

DR. H. S. CARSLAW has been appointed professor of pure and applied mathematics in the University of Sydney. He was fourth wrangler (bracketed) in 1894, and is lecturer in mathematics in the University of Glasgow, and Fellow of Emmanuel College, Cambridge.

THE Vienna correspondent of the *Times* states that according to a communication from St. Petersburg, the Russian Ministry of Agriculture has just decided to found an agricultural high school for women. Students at the school will receive a general training as agriculturists, or will be permitted to restrict their attention to special branches of agriculture, such as dairy farming, gardening, bee culture, poultry keeping and cattle and sheep breeding. The course has been fixed for three years and will include practical occupation on a model farm in addition to study and laboratory work. Although the date on which the new institution will be opened has not yet been decided upon, 325 women who have had an intermediate education have announced their intention to follow the course.

A RESEARCH scholarship of the annual value of 200*l.* for the study of the thymus and other ductless glands has recently been founded by Mr. J. Francis Mason, of Freeland Lodge, Woodstock, Oxfordshire. The scholarship is tenable for two years, but the period may be extended to three years. The medical papers announce that on the recommendation of Prof. G. Sims Woodhead, of Cambridge, and Dr. T. F. S. Caverhill, of Edinburgh, Dr. Swale Vincent, lecturer on histology at the University College, Cardiff, has been appointed the first scholar. In addition to the foundation of the scholarship, Mr. Mason has made a donation of 200*l.* to the laboratory of the Edinburgh Royal College of Physicians to enable the medical superintendent, Dr. Noël Paton, to carry out a combined research on ductless glands.

THE chief of the circulating department of the New York Public Library has recently undertaken an inquiry into the kind and amount of the reading of scientific subjects which takes place in connection with the eleven branches of the New York Library. During May, 1901, the total home circulation of books from the eleven branch libraries was 131,700, and that of books of science 8553, or 6·5 per cent. The most popular subjects of science during the month concerned were, in order, zoology, mathematics, physics and botany, the least popular of the ten sciences tabulated being palæontology, on which subject there were only twenty-four books in all the libraries put together, and of these only four were borrowed during the month. But a month is too short a time for the investigation, and little importance can be attached to the results.

THE report of the Somerset County Education Committee for the year ending March 31 last shows that very few changes were made during this period in the system of technical education existing in the county of Somerset. The committee continues to encourage agricultural research. For instance, a grant of 100*l.* a year for three years has been made to the Bath and West and Southern Counties' Society in aid of a research by Mr. F. T. Lloyd into the causes of production of flavour in dairy produce, the Board of Agriculture contributing 200*l.* per annum and the Bath and West Society 150*l.* per annum for the same purpose during the same period. A grant of 25*l.* has also been made in aid of the expenses of experiments on the influence of the manuring of pastures on the growth of sheep fed thereon, to be carried out on Lord Ebrington's estate on Exmoor.

WE have received from Sir Philip Magnus the report, for the session 1901-2, on the work of the department of technology of the City and Guilds of London Institute. Among other matters described are the steps by which arrangements have been made for coordinating the technological work of the Institute with that of the Board of Education for England and Wales and of the Scotch Education Department. These arrangements are to be welcomed as helping to systematise technical instruction and as tending to prevent the overlapping of effort which, in educational matters, has generally led to waste and inefficiency. They mark another step towards the unification of different educational activities under a central board. The work of the department of technology of the Institute continues to grow steadily. During the session, the number of classes registered by the Institute increased from 2222 to 2320, and the number of students in attendance at these classes from 34,246 to 36,189. The total number of candidates for examination in Great Britain and Ireland was 16,580, showing an increase of 1023 on the number presented in 1901.

SOCIETIES AND ACADEMIES.

LONDON.

