explained that the present wireless telegraphy was only another way of availing ourselves of the time-honoured method of signalling, the only difference being that we used long waves instead of short ones, and in the course of his lectures he would show how they were manipulated. The movements of ether waves were then demonstrated—first, as to what they were; and then as to what was necessary for their production. By a most ingenious arrangement of a mirror, a ripple of water experiment was thrown upon a lantern screen. In this water ripple was seen and explained the transference of energy, but no transference of matter. In this two things were necessary—viz., elasticity and inertia. They existed in ether, as thus illustrated, and were known as electricity and magnetism. A torsion model was then brought into requisition to illustrate this. It was Faraday who first worked out the properties of ether, and Maxwell showed that it had the necessary properties to produce wave movement, and that the speed would be of the same velocity as that of light. So the lecturer brought his audience to consider the wave motions in the ether, so that they should know what to expect and what not to expect in wireless telegraphy. An important feature of the experiments demonstrated the fact that while these waves could be intercepted by metal obstructions, they could not be made to go around corners and over obstacles. In this we had a solution of Newton's historic problem as to the waves only being made to go straight. Professor Bragg and his assistant, Mr. Rogers, went to considerable trouble in preparing experiments, and were awarded applause.