electricity, as the author places these subjects in such a light as to make them easily understandable by any reader. The quadruplex and other systems of multiple telegraphy, as well as the principles of cable and time telegraphy need not therefore remain mysteries to the intelligent public in the future as they have in the past.

The other subjects are handled in the admirable and lucid manner that characterizes the writings of the author, whose recent election as President of the American Institute of Electrical Engineers, shows that his electrical attainments are appreciated in the higher circles of the electrical profession.

The extracts from standard authors at the end of each primer is a feature that has been highly praised in the preceding volumes, and has been retained in the present one.

Each primer is, as far as possible, complete in itself and there is no necessary connection between the several volumes of the series, of which the present one is the third and last.

W.

Franklin Institute.

[Proceedings of the stated meeting, held Wednesday, September 20, 1893.]

HALL OF THE FRANKLIN INSTITUTE,
PHILADELPHIA, September 20, 1893.

JOSEPH M. WILSON, President, in the chair.

Present, 168 members and fifty-three visitors.

Additions to membership since last report, twenty-six.

Mr. W. N. Jennings exhibited an instructive series of photographs taken from a balloon, at altitudes varying from 1,000 to 6,000 feet.

Mr. A. Langstaff Johnston, of Richmond, Va., read a paper descriptive of an automatically operating safety disconnecting device for use upon electric trolley lines. The apparatus is placed in the trolley line at about every 1,000 feet, where the feed wire is tapped in. They are supported from the span wire on the end of a bracket arm. Should the trolley wire be ruptured, springs in the disconnectors on each side of the break, held in extension by the weight and tension of the wire, are released and by their contraction throw certain switches out of contact, thus cutting out the feed taps on each side of the break, which renders the affected section or block dead, but in no manner interferes with the rest of the line. The construction of the apparatus was illustrated with the aid of sectional views and its operation was practically demonstrated upon a short section of trolley line put up for the purpose in the lecture room. With the aid of an electric motor placed in the circuit the sundering of the line wire between two disconnectors was shown to cut out the section between them, while the line wire on both sides was shown to be still "live."

Mr. C. J. Hexamer exhibited a series of lantern slides of buildings and views of the World's Fair, with descriptive remarks on the same.

The meeting then proceeded to the consideration of the amendments to the by-laws of the Institute, which were presented at the stated meeting of June, 1893. (See the *Journal*, June, 1893.)

The President made a brief address explanatory of the action of the Board of Managers in recommending the proposed changes.

The proposed amendments evoked a lengthy and animated discussion, and, on being put to vote, separately, were not approved.

The Secretary presented, on behalf of Professor Rondinella, the following resolution :

That the Board of Managers be requested to consider the subject of the advisability of holding a progress exhibition during the year 1894, and to report thereon at the next stated meeting of the Institute.

The resolution was numerous seconded, and on being put to vote, was adopted.

On Mr. Heyl's motion, the following resolution was likewise adopted :

Resolved, That the Committee on Science and the Arts be authorized to award the Elliott Cresson Medal for such discoveries, inventions or manufactures, as in their opinion shall deserve it, subject to the general regulations on investigations and the following special rules :

(1) Upon the adoption, by the Committee on Science and the Arts, of a report setting forth that an invention or improvement is worthy of an award of the Elliott Cresson Medal, publication shall be made three times in the *Journal of the Franklin Institute*, stating that at the expiration of three months from the date of the first publication, the applicant will be entitled to receive the award of the said medal, unless within that time satisfactory evidence shall have been submitted to the Committee on Science and the Arts of the want of originality of the supposed invention or improvement.

(2) All applications for the Elliott Cresson Medal must be made to the Secretary of the Institute, by whom the applications and accompanying descriptions, drawings, etc., shall be laid before the Committee on Science and the Arts, and by whom all publications ordered by said committee in relation to said medal, shall be made.

On motion of the same member, the meeting voted to repeal the resolution of the Institute of May 17, 1849, defining the manner of awarding the Elliott Cresson Medal.

Adjourned.

WM. H. WAHL, *Secretary*.