

try the members of the college, and such members of the university as the master and seniors may from time to time direct.

LONDON.—The London Ladies' Educational Association opened its tenth session at University College for day lectures on Monday. Most of the evening lectures—intended chiefly for governesses and candidates for public examinations open to women—began a fortnight ago. In the past session of 1876-77 there was a decrease in the number of students as compared with the preceding session, in which the number had been greatly in excess of any previous year. There was, however, but a very slight diminution last year in the total amount of fees received, which rose considerably above the former level, the students, as a rule, showing a desire to avail themselves of a regular course of study by attending a larger number of classes. Moreover, the number presenting themselves for examination showed a very marked increase. The range of subjects offered to ladies in the coming session is fully as wide as in any preceding one, and comprises the language and literature of England, France, Germany, and Italy; Greek and mathematics, in elementary and advanced classes; physiology and hygiene; physics; English history, in two classes, intended as a preparation for the Cambridge higher local examinations for women; English Constitutional History; and history of Grecian literature and art; to which will be added, next term, an additional course of Modern History, and a course of lectures on Architecture. Besides these classes, which are for ladies only, ladies are admitted as regular students to the following classes in the college:—Anglo-Saxon, Higher Senior Mathematics, Philosophy of Mind and Logic, Political Economy, Jurisprudence, and Roman Law. Ladies are also permitted to receive practical instruction in the physical laboratory of the college, whilst the Fine Art Department has from its commencement always been open to them.

MANCHESTER.—The Dalton Chemical Scholarship has been awarded to Mr. C. F. Cross. Mr. Cross presented an original investigation upon "Normal primary heptyl alcohol, and its derivatives."

The Dalton Mathematical Scholarship has been awarded to Mr. E. T. Littlewood.

Prof. Boyd Dawkins, M.A., F.R.S., began on the 22nd inst. a course of six museum lectures on "Man's place in the tertiary period." These lectures are open to the public at a small nominal fee.

The session of the evening classes was opened on the 15th inst. by an address on "The Great Masters since Handel and Bach, with especial reference to the form of their compositions." The address was delivered by Mr. Hecht, Lecturer on Music, and was illustrated by selections from the masters' works, performed on the pianoforte.

LEEDS.—On Tuesday the foundation stone of the new Yorkshire College was laid by the Archbishop of York on the site of the Beechgrove estate, at Little Woodhouse, near Leeds, in the presence of a large gathering of friends and subscribers to the undertaking. Dr. Heaton, the chairman to the council of the College, delivered a short statement in the nature of a history of the college from its initiation and its establishment down to the present time. With these details our readers are already familiar. The cost of the site has been 13,000*l.*

BRISTOL.—On Saturday next, October 27, the Dean of Westminster will give a public address to the students of University College, and those interested in its success. The introductory lectures have been duly delivered, and in most cases attracted large audiences, and were well reported in local papers.

ABERDEEN.—*Apropos* of a recent correspondence in the *Times*, the following fact is of some interest:—

At a recent meeting of the Aberdeen University Court a letter was read from Sir Louis Mallet, Secretary to Lord Salisbury, asking what special provision the University would make for superintending the conduct of students selected for the Indian Civil Service during their two years of probation. In reply, the court adopted a motion, in which they resolved respectfully to inform the Secretary of State for India that the University could not undertake to institute any separate or severer system of oversight or discipline for one class of students than for another, and that the present system had been found in practice to be perfectly effectual in securing the steadiness, moral training, and good behaviour of the students.

A memorial from the University Council, asking the court to take steps to institute evening lectureships in science and art, was referred to the Senatus for a report.

DUBLIN.—Prof. Emerson Reynolds will commence a course of lectures on General and Medical Chemistry on every Tuesday, Thursday, and Saturday from November 1 to March 31 following. The first course of Practical Chemistry will comprise laboratory instruction in Qualitative Analysis (including Spectrum Analysis), commencing in Michaelmas Term; Volumetric and Simple Gravimetric Analysis, commencing with Hilary Term; Organic Preparations and Analysis, commencing with Trinity Term. The second, or advanced, course of Practical Chemistry will comprise instruction in the higher branches of Experimental and Analytical Chemistry, and in Methods of Research.

