

all the circuits tuned to the same period. The fact that signalling had been successfully carried out over a distance of 50 kilometers with a cylinder only 1.25 meters high and one meter in diameter led to the possibility of constructing portable apparatus for use in the field. He had designed a complete installation on a steam motor-car, on the roof of which was placed a cylinder, only six or seven meters high, that could be lowered while traveling. By means of this, communication had easily been carried on with a syntonized station 50 kilometers distant, a 25-cm. spark induction coil, taking about 100 watts, being used for transmitting. A strip of wire netting dragged behind the car was sufficient for earth connection, or in lieu of any earth connection the electrical capacity of the boiler might be utilized. As to the distance over which signalling had been effected, last spring he established a station at the Lizard and opened communications with St. Catherine's—a distance of over 300 kilometers. The amount of energy used in this case was not more than 150 watts, and the aerial conductor consisted of four parallel vertical wires $1\frac{1}{2}$ meters apart and 48 meters long, or of a strip of wire netting of the same length. In conclusion, Mr. Marconi gave some examples of the progress made in the practical utilization of his system, and also briefly examined a method proposed by Professor Slaby.

WIRELESS TELEGRAPHY IN THE NAVY.

ADMIRAL BRADFORD, chief of the naval bureau of equipment, has given out the following extract from the report of the board which has investigated the question of transmitting messages by wireless telegraphy:

"From the examination of the subject, as outlined in the orders of the department, the board makes the following recommendations:

"1. That the use of homing pigeons be discontinued as soon as wireless telegraphy is introduced into the navy.

"2. That, pending such action, no new pigeon codes be established.

"3. That wireless telegraphy be adopted by the navy for transmission of messages between distant points.

"Referring to the last recommendation, the

board is of the opinion that a high degree of special electrical training is demanded for the successful operation of any system of wireless telegraphy, and it therefore suggests as necessary the establishment of two stations sufficiently far removed from each other for the training of officers and men.

"In its opinion this requirement would be best met by the establishment of such stations at the Navy Yard, Washington, and the Naval Academy, Annapolis. If wireless telegraphy fulfills what now seem to be its possibilities, the cadets should be thoroughly trained in it.

"As the investigation made by this board is not technical, there being no apparatus of any kind ready for test, but general in its character, such partial examinations as outlined above would not change the recommendations already made.

"The selection of any special system of wireless telegraphy is, in the opinion of the board, very largely a matter of business detail.

"If for any reason any competitive test of different systems is thoroughly desirable the board recommends, in view of the fact that the improved Marconi apparatus will not be available for several months, and that improvement in other systems may occur in that interval, that it be made only after due notice and preparation therefor, and by a special board of experts appointed for the purpose."

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

ARRANGEMENTS for the Denver meeting of the American Association for the Advancement of Science are locally assuming very definite shape. A meeting of the Colorado Science Teachers Association was held in Denver on May 11th and all the members of the American Association residing in Colorado were invited to attend, a special point being made in the call that the meeting would consider the August meeting of the American Association. The cooperation of the Society was pledged to the Local Executive Committee, and the committee itself was organized by the election of Mr. George Lyman Cannon as chairman and Mr. Arthur Williams, secretary of the Chamber of Commerce and Board of Trade, as secretary.