reprints furnished to their authors by the Institute, have in not a few instances merited a more marked distinction, and this the Institute will hereafter be in position to award.

The improvement of the JOURNAL during the past year as regards its contents has extended to its typographic quality as well. The changes in this direction, while thoroughgoing and extensive, have yet been studiously made to retain that general appearance of the JOURNAL which has characterized it throughout its many years and which has thus, in a way, become a symbol of its stability.

The financial status of the JOURNAL has also improved considerably during the past year. Notwithstanding the additional costs of the publication incurred during this period and, to some extent at least, because of these additions, the income of the publication has overlapped the additional costs and brought it more and more nearly to the point where the cash balance will be that of a surplus instead of a deficit. Even as it is, counting the accretions to the Library, obtained through exchanges with the JOURNAL, its publication affords a substantial gain, though not yet enough to reasonably requite the efforts for its promotion. Not the least important of these efforts are those of the Actuary of the Institute, whose co-operation in the management of the business affairs of the Publication Committee is greatly appreciated by its members.

Respectfully submitted,

LOUIS E. LEVY,
Chairman.

REPORT OF THE COMMITTEE ON SECTIONAL ARRANGEMENTS.

To the Board of Managers:

During the year ending September 30, 1910, thirty-one meetings were held by the Sections and papers on the following subjects were presented:

PHYSICS AND CHEMISTRY SECTION.

Eight Meetings.

October 7, 1909.

Some of the Laws Concerning
Voltaic Cells.
Prof. Edward H. Landis.

November 11, 1909.

Advances in Electro-Analysis.
Mr. Jacob S. Goldbaum.

ELECTRICAL SECTION.

Eight Meetings.

October 14, 1909.

Recent Improvements in the De-
sign of Nernst Lamps.
Mr. Chas. A. Barton.

November 18, 1909.

The Electric Reduction of Iron
Ore.
Dr. Jos. W. Richards.

January 20, 1910.

Promotion of Safety in the
Transportation of Explosives
and Other Dangerous Articles
in the U. S.

Col. B. W. Dunn.

March 3, 1910.

An Analysis of Illumination Re-
quirements in Street Lighting.
Mr. Arthur G. Sweet.

March 10, 1910.

Phenomena of Flocculation and
Deflocculation.

Dr. Edward E. Free.

April 7, 1910.

Chemistry of Colloidal Matter.

Dr. Robt. H. Bradbury.

May 5, 1910.

Flax Growing and Linen Manu-
facturing in the U. S., Present
and Future.

Mr. Jas. Wood Pogue.

May 12, 1910.

Recent Progress in the Chemis-
try of the Sugars.

Mr. Jos. S. Hepburn.

MECHANICAL AND ENGINEERING.

Seven Meetings.

October 21, 1909.

Three Centuries of Glass.

Mr. John I. Arbogast.

December 2, 1909.

The Use of Concrete Piles.

Mr. W. F. Hall.

January 13, 1910.

Methods and Results of Electri-
cal Testing.

Dr. Clayton Sharp.

February 10, 1910.

Electrical Heating.

Mr. W. S. Hadaway, Jr.

February 17, 1910.

Electric Railway Signals.

Mr. Carl P. Nachod.

March 24, 1910.

The Electrometallurgy of Steel.

Dr. Jos. W. Richards.

March 31, 1910.

The Electric Vehicle.

Mr. John Meyer.

April 28, 1910.

Magnetic Hysteresis in a Rotat-
ing Field.

Dr. Morton G. Lloyd.

PHOTOGRAPHIC SECTION.

Five Meetings.

October 28, 1909.

Demonstration of the New
Bausch and Lomb Balopticon
for the Projection of Lantern
Slides, Opaque Objects and
Micro-Slides.

Mr. Arthur H. Thomas.

December 9, 1909.

Infra-Red and Ultra-Violet—a
New Departure in Photogra-
phy.

Dr. Robt. W. Wood.

December 30, 1909.

Flying, the New Art.
Mr. Wilbur R. Kimball.

January 6, 1910.

Steel in Freight Car Construc-
tion.
Mr. C. A. Seley.

February 3, 1910.

Modern Heavy Guns.
Mr. Samuel Lichtman.

March 17, 1910.

A New Pyrometer.
Mr. Chas. E. Foster.

April 21, 1910.

Liquid Gas.
Mr. L. Akesson.

January 27, 1910.

The Making of Lantern Slides.
Mr. Chas. R. Pancoast.

February 24, 1910.

Symposium on Modern Photo-
graphic Developers.
Messrs. John Bartlett, Reuben
Haines, Alfred Holden, S.
Hudson Chapman.

April 14, 1910.

Unusual Trees.
Mr. J. W. Ridpath.
Photomicrographs in Natural
Colors.
Dr. Henry Leffmann.

MINING AND METALLURGICAL SECTION.

Three Meetings.

November 4, 1909.

Address of the President of the
Section.
Prof. A. E. Outerbridge, Jr.

December 16, 1909.

Comparison of Copper and Lead
Smelting.
Mr. Hiram W. Hixon.

May 19, 1910.

Copper Deposits of Franklin-
Adams Counties, Pa.
Dr. Edgar T. Wherry.

The attendance at these meetings was much better than during previous years, the average attendance being sixty persons.

It is believed that the subjects presented also proved more interesting than those of previous years. The improvement in attendance and general interest was very marked during the closing months of the year, subsequent to the term embraced in this report.

It is believed that a new stimulus would be given to the work of the sections, if arrangements could be effected to promote co-operative action between the local sections of national scientific and technical associations and the several sections of the Institute, and your committee would suggest that the Board would give authority to the Secretary to use his endeavors towards securing such co-operation.

JAMES CHRISTIE,
Chairman.

PHILADELPHIA, PA., January 11, 1911.