

appointed Professor of Mineralogy), Messrs. W. Garnett, F. M. Balfour, and S. H. Vines.

The Rev. W. Cunningham, M.A., of Trinity College, has been appointed Deputy for the Knightbridge Professor, Prof. Birks, and has resigned the Assistant-Secretaryship of the Local Examinations and Lectures Syndicate.

Mr. W. Hillhouse, B.A., of Trinity College, Assistant-Curator of the Botanical Museum, has been approved as a teacher of botany, and Mr. J. J. Lister, B.A., of St. John's College, Demonstrator of Comparative Anatomy, as a teacher of that subject for the purposes of medical certificates.

It was resolved last Thursday to admit women students at Cambridge to the Previous Examination and to the various Tripos Examinations, to publish separate class-lists for women, and in cases where order of merit is indicated in the men's class-lists, to indicate the position which any female student would have taken in the corresponding list of men. The examiners may also state that any candidate who does not attain an honour standard is adjudged to have deserved an ordinary degree. It will be necessary to present a further report on minor details of fees and regulations, but it can hardly be doubted that students duly qualified may be admitted formally to the examinations coming on in June next.

The University accounts just published show that examiners cost the University last year 2200*l.*, professors, demonstrators, lecturers, &c., 8400*l.*, in addition to those specially endowed. The ordinary expenses of the museums and lecture-rooms have been 2500*l.*, while the grant from the University is 2000*l.* The botanic garden has cost nearly 1000*l.*, and 660*l.* has been so far spent on a curator's house. The Local Examinations and Lectures Board have received 8400*l.*, and have invested a further sum of 500*l.*, which at a future time may help to provide a building for this extensive work. The University Library has overdrawn its balance nearly 900*l.*, and the Museums and Lecture Rooms Building Fund is in debt 2725*l.* On the whole it appears that the University has been very careful not to sanction new expenditure in this time of transition, and has succeeded in laying by 3000*l.*, now possessing a capital of 27,000*l.* in stocks. 3000*l.* was the University's income last year from common rents and dividends, while 27,000*l.* was paid by members of the University in fees for examinations, degrees, &c.

In the Special Examinations for the ordinary B.A. degree last year thirty-six candidates entered in Chemistry, nine of whom failed; two in Geology, nine in Botany; only one failed, viz. in Botany. The examiners report that in Chemistry the requirement of practical work has exerted a useful influence. This requirement however entails much additional work on the examiners in Natural Science, and the appointment of a third examiner is recommended.

Next Monday at three o'clock, Dr. W. H. Gaskell will make a communication to the Philosophical Society on the action of the vagus nerve upon the frog's heart; and Mr. F. M. Balfour will discuss the ancestral form of the chordata.

THE Calendar of St. David's College, Lampeter, for 1881, is of interest in connection with the forthcoming report of the Commission on Higher Education in Wales. It contains a full account of the foundation and history of the University, the means at its disposal, and the nature of the education it offers to students. The examination for the B.A. degree of this college includes either physics or chemistry.

### SCIENTIFIC SERIALS

*Archives des Sciences Physiques et Naturelles*, No. 1, January 15.—Contributions to knowledge of the family of the Pintinnodea, by H. Fol.—On the use of the microphone in the service of the astronomical hour, by M. W. Meyer.—Exercises of analytical geometry, by L. de la Rive.—On the use of some azoic colours in physiological chemistry, by A. Danilewsky.—*Comptes rendus* of the Geneva Chemical Society, by S. Walter.—On the botanical geography of Southern Tessin, by S. Calloni.—*Annals of Berne Observatory*, by A. Forster.

*Rivista Scientifico Industriale*, No. 24, December 31, 1880.—Description of three new species of the aphides of Sardinia, by L. Marchiati.

*Reale Istituto Lombardo di Scienze e Lettere. Rendiconti*, vol. xiii, fasc. xx.—On the rotatory movement of the heart, by E. Oehl.—On a new nuclearia; description and considerations as to its position in the geological system and its importance in

animal ontogeny, by L. Maggi.—Registering instruments in meteorology, by C. Chistoni.—Synthesis of two new acids isomeric with vanillic acid, by G. Körner and G. Bertoni.

### SOCIETIES AND ACADEMIES

#### LONDON

Royal Society, January 27.—“On the Iron Lines widened in Solar Spots.” By J. Norman Lockyer, F.R.S.

The observations put forward with reserve in my last communication to the Society have now been confirmed.

