

needed, a tower runs through the central part of the western section. The tower has a total height of 60 feet; it is built with double walls to isolate it from the rest of the building, the outer walls carrying the floors.

Above the roof, the sides of the tower are almost entirely of glass. There is free access to the four sides of the tower, as well as to the top, which is at a height of 72 feet from the basement-floor. Openings are left at every story to allow light to be sent to the central part of the tower. The piers of the first floor are also so arranged as to obtain lines of considerable length across the building. The doors are so placed that adjoining rooms are readily thrown open together.

The laboratory, built to commemorate Ellen Wayles Coolidge, grand-daughter of Thomas Jefferson, has been named the 'Jefferson laboratory.' It seems most appropriate that the name of one who was among the first to recognize the value of university education in this country should be connected with a building to be devoted to the investigation of some of the most interesting problems of nature.

The cost of the building, with the necessary fixtures, will be about \$115,000. There is a fund of \$75,000, the income of which is to be expended for the benefit of the physical laboratory, in addition to the appropriations and expenditures now incurred for physics by the college.

#### NOTES AND NEWS.

Zoölogists the world over will regret to learn of the death of the genial and talented Wilhelm Karl Hartwig Peters, director of the zoölogical museum of Berlin, and younger brother of Dr. Peters of our own Clinton observatory. Dr. Peters was born at Coldenbüttel, near Eiderstedt, in Schleswig, on April 22, 1815, and died in Berlin on the 20th of last month. Immediately after completing his studies in medicine and natural history at Copenhagen and Berlin, he undertook a journey to southern France and Italy to investigate the fauna of the Mediterranean. Returning to Berlin in 1840 as assistant in the anatomical institute of the university, he soon laid his plans for an independent investigation of the unexplored regions of Mozambique, in which he received the advice and support of his distinguished friends, Johannes Müller, Humboldt, Ritter, Ehrenberg, and Lichtenstein, and the powerful patronage of the king, Frederic William IV. He left for this journey—the great event of his life—in 1842, and was absent more than five years. Two years were spent in the interior of Mozambique; but he also made journeys to the Comoro Islands, to Zanzibar, Madagascar, and the Cape, and, before his return, visited the coast of India. His *Reise nach Mozambique*, published between 1852 and 1868 in five quarto volumes, is the result of this exploration, and is a model for faunal work of this kind. Returning to Berlin in 1848, he was made professor at the institute, afterwards professor extraordinary, and in 1857 succeeded Lichtenstein as full professor in the university, and director of the zoölogical museum. The museum, under his administra-

tion, early took the highest rank, which it has ever since held; and more than one American student has been cordially received within its walls. Peters's studies were mainly given to the world in Müller's Archiv, and the publications of the Berlin academy, to which he was elected in 1851. They covered nearly the entire field of zoölogy, but were specially devoted to mammals, reptiles, amphibians, and fish. His geographical discoveries in Mozambique were published by Kiepert in 1849 in a map; and Bleek's *Languages of Mozambique* contains a portion of his linguistic studies.

—The April number of the Harvard university bulletin, which has just appeared, contains fifty-six pages, of which thirty-one are devoted to the book-list. We notice recorded a copy (one of thirty) of the Maya manuscript in the Dresden library, reproduced in polychromatic photography. The appendices contain another instalment of Mr. Bliss's classified index to the maps in Petermann's Geographische Mittheilungen (twelve pages), and of Mr. Winsor's valuable bibliography of Ptolemy's geography (seven pages). The University notes mention additions to the zoölogical museum, the purpose of the observatory to collect astronomical photographs, and give an account, reprinted on p. 437, of the plans of the new Jefferson physical laboratory. Among the appointments gazetted, we notice that of Mr. J. Rayner Edmonds and Mr. John Ritchie, jun., to the observatory, to be in charge of the time-service and the distribution of astronomical information respectively.

