

present themselves for the Tripos and 100 for 2nd M.B., will receive £75 each. The papers of all candidates in a subject are to be looked over by both examiners, who must be present at all oral examinations and at the final meeting of examiners.

The Harkness Scholarship in Geology and Palæontology, for women in their first or second term of residence, has been awarded to E. Macdonald, of Girton College.

H. F. Newall, M.A. of Trinity College, has been recognized as a teacher of physics, D. Carnegie, B.A. of Caius College, as a teacher of chemistry, and J. R. Vaizey, M.A. of Peterhouse, as a teacher of botany, for the purpose of giving certificates for M.B. degree.

At Jesus College, on December 11, there will be an examination for scholarships in natural science, the maximum value being £80. Notice must be given to the tutors before December 1. Chemistry is essential, and one of the following: physics, elementary biology, animal physiology. Christ's College examination will commence on the same date, and a candidate may be elected at either College.

At St. John's College the open scholarship examination on December 11 may include all the subjects of the Natural Sciences Tripos, but every candidate must show a competent knowledge of two of the following subjects: elementary physics, chemistry, and biology.

SCIENTIFIC SERIALS.

American Journal of Science, October.—On a young tortoise with two heads, by E. H. Harbour. An account is given of a two-headed *Chrysemys picta* recently found near New Haven, Connecticut, and presenting some interesting physiological features. They appear to be two independent organisms inclosed in a common carapace, with separate and even antagonistic instincts and impulses, as shown in their struggles to move in opposite directions, in their independent breathing, sleeping and feeding at different times, and so on. They were still alive and vigorous on September 4, fourteen weeks after capture.—The structure of Florida, by Lawrence C. Johnson. In this paper, which was read before the American Association for the Advancement of Science at New York last year, the peninsula is divided longitudinally into four regions plainly marked by surface indications: (1) the Gulf Hammock in the west; (2) a central plain, or region of sinks; (3) the High Hammocks, or lake region; (4) the eastern slope, draining to the St. John's River.—Analysis of a soil from Washington Territory, with some remarks on the utility of soil analysis, by Edward A. Schneider. The specimens here analyzed are from the Rockland Ridge near "The Dalles" on the Columbia River. From this study the author infers that the action of hydrochloric acid on soils is far from uniform; that plant roots probably derive their nutrition from the finest sediments of the soil; that hydrochloric acid powerfully corrodes both the finest and coarsest sediments; that fertility largely depends not only on the quantity of phosphoric acid, but also on the mode of its occurrence, and that consequently the fertility of a soil cannot be determined by chemical analysis alone.—On the Rosetown extension of the Cortlandt series, by J. F. Kemp. The discovery of this extension of the well-known Cortlandt series is accredited to Dr. N. L. Britton, and the Rosetown area, due west of Stony Point, is here definitely circumscribed.—The contact-metamorphism produced in the adjoining mica-schists and limestones by the massive rocks of the Cortlandt series near Peekskill, New York, by George H. Williams. In previous papers were described the principal types and some intermediate varieties forming the complicated group of this series. Here the author deals with the unusual contact-metamorphism which they have occasioned in the adjoining schists and limestones, concluding with a summary of the evidence in favour of the eruptive origin of the massive members of the series.—The sedentary habits of *Platyceras*, by C. R. Keyes. The sedentary habits of this group of Palæozoic Gastropods is inferred from the analogous habits of their modern congeners, and from their attachment to various species of Crinoids during life.—On edisonite, a fourth form of titanate acid, by W. E. Hidden. The specimen here described is from the Whistnant gold mine, Polk County, California. Its analysis shows it to be a nearly pure TiO_2 , like rutile, but differing in its crystallization from the three previously known forms of that mineral.—On two new masses of meteoric iron, by George F. Kunz. The first of these specimens, from Linnville Mountain, North Carolina, closely resembles the Tazewell, Claiborne, and Bear Creek (Colorado) meteorites in

composition; the second, from Laramie County, Wyoming, approaches nearer to those of Rowton, Charlotte, and Jewel Hill.—Experiments on the effect of magnetic force on the equipotential lines of an electric current (continued), by E. H. Hall. An account is here given of the author's experiments with cobalt, nickel, and bismuth, together with a summary of results.—W. Spring gives a further account of his views regarding the compression of powdered solids, in reply to Mr. Hallock; and E. S. Dana contributes a short preliminary notice of beryllonite, a new mineral so named by him from the fact that it contains the rare element beryllium.

THE *American Meteorological Journal* for September contains:—(1) An article by Prof. J. E. Curtis on suction anemometers. Two different forms of such instruments have been proposed, corresponding to two distinct ways in which a moving fluid produces a diminution of pressure. In the first the suction is produced by the wind blowing through a horizontal tube, having a contracted section; in the second the suction is produced in a vertical tube, by the wind blowing across its mouth. The second form alone has come into limited use, under the name of the Hagemann anemometer. The author points out that these instruments are not more generally used partly because there is a feeling of uncertainty as to the definite relation of the suction to the wind's velocity. The paper deals almost exclusively with their history and theory. (2) An account by Mrs. J. N. Brodhead of her experience of the great cyclone at Calcutta, on October 5, 1864. (3) An article by Prof. H. A. Hazen on the advantages of Mount Washington as a meteorological station. No individual station has had its observations discussed more thoroughly, and one of the most important investigations has been the use of the observations in determining a proper reduction of barometric readings at great altitudes to sea-level, by Lieut. Dunwoody.

Bulletin de l'Académie des Sciences de St. Pétersbourg, vol. xxxii. No. 3.—On the determination of constants of the ellipsoid of the earth by means of geodetical measurements, by A. Borsdorff. This paper contains new formulæ for the calculation of the eccentricity.—On the formation of meteoric currents from the disintegration of comets, by Dr. C. Charlier, being a mathematical inquiry into the orbits of meteorites.—On the aberration of fixed stars, by M. Nyrén. After having calculated it on the ground of observations of two stars, the Comes and the Polaris, M. Nyrén obtains very nearly the same numerical values as those formerly found for the same stars by W. Struve.—On a new method for determining the focal distance of a system of lenses for different rays of light, by Dr. Hasselberg.—Some remarks on the fables of Phædrus, by A. Nauck.—A note by Dr. W. Radloff on grave-inscriptions in Semiryetchensk.—On the phenyl-angelic acid, by A. Gernet.—The approximate elements and ephemerides of Encke's comet for 1888, from May 12 to August 28, by O. Backlund and B. Seraphinoff.—The tale of the Princess Bentes compared with the tale of the Emperor Zenon and his two daughters, by Dr. O. Lemm. (All in German.)

No. 4.—Diagnoses of new Asiatic plants, by Dr. C. J. Maximowicz, being the seventh instalment (in Latin, with four plates) of a capital work about new plants brought by Przewalski, Potanin, Taschiro, and several others, from Central Asia, Japan, &c.—On the "hyperclementary" terms in the theory of perturbations, a mathematical inquiry, by O. Backlund (in German).

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, October 22.—M. Daubrée in the chair.—On lameness caused by pain, by M. Marey. By means of his photo-chronograph the author studies the character of the peculiar limping action instinctively caused by the desire to diminish the pain of a sore foot in walking. From the standpoint of the mechanical laws regulating the pressure of the foot on the ground, the three cases are considered in which this pressure is either equal to, greater, or less than, the weight of the body.—A paper follows by the same author, in which the swimming action of the eel is studied and illustrated by the same photo-chronographic process. The eel was 0.30 m. long, reduced by its squirming action to 0.29 m., and its rate of progress was shown to be 0.019 m. in 0.1 second, or about