

the papers were by other than British subjects. Dr. Sorby's paper on the application of very high powers to the study of the microscopical structure of steel was probably the paper of most purely scientific interest.

On May 12 occurred the annual presentations for degrees at the University of London, when a very large number of graduates of both sexes had their degrees formally conferred. The chancellor, Lord Granville, being in attendance on the queen at Liverpool, the ceremony was performed by the vice-chancellor, Sir James Paget, who, after referring to the loss sustained by the university in the deaths of Dr. Carpenter and Dr. Storrar (both noticed at the time in this correspondence), gave some interesting statistics of its growth. It was now fifty years old, and 54,630 students had graduated. In 1838 it only had 23 candidates; in 1860, 788; and in 1885, 3,477. With its numbers its influence had increased, and it attracted students from all the colonies and from India, as well as from England. Among its distinguished graduates were Sir H. Roscoe, Sir W. Jenner, Lord-Justice Fry, and the present lord-chancellor. At the meeting of convocation on the previous day, a scheme for degrees in engineering science was, on the motion of Prof. W. C. Unwin and Mr. W. Lant Carpenter, unanimously adopted, and sent up to the senate for consideration. A movement is in contemplation to celebrate the jubilee of the university.

In an interesting paper given last night before the Society of telegraph engineers, upon long-distance telephony, by Mr. W. H. Preece, the system of trunk-line (American, 'extra territorial') working was described, and some very curious statistics were given. At the end of 1877, 780 telephones existed in the United States, and at the end of 1885 there were 325,570 telephones, and 782 telephonic exchanges. In England at the same date there were only 13,000, or about as many as were used in New York and Brooklyn alone; while Canada, with its population of three millions, employed 18,000. Of European cities, Berlin possessed the most, 4,248, London coming second with 4,193. The most complete development he had seen in any country was in the group of towns of which Newcastle-on-Tyne was the centre. Long-distance speaking was entirely a question of line wire, not of instruments. M. Van Rysselberghe spoke in the discussion, and detailed some of his recent experiments in the states. He is about to connect Paris, Brussels, Amsterdam, and Rotterdam by his simultaneous telegraphic and telephonic arrangements.

The report for 1885, of the inspectors on experiments on living animals, under the vivisection

act, has just been issued. The total numbers of experiments was 800; 210 being done under the restrictions of the license alone, and 82 lecture demonstrations under similar restrictions. In all, except those under a special certificate, the animal is rendered insensible during the whole of the experiment. In most of the experiments where anaesthetics were dispensed with, the operation was simple inoculation or hypodermic injection; so that the number of animals that suffered any appreciable pain was 35 or 40, and these, for the most part, frogs. Although the number of experiments in 1885 was nearly double that in 1884, there was no increase of suffering to the animals employed.

The report of the inspector of fisheries has just been issued, and gives interesting details on the trade in eels between London and the continent. From Holland 1,000 tons are sent annually to Billingsgate (London) alone, the total annual value of eels consumed in England being about two and a half million dollars. An admirable contrivance is described for reviving them from their exhausted condition on arrival. At the Society of arts this week, Mr. J. Willis Bund read a paper on the proposed fishery board for England and Wales, showing that their fisheries had relations at present with at least five government departments: viz., the home office, the foreign office, the admiralty, the customs, and the board of trade. The total value of the English and Welsh fisheries was probably between eight and ten million dollars, but an annual statistical account of them was a very great want.

Mr. W. Bateson of St. John's college, Cambridge, is about to proceed to Central Asia for the purpose of investigating the fauna of the Sea of Aral and the smaller lakes in its neighborhood. Mr. Bateson is already well known as a morphologist, having paid two visits to the Chesapeake zoölogical laboratory of the Johns Hopkins university for the purpose of studying the development of the American species of *Balanoglossus*; and he now proposes to collect large numbers of the Mollusca and Crustacea of the Central Asian lakes, for the purpose of studying the range of variation within specific limits.

W.

London, May 14.

NOTES AND NEWS.

