

on receipt of a satisfactory report of work done during the first year :

Nominating Institution.	Scholar.	Place of Study.
Univ. St. Andrews.	J. C. Irvine, B.Sc.*	Univ. of Leipzig.
Mason Univ. Coll., Birmingham.	Henry L. Heathcote, B.Sc.	Univ. of Leipzig.
Univ. Coll., Bristol.	Winif. E. Walker, B.Sc.	Univ. Coll., London.
Yorkshire College, Leeds.	Fred. W. Skirrow, B.Sc.	Univ. of Leipzig.
Univ. Coll., Liverpool.	Charles G. Barkla, B.Sc.	Cavendish Lab., Cambridge.
Univ. Coll., London	Harriette Chick, B.Sc.	Thompson-Yates Lab., Univ. Coll., Liverpool.
Owens Coll., Manchester.	Frank A. Lidbury, B.Sc.	Univ. of Leipzig.
Durham Coll. Sci., Newcastle-upon-Tyne.	William Campbell, B.Sc.	Royal Coll. of Sci., S. Kensington.
Univ. Coll., Nottingham.	Louis Lownds, B.Sc.	Univ. of Berlin.
Univ. Coll. Wales, Aberystwith.	James T. Jenkins, B.Sc.	Univ. of Kiel and Biol. Institution, Heligoland.
Univ. Coll. of North Wales, Bangor.	Robert D. Abell, B.Sc.	Univ. of Leipzig.
Queens Coll., Belfast.	William Caldwell, B.A.	Univ. Würzburg.
McGill Univ., Montreal.	William B. McLean, B.Sc.	Owens Coll., Manchester.
Univ. of Melbourne	Bertram D. Steele, B.Sc.	Univ. of Breslau.
Queen's Coll., Cork.	Ed. J. Butler, M.B.	Univ. of Freiburg.
Univ. of New Zealand.	Joseph W. Mellor, B. C.	Owens Coll., Manchester.
Univ. Coll., London	Louis N. G. Filon, M.A.	King's Coll., Cambridge.

The following scholarships granted in 1898 have been exceptionally renewed for a third year :

Nominating Institution.	Scholar.	Place of Study.
Mason Univ. Coll., Birmingham.	A. H. H. Buller, B.Sc., Ph.D.	Univ. of Munich.
Yorkshire College, Leeds.	Harry T. Calvert, B.Sc.	Univ. of Leipzig.
Royal Coll. of Sci., Dublin.	Rob. L. Wills, B.A.	Cavendish Lab., Cambridge.
Dalhousie Univ., Halifax, N. S.	Eben. H. Archibald, M.Sc.	Harvard Univ.

SCIENTIFIC NOTES AND NEWS.

PROFESSOR A. MICHELSON, of the University of Chicago, has been awarded the grand prize of the Paris Exposition for his Echelon spectro-scope.

It is reported that Professor Haeckel, of Jena, is about to start for Java to conduct explorations in search of *Pithecanthropus erectus*.

IN the matter of the vacancy arising from the death of Professor James E. Keeler, the president and board of regents of the University of California have authorized astronomer W. W.

Campbell to discharge the duties of the director of the Lick Observatory, *ad interim*.

M. M. OUSTALET and DEPOUSARQUES have been nominated by the Paris Academy of Sciences for the chair of zoology in the Muséum d'Histoire naturelle, rendered vacant by the death of Professor Milne-Edwards. One of these candidates will be selected by the minister of public instruction.

MR. THOMAS LARGE has been appointed assistant in charge of the Fresh Water Biological Station of the University of Illinois, at Meredosia, Illinois, to succeed Dr. C. A. Kofoid, who, as we have already announced, has accepted a call to the University of California.

MR. J. STIRLING, Government geologist of Victoria, is at present in London, and will address several scientific societies during his stay in England.

SURGEON A. R. THOMAS of the U. S. Marine Hospital Service has been sent to Glasgow to investigate the bubonic plague which appears to be increasing in that city.

THE Government of Queensland has engaged Dr. Maxwell, the sugar expert of Honolulu, for five years' service on the Food Commission at a salary of \$20,000 a year.

DR. F. ROEMER, assistant in the Zoological Institute at Breslau, has been made curator in the Senckenbergischen Museum at Frankfurt-on-the-Main.

PROFESSOR K. LAMPERT, of Stuttgart, has been made curator of the Royal Natural History collections.

DR. D. MORRIS, the British Commissioner of Agriculture for the West Indies, is at present in Great Britain for the purpose of reporting to the Colonial office.