Prof. Macalister, M.D., will commence a course of lectures on Zoology in November, to be continued through each term until the end of June.

Prof. E. P. Wright, M.D., will commence a course of lectures on the Morphology of the Cells and Tissues of Plants, and one on the Natural History of Algae and Fungi in November.

CORK.—Prof. J. Reay Greene has resigned the Professorship of Zoology and Botany in the Queen's College, Cork, retiring on a pension. There is, however, no vacancy, as Prof. Harkness will lecture the students on these subjects.

GALWAY.—Prof. Cleland, M.D., F.R.S., has resigned the Professorship of Anatomy in the Queen's College, Galway, having been elected to the valuable Professorship of Anatomy in Glasgow College, vacant by the resignation of Prof. Allen Thomson. The vacancy in the Queen's College, Galway, will be filled up by H.E. the Lord-Lieutenant of Ireland on October 27.

LANCASTER.—A very fine set of new buildings for the Lancaster Royal Grammar School was opened on September 24. The buildings include a well-fitted laboratory, erected at the expense of W. Bradshaw, Esq., placed at some distance from the main building. It is a pleasant, well-lighted room, thirty feet by twenty feet. The whole school is taught physics, and every boy will pass through a course of chemistry at about the fourth form stage. We hope the authorities will feel encouraged soon to introduce other branches of science as a regular part of the curriculum.

AMSTERDAM.—A university has been opened at Amsterdam.

### SCIENTIFIC SERIALS

*Reale Istituto Lombardo di Scienze e Lettere*, Rendiconti, vol. x. fasc. xv.—New contribution to the efficacy of the elastic ligature in surgery, by M. Scarenzio.—Gleanings in the Zoological Museum of Pavia, by M. Pavesi.—Note by M. Curioni on the contents of his work, "Applied Geology of the Lombardy Province."—On microphytes, which produce certain diseases in plants, by M. Cattaneo.—Physico-chemical researches on the different allotropic states of hydrogen, by M. Tommasi.

*Journal de Physique*, September, 1877.—From this number we note the following papers: On the application of a new apparatus for the determination of visual astigmatism, by M. Javal.—On the spectrum of the electric spark in a compressed gas, by A. Cazin. The author made two series of experiments, one in which he simply observed the spectrum directly by means of the spectroscope, and the other in which he photographed the spectra and thus obtained more accurate results.—Experimental determination of the principal elements of an optical system, by A. Cornu.—On the currents produced by a liquid passing through a tube, by E. Edlund.—On the spectra of chemical compounds, by P. Moser.—On the modes of crystallisation of water and the causes of the various aspects of ice, by Raoul Pictet.—On the influence of light on the electrical resistance of metals, by R. Boernstein.

*Zeitschrift für wissenschaftliche Zoologie*, vol. 29, part 2 (July).—H. Reichenbach, on the early development of the fresh-water crayfish, 75 pp. 3 plates.—H. Ludwig, on *Rhopalodina* (class ciliatodermata).—O. Bütschli, on the process of division of cartilage-cells; on the development of *Paludina vivipara*, in relation to Bobretzky's and Lankester's recent papers; on the development of *Neritina fluviatilis*, and on the segmentation process and formation of the blastoderm in *Nephtis vulgaris*.

Part 3 (September).—Prof. A. Wrzesniowski (Warsaw), Contributions to the natural history of the infusoria, 57 pages, 3 plates, containing descriptions of many new species, and discussions on *Oxytricha*, *Epistylis flavicans*, *Ophrydium versatile*, &c. —Marie von Chauvin, on the power of adaptation of the larvæ of *Salamandra atra*.—Ernst Zeller, on the reproduction of opalina (parasitic on batrachians), 2 plates.—W. Kurz, studies on the lernæopods, 3 plates.