ALTHOUGH the university of the state of New York exists only on paper, yet its annual convocations are meetings of considerable scientific interest and importance. This year the convocation will be held at Albany on July 6, 7, and 8. The announcement includes the following important papers, all of which will be followed by a discus-

sion of the subjects presented: Tact in teaching, by Rev. Brother Noah, professor of English literature in Manhattan college; Manual training, by Principal S. G. Love of the Jamestown union school; The present status of entomological science in the United States, by J. A. Lintner, Ph.D., state entomologist; Has the college a logical place in the American system of education? by Prof. Oren Root, Ph.D., of Hamilton college, and Prof. S. G. Williams, Ph.D., of Cornell; The 'natural method' of teaching languages, by L. Sauveur, president of the College of languages, New York City, and Principal George C. Sawyer of the Utica free academy; The educational uses of museums of natural history, by James Hall, director of the New York state museum of natural history; Systematic habit in education, by Principal E. H. Cook of the Potsdam normal school; Elective studies in college, by President James McCosh, LL.D., of the College of New Jersey; The mutual relations of the colleges and academies, by President Charles K. Adams, LL.D., of Cornell university. There will also be a conference upon college education in the state of New York, which will be presided over by Chancellor Sims of Syracuse university, who will open the discussion as to the classical requirements for the degree of A.B. Among those who intend to participate in the conference and discussions are Presidents Dodge of Madison university, Darling of Hamilton, Potter of Hobart, Fairbairn of St. Stephen's, Ryan of Niagara university, Webb of the College of the city of New York, Adams of Cornell, Taylor of Vassar, and Forsyth of the Rensselaer polytechnic institute.

—The Indiana academy of sciences held its field-meeting at Brookville, May 20 and 21. The days were spent in field-work, and the academy held meetings at the town-hall in the evenings. On the evening of May 20, the academy was welcomed by D. W. McKee, president of the Brookville society of natural history. To this President D. S. Jordan responded. Prof. J. C. Branner delivered an address on "The relations now existing between geologists and the people." Friday evening Prof. D. S. Jordan delivered an address on 'Darwin,' which was discussed by Prof. D. W. Dennis. Prof. Jordan then spoke concerning the different methods employed in catching fish. Prof. Branner gave an account of the ways in which corals are procured. Prof. P. S. Baker spoke of 'The progress of toxicology.' The academy will hold its annual meeting at Indianapolis in December next.

—The opening of the Carnegie laboratory a year ago, and the endowment of hospitals by the Van-

derbilt family, have been followed by the announcement of two new laboratories for the advancement of medical science, — one in Brooklyn, and the other in New York. The former will be known as the 'Hoagland laboratory of the Long Island college hospital,' and is the gift of Dr. C. N. Hoagland, a physician of Brooklyn. It will be devoted to bacteriological, physiological, and pathological purposes, and will be equipped with all the best modern appliances, together with a select library and museum. It is intended not only as a means of teaching the students of the college, but also as a place where physicians and others desirous of prosecuting original investigation can find the necessary apparatus and facilities. The new laboratory to be established in New York is to be known as the 'Loomis laboratory,' and is to be in connection with the University medical college. The name of the donor is still unknown, but the name it is to bear is a tribute of respect to the well-known teacher, Prof. A. L. Loomis.

—The first annual meeting of the University science club, of the University of Kansas, was held Friday, May 21. The programme, as arranged, was as follows: E. H. S. Bailey, On the viscosity of fats and oils; L. L. Dyche, Methods of studying the food-habits of birds; J. D. McLaren, Notes on *Pogonomyrmex occidentalis* (agricultural ants of Kansas); Richard H. Short, A determination of the force of gravity on Mount Oread; R. L. McAlpine, A determination of the accuracy of the solar attachment to the engineer's transit; E. C. Franklin, on a variety of orthoclase from Hadam, Conn.; L. E. Sayre, A new appliance for the rapid collection of precipitates; F. H. Snow, The transitional character of the essential organs in the white maple (*Acer dasycarpum*); W. S. Franklin, A modification of Le Clanche battery; F. O. Marvin and Richard Birbeck, Gauging of the Kansas River; V. L. Kellogg, Bird parasites; J. D. McLaren, The structure of *Unio laevis*; E. L. Nichols and W. S. Franklin, On the influence of magnetism upon electromotive force; E. H. S. Bailey and S. H. Wood, Note with reference to the effect of boiling upon the solubility of tannin in coffee; F. H. Snow, Some results of eighteen years of meteorological observations at Lawrence, Kan.

—The following comprise the latest changes in the coast and geodetic survey; Professor Davidson has finished his work on astronomical latitude observations at Portland, Ore., and is about to return to San Francisco; Assistants Lawson and Dickens are at work near Los Angeles, while Assistant Rogers has finished the work of resurveying on the Straits of Karquines, at the mouth

of the Sacramento River, and is now making a resurvey in the vicinity of Golden Gate; various acting assistants in the coast and geodetic survey are preparing to take the field the first of June, to continue the work of furnishing points and data to different state surveys, Professor Buchanan going to Tennessee, Professor Campbell to Indiana, Professors Barnard and Merriman to Pennsylvania. Chart No. 2, from the mouth of St. John's River to Jacksonville, Fla., embracing the latest hydrographic work, and the improvements of the jetties at the mouth of St. John's, is now ready for distribution to agents.

— At a meeting of the Royal geographical society on May 11, a paper was read by Prof. W. M. Ramsay on 'Roman roads and English railways in Anatolia.' Before the reading of the paper, the chairman announced that royal medals had been awarded to Major A. W. Greely, commander of the U. S. Arctic expedition of 1881-84, for having so considerably added to our knowledge of the shores of the Polar Sea and the interior of Grinnell Land, and for the narrative of the expedition which he has just given to the world; and to Signor Guido Cora, for his important services as a writer and cartographer in advancing geographical knowledge, promoting the study of geography, and defining its position as a science. Professor Ramsay's paper detailed the results of his researches into the system of Roman roads in Anatolia, and the conclusions to be drawn from those researches as to the considerations which influenced the Romans in the formation of those roads.

— Another comet in Virgo was discovered Saturday morning, May 22, by Mr. Brooks. As determined by Professor Swift at the Warner observatory at ten o'clock Sunday evening, its position was, right ascension, 11h 51m 15s; declination, north 8° 55' 15". It has a slow motion south-east. It is very large, but faint. This discovery secures to Mr. Brooks the three first Warner prizes of the year.

— Commodore George E. Belknap has been detached from duty as superintendent of the naval observatory at Washington, and ordered to command the Mare Island navy-yard, California, about the middle of June. Lieutenant Bowman and Ensign Taylor have also been detached from the observatory. Commodore Belknap's successor has not been announced.

— The executive committee of the International institute of statistics met at Cologne on May 1, 2, 3, and 4. The members present were Sir Rawson W. Rawson (England), president; M. Levasseur (France), Herr Hofrath Neumann-Spallart (Austria), M. L. Bodio (Italy), and Mr. John B. Martin (Eng-

land). It was decided that the meeting of the institute this year should be held at Rome, from Sept. 23 to Sept. 29. The programme was drawn up, and a list of subjects to be discussed adopted.

LETTERS TO THE EDITOR.

Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

A new museum pest.

IN a collection arranged to illustrate a course in paleontology at the Museum of comparative zoölogy, a new set of labels was introduced last year, which has since been very much injured by the attacks of an insect, *Lepisma domestica*, — the silver-fish, in popular language. The labels are similar in plan to those which are used in the paleontological department of the national museum. They are made of thick paper, heavily sized with starch, with headings, and a border-line printed in black ink. They are bent at a right angle in the middle. The specimen is set on the lower half, while the description of the same is written on the upturned portion, rendering it visible without the necessity of lifting the specimen, — a distinct advantage, especially for class-room use. There are about seven hundred labels in use, and all, at the time of examination, had been written within ten months; yet not a single one had wholly escaped from the attacks of *Lepisma*. Many were eaten enough to obliterate the writing, and riddle the paper with holes; and all gradations between slight and extensive injury exist. Paper trays in which the specimens are kept, and which apparently contain no sizing, are not at all eaten. The labels are eaten on all parts except underneath, where pressed against the paper tray by weight of the specimen. The parts covered with printer's or writing ink are eaten quite as much as those which are not, contrary to the observations of others cited below. Careful search in the early winter led to the discovery of perhaps half a dozen specimens of *Lepisma*, but none have been seen since.

I have seen labels written on various kinds of paper, in the same and other departments of the museum, eaten by *Lepisma*; also a photograph, wall-paper probably, and an old engraving in New York. In this last the white portions were most affected, but some parts closely covered with printer's ink were eaten.

I have made many inquiries from naturalists and others, concerning the destruction done by *Lepisma*; but to most it was new. The late Prof. C. E. Hamlin of the museum said he had seen paper eaten, and titles eaten off the backs of books, where they had been attached by starch paste, but was confident that unsized paper was never affected. Prof. R. P. Whitfield of the American museum said that he had known injuries to labels to have been committed by *Lepisma*. Prof. F. W. Putnam, of the Museum of archeology and ethnology, showed me many labels which had been eaten, or entirely reduced to powder, by *Lepisma*. Mr. S. Henshaw, of the Boston society of natural history museum, had known of injuries, and, enclosing *Lepisma* in a jar with paper, found that the insects eat large holes in it.

It is clear that *Lepisma*, if not a very common visitant to museums, is at least a dangerous one when it does appear, and it behooves naturalists to be on the lookout for it. Labels, of course, are a most essentially important thing, and it seems not