DR. C. VIRCHOW has been appointed chemist in the geological bureau at Berlin.

THE tomb of Sir Humphrey Davy, at Geneva, which for some years was in a neglected state, has recently been renovated.

DR. JOHN ANDERSON, M.D., F.R.S., has died at Buxton at the age of 66 years. He was appointed superintendent of the Indian Museum, Calcutta, in 1865, and made several expeditions to China. He was the author of

numerous and important contributions to zoology and the literature of scientific explorations.

WE regret to learn of the death of Professor Henry Sidgwick, who was recently compelled by ill health to resign the professorship of moral philosophy at Cambridge University. Professor Sidgwick was born in Yorkshire on May 31, 1838, and was educated at Rugby and Trinity College. He was elected a fellow of Trinity College, but resigned owing to the religious tests then imposed. He was, however, elected an honorary fellow of Trinity in 1881, and in 1883 became Knightbridge professor of moral philosophy. Professor Sidgwick published numerous and important books on ethical and economic subjects which united in a rare degree genius and scientific caution.

FRIEDRICH WILHELM NIETZSCHE, the philosopher and man of letters, died on August 25th at Weimar, where for eleven years he had been living hopelessly insane at the home of his sister. Nietzsche was formerly professor of oriental languages at Basle, but later gave this up to travel and to write his remarkable books which showed genius of a destructive rather than of a constructive character. They are of interest to men of science, because he was greatly influenced by modern theories of biological evolution.

THE death is announced of Sir John Bennett Lawes, F.R.S., at the age of 86 years. He was educated at Eton and Oxford, and early began the study of scientific agriculture, being one of the first to use bone dressing and artificial fertilizers. He was the author of over one hundred papers on the scientific aspects of agriculture.

SIR MALCOLM FRASER, a civil engineer, formerly Surveyor-general and Colonial Secretary of Western Australia, died at Clifton on August 17th, aged 66 years.

THE Fourth International Congress of Psychology opened at Paris on August 20th with an attendance of about 400 and a long list of papers on its program. The first general addresses were given by M. Ribot, professor in the Collège de France and Professor Ebbinghaus of Breslau. Among the Americans in

attendance were Professor Ladd of Yale University, Professor Münsterberg of Harvard University, Professor Bryan of the University of Indiana, and Professor Warren of Princeton University.

THE annual meeting of the English Arboricultural Society, says *Nature*, was held at Manchester recently. Professor Somerville was appointed president for the ensuing year. Reports were read from the judges upon essays on 'Foreign *versus* Native Timber,' 'Agricultural and Woodland Drainage,' and 'Thinning.' The silver medal for the first essay was awarded to Mr. George Cadell, late of the Indian Forest Department, and bronze medals for the other essays were given to Mr. D. A. Glen, of Kirby, near Liverpool, and Mr. A. Dean, of Egham.

THE Governing Body of the Jenner Institute announce their intention of awarding three studentships of £150 each, tenable by British subjects for one year from January 1st next, and renewable for a second year at the option of the Governing Body, for the purposes of research at the Institute. Applications from candidates must be sent in by November 1st.

THE Berlin Academy of Sciences offers its prize on the Steiner foundation for the solution of some important problem connected with the theory of curved surfaces, preferably related to the work of Steiner. The prize is of the value of 4000 Marks with a second prize of 2000 Marks. The paper must be handed in by the end of the year 1904, and may be written in English.

MAJOR GIBBONS has reached Omdurman after a trip through Africa extending to about 13,000 miles. Among the objects attained were the mapping of Marotseland, 200,000 miles in area; the accomplishment of the first steam navigation of the Middle Zambesi, and the tracing of the whole course of the river, the discovery of its source and the determination of its watershed. Thence the route of the expedition was eastward and by way of the Great Lakes to the Nile. It is understood that Major Gibbons has brought with him valuable collections.

DURING the summer the Ohio State Archaeological and Historical Society, under the direction of the curator, Wm. C. Mills, carried on

explorations at the Baum prehistoric village site, near Bourneville, Ross County, Ohio. The work was very successful; more than 60 skeletons were found and photographed in place. This village site is especially rich in fine implements of bone, shell and stone, of which several thousand were taken from the ash pits together with the bones of the elk, deer, bear, wolf, raccoon, wild turkey and Indian dog.

THE French Minister of War, as we learn from *Nature*, has invited the Paris Academy of Sciences to advise as to the precautions to be adopted in selecting and planting trees in the neighborhood of powder magazines, in order to secure the best protection from lightning.

