THE following are among recent appointments:—Dr. C. A. Strong to be lecturer on psychology in Columbia University; Mr. H. C. Warren to be assistant professor of experimental psychology in Princeton University; Herr H. Hinterberger to be professor of photography in the University of Vienna; Prof. James Holm, of University College, Nottingham, has arrived at Cape Town, to succeed Prof. Smith as professor of applied mathematics and physics in the South African College; Prof. G. F. Atkinson to be full professor and head of the department of botany in Cornell University; Mr. Arnold Philip to be professor of electrical engineering and applied physics in the Merchant Venturers' Technical College, Bristol, in place of Prof. W. Wilson, who will shortly vacate the chair in consequence of his appointment to the post of principal of the Salford Municipal Technical School.

THE plans and drawings of the Women's Medical Institute, the new Russian college for granting medical diplomas to women, are, says the *Lancet*, completed. The building operations will begin next month, and it is hoped that they may be finished in time to open the new institution in August of next year. It has been liberally subsidised by Government and by the municipality of St. Petersburg, and private subscriptions and donations have been neither few nor small. At present the whole capital amounts to about 600,000 roubles (nearly £64,000). But of this at least 450,000 or 475,000 roubles will be required for building and furnishing the institute. The late Prof. Tchudnofski, whose recent death has created a vacancy in the chair of General Therapeutics in the Army Medical Academy, has left to the Women's Medical Institute his entire medical library, containing over 4000 volumes. The number of students who will be admitted to the courses at first has been fixed at 125. Already over 100 applications have been received.

YALE UNIVERSITY is having a run of good fortune. The widow of Thomas G. Sloane will remarry soon after Easter, thereby forfeiting to Yale the sum of 200,000 dols. left by her first husband on condition of her remaining unmarried. She will let the money go without a contest. The will of the late George Bliss, of the great banking house of Morton, Bliss, and Co., was admitted to probate in New York on March 11. Among the bequests is one of 50,000 dols. to Yale, to be disposed of as the President of the University shall direct. A new dormitory is to be erected on the college *campus* this season, at a cost of nearly 100,000 dols. Ground was broken on March 9, at Washington, for the new American University, the Hall of History being the first building to be erected. This is a university of the Methodist Church, and Bishop Hurst of that Church presided. About 1,000,000 dols. has been secured towards the University fund. This should not be confounded with the proposed University of the United States. Nothing has yet been done regarding the latter, except the introduction of a Bill in Congress; and the fate of the measure is still problematical.

WHEN shall we be able to chronicle so many gifts from private persons to science and education in England as the following, which *Science* announces in a single number?—The will of the late Mr. Hart A. Massey, of Toronto, leaves about 650,000 dols. to educational and charitable institutions, including the following bequests: Victoria College, Toronto, 200,000 dols.; Wesley College, Winnipeg, Man., 100,000 dols.; Mount Allison College, Slackville, N.B., 100,000 dols.; Wesleyan Theological College, Montreal, 50,000 dols.; American University, Washington, D.C., 50,000 dols.—The Finance Committee of the Senate of the State of Virginia has presented a Bill appropriating 50,000 dols. annually, instead of 40,000 dols. as heretofore, to the University of Virginia.—The will of the late Mr. Charles L. Colby, of New York, bequeaths 20,000 dols. to Brown University.—Morris M. White and Francis T. White have given to Earlham College, a Quaker institution in Richmond, Ind., 25,000 dols., to be added to the endowment fund and to be known as the John T. White memorial fund, in honour of their father.—Mrs. Josiah Fiske, of New York City, has given 5000 dols. to Radcliffe College, in memory of her late husband. The College has also received 6568 dols., the balance of a bequest by the late Caroline B. Perkins.—Mr. T. E. Bondurant, of De Land, Ill., has offered to give 20,000 dols. to the endowment fund of Eureka College, Illinois, provided the Board of Trustees will secure 100,000 dols. additional by March 1, 1897. Mr. T. J. Underwood, of Sangamon County, Ill., has donated 10,000 dols. towards the fund.

