

study of these great collections. The geology will be treated of by Mr. Hatcher, the Tertiary invertebrates by Dr. Ortmann, the fossil vertebrates by Messrs. W. B. Scott and Hatcher, and the recent birds by Mr. W. E. D. Scott.

It is difficult to exaggerate the value of Mr. Hatcher's and Mr. Peterson's long and arduous labors. Materials have now been gathered that will make possible the solution of many vexatious and much discussed problems, and for the first time a full and representative collection of the wonderful fossil mammals of Patagonia has been brought to a Northern museum. We can, at last, directly compare the Tertiary mammals of the Northern and Southern Hemispheres, and may hope to reach some definite conclusions concerning the mutual relations of these two faunal assemblages.

A LONG PHOTOGRAPHIC TELESCOPE.

LAST spring a plan was proposed at the Harvard College Observatory for the construction of a telescope of unusual length for photographing the stars and planets. Anonymous donors have now furnished the means by which this experiment may be tried. The plan will, therefore, take definite shape, and it is expected that a telescope, having an aperture of 12 inches and a length of a hundred feet or more, will be ready for trial at Cambridge in a few weeks.

EDWARD C. PICKERING.

HARVARD COLLEGE OBSERVATORY,
October 12, 1899.

SCIENTIFIC NOTES AND NEWS.

WE announce with great regret the death on October 16th, of Dr. Edward Orton, the eminent geologist, professor in the Ohio State University, president of the American Association for the Advancement of Science.

DR. J. T. ROTHROCK has been reappointed for a term of four years, State Commissioner of Forestry for the State of Pennsylvania.

PROFESSOR GEORG STEINDORFF, the director of the Ägyptologische Sammlung at Leipzig, has, says *Nature*, obtained leave of absence for six months to enable him to undertake a scientific journey to Africa.

It is stated in *Natural Science* that Dr. Robert Logan Jack, late Government Geologist for Queensland, and special commissioner in charge of the exhibits at the Greater Britain Exhibition, has accepted an appointment from Mr. Pritchard Morgan to run some mining concessions in Szechuan, Korea, and North China. Dr. Jack sailed in September.

At a sitting of the International Geographical Congress on October 2d, it was announced that Dr. Scott Keltie had received a telegram from Mr. H. J. Mackinder, the reader in geography at Oxford, who has just succeeded in reaching the summit of the hitherto unscaled Mount Kenia (about 18,000 feet), in British East Africa. Mr. Mackinder left England in June last in command of an expedition subsidized by the Royal Geographical Society. The telegram, which was sent *via* Mombasa, states that some 15 glaciers were found upon the mountain.

DR. G. W. HILL will give a course of lectures on celestial mechanics at Columbia University on Saturday mornings beginning October 21st. The subjects treated will be:

- I. Delaunay's Method in the Lunar Theory generalized and applied to the Planets.
- II. Gylden's Method of Perturbations.
- III. Gauss' Method with Secular Perturbations.
- IV. General Expressions for the Secular Inequalities of the Solar System.
- V. Poisson's Theorem on the Invariability of the Mean Distances.
- VI. Periodic Solutions in the Planetary Problem.
- VII. The Restricted Problem of Three Bodies.
- VIII. General Considerations on the Stability of Motion of Planetary Systems.

PROFESSOR R. W. WOOD, of the University of Wisconsin, having received several inquiries as to whether he could furnish lantern slides of the plates illustrating his article on the photography of sound-waves, which appeared in the *Philosophical Magazine* for August, has placed the original negatives in the hands of Miss Blanchard Harper (Madison, Wis.), who is prepared to supply slides from any or all of the plates at a nominal cost. The slides will be found useful in teaching, showing as they do the wave fronts by reflection from all sorts of surfaces, refraction, diffraction, Huyghens' principle, etc.

MAJOR RONALD ROSS has now returned from Africa, and is represented to have said that the authorities in Sierra Leone, acting on his advice, are now destroying the virulent mosquito by every means in their power. In the judgment of Major Ross the future of the west coast will be assured as soon as the colonial authorities take similar steps in the neighborhood of the principal towns, although years must elapse before the inland stations are improved.

THE Vice-Chancellor of Cambridge University announced on October 4th that he had received the following communication from the Colonial Office: The Government of the Straits Settlements desires to invite the attention of Radcliffe's travelling Fellows and of holders of scholarships for medical and physical research to the study of the tropical diseases called beriberi. This disease caused in the hospitals of the colony 730 deaths in 1896, and 692 in 1897. This government will be glad to assist any scholar who desires to engage in the scientific investigation of this disease in the colony, by providing him with furnished quarters, rent free, by giving him free access to all the hospitals, and facilities for studying the cases therein, by defraying the cost of his passage to the colony, and in any way which may be agreed upon hereafter between the scholar and Mr. Swettenham, the Secretary of the Straits Settlements.

THE death is announced of M. Paul Janet, member of the Paris Academy of moral and political science, and formerly professor of philosophy at the Sorbonne.

MR. EDWARD CASE, an English engineer, well known for his method of groyning to prevent the sea from encroaching on the coast, died on September 22d.

THE position of assistant in the bio-chemic division of the Bureau of Animal Industry in the Department of Agriculture, will be filled as the result of an examination on November 7th. The chief subject in the examination will be serum therapeutics. The salary will be \$750 per annum.

THE charter of the Dental School and Museum of Art, provided for in the will of the late Dr. Thomas W. Evans, the American dentist, who

died in Paris in 1897, has been approved by Judge Arnold. The Museum will have an endowment of nearly four million dollars unless the will is broken by the legal contest now in progress.