THE United States Civil Service Commission announces that it has been informed by the Department of Agriculture that there is an opportunity at this time for appointment to two or three positions in the office of Public Road Inquiries of persons qualified as practical road builders and who have a knowledge of rural engineering, geology, mineralogy, and kindred subjects. Persons who desire to become eligible will not be required to appear at any place for examination but should file with the Commission a properly certified statement as to the length of time spent in college, the studies pursued, the standing in those studies, and the special qualifications they have for such work mentioned above together with a thesis upon the subject mentioned, or in lieu of this thesis literature upon this subject published over their own signatures. At the request of the Department applications will not be accepted from other than graduates of colleges receiving the benefits of grants of land or money from the United States. The length of time any scientific aid may serve in the Department is limited to two years. The salary shall not exceed \$40 per month. The subjects and weights of this examination will be as follows:

Subjects.	Weights.
1. College course with bachelor's degree.....	50
2. Post-graduate course and special qualifications.....	25
3. Thesis or other literature.....	25
Total	100

A REMARKABLE meteor is reported by observers in New England. As seen from the mouth of the Damariscotta River, Maine, its altitude, when, at 8 P. M., it burst into view, was about thirty degrees and its direction north by west, color a rich copper green, and magnitude and brilliancy so great as to light up the whole country with a flash of great intensity, the light persisting about two seconds before final extinction. The mass was pear-shaped, larger end downward. The smaller end shaded from green to yellow. A little later, a bright red meteorite was seen north by west of smaller size. We hope that our correspondents will supply more precise data.

DETAILS have been published in regard to the plague at Hong-Kong which show that the epidemic has not been quite so severe this year as last, and is now abating somewhat. The deaths during the past six years have varied in a curious way, being as follows: 1894, 2485, 1895, 36; 1896, 1078; 1897, 19; 1898, 1175; 1899, 1428. The deaths are chiefly among the Chinese, the mortality being excessive—perhaps in part due to the fact that cases which did not result fatally were not reported. Last year the total number of cases was 1455, and the number of deaths 1407.

THE fastest regular trains in the world are, as we have already noted, those running over the Philadelphia and Reading and Pennsylvania Railroad from Camden to Atlantic City. By the former line the 55½ miles is traversed at the rate of 66.6 per hour. The Empire State Express, of the New York Central Railroad, however, no longer holds the record for long distance trains. It runs from New York to Buffalo—440 miles—at the rate of 53.33 miles per hour. The Sud Express on the Orleans and Midi Railway now runs from Paris to Bayonne, a distance of 486½ miles, at the rate of 54.13 miles per hour.

THE London *Daily Graphic*, as quoted in *Nature*, states that the Norwegian government has built and fitted out a steam vessel for the express purpose of marine scientific research, and has placed her, as well as a trained staff of assistants, in charge of Dr. J. Hjort as leader of the Norwegian Fishery and Marine Investi-

gations. The vessel herself, the *Michael Sars*, has been constructed in Norway on the lines of an English steam trawler—that type of boat being regarded as the most seaworthy and suitable for such an expedition—but considerably larger, being 132 feet in length, 23 feet beam, and fitted with triple expansion engines of 300 horse-power. The fishing gear includes, *inter alia*, trawls, nets, and lines of all kinds, with massive steel hawsers and powerful steam winches to work the heavy apparatus, while the numerous scientific instruments are of the very best and latest description. The expedition left Christiania in the middle of July, on what may be termed its trial trip along the Norwegian coast (accompanied for part of the time by Dr. Nansen, who was desirous of testing various instruments in which he had made improvements), and has just sailed from Tromsø on a lengthy cruise to the North Atlantic and Arctic Oceans. Dr. Hjort has already added so much to the knowledge of pelagic fishes, their life, habits, and the causes affecting their migrations, that, with the means now at his disposal, a considerable amount of valuable information will probably be gained which will prove of service to the fishing industry of all nations.

THE Queen Regent of Spain has signed a decree establishing the method of accounting time in the kingdom as follows:

(1) In all railway, mail (including telegraph), telephone, and steamship service in the Peninsula and the Balearic Islands, and in all the ministerial offices, the courts, and all public works, time shall be regulated by the time of the Greenwich Observatory, commonly known as western European time.

(2) The computation of the hours in the above-mentioned services will be made from the hour of midnight to the following midnight in hours from 1 to 24, omitting the words *tarde* (afternoon) and *noche* (night), heretofore in customary use.

(3) The hour of midnight will be designated as 24.

(4) The interval, for instance, between midnight (24) and 1 o'clock will be designated as 0.05, 0.10, 0.59.