—A general veterinary establishment for the treatment and care of lame, sick, or wounded horses, cattle, sheep, and dogs, is to be maintained in connection with the school of veterinary medicine, of Harvard university. The hospital will probably be ready for occupation June 15. The patients will be under the professional charge of Mr. Charles P. Lyman, fellow of the Royal college of veterinary surgeons, London, and professor of veterinary medicine in the university. The school will also have at its disposal commodious buildings and pastures at the Bussey farm, where cattle can be received and cared for, and where horses not required for present use, or suffering from lamenesses or illnesses which require long seasons of rest, can receive all proper care and treatment, together with the benefit of grass-paddocks in summer, and a warm straw-yard in winter. Any person having sick or lame animals to be cared for can procure for them the benefits of the establishment upon the payment of a fixed sum per day, covering board, treatment, and medicines. To each subscriber of ten dollars a year, a number of privileges will be given. On Tuesdays and Fridays a free clinic will be held.

—The semi-annual meeting of the American antiquarian society was held in Boston on April 25 at eleven o'clock. About fifty members were present. The reports of the officers showed that the affairs of

the society were in good condition, although the council felt the need of a special fund for the salary of a person to fill the place of the late Dr. S. F. Haven. Mr. Samuel S. Green of Worcester read a paper of local interest in relation to the First parish of that city; Mr. Andrew M. F. Davis of San Francisco discussed the question of bearded men reported to have been seen by Moncatch-Apé on the Pacific coast of America before 1758; Mr. F. W. Putnam of Cambridge gave an account of the use of native metals by the mound-builders of the Ohio valley, and exhibited ornaments from the mounds made by hammering native copper, silver, gold, and meteoric iron; Mr. Putnam also read a paper on Iron in the Ohio mounds, a critical review of the misconceptions of two writers of sixty years ago; and Mr. H. W. Haynes of Boston presented by title a paper on Ancient soapstone-quarries. Two of these papers are noticed more fully in our Weekly summary. After adjournment the members were invited to lunch at the residence of Mr. James F. Hunnewell in Charlestown, after which a visit was made to Bunker Hill by invitation of the directors of the Monument association.

—Mr. F. W. Putnam lectured on Recent discoveries in American archeology before the Harvard historical society, Cambridge, May 7, illustrating his discourse with stereopticon views.

—The effort to raise money to pay off the debt of the Academy of sciences of Davenport, Iowa, has met with good success. Not only has enough been obtained for that purpose, but a start has been made with an endowment fund to place the institution on a firmer basis. The feeling of interest in the academy, which was created among the business-men at a meeting held April 24, continues to spread. There seems to be little doubt that the continued usefulness of the institution is assured.

—At the meeting of the American academy of arts and sciences, April 11, the papers read were by Professor William A. Rogers, Results of the comparisons of three independent copies of the imperial yard, and of four independent copies of the metre of the archives; Dr. Otto Struve, Aberration; Mr. S. C. Chandler, On the variable star, R. Aquarii; and by Prof. E. C. Pickering, on the measurements made of the photographs of stellar spectra obtained by the late Dr. Henry Draper.

—At a meeting of the section of mechanics and engineering of the Ohio mechanics' institute, held April 24, Mr. Alfred R. Payne read a paper on Utilization of sewage from the hills, discussing the value of both the fertilizing material and the water-power.

At the meeting of the section of chemistry and physics, April 26, papers were read by Prof. F. W. Clarke, on Tartrates of antimony; by Prof. H. T. Eddy, on the Kinetic theory of solids, fluids, and gases; and by Professor Robert B. Warder, on a

Proposed systematic computation of data relating to the speed of chemical reactions. The section resolved to undertake the computation (on some fixed system of units), with such co-operation as other chemists and physicists may kindly afford.

—The summer course of instruction in botany in Harvard university will begin on July 6, and continue six weeks. The principal part of the instruction will be given by Professor William Trelease of the University of Wisconsin, but lectures will be given also by Professor Goodale.

—At the meeting of the Biological society of Washington, April 27, the following communications were made: Prof. C. V. Riley, Another jumping-seed, Remarks on bee-fly larvae and their singular habits, A burrowing butterfly larva; Mr. H. H. Birney, Remarks on *Samia cynthia*, the Ailantus moth; Professor Theodore Gill, The Stromateidae; Dr. Frank Baker, The origin of dextral preference in man. A field meeting of the society took place on Saturday, April 28, at Bladensburg.

—At the meeting of the Society of arts of the Massachusetts institute of technology, April 26, Mr. A. E. Burton spoke on the Topographical methods of the U. S. coast-survey, and Mr. W. H. Pickering on the Sensitiveness of photographic plates.