A RETURN made to the Department of Science and Art, showing the extent to which, and the manner in which local authorities are applying funds to the purposes of technical education (including science, art, technical and manual instruction), has been published as a Parliamentary Paper. The return shows that the total expended on technical education during the year 1893-94 in England, Wales, Scotland, and Ireland was £647,632; and that the estimated total expenditure on technical education for the year 1894-95 was £737,421. These amounts are exclusive of the sums devoted to intermediate and technical education under the Welsh Intermediate Education Act. In England, 41 out of the 49 County Councils (excepting the County of Monmouth) are applying the whole of the residue received under the Local Taxation (Customs and Excise) Act to technical education, and 8 County Councils a part of it to the same purpose. Of the Councils of the 61 County Boroughs, 55 are devoting the whole of the residue to technical education, and 8 a part of it; while in one case only, the County Borough of Preston, the residue is not being applied to educational purposes, but to relief of rates. Further, the Councils of 11 County Boroughs, 51 Boroughs, and 86 urban districts are making grants out of the rates under the Technical Instruction Acts; and 8 local authorities are devoting funds to technical education out of the rate levied under the Public Libraries' Act. In Wales and Monmouth, the 13 County Councils and the Councils of the 3 County Boroughs are devoting practically the whole of the residue grant to intermediate and technical education, and several Councils are making grants out of the rates. As regards Scotland, 21 out of the 33 County Councils are applying the whole of the residue to technical education, and 9 a part of it, while 3 use it for the relief of rates. Of the 195 Burghs and Police Burghs, more than half (101) apply the whole of the grant to the relief of rates.

DESPITE Prussia's open secret of a Treasury exhausted for the Army vote, and the consequent amenities between the Ministers of Education and Finance, the necessity of maintaining the trade schools in some degree of efficiency is present to the German official mind. The want of funds applicable to educational purposes in Prussia, is among the causes making for the spread of social democracy, and this is particularly the case in the straitened salaries of the teachers of the *Volksschulen*. A review of the Technical Education item in the Prussian Budget for the last five years shows, however, a healthy growth. For altogether, apart from the continuation schools in West Prussia and Posen, for which special provision is made, the grant for 1895-96 was 1,947,257 marks (£97,362 17*s.*), which was an increase in the total State subvention of £22,304 14*s.*, or nearly 30 per cent. of the entire grant. To take the trade schools (*Fachschulen*) alone, these were especially well treated. The State's expenditure on them rose from 896,993 marks (about £44,850) in 1891-92, to 1,263,157 marks (about £63,158) in 1895-96, or by more than 40 per cent., while their internal history shows an equally satisfactory development. In 1891-92 there were forty-four trade schools subsidised by the Treasury. Of these, four of the least significant have since been closed, while, on the other hand, no less than eight new ones have been started, involving a vote for the current year of more than £10,500. Three of these new schools are for building, two for weaving, one for pottery, one for engineering, and one for art industries. Similarly, the contribution to the continuation schools (*Fortvildungsschulen*) reveals an increase by more than 20 per cent., from £22,000 in 1891-92 to £26,500 in 1895-96. These figures are at least reassuring, and give hope that during the present year the Treasury will not look askance on the Education Office when it begs for money for the growth of its good work.

SCIENTIFIC SERIALS.

American Meteorological Journal, February.—The rainfall of the Malay Archipelago, by Dr. A. Woeikof. This article is chiefly based upon the observations which have been for fifteen years published in considerable detail by the Observatory of Batavia. It is generally considered that near the equator the rains are everywhere heavy and of nearly daily occurrence. Dr. Woeikof shows that in many localities, *e.g.* on the open sea, this is not the case. In the region in question, some of the wettest and some of the dryest stations lie within 1½° N. and 1° S. of the equator. The most rain falls on the west coast of Sumatra; the more level Eastern Sumatra and Western Borneo

have less rain, and less contrasts also. On the north-east of the peninsula of Celebes the rains are comparatively light, and there is a well-marked dry season. In Java, the rainfall is lightest in the east, and the dry season is longer and more sharply defined, so that vegetation has a time of arrest corresponding to our winter.—Psychrometer studies, by Prof. H. A. Hazen. This is a continuation of a discussion between Prof. Hazen and Dr. Ekholm, of Stockholm, on the behaviour of the psychrometer with respect to water vapour and ice vapour.

