lificating faculty as would only become effective after a long lapse of time in all cases where water-mortar is to be made with pozzuolana for immediate use.

It is, however, undoubtedly advisable to take a greater proportion of lime, and to allow more time, in order that the various substances of which the mixture may be composed can have full chance to act upon one another before the mortar is brought into use.

In so doing, the following advantages are secured :

- (1) The chemical reactions will be more complete.
- (2) In consequence of the more uniform course of these reactions, the substance becomes more dense, and the consistence of the mortar, subsequent to the hardening process, is more safely secured.

After the pozzuolana has been reduced to the finest powder, it is mixed with lime, which must be previously reduced to a stiff, pap-like condition; to these materials a sufficient quantity of water has to be added to produce a mass of a certain consistence. The use of Hertel's clay cutting apparatus or of a similar machine is advisable. After leaving the substance alone for a few days, the mixing process has to be repeated several times with the addition of the requisite quantity of water.

(To be continued.)

Franklin Institute.

Proceedings of the Stated Meeting, February 15th, 1871.

THE meeting was called to order at the usual hour, the President, Mr. Coleman Sellers, in the chair.

The minutes of the last meeting were read and approved.

The Actuary submitted the minutes of the Board of Managers, and reported that at the stated meeting held March 8th, inst., donations to the library were received from the Society of Arts, the Institute of Civil Engineers, and Lieut. Col. Edward Sabine, London, England; Hon. Secretary of State, Hon. William D. Kelley, Washington; American Philosophical Society, Dr. E. P. Wyckoff, and Messrs. Hillibrand and Wolf, Philadelphia.

The committee appointed to report on the estimation of H. P. of engines and boilers reported progress.

The Secretary then read his monthly report on Novelties in Science and the Mechanic Arts, after which the Institute adjourned.

W. H. WAHL, *Secretary.*

Proceedings of the Stated Meeting, March 15th, 1871.

The meeting was called to order at the usual hour, with the President, Mr. Coleman Sellers, in the chair. The minutes of the last meeting were read and approved.

The Actuary submitted the minutes of the Board of Managers, and reported that at a meeting held at the Hall, the Board organized in accordance with the annual election of January 25, by electing Bloomfield H. Moore and Charles Bullock, Curators; and William Hamilton, Actuary for the ensuing year; and by appointing the following standing committees:

On Instruction.

William H. Wahl,
Robert E. Rogers,
Enoch Lewis,
Washington Jones,
Robert Briggs.

On Elections and Resignations.

Henry G. Morris,
Henry Gartwright,
Clarence S. Bement,
William Helm,
Theo. Bergner.

On Stocks and Finance.

William Sellers,
Frederick Fraley,
J. Vaughan Merrick,
Enoch Lewis,
William P. Tatham.

On Publication.

Bloomfield H. Moore,
Samuel Sartain,
Charles Bullock,
Pliny E. Chase,
Joseph M. Wilson.

On Exhibitions.

J. Vaughan Merrick,
William Sellers,
Charles S. Close,
Bloomfield H. Moore,
Edward H. Williams.

On Sections.

John H. Cooper,
R. Egglest. Griffith,
H. W. Bartol,
W. B. Le Van,
Hector Orr.

Furthermore, that at the stated meeting of the Board, held February 8th, 1871, donations to the library were received from the Royal Astronomical Society, the Royal Geographical Society, and the Institute of Civil Engineers, London, Eng., and the Steam Users' Association, Manchester, Eng.; the K. K. Geologischen Reichsanstalt, Vienna, Austria; the Natural History Society, Montreal, Canada; Col. James B. Eads, Chief Engineer Illinois and St. Louis Bridge; E. S. Cheesborough, City Engineer, Chicago, Ill.; John W. Bast, Surveyor General of California; and from D. Sheppard Holman, Philadelphia.

The resignations of membership in the Board were received, of Messrs. John Birkbeck and Clarence S. Bement, and accepted, with the order to be reported at the next meeting of the Institute. The

committee appointed at the last meeting to consider the mode of estimating the H. P. of boilers and engines reported progress.

The Secretary's report on Novelties in Science and the Mechanic Arts was then read.

Under the head of new business, the President announced the appointment of the following gentlemen upon the committees of the Institute for the ensuing year, to wit:

Library.

Charles Bullock,
Samuel Sartain,
Wm. P. Tatham,
Henry G. Morris,
Jos. M. Wilson,
Wm. H. Wahl,
Bloomfield H. Moore,
John C. Browne,
Percival Roberts,
Pliny E. Chase.

Arts and Manufactures.

William Adamson,
John H. Cooper,
Jacob Naylor,
Hector Orr,
Wm. G. Rhoads,
William P. Tatham,
Rafael Estrada,
James Sellers Bancroft,
Alfred Mellor.

Models.

Wm. B. Bement,
Edward Williams,
Ewd. Brown,
Theodore Bergner,
John Goehring,
D. S. Holman,
William B. Le Van,
Edwin Smith,
Charles McIlvain,
Addison Hutton.

Meteorology.

Isaac Norris, Jr.,
Robert E. Rogers,
William H. Wahl,
John Wise,
Thos. S. Speakman,
James A. Kirkpatrick,
Pliny E. Chase,
David Brooks,
Alexander Purvis,
John G. Moore.

Minerals.

John C. Trautwine,
F. A. Genth,
Theo. D. Rand,
R. Egglesfield Griffith,
Albert R. Leeds,
Clarence S. Bement,
S. B. Howell,
John C. Browne,
William H. Wahl,
Albert C. Peale.

Meetings.

Henry Cartwright,
Enoch Lewis,
Robert E. Rogers,
Ed. Longstreth,
B. C. Tilghman,
Bloomfield H. Moore,
Charles S. Close,
William H. Wahl,
Henry G. Morris,
R. E. Griffith.

The election of two members of the Board was ordered to fill vacancies caused by the resignation of Messrs. Birkbeck and Bement. Mr. Wm. Wharton, Jr. and B. C. Tilghman were, upon balloting, declared duly elected.

The meeting then adjourned.

WM. H. WAHL, *Secretary.*