Entomological Society, October 15.—Prof. E. B. Poulton, F.R.S., vice-president, in the chair.—Mr. A. J. Chitty showed an entirely black specimen of *Metoecus paradoxus* as tending to disprove the mimicry suggested by him at the meeting on October 1. Dr. Chapman said that in his experience one out of every six specimens of this species was black. Mr. Donisthorpe stated that out of about one hundred specimens he had never caught or bred a black *Metoecus*.—Mr. E. P. Pickett exhibited a variety of the female of *Argynnis aglaia*, varieties of *Satyrus janira*, and a long series of *Lycaena corydon* taken near Folkestone and Dover in August last, including four males of the last-named species, with the black band on the edge of the forewings much deeper than usual; also twelve dwarf male specimens of this species, four dwarf females and many other aberrant forms. Mr. Goss said this dwarf form of *L. corydon* occurred constantly in one valley about two miles east from Dover, but he was unaware of its occurrence elsewhere in this country. He remarked that a dwarf form of *L. arion* occurred everywhere where the type was found, both in Gloucestershire and Cornwall. Dr. Chapman and Mr. Sloper also remarked on the dwarf form of *L. corydon*.—Dr. Chapman exhibited specimens of *Notodonta (Hybocampa) dryinopa* from Queensland. It was remarkably similar in appearance, structure and habits to *Hybocampa milhauseri*. He stated that the pupa with a similar spine to that of *H. milhauseri* does not cut out a regular oval lid from the cocoon like that species, but by a stabbing process pierces it with a number of holes, so that a piece is more easily pushed off. The cocoon being covered with bits of bark, stone, &c., a cutting process would be impossible, whereas the cocoon of *H. milhauseri* was of pure gum-like silk. He pointed out that the larva much resembled that of *H. milhauseri*, but the hinder segments were more like those of *Stauropus fagi*. He also exhibited living eggs, larvæ and imagines of *Orina tristis*, var. *smaragdina*, from Pino, Lago Maggiore. The beetles were taken on May 30, and had laid many eggs. Dr. Chapman said that the embryo, ready to hatch, might be seen within some of the eggs and its hatching spines observed.—Mr. Sloper exhibited a specimen of *Lycaena hylas*, caught at Dover on September 7.—Mr. Martin Jacoby communicated a paper entitled "A Further Contribution to our Knowledge of African Phytophagous Coleoptera."—Mr. Malcolm Burr read a communication from Hofrath Dr. Carl Brunner von Wattenwyl entitled "Observations sur le nom générique Acrida."

MANCHESTER.

Literary and Philosophical Society, October 21.—Mr. Charles Bailey, president, in the chair.—Mr. C. E. Stromeyer exhibited specimens of boiler scale which both internally and externally resembled volcanoes, and he thought might with advantage be studied with the object of gaining a knowledge of volcanic eruptions.—The president read a paper on the adventitious vegetation of the sandhills of St. Anne's-on-the-Sea, in which he remarked on four aliens found in that locality, viz. *Cenothera biennis*, Linn., *Sisymbrium pannonicum*, Jacq., *Ambrosia artemisiifolia*, Linn., and *Vicia villosa*, Roth. Although the latter plant is distributed throughout Europe, this is probably the first record of its occurrence in Britain. *Ambrosia artemisiifolia* is also a noteworthy addition, as it is a rare casual in the few places in England where it has previously been found.

PARIS.

Academy of Sciences, October 22.—M. Bouquet de la Grye in the chair.—Demonstration of the absolute irreducibility of the equation $y'' = 6y^2 + x$, by M. Paul Painlevé.—Synthesis of the alkaline hyposulphites and of the hyposulphites of the alkaline earths in an anhydrous condition, by M. Moissan. The hydrides of the alkalis and the alkaline earths when acted upon with sulphur dioxide under reduced pressure give pure hyposulphites, the hydrosulphites of Schutzenberger. From the fact that hydrogen is given off in this reaction, it is shown that the formula given by Bernthsen, $\text{Na}_2\text{S}_2\text{O}_4$, is correct, and that the original formula of Schutzenberger, in which these substances are represented as containing hydrogen, is not in accordance with fact.—The culture of wheat at the experimental field at Grignon in 1902, by MM. Dehérain and C. Dupont. Chiefly owing to the rains in the month of May, the yield of wheat in this experimental station has been exceptionally good. The

conclusion is drawn from this that where irrigation is possible in the spring without too great an expense, the results will be very advantageous to the farmer.—Some cases of integration of the equation to the brachistochrone, by M. Haton de la Goupillière.—On cavitation in screw steamers, by M. J. A. Bormand. The name cavitation is given to the phenomenon met with when a screw is driven in water at speeds above a certain limiting value. A cavity is formed in the water inside which the screw revolves, and a further increase in the power driving the screw then results in no increase in the velocity of the boat. The alterations necessitated in the usual formulæ for screw propulsion by this phenomenon are discussed in detail.—On the velocity of propagation of the X-rays, by M. T. Blondlot. By means of the action of the X-rays upon the discharge of a Hertzian exciter, it is shown that the duration of these rays is less than 5×10^{-10} sec., and that the velocity of the X-rays is of the same order as that of the Hertzian waves.—Remarks by M. le General Bassot on the volume of the *Connaissance des Temps* for 1905.—New observations on the volcanic eruptions at Martinique, by M. A. Lacroix.—Observations on the sun made at the Observatory of Lyons with the Brunner equatorial during the second quarter of 1902, by M. J. Guillaume. The results are summarised in three tables giving the number of spots, their distribution in latitude and the distribution of the faculæ in latitude.—On the theory of algebraic functions, by M. Ludwig Schlesinger.—On Bessel's equation with a second member, by M. A. S. Chessin.—On an example of correlative transformation in mechanics, by M. Paul J. Suchar.—The precautions to be taken in the employment of silk fibres as torsion wires, by M. V. Crémieu.—Vision at a distance by electricity, by M. J. H. Coblyn.—The variation of the magnetic resistance of a bar submitted to traction, by M. Fraichet.—The electromotive force of a thermoelectric element, by M. Ponsot.—A method for the volumetric estimation of tannin and the analysis of wood and of tannin extracts, by M. Albert Thompson. The method is based upon the determination of the amount of oxygen absorbed from an alkaline solution of hydrogen peroxide by the tannin.—On a new base derived from galactose, by M. E. Roux. By the reduction of the oxime obtained from galactose, a new base named galactamine is obtained, the preparation and chief properties of which are described.—On a new compound of the hexamethylene-tetramine group, by M. Marcel Descudé.—On a solid acid from the oil of *Elaeococca vernicia*, by M. L. Maquenne.—On musculamine, a base derived from muscles, by MM. A. Etard and A. Vila. The base described is the first example of a triamine base among biological products.—On the origin of the natural coloration of silk in the Lepidoptera, by MM. D. Levrat and A. Conte. These researches show the possibility of passing a substance such as a colouring matter through the digestive tube on to the silk, through the blood.—On the new genus *Gyrinocheilus* of the family Cyprinidae, by M. Léon Vaillant.—Contribution to the study of the Anopheles of the Isthmus of Suez, by M. Cambouliu.—The physical conditions of tuberisation in plants, by M. Noel Bernard.—Observations on the germination of the spores of *Saccharomyces Ludwigi*, by M. A. Guillemond.—On the pollen of plants belonging to the genus *Asclepias*, by M. Paul Dop.—New experiments in maritime aeronautics, by M. H. Hervé.