THE report of the Zoological Gardens of Ghizeh, near Cairo, for the year 1899 is summarized in *Nature*. Under its present director, Captain Stanley Flower, it has become a popular place of resort for the European visitors to

Egypt, as well as for the Cairenes. The receipts for 1899 were 3033*l.*, of which 968*l.* were for gate-entrances, and the expenditure was 3019*l.* The list of donors includes many well-known names, amongst them those of Sir William Garstin, Prince Omar Tousson, Sir F. Wingate and Lord Kitchener. The government of India presented an elephant. Various new buildings were erected, and others were reconstructed in 1899. The number of animals in the collection on October 1st of that year was 473, against 270 at the corresponding date in 1898. A list of wild birds that inhabit the Ghizeh Gardens, and in many cases breed there, enumerates nineteen species, amongst which is the European song-thrush (*Turdus musicus*). Two proboscis monkeys (*Nasalis larvatus*), presented by the government of the Netherlands, East Indies, unfortunately did not live long. Since the report was issued Captain Flower has succeeded in bringing to the Ghizeh Gardens from the Sudan a fine young giraffe, presented by the Sirdar.

A CORRESPONDENT writes to the *London Times*: At this week's meeting of the Royal Horticultural Society a fruit was exhibited for the first time which bids fair to become very useful. From a botanical point of view also it is of considerable interest, the plant bearing it being a hybrid between the raspberry and the common blackberry. As the 'Mahdi,' as it has been called, was raised by Messrs. Veitch, its origin is well authenticated, the seed parent being a variety of the raspberry known as 'Belle de Fontenay.' The same cannot be said for the Logan berry trailing from the other side of the Atlantic, for which a somewhat similar parentage has been claimed. A high authority, however, is of opinion that the raspberry plays no part in its composition, and that both its parents were an American species of *Rubus* instead of only one. The 'Mahdi' has very much the habit of the blackberry, and in cultivation it is trained in the same way. Its fruit recalls to some extent the dewberry of our hedges. There is the same bloom, but the number of fruitlets is greater. Careful scrutiny will reveal many intermediate characters; the taste of the 'berry' combines a preponderant flavor of the dewberry with a

suspicion of that of the raspberry. Most important is the time of fruiting as regards the future of the plant economically, for it comes into bearing as the raspberries are failing and before the blackberries are ripe. The 'Mahdi' is very prolific and has considerable claims to be a decorative plant; it will not, however, be placed upon the market for probably another twelve months at least.

A SUMMARY of the work done by the Reichsanstalt from February, 1899, to February, 1900, has been published in the *Zeitschrift für Instrumentenkunde*. According to an abstract in the *Electrical World* the comparison of the two sets of standard resistance coils showed good agreement; the variations during seven years amount only to a few hundred thousandths of the original value. Preliminary experiments were made for determining the capacity of an air condenser. A greater number of zinc and cadmium standard cells were made for testing purposes; renewed measurements gave results in good agreement with the figures published last year. The exact investigation of the conductivity of aqueous solutions has been concluded for the chlorides and nitrates of alkaline metals. The instruments, storage batteries, primary cells, cut-outs, insulating and conducting materials, arc lamp carbons, fuses which have been tested, are given in a table. Statistical material on the use of electric meters in practice has been collected; according to the information given by the central stations, about 60,000 meters are at present in use in Germany, while about twice as many is the number estimated by the manufacturers. The apparatus for testing alternating current instruments was completed. A new resistance material of Heraeus was tested, the investigation of the resistance devised by Kundt was continued. One hundred and eleven Clark and 22 Weston cells were tested. The variation from the normal e. m. f. was below 0.0003 volt for 83 Clark cells, between 0.0004 and 0.0006 volt for 23 cells, 0.001 volt for 1 cell and greater than 0.001 volt for 4 cells. The agreement of the commercial Weston cells was found to be very satisfactory. The magnetic properties of 25 samples of steel and iron were tested. An investigation was made of the dif-

ference between continuous and interrupted magnetization. Also preliminary measurements were made to investigate the influence of repeated annealing upon the magnetic properties of different samples of iron.

