

the vessel and in the balloon at the beginning of the experiment, and the substance, whose molecular depression is to be determined, should not be introduced until the freezing point of the acid is constant in two determinations; sometimes two are sufficient—four may be required. As soon as a constant freezing point is indicated, the substance under experiment, accurately weighed to milligrammes, is dropped into the apparatus through the wide tube, and after it has been dissolved by stirring, three determinations of the freezing point are made; the greatest difference between the first and third will be about $0^{\circ}.01$. A second weighed quantity of the substance is then introduced, and three more determinations made, the differences observed in this series being similar to those in the first.

The required time is about ten minutes for each determination; three or four hours will suffice for a series of, say, eleven consecutive determinations with all the manipulations and weighings.

W. H. G.

GEOLOGY.

GEOLOGICAL MAP OF EUROPE.—Those readers of the JOURNAL who are interested in geography or geology, are notified that the subscription list to the Geological Map of Europe, which the International Geological Congress is to issue shortly, is nearly complete, but twelve more copies remaining to make the century assigned to the United States. As almost all, if not all, the leading institutions of learning and of research in the country are subscribers to this map, it is time for those who desire to avail themselves of the opportunities of securing it, at twenty per cent. less than its market price, and before it is sold to the general public, to send their names in to Dr. Persifor Frazer, Secretary American Committee, 201 South Fifth Street, Philadelphia. The cost of the map to institutions will be \$21, and to individuals \$26, the difference being the duty, which to the former class is not chargeable. No money contribution is required until the map is issued, which will probably not be before next fall or winter.

Franklin Institute.

[Proceedings of the Stated Meeting, held Wednesday, April 18, 1888.]

HALL OF THE INSTITUTE, PHILADELPHIA, April 18, 1888.

Mr. JOS. M. WILSON, President in the Chair.

Present, 132 members and fourteen visitors.

Additions to membership since last meeting, sixteen.

The Actuary reported the election, by the Board of Managers, at its meeting held Wednesday, April 11, 1888, of the following persons, to serve as Trustees in accordance with Article I, Section 2, of the By-Laws:

CHAS. HARE HUTCHINSON,

JOHN T. MORRIS,

EDWARD LONGSTRETH,

SAMUEL SARTAIN,

J. VAUGHAN MERRICK,

WM. SELLERS,

JOSEPH M. WILSON.

The Special Committee to prepare a memorial of the late Prof. JAMES CURTIS BOOTH, presented a report which was accepted and referred for publication.

Mr. WM. B. LE VAN read a paper, entitled "The Decline of Engineering; illustrated by Examples drawn from local Practice," which evoked a free discussion. (Referred for publication.)

Mr. W. N. JENNINGS described and exhibited a number of specimens, illustrating a new method of transferring photographs upon porcelain, tiles, celluloid, silk, etc.

F. E. IVES announced that he had succeeded in applying chlorophyt effectively to gelatine-bromide plates, by flowing with the alcoholic solution, then drying, then soaking in water. A paper giving details of experiments has been referred for publication.

The President announced in suitable terms the death of Mr. JOSEPH ZENTMAYER, distinguished for his skill and ability as an optician and maker of microscopes, and who was for many years an active and valued member of the INSTITUTE. The President appointed the following members as a committee to prepare an appropriate memorial of the deceased: Prof. Henry Morton (*Chm.*), Dr. Chas. M. Cresson, Fred. Graff, Geo. H. Perkins and Prof. Coleman Sellers.

Mr. S. LLOYD WIEGAND offered the following preamble and resolutions, and spoke in favor of their adoption by the meeting viz:

"WHEREAS, The promotion of the useful arts and sciences, under the constitution and laws of the United States, granting letters-patent to inventors, has developed inventions so numerous and diversified in character as to embrace devices in almost, if not every, department of the arts, and a record thereof so voluminous that it is difficult and almost impossible for persons not specially trained to ascertain accurately the state of art in any department of manufactures, under which disadvantages many devices are unnecessarily re-invented, and litigation from conflicting claims often ensues; and,

"WHEREAS, The Commissioner of Patents has again recommended the preparation and publication of properly classified abridgements of letters-patent similar to those issued by the British Patent Office, and has clearly shown that the funds accumulated in the United States Treasury, applicable only to purposes of the patent system, are amply adequate to permit such publication, and has recommended Congress to enact such laws as will enable the preparation and publication of such abridgements to proceed; and,

"WHEREAS, The FRANKLIN INSTITUTE, of the State of Pennsylvania, for the Promotion of the Mechanic Arts realizes the importance of rendering easily accessible to persons practically engaged in arts and manufacture, correct information as to what inventions have been patented in the several departments of their work, and the great utility of such classified abridgements of letters-patent in enabling them to attain such information; therefore,

"Resolved, That the FRANKLIN INSTITUTE earnestly recommends and urges upon the representatives in Congress to give operative effect to the recommendation of the Commissioner of Patents by enacting promptly such laws as will secure the preparation, by persons of competent skill and knowledge, of concise and thoroughly indexed classified abridgements of patents for invention, and the publication thereof and the placing of such publications on sale at moderate charges, and accessible to the public in libraries for the better diffusion of knowledge on such subjects."

Adopted.

The President was authorized to call a special meeting to be devoted to an exhibition of the operation and capabilities of the improved phonograph devised by Mr. Thos. A. Edison.

Adjourned.

WM. H. WAHL, *Secretary.*