

tions,' by Louis Kahlenberg—Faraday's law was found to hold approximately in such solutions; 'Vapor-pressure Relations in Mixtures of Two Liquids, II,' by A. E. Taylor; 'On the Determination of Transition Temperatures,' by H. M. Dawson and P. Williams; 'The Driving Tendency of Physico-Chemical Reaction, and its Temperature Coefficient,' by T. W. Richards.

June. 'The Allotropic Forms of Selenium,' by A. P. Saunders—an exhaustive contribution to an illy investigated subject. The author finds that selenium exists in three distinct forms:

1. Liquid (including vitreous, amorphous, and soluble selenium).
2. Crystalline red (including perhaps two closely allied forms).
3. Crystalline gray or metallic.

'An Exposition of the Entropy Theory,' by J. E. Trevor; 'Entropy and Heat-Capacity,' by J. E. Trevor; 'The Relation of the Taste of Acid Salts to their Degree of Dissociation, II,' by Louis Kahlenberg—showing that the theory of electrolytic dissociation does not satisfactorily account for the phenomena connected with the sour taste of acid salts of weak acids. A rejoinder to the work of T. W. Richards and of A. A. Noyes.

DISCUSSION AND CORRESPONDENCE.

EMINENT AMERICAN MEN OF SCIENCE.

TO THE EDITOR OF SCIENCE: In SCIENCE of August 17th I notice the names of about twenty eminent Americans proposed as suitable to be engraved in the Hall of Fame of the New York University and also your question as to how many men of science should be included, and who they should be. In response to the query I beg respectfully to suggest the following names: Professor O. C. Marsh, Professor E. D. Cope, Dr. James Hall, Dr. D. G. Brinton, Professor J. D. Dana, Professor Newberry, Professor Orton, and Professor Alexander Winchell, in addition to those already mentioned. I do not see how these eight names could be omitted from such a list, nor do I see how the names of Henry, Silliman, Torrey, Gray, Hitchcock, and Baird could be left out. I

should think that at least thirty men of science should be included among the one hundred.

HENRY MONTGOMERY.

TRINITY UNIVERSITY, TORONTO,
August 20, 1900.

INTERNATIONAL COMMISSION ON ATOMIC WEIGHTS.

SCIENCE for August 17th contained a resumé of the report of the committee of the German Chemical Society, giving the views of the International Commission on Atomic Weights. On the chief point at issue, the selection of a standard for atomic weights, with the exception of six German members and one American (Professor Mallet), the commission was unanimous for oxygen = 16. This point, at least, would have seemed settled, but the German minority have in the last *Chemical News* reopened the question. The essence of their argument for H = 1 is comprised in the following paragraph:

"For the teacher, simplicity and clearness of the foundation seem specially important; instruction must suffer no harm with regard to the enlightening construction of the law of volumes, no shadow of doubt must penetrate the doctrine of valency. Regard for the understanding of prospective chemists will compel us therefore, under all circumstances, in teaching and in our text-books, to retain Dalton's numbers, and Professor F. W. Clarke, the worthy editor of the Annual Atomic Weight Tables of the American Chemical Society, authorizes us to say that he recommends the retaining of the standard H = 1. For if numbers were used in practice which were unsuitable to use in teaching, confusion would be the natural consequence, instead of the unanimity desired by all."

The German minority therefore calls upon all teachers of chemistry in universities and technical high schools to take a definite position in regard to this matter, and to send their answers to the subjoined questions to Professor J. Volhard, Halle-a-S., Mühlporfte 1, at their earliest convenience. The editor of the *Chemical News* also desires to publish copies of these replies. The questions are as follows:

1. Shall the unity of hydrogen be retained as the standard for reckoning atomic weights?
2. Shall the atomic weights be given approximately with two decimal places in which the

uncertain figures can be recognized by the type?

3. Shall the International Atomic Weight Commission have the current table of atomic weights edited on this basis?

In comment it may be mentioned that not all teachers are troubled by using $O = 16$ as a standard, and that there is a very large body of chemists outside the ranks of teachers, to whom this standard offers the decided advantage, that with this a large share of the more commonly used atomic weights approximate very closely to whole numbers. J. L. H.

PLANT EMBRYO-SACS.

SOME recent studies by the writer on the young ovules of the lily-of-the-valley, pond-weed (*Potamogeton*), and the garden canna have shown a number of interesting features in connection with the development of the embryo-sac. The first division of the nucleus in the hypodermal cell is heterotypic, while the next two represent the 'reducing division'; hence in these plants this cell strongly suggests the pollen-mother-cell of the anther. Apparent reduction takes place as usual just previous to the heterotypic division. The reduced number of chromosomes in the lily-of-the-valley was eighteen, in pond-weed about eight, while in canna it was only three, one of the smallest yet recorded for plants. In the lily-of-the-valley and pond-weed only the heterotypic division is followed by a cell wall, thus resulting in an 'axial row' of two binucleated cells; in canna all three divisions produce transverse walls and the axial row is therefore four celled. In the first named plant both cells enter into the formation of the embryo-sac, in pond-weed the lower only, while in canna only the lowermost of the row of four. Therefore in lily-of-the-valley the embryo-sac contains all four nuclear elements from the mother cell as in *Lilium*, in pond-weed only two, and in canna only one. Can the embryo-sacs in these cases be homologous structures, and should a macrospore contain more than one of these nuclear elements? In pond-weed a membranous pouch formed around the egg-apparatus at a very early period seems to preclude entirely the fusion of polar nuclei to form the endosperm mother nucleus.

In this plant also the chromatin is aggregated into a central ball during the resting stage as in some animal tissue. Those interested in the details of the work may find a fuller account in the *Botanical Gazette* for July of this year.

K. M. WIEGAND.

SCIENTIFIC NOTES AND NEWS.

THE monument of Lavoisier, erected by international subscription, was unveiled at Paris on July 27th. There were present the members of the fourth International Congress of Chemistry and a large number of scientific and public men. M. Berthelot who was to have presided was unable to be present on account of ill health, and his address was read by M. Darboux. The monument was presented to the city of Paris by M. Moissan, to whom M. Leygues, the minister of public instruction, responded.

FAIRMAN ROGERS, formerly professor of civil engineering in the University of Pennsylvania and one of the original members of the National Academy of Sciences, died in Vienna on August 21st. He was born in Philadelphia in 1833, graduated from the University of Pennsylvania and was professor of civil engineering in that institution from 1855 to 1870. From 1853 to 1865 he was also lecturer on mechanics in the Franklin Institute. On retiring from the professorship in the University of Pennsylvania he became a trustee, and gave later to the institution his valuable collection of works on engineering. Mr. Rogers served as an engineering officer in the civil war and was connected with the Coast and Geodetic Survey. He was the author of 'The Magnetism of Iron Vessels' and of numerous papers on scientific and engineering topics. Mr. Rogers was formerly prominent in Philadelphia and New York society, but has latterly lived abroad.

THE Paris 'Conference Scientia' has given a banquet to Lord Lister and will later entertain in a similar manner Lord Kelvin.

M. DUHEM has been elected a correspondent of the Paris Academy for the section of mechanics.

DR. AUGUST LEPPA has been appointed State geologist and Dr. Oskar Zeise district geologist in the Geological Institute at Berlin.