Bulletin of the American Mathematical Society, vol. ii. No. 5, February.—"Remarks on the progress of celestial mechanics since the middle of the century" is the presidential address delivered before the Society on December 27, 1895, by Dr. G. W. Hill. The address opens with the statement that a thoroughly satisfactory history of the subject has yet to be written, and then the author rapidly analyses some of the books that touch upon it, as Gautier's "Essai historique sur le problème du trois corps" (1817), Laplace's historical chapters in the last volume of the "Mécanique Céleste," Todhunter's "History of the Theories of Attraction and the Figure of the Earth," and Tisserand's "Traité de Mécanique Céleste." The scarcity of memoirs and books on the same subject accessible to American students, unless they work abroad, is dwelt upon, and then Dr. Hill opens with a consideration of Delaunay's method (*cf.* his "Théorie du Mouvement de la Lune"). Pointing out that Delaunay's method has not yet received all the developments and applications it is susceptible of, he next merely mentions Hansen's treatise on the perturbations of the small planets, and then confines his attention to a careful examination of the labours of Prof. Gyldén and M. Poincaré. He here enters into considerable detail, and closes with the remark that we owe much to M. Poincaré for his attack, "but the mist is not altogether dispelled; there is room for further investigation." This last remark is made with reference to the Lindstedt series, which "if convergent, would establish the non-existence of asymptotic solutions" (*cf.* a paper by the same author in the January number of the *Bulletin*, noticed in NATURE, No. 1373, p. 382).—A short note follows on Kronecker's linear relation among minors of a symmetric determinant, by Prof. H. S. White.—Dr. G. A. Miller's note on the lists of all the substitution groups that can be formed with a given number of elements, is a valuable historical *résumé* of recent and past work in this subject.—On Cauchy's theorem concerning complex integrals, by Prof. M. Bôcher, closes the mathematical papers.—From the Notes we learn that Prof. White's paper was read before the Society.

In the December number of the *Botanical Gazette* (vol. xx.), Mr. Frederick V. Coville, the Botanist of the U.S. Department of Agriculture, contributes a very interesting account of the botanical explorations of Dr. Thomas Coulter in Mexico and California, between the years 1824 and 1834. Among the chief botanical explorers in North America during the first half of the present century was Coulter. His collections were the basis of important contributions to the descriptive botany of Mexico and California. Born near Dundalk, Ireland, in 1793, he graduated in the Dublin University in 1817, studied under De Candolle at Geneva, and published his monograph of Dipsaceæ in 1824. He was Keeper of the Herbarium of Trinity College, Dublin, from 1834 to 1843. This account is accompanied by a copy of the principal part of the map published with Coulter's "Notes on Upper California," and Mr. Coville adds that he hopes in the near future to publish the letters of Coulter to A. Pyramus and Alphonse De Candolle, of which, through the courtesy of Dr. Casimir De Candolle, he has had copies. He further earnestly begs for any additional facts relating to Coulter, which should be sent to him to the Agricultural Department, Washington, U.S.