—On the 31st of March, the Weymouth and Channel Islands steam-packet company's steamer *Aquila*, on her way across the channel, was suddenly struck by mountainous seas, which sent her on her beam-ends, and washed the decks from stem to stern. As the decks became clear of water, the bulwarks were found to be broken in several places, one of the paddle-boxes was considerably damaged, the iron rail on the bridge was badly twisted, the pump was broken, the skylights broken, and the cabins flooded. Five minutes after the waves had struck the steamer, she came again into smooth water.

—In 1882 there were built and registered in the United Kingdom, as British ships, 453 iron steamers having a gross tonnage of 676,338, and 64 steel steamers having a gross tonnage of 113,389. The percentage of steel gross tonnage is 14, while for 1881 it was but 11. There were 91 iron and steel sailing-ships built and registered during the same time, having a gross tonnage of 126,398.

—The second number of *Appalachia*, vol. iii., has recently appeared. Prof. E. C. Pickering discusses the value of mountain observations for astronomical work, and suggests the use in them of the horizontal telescope, lately devised by him, before which the observer may sit in a comfortable position and in a warm room. Mr. Scott, vice-president of the club, describes a trip to the Twin-Mountain range; and Mr. J. W. Chickering, a longer excursion to Roan Mountain, in North Carolina. Mr. E. G. Chamberlain maps the Blue Hills near Boston, and gives a list of distant points seen from their summit.

Mr. W. O. Crosby presents the results of his studies on the mountain-reefs of eastern Cuba, of which an abstract will be printed in our geographic columns. Mr. J. Tatlock, jun., discusses the variation of barometric measurements with the season. Various reports and proceedings fill about half of the hundred pages. The club's growth in popularity, as shown by its rapidly increasing membership of both sexes, has by no means diminished the scientific value of its publications.

— The general catalogue of the American exhibit at the London fisheries exhibition, referred to on a previous page, and which is now in course of publication, will be followed by a series of special catalogues of the more important sections, which will contain much fresh information regarding the distribution, abundance, and relationships of the species exhibited. The handbooks of two sections — that of the birds, by Mr. Ridgway; and that of the invertebrates, by Mr. Rathbun — are now in press.

— It may not be generally known that Harvard college observatory took an important part in the early experiments made in astronomical photography. Under the direction of Prof. W. C. Bond, the first daguerrotype of a fixed star, and many early representations of other objects, were obtained there. After the invention of the collodion process, Prof. G. P. Bond returned to the subject, and obtained an interesting series of photographs of various celestial objects. While stars of the first magnitude only could be depicted by the daguerrotype, the new process rendered it possible to photograph stars of the fourth. Professor Bond paid special attention to the means afforded by photography for the accurate measurement of double stars. For this purpose he procured numerous photographs of the star Mizar (*ζ Ursae Majoris*), which he afterwards measured micrometrically. The accuracy of the results was remarkable; and the average discordance of the values obtained from the photographs taken on eight different evenings was only 0.3".

— The second part of vol. iii. of *Anales* of the Mexican national museum is devoted to the following papers: 1. Continuation of the study upon the *Piedra del sol*, by Alfredo Chavero; Glossary of Castilian words derived from the Mexican, or Nahuatl, by Jesus Sanchez; Mexican antiquities, by Carlos Fernandez. In the list of Sr. Sanchez are more than two hundred words derived from the aboriginal Mexican, a few of which are already in the vocabulary of the United States; and some of them have become reputable English words, such as, cacao (*cacahuatl*), cocoa (*cocoa*), copal (*copalli*), coyote (*coyotl*), Chile (*Chilli*), chocolate (*pozolatl?*), mezcal (*mexcalli*), mezquite (*mizquitl*), ocelote (*ocelotl*), pinole (*pinolli*), tomato (*tomatl*), tule (*tollin*).

— Professor Aeby has published a diagram of the course of the nerve-fibres in the human central ner-

vous system, which is very warmly praised, and recommended to students and teachers alike. The publisher is Dalp in Bern; the price, 1 mark and 60 pfennigs.

#### RECENT BOOKS AND PAMPHLETS.

Allieri, L. Equilibrio interno delle pile metalliche secondo le leggi della deformazione elastica. Roma, Loescher, 1882. 119 p., 7 tables. 4°.