SOME of our Consuls in South America, says the *London Times*, refer in their last reports to the virtues ascribed to the tea made from yerba maté, a herb which takes the place to some extent of tea and coffee, and which is derived from the leaves of the *Ilex Paraguariensis*, a tree of from twelve to twenty feet in height. The Consul in Paraguay says this tea is consumed by a large proportion of the populations of Brazil, the Argentine, Uruguay, Chili and Paraguay. The leaves are gathered every two or three years and dried over a slow fire; they are then pounded in mortars in the ground, and finally packed in fresh skins and dried in the sun. The tea is made by pouring boiling water on the leaves, which serve for several infusions. The taste is bitter, but not unpleasant, and the effects are asserted to be invigorating. It is said that it would be valuable as a restorative to troops on the march and on active service, and the French Government have ordered a shipment of maté for the colonial troops and some samples have also been sent to Germany for experimental purposes. An attempt is also being made to introduce it into the United States as a suitable beverage for the working classes. When analyzed the tea is shown to contain caffeine and cafetannic acid in important proportions. The Council-General at Rio also refers to the subject as one of commercial interest. It is claimed, he says, on behalf of the tea that it possesses superior stomachic properties to tea and coffee, in that, while it is refreshing and invigorating and favorable alike to mental and physical exertion, it does not disturb the nervous system. But even Brazilians are not agreed as to its merits, some alleging that by its aid the most arduous work can be done, such as forced marches of troops on short rations; others asserting that in war coffee has proved much more sustaining. However this may be, it is largely consumed in South American countries when the prices of low grade China teas are too high to admit of their shipment to South

America, and it is therefore possible that it has some good qualities to recommend it.

THE South African Native Races Committee have, as we learn from the *London Times*, addressed a letter to the Colonial Secretary submitting certain points for his consideration on which they believe that there is need for an inquiry connected with the black and colored population of South Africa. It is stated that no recent public investigation into this subject has been made. Even with regard to Cape Colony and Natal the time seems to have come for further inquiry with reference to many points of importance, such as the overcrowding of locations; the provision of land for surplus population; the practical effect of the Glen Grey act; the working of the Pass Laws; the question of native education, and other matters. In other parts of British South Africa the need for a thorough investigation of native questions is still greater. The committee urge on her majesty's government the expediency of inquiries being instituted at as early a date as possible, with regard to some at least of the following matters: (1) Laws, customs, and land tenure of the natives in districts which were not the subject of examination by the Cape Government Commission; (2) the operation of the existing tribal system, and the expediency of maintaining it; (3) the advisability of setting aside large areas (such as the whole or part of the Zoutpansberg district and Swaziland) to be administered for the exclusive use and benefit of the native tribes; (4) the condition of existing native locations and reserves, the terms upon which lands are secured to the natives, and the need and method of providing further lands for the surplus native population; (5) the provision of further facilities for the flow of labor to centers of industry, and, if practicable, for the migration of families to such centers, the supervision of contracts of service, the securing of safe and healthy conditions of labor in the mines and other occupations; (6) the provision of advice and assistance for natives at industrial centers, and of facilities for the deposit and transmission of their earnings; (7) the need for further Government aid for native education and for reforms in the present system; (8) the effects of existing

methods of taxation on the economic and social condition of the natives; (9) the working of the Pass Laws, with a view to ascertaining whether their mitigation or abolition is practicable; (10) the administration of the Liquor Laws.

UNIVERSITY AND EDUCATIONAL NEWS.

THE fact that under the new constitution of the University of London the registered graduates have a larger share than before in the government of the University has led to the formation of the University of London Graduates Union. Dr. K. P. H. Pye-Smith, F.R.S., has been elected president.

PRESIDENT CHARLES F. THWING, of Western Reserve University, Cleveland, is at present delivering a course of lectures at the University of Virginia on 'The American University,' treating its organization and administration, its chief executive, the university and patriotism, and the place of the university in American life.

DR. GEORGE P. DREYER, Ph.D. (Johns Hopkins), associate professor of physiology in the Johns Hopkins Medical School, has been elected professor in charge of the physiological department of the College of Physicians and Surgeons (Chicago), the medical department of the University of Illinois.

THE vacancy in the chair of mathematics in Haverford College caused by the removal of Dr. Frank Morley to Johns Hopkins University has been filled by the appointment of Dr. A. W. Reid, A.B. (Johns Hopkins) Ph.D. (Göttingen), instructor in mathematics at Princeton University. The vacancy at Princeton has been filled by the appointment of Dr. L. P. Eisenhart who received this year the doctorate at the Johns Hopkins University.

DR. TH. ZIEHEN, associate professor of psychiatry in the university at Jena, has been appointed professor in the University of Utrecht.

WE notice also the following appointments in foreign universities: Dr. Pfeiffer professor of agricultural chemistry in the university at Jena has been called to Breslau; Professor P. Curie, of Paris, has been appointed professor of general and experimental physics in the University at Geneva; Dr. Zehander, has qualified as docent in physics in the university at Munich.