Mr. Andrew Carnegie has increased his gift for the Washington Public Library to \$350,000. At the close of the last session a site on Mount Vernon Square was selected, and it is expected that the construction of the building will be begun very soon.

WE learn from *Popular Astronomy* that the new observatory and great refractor of the astrophysical observatory at Potsdam were inaugurated on August 26th, in the presence of the German Emperor.

THE fine collection of Scottish agates made by the late Professor Heddle says *Natural Science* is now arranged in the Museum of Science and Art in Edinburgh. Mr. J. G. Goodchild has prepared a guide to the collection, incorporating Professor Heddle's explanatory notes.

THE winter meeting of the American Chemical Society will be held at New Haven, Conn., during Christmas week. As last year in New York the Society will meet at the same time and place as the American Society of Naturalists and affiliated societies.

ABOUT seventy members of the British Association took advantage of the trip through France and Belgium arranged to follow the Dover meeting. They were officially welcomed in the different towns and cities that they visited.

THE Fourth International Congress of Applied Chemistry is to be held in Paris from the 21st to 23d of July, 1900, with M. Berthelot as honorary president, and M. Moissan as president. An American Committee on Organization has been formed consisting of: Section I.—*Analytical Chemistry*, W. L. Dudley, W. F. Hillebrand, J. H. Long, Elwyn Waller; Section II.—*Inorganic Products*, Edward Hart, Edward W. Morley, J. D. Pennock; Section III.—*Metallurgy, Mines, Explosives*, F. W. Clarke, C. B. Dudley, C. E. Munroe, H. H. Nicholson; Section IV.—*Organic Products*, Thomas Evans, Wm. McMurtrie,

Ira Remsen, Clifford Richardson, S. P. Sadtler; Section V.—*Sugar Industry*, Edward Gude-man, W. D. Horne, G. L. Spencer, M. Swenson, Edward B. Vorhees; Section VI.—*Fermentations*, C. A. Crampton, W. B. Rising, Alfred Springer; Section VII.—*Agricultural Chemistry, Fertilizers, Cattle Feeding, Dairy*, G. C. Caldwell, L. L. Van Slyke, H. W. Wiley; Section VIII.—*Hygiene, Medical and Pharmaceutical Chemistry*, W. O. Atwater, R. H. Chittenden, J. U. Lloyd, Wm. P. Mason, Wm. J. Schieffelin; Section IX.—*Photography*, C. F. Chandler, J. H. Stebbins, Jr., E. R. Hewitt; Section X.—*Electro-Chemistry*, Elihu Thomson, Edgar F. Smith, Charles A. Doremus, Chairman of the American committee.

THE Twelfth Congress of Orientalists convened at Rome on October 4th, with about 400 delegates in attendance.

At a meeting of the Trustees of New York Public Library on October 11th, the Director, Dr. John S. Billings submitted his annual report. The number of books received for the 'shelf department' and catalogued in the year was 34,182, of which 16,994 were purchases and 17,188 gifts. The Ford gift is estimated at about 100,000 volumes and pamphlets. The total volumes actually received was 55,593, and the pamphlets 101,698. On the shelves and available for use at the end of the year were 459,248 volumes and about 117,000 pamphlets. The number of readers who visited the two buildings was 111,038. This is an increase of 7,000 over the previous year.

ACCORDING to *Natural Science* an interesting experiment is being made by the government of Bosnia and Herzegovina in connection with the subject of the migration of birds. A number of observatories are being established all over these two countries, on the coasts, plains, mountains, rivers and lakes—in fact, in every spot which seems likely to yield results of interest to those engaged in researches on bird migration. Under the auspices of the government of the two countries named, a meeting of ornithologists was convened at Sarajevo from the 25th to the 29th of September, with a view to similar observations conducted on uniform methods being instituted elsewhere. A report was presented on

the bird life of the Balkan States, illustrated by a fine collection from those districts.

BOTANISTS should feel under obligations to us for calling their attention to the description of a new species, as it appeared in a daily paper where it might be overlooked. We regret that the n. sp. is not figured. The description is in the following paragraph from the London *Daily Chronicle*:

The Pope takes great interest in an electric plant, to which he has given the name 'Officina Electrica Vaticana Alessandro Volta,' in honor of Volta. A few days ago his Holiness made a special inspection of these plants, and the employees of the Vatican gardens were presented to him by the chief.

UNIVERSITY AND EDUCATIONAL NEWS.

IN fulfillment of the terms of the will of the late Edward Austin, the president and fellows of Harvard College, have voted that, until they shall give further orders, \$2,000 shall be assigned yearly from the income of his bequest of \$500,000 to establish eight scholarships, each with an annual value of \$250, to be awarded for one year to superintendents of schools and to teachers in secondary schools and colleges, who have been recently in service and intend to return to service. Several of these scholarships have been awarded including one to R. E. Gaines, professor in Richmond College, and C. V. Piper, professor of biology in the University of Washington.

D. F. CONVERSE, a mill owner of Spartanburg, S. C., who died a week ago, left one-third of his estate, valued at \$500,000, to Converse College, an institute for the higher education for women founded by him in Spartanburg ten years ago.

THE expenses of the University of Chicago for printing and publishing during the academic year ending June 30, 1899, were over \$44,000, whereas the receipts were only \$17,000. It is probable that no other university supports its publications with such liberality.

PROFESSOR GEORGE HARRIS was formally inaugurated as President of Amherst College on October 11th. In the course of his inaugural address President Harris clearly stated that a scientific education has a culture value equal to