Beilstein, F. Handbuch der organischen chemie. Leipzig, Voss, 1883. 2185 p. 8°.

Binzer, J. M. v. Vacuosität und schwerkraft. Nachweis der gemeinsamen ursache der attractions- und gravitations-phänomene einschliesslich der magnetismus auf grund physikalischen thatsachen. Salzburg, Dieler, 1883. 49 p. 8°.

Bottler, Max. Exkursions flora von Unterfranken. Ein taschenbuch zum leichten bestimmen der in Unterfranken, auf dem Steigerwalde und in der Rhön wildwachs. Phanerogamen. Kissingen, Hailmann, 1883. 6+208 p. 8°.

Bowman, W. H. Lecture introducing his system of respiration for the development and treatment of the vital organs of the body. Boston, Mudge, pr., 1883. 30 p. 8°.

Brunbauer, Paul. Der einfluss der temperatur auf das leben der tagfalter. Inaug. diss. München, 1883. 115 p. 8°.

Compte rendu des travaux du service du Phylloxera. Année 1882. Procès-verbaux de la session annuelle de la Commission supérieure du Phylloxera. Rapports et pièces annexes. Lois, décrets et arrêtés relatifs au Phylloxera. Paris, Impr. nat., 1883. 603 p. 8°.

Congrès géologique international. Compte rendu de la 2d session, Bologne, 1881. Bologne, impr. Fara et Garagnani, 1882. 15+661 p., 19 pl. 8°.

Falb, Rud. Meteorologische betrachtungen mit besondere bezugnahme auf die periodischen ueberschwerungen. Wien, Hartleben, 1882. 6+152 p. 8°.

Gilardini, G. Principio della scienza idraulica italiana. Milan, tip. Osserv. cattolico, 1882. 23 p. 16°.

International (Great) fisheries exhibition. London, 1883. United States of America. A. Preliminary catalogue and synopsis of the collections exhibited by the United States fish commission and by special exhibitors; with a concordance to the official classification of the exhibition. Washington, Government, 1883. 106 p. 8°.

Kempe, H. R. Handbuch der elektrizitätsmessungen. Aus dem englisch übertr. v. J. Baumann. Braunschweig, Vieweg, 1883. 8+308 p. 8°.

Konkoly, Nic. v. Praktische anleitung zur anstellung astronomischer beobachtungen mit besonderer rucksicht auf die astrophysik. Braunschweig, Vieweg, 1883. 22+912 p., 345 cuts. 8°.

Lassalle, C. Origin of the western nations and languages: showing the construction and aim of Punic recovery of the universal language, reconstruction of Phoenician geography, Asiatic source of the dialects of Britain, principal emigrations from Asia, and description of Scythian society. With an appendix upon the connection of Assyrian with the language of western Europe, and Gaelic with the language of Scythia. London, Heywood, 1883. 420 p. 8°.

Maine, Sir H. S. Dissertations on early law and custom, chiefly collected from lectures delivered at Oxford. London, Murray, 1883. 402 p. 8°.

Moncel, Th. du, et Gerdaldy, F. L'Électricité comme force motrice. Paris, Hachette, 1883. 308 p., 112 fig. 18°.

Nebst, E. Moderne instrumentenkunde. Braunschweig, Vieweg, 1883. 22+912 p., 345 cuts. 8°.

New York — Department of public parks. Report of the New York meteorological observatory for the year 1882. N.Y., City, 1883. (13 p.) 4°.

North Carolina — Board of agriculture. Annual report of the agricultural experiment station for 1882. Raleigh, Ashe & Gatling, 1883. 8+150 p. 8°.

Rodriguez Mourello, J. La radiación, estudio de una nueva propiedad de las radiaciones. Madrid, impr. Hernández, 1883. 15+286 p., pl. 8°.

Romanes, G. J. Scientific evidences of organic evolution N.Y., Macmillan, 1883. (Nature series.) 6+88 p. 12°.

Taber, C. A. M. How the great prevailing winds and ocean currents are produced, and how they affect the temperature and density of lands and seas. Boston, Williams, 1882. 82 p. 12°.

Thurston, R. H. Conversion tables of metric and British or United States weights and measures. N.Y., Wiley, 1882+83 p. 8°.