DIARY OF SOCIETIES.

THURSDAY, NOVEMBER 6.

LINNEAN SOCIETY, at 8.—Notes on a Natural History Journey to Chile: H. J. Elwes, F.R.S.

RÖNTGEN SOCIETY, at 8.30.—Address by the President, Mr. Herbert Jackson.

CHEMICAL SOCIETY, at 8.—Di-Indigotine: J. Moir.—Note on the Localisation of Phosphates in the Sugar Cane: C. H. G. Sprankling.—The Specific Heats of Gases: H. Crompton.—On the Non-existence of the Gaseous Sulphide of Carbon described by Deninger: E. J. Russell and N. Smith.—The Action of Nitric Acid on Bromophenolic Compounds: W. Robertson.—Hydroxyoxamides, Part II.: R. H. Pickard, C. Allen, W. A. Bowdler and W. Carter.—3:5-Dichloro-o-xylene and 4:5-Dichloro-p-phthalic Acid: A. W. Crossley and H. R. Le Sueur.—Isometric Anhydrous Sulphates of the Form $M^2SO_4 \cdot R_2SO_4$: F. R. Mallet.—The Catalytic Racemisation of Amygdaline: J. W. Walker.—The Combination of Carbon Monoxide with Chlorine under the Influence of Light: G. Dyson and A. Harden.—The Constituents of Commercial Chrysoarobin: H. A. D. Jbrett and C. E. Potter.

SATURDAY, NOVEMBER 8.

ESSEX FIELD CLUB (Essex Museum of Natural History, Stratford), at 6.30 p.m.—Results of the Fungus Foray on October 17 and 18: Dr.

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M. C. Cooke.—Report of Delegate at British Association Meeting, Belfast: W. Whitaker, F.R.S.—Lecture, "Insect Life": F. Enock.

TUESDAY, NOVEMBER 11.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Electric Tramways: C. Hopkinson, B. Hopkinson and E. Talbot.

ANTHROPOLOGICAL INSTITUTE, at 8.15.—On the Classification and Arrangement of the Exhibits of an Anthropological Museum: W. H. Holmes.—On the Initiation Ceremonies of the Natives of the Papuan Gulf: Rev. J. H. Holmes.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—World-shaking Earthquakes: Prof. J. Milne, F.R.S.

THURSDAY, NOVEMBER 13.

MATHEMATICAL SOCIETY, at 5.30.—Address on the Infinite and the Infinitesimal in Mathematical Analysis: Dr. E. W. Hobson.—Ueber den Satz der Gleichheit der Basiswinkel im gleichschenkligen Dreieck: Dr. D. Hilbert.—The Summation of a Certain Series: Prof. A. C. Dixon.—Expansion by Means of Lamé's Functions: Prof. A. C. Dixon.—Sets of Intervals: W. H. Young.—Note on Unclosed Sets of Points defined as the Limits of a Sequence of Closed Sets of Points: W. H. Young.—Wave Propagation in Two Dimensions: Prof. H. Lamb.—The Continuation of Certain Fundamental Powers Series: Prof. M. J. M. Hill.—A Geodesic on a Spheroid and an Associated Ellipse: L. Crawford.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.

FRIDAY, NOVEMBER 14.

ROYAL ASTRONOMICAL SOCIETY, at 5.

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