## SOCIETIES AND ACADEMIES

### LONDON

Entomological Society, October 3.—Prof. J. O. Westwood, M.A., F.L.S., president, in the chair.—Mr. W. L. Distant exhibited a specimen of the ravages of *Dermeestes vulpinus* in a cargo of dried hides from China. On the arrival of the cargo in this country it was found to be swarming with the insect in all stages.—Mr. McLachlan also exhibited a piece of wood which had formed part of a case containing hides from Shanghai and which was riddled with borings of the larvæ of the same insect. The president remarked that his attention had been directed some years ago to the depredations of this larva in a cargo of cork.—Prof. Westwood exhibited a drawing of the pupa of a species of *Anabolia* which swam about in water like a *Nolanea* and was remarkable for using its middle legs as swimming apparatus. Prof. Westwood also made remarks upon the homology of the mouth organs in the pupæ of Trichoptera and suggested that the mandibles of the pupæ (which are aborted in imago) are for the purpose of eating their way out of the cases in which they undergo their transformation.—The president next exhibited a small lepidopterous insect from Lake Nyassa with a pupa case of a species of *Tachina* from which it was supposed to have been bred.—Prof. Westwood next called the attention of the Society to the remarkable lepidopterous larva attached to the homopterous larva which had been handed to him by Mr. Wood-Mason at the last meeting and stated his belief that the relation of the Lepidopteron to the Homopteron was probably one of true parasitism, the former (*Epiphyrops*) feeding on the wax secreted by the latter. Mr. Wood-Mason stated that he was inclined to consider the *Epiphyrops* larva as a messmate of the Homopteron having attached itself to the latter for the sake of being carried about to its food-plant and having covered itself with the waxy secretion for the purpose of rendering itself inconspicuous to its foes.—Prof. Westwood then exhibited a moth from Brazil which had been bred from a caterpillar found among the hairs of some animal.—The president finally read a note from Albert Müller announcing the formation of an entomological station at Basle.—Mr. Meldola announced that the Longicorn beetle received from Birkenhead and exhibited at the last meeting had been identified by Mr. C. O. Waterhouse as *Monohammus titillatus*, Fab., a species inhabiting the United States. Mr. Meldola also exhibited a collection of Lepidoptera formed by him in 1875 in Ceylon and the Nicobar Islands.—Mr. H. Goss exhibited a series of *Lycana Arion* taken in the Cotswolds which were remarkable on account of the small size of some of the specimens, about one-third being below the average size.—Mr. McLachlan read a paper on *Notiothauma Reudi*, a remarkable new genus and species of Neuroptera from Chili pertaining to the family *Panorpida*.—A paper was communicated by Mr. A. G. Butler on the Lepidoptera of the family *Lithosida* in the collection of the British Museum.

### WELLINGTON

Philosophical Society, July 21.—Mr. W. T. L. Travers, F.L.S., president, in the chair.—The hon. Mr. Mantell read a paper by Mr. J. C. Crawford, F.G.S., on gold found in the rocks of the Tararua and Rimutaka ranges in the province of Wellington. Mr. Crawford had forwarded a specimen to Melbourne, and Mr. J. Chapman, the assayer to the bank of Victoria, had reported that the specimen was composed of sulphate of iron, and gold at the rate of 1 oz. per ton. The hon. Mr. Mantell said he would like some explanation regarding the presence of sulphate of iron. Dr. Hector stated that there must have been some mistake, probably iron bi-sulphide was meant. He reminded the society that a great deal had been done in prospecting the country referred to by Mr. Crawford, and that in 1869 he (Dr. Hector) had communicated to the society the results obtained. Eighteen analyses had been made of quartz specimens from reefs in the district; of these only six had proved auriferous,