In the fine spots visible on December 24, January 1 and 6, many lines in the spectrum of iron were seen contorted, while others were steady.

The facts are given in the following table:—

	The iron lines indicating motion.	Iron lines, visible in the same field of view, steady.
Dec. 24, 1880	... 5403.2	
	5404.8 ... ..	5410.0
	5409.0 ... ..	5414.5
	5408.8	
	5396.0	
	5370.5	
	5369.0 ... ..	5366.5
	4919.8	
	4918.0 ... ..	4923.0
	5142.2 ... ..	5269.8
	5138.5 ... ..	5268.5

In another part of the same spot—

	5269.8 ... ..	5323.5
	5268.5 ... ..	5327.0 (double).
Jan. 1, 1881	... 5323.5 ... ..	5269.8
	5327.0 (double) ... ..	5268.5
Jan. 6, 1881	... 4919.8	
	4918.0 ... ..	4923.5
	All lines between $\lambda$ 5323.5	
	and 5410.0 except ...	5382.1

It is to be noted that these observations furnish us with an instance of inversion similar to those frequently obtained in our observations of the most widened lines in spots.

The inferences to be drawn from these observations, and those on which we are now continuously engaged, must be matter for future communication. But I cannot resist calling attention to the crucial nature of the evidence, at least as regards iron, in favour of the view first put forward by Sir B. Brodie, whom we have so recently lost, that the constituents of our terrestrial elements exist in independent forms in the sun.<sup>2</sup>

I have thought it right to send in a record of this work at once, with a view to induce other observers to follow the continually varying phases of the spots during the approaching maximum.

The observations have been made by Mr. H. A. Lawrance, and confirmed by myself in the majority of cases.

Chemical Society, February 17.—Prof. Roscoe, president, in the chair.—The following papers were read:—On the estimation of organic carbon and nitrogen in water analysis simultaneously with the estimation of nitric acid, by M. W. Williams. The author has modified the well-known process of Frankland and Armstrong. Instead of reducing the nitrates with sulphurous acid, he uses the copper-zinc couple of Gladstone and Tribe, which converts nitrates into ammonia. The ammonia produced is distilled off and the distillate nesslerised; the water left in the retort, after distilling off the ammonia, is evaporated to dryness and the residue burnt in the ordinary way. The errors which accompany the use of sulphurous acid are thus avoided, and the time required for the analysis is much shortened.—Capt. Abney and Col. Festing then gave an account of their recent researches on the influence of the molecular grouping in organic bodies on their absorption in the ultra-red region of the spectrum. The authors have photographed the absorption spectra of numerous inorganic and organic liquids in the region beyond the red. In many cases the presence of an organic radical seems to

<sup>2</sup> In this spot the D lines indicated motion, and did not retain their parallelism.

<sup>2</sup> Lecture delivered before the Chemical Society, June 6, 1867.

be characterised throughout its compounds by particular bands. Further research will probably throw much light on the internal structure of chemical substances.—On absorption-bands in the visible spectrum produced by certain colourless liquids, by Dr. Russell and Mr. Lapraik. The authors have carefully drawn the absorption-spectra of various liquids—water, ammonia, &c.—as seen through an ordinary spectroscope.—On the action of hydrochloric acid on ethylene alcohol, by C. Schorlemmer. By heating glycol with an excess of fuming hydrochloric acid in a sealed tube to 100° the author has converted this substance into ethylene dichloride, and has thus disproved the conclusion that the two hydroxyl groups had different functions.—On an attempt to accelerate the process of determining the soluble salts in a soil, by E. W. Prevost. The author added calcium sulphate and barium carbonate to the soil, but in neither case were satisfactory results obtained.