L'Anthropologie, Tome vi. No. 6.—Researches on the weight of the brain among the lunatics at St. John's Hospital, Copenhagen, by F. Meyer and P. Heiberg. In these investigations, which have extended over more than ten years, the authors have excluded brains that have suffered great loss of substance, those that have been the subjects of considerable cerebral hæmorrhage, and those that presented large tumours; on the other hand, brains suffering from œdema, anæmia, hyperæmia, atrophy, or periencephalitis have been included. The mean weight of 398 brains of men was found to be 1320 grammes; the greatest weight was 1866 grammes, and the least 995 grammes. 292 brains of women were examined; the mean weight was 1177 grammes, the heaviest weighed 1509 grammes, and the lightest 780 grammes. It appears that the brain gradually diminishes in weight after about fifty years of age.—On marriage amongst the Polynesians of the Marquesas Islands, by Dr. Tautain. Some of the marriage ceremonies described by the author clearly point to a time, not very remote, when all the women were common property, and marriage was unknown. A man on his marriage acquires the right of a husband over all his wife's sisters, and at the same time his brothers are entitled to exercise similar privileges with respect to the newly-made bride. In the author's opinion the Marquesans are a degraded people, and do not deserve the least sympathy.—Prehistoric stations in the neighbourhood of Marseilles, by E. Fournier. In this paper are recorded the results of digging operations at 110 stations, 45 of which have yielded evidence of the fauna and of prehistoric industry. They may be arranged in four groups: (1) The Magdalenian, (2) those belonging to the transition period, (3) the Lower Neolithic, (4) the Upper Neolithic.—Sculpture in Europe before Græco-Roman influence, by Salomon Reinach. The author enters upon the last part of his inquiry, viz. the representation of animals in primitive art, and the association of the human form with the forms of animals.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, March 5.—"On the Diurnal Periodicity of Earthquakes." By Charles Davison, M.A.

Reference is made to the previous work of De Montessus and Omori, the former endeavouring to show that the diurnal periodicity of earthquakes is apparent rather than real, and the latter pointing out that a marked diurnal periodicity characterises the after-shocks of great earthquakes in Japan.

The results of twenty-six registers obtained by means of continuously recording instruments in Japan, the Philippine Islands, and Italy are subjected to harmonic analysis with the following conclusions:—

(1) The reality of the diurnal variation of earthquake-frequency seems to be proved by the approximate agreement in epoch (mean local time) of the first four components (24, 12, 8, and 6 hours) for the whole year at Tōkiō and Manila, and for the winter and summer halves of the year at Tōkiō.

(2) In ordinary earthquakes, there is in nearly every case a marked diurnal period, the maximum generally occurring between 10 a.m. and noon. The semi-diurnal period, though less prominent, is also clearly marked, the maximum occurring as a rule between 9 a.m. and noon and between 9 p.m. and midnight. Other minor harmonic components are also occasionally important, the first maximum of the eight-hour component probably occurring about 6.30 a.m., and that of the six-hour component about 3 or 4 a.m.; but for these two epochs the results are not always concordant.

(3) Though the materials are insufficient for any general conclusion, the weaker shocks seem to be subject to a more marked diurnal periodicity.

(4) In the case of after-shocks of great earthquakes, the diurnal periodicity is as a rule strongly pronounced. The maximum of the diurnal period occurs within a few hours after midnight, but the epochs of the other components are subject to wide variation, possibly on account of the short intervals over which the records extend. A special feature of after-shocks is the prominence of the eight-hour and four-hour components.

The epochs of the first four components representing the diurnal variation of seismic frequency are compared in several cases with those for barometric pressure and wind velocity. While the variation of the former cannot be attributed exclusively to either of the latter phenomena, it seems not improbable that the diurnal periodicity of ordinary earthquakes may be due chiefly to that of wind velocity, and the diurnal periodicity of after-shocks chiefly to that of barometric pressure.

Geological Society, February 26.—Dr. Henry Hicks, F.R.S., President, in the chair.—On the structure of the Plesiosaurian skull, by Charles W. Andrews. Owing to the imperfection of the specimens described, various previous accounts of the Plesiosaurian skull were incomplete, and differed from one another in important particulars. There was in the National Collection a fine skull of *Plesiosaurus macrocephalus* which had lately been cleared from the matrix, with a description of which the author was mainly occupied, though other specimens, which were of assistance in clearing up some