varying from mere traces up to 13 dwts. per ton of gold, the richest being from Wainuiomata, the same locality from which Mr. Crawford's specimen had come. In his former communication he had warned prospectors against the solid quartz reefs which traverse the sandstones and slate, as the gold at Makara and Terawiti appears to occur in jointed sandstones, chiefly as dendritic films.—Capt. Edwin, R.N., communicated a notice by Mr. J. F. Marten, of Russell, Bay of Islands, regarding the occurrence of the tidal wave which took place on May 11 last. Mr. Travers said he had observed this occurrence in Wellington harbour, and that he believed Dr. Hector had taken observations of the rise and fall. Some years ago a similar wave was observed in New Zealand, after which we had news of an earthquake in America, and no doubt the wave on May 11 last was due to a like cause.—Dr. Hector reported that tidal disturbance on May 11 had been observed on every part of the New Zealand coast, and also in Australia in the same manner, but not so intensely as the waves of August, 1868. The origin of the waves on that occasion was clearly traced to a great volcanic disturbance near the west coast of South America, and in this instance a violent convulsion has also been reported from that quarter as having occurred on May 10. We have not the full particulars yet, but if this date is correct the wave felt on our coast must have been due to a still earlier shock, perhaps in some other place, as it was first noticed at 5 A.M. on the 11th, corresponding to 1 P.M. of the 10th on the South American coast. From this date must be subtracted about seventeen hours for the time of transmission of the wave across the Pacific Ocean, which would require that the shock should have taken place about 8 A.M. on the 9th. This tends to confirm the belief that there is a periodicity in earthquakes, and that they occur independently at distant localities at nearly the same time. He observed that a writer in the last received number of NATURE notices this coincidence in reporting a sharp earthquake at Comrie, in Scotland, on May 11. At Napier, where the engineer of the harbour works, Mr. Weber, makes exact observations, the tides were disturbed from the 11th to the 19th. The position of Napier renders it peculiarly sensitive to oceanic oscillations. Thus on May 1 the highest sea ever experienced in Napier washed over the shingle spit and damaged the rails in front of the Court-house. This phenomenon was only local, and attributed to a long continuance of south-east wind. He called attention to a recent paper by Mr. Russell, the Government Astronomer at Sydney (*Journ. Ast. Soc. N.S.W.*, 1876, p. 37), which states that the slightest earth shocks felt in New Zealand are nearly always recorded on the tide gauges in Sydney and Newcastle, and are most unaccountably coincident with abnormal readings of one of the thermometers in the Observatory. If we had well-placed tide-gauges on the New Zealand coasts it is probable the most interesting results would be obtained. Every addition to the observed facts bearing on this subject would be valuable. The investigation of earthquakes would be similar to that of the influence of sun-spots recently examined by Prof. Balfour Stewart, in so far that the release of prodigious latent energies might depend on very obscure and trivial exciting causes. Mr. Carruthers said he did not consider it necessary to suppose that seventeen hours must elapse before a tidal wave due to the same cause as the South American earthquake would reach New Zealand. He did not think the earthquake caused wave, but that both were due to the same cause. He thought earthquakes were locally intensified exhibitions of a great deep-seated movement of the floor of the ocean, and that if the floor were not in movement an earthquake, however violent, would be unable to propagate a wave for such distances as from America to New Zealand. The intensified action which so often shows itself in this part of South America he thought was due largely to the great bend made in the line of elevation of the Andes at this point, which had the effect of converting a deep-seated movement of the earth's crust into a violent crushing of the surface. Dr. Hector explained that the period of seventeen hours for the transmission of a wave across the Pacific Ocean was derived from observation in 1868, when the commotion of the sea extended not only to New Zealand and Australia, but to Japan, Sandwich Islands, and the Cape of Good Hope. He agreed that earthquakes were widespread phenomena locally intensified, but it is the strong local convulsion that originates the oceanic waves. Such waves could not keep pace with a tremor propagated through the solid floor of the ocean, which travels at six times greater speed and generates what is termed the *forced wave*. The ocean wave once generated would take its own time. Dr. Newman did not think we had