**Linnean Society, February 17.**—Frank Crisp, LL.B., F.L.S., in the chair.—Mr. Wickham exhibited two collections of Arctic plants. Of fifty-seven species collected by Capt. Markham in Novaya Zemlya (1879) thirty-seven of the most interesting Phanerogams were shown. The absence of species of Gentian is noteworthy, for Arctic Russia, in proximity, possesses six species. Leguminosæ are unrepresented in Spitzbergen and Arctic Greenland, but three species of the order obtain in Novaya Zemlya. Other features of the latter island's flora are equally remarkable. The second collection of typically Polar plants exhibited were those obtained by Mr. Grant in Mr. Leigh Smith's successful voyage to Franz-Josef Land, 1880, and where sixty-one flowering plants were obtained; though the facies of the flora indicates the probability of more yet to be got in this high latitude.—Mr. A. Hammond drew attention to a microscopic specimen and drawing of portion of the wall of the so-called glandular sac of the larva of the Puss moth, from which that insect ejects an acid liquid when alarmed or irritated. Although doubtless the organ is the source of the excretion, it yet is questionable to regard it as a true glandular structure, inasmuch as its tissue is largely composed of chitinous matter.—Dr. Francis Day read a paper, observations on some British fishes. In this he pointed out:—that *Pimlepterus Cornubiensis* is identical with the American *Pammelas perciformis*, Mitchell; that great confusion exists in the works of Yarrel and Couch respecting the Tunnies and their allies, most, if not all, the examples of the short-finned Tunnies being in reality specimens of *Pelamyo sarda*; that the Comber wrasse (*Labrus Donovanii*, Cuv. and Val.), is a peculiarly-coloured variety of *L. maculatus*, Bloch; that *Crenilabrus Bailonii*, Couch, is the *C. melops*, Cuv. and Val. Adult examples of Brill and Sole, coloured on both sides, but in which the eyes were normal, were exhibited. Some Sprats obtained off St. Ives were adverted to, which had fully-developed ova in January this year. It was also proved that the specimen of *Ostracion quadricornis* figured by Couch as a British fish had been brought in salt from abroad by a sailor. Observations also were made by Dr. Day concerning the habits of the Thresher Shark towards the Whale.—Mr. C. B. Clarke gave a communication on right-hand and left-hand contortion of the corolla. In this he maintains that Linnæus's definition of right-hand contortion is correct, and that the criticisms published by M. Alph. de Candolle in "Phytographie" are founded on a misconception. Mr. Clarke holds:—that everybody understands the same direction (viz. the watch-hand direction) by the term right-hand contortion; that the apparent direction of the heavenly bodies is reversed if the spectator looks north instead of south; that the direction of rotation is the same whether the observer supposes himself within or without the helix, but that the apparent direction of a helix is altered if the spectator reverses the direction in which he looks along the axis.—Prof. P. M. Duncan read a paper on some sponges obtained among a mass of fistulose coral from deep water off the coast of Spain during the expedition of the *Porcupine*. One kind, apparently new, is described as a species of *Leodermatium*, *L. affine*, Dunc., and another belongs to the genus *Aphrocallistes*.

**Geological Society, February 18.**—Annual General Meeting. Robert Etheridge, F.R.S., President, in the chair.—The Secretaries read the Reports of the Council and of the Library and Museum Committee for the year 1880, the Council announcing with much satisfaction that the financial depression under which the Society had been suffering during 1878 and 1879 had proved, as was anticipated, only temporary, and that the Society is now in a very prosperous condition. The Council's Report

also announced the publication of the new Catalogue of the Library, which, although considerably larger than was at first expected, will be issued to the Fellows at the price originally fixed for it. The Report further announced the awards of the various medals and of the proceeds of the donation funds in the gift of the Society. In presenting the Wollaston Gold Medal to Prof. P. Martin Duncan, M.B., F.R.S., F.G.S., the President addressed him as follows:—Professor Duncan,—It is with no ordinary pleasure that the Council have awarded to you the Wollaston Medal, the highest honour that it is in their power to bestow, in recognition of the valuable services which you have rendered during so many years to the advancement of geology, and especially of palæontology; and I may add that it is equally productive of gratification to me that this honour is to be formally conferred upon you by my hands. Since the year 1863 palæontologists have been indebted to you for no fewer than twenty-six memoirs relating to the history, structure, and distribution of the fossil Actinozoa, a group which you have made peculiarly your own by long-continued and most careful researches. Further, you have enriched the publications of the Palæontographical Society with several most important treatises on the British fossil corals, supplementary, or rather perhaps complementary, to the classical monograph of MM. Milne-Edwards and Haime. These labours alone, and the value of their results, might have justified the Council in awarding you the Wollaston Medal; but besides your researches upon the Actinozoa, we have to point to several important papers upon the fossil Echinodermata, to others relating to subjects of physical geology (also freely touched upon in your more special memoirs), and particularly to your exceedingly important work in connection with the Geological Survey of India, in describing the fossil corals of that peninsula, and discussing the questions of both zoological and geological interest which naturally arise out of the study of those organisms. Patiently and unobtrusively for nearly twenty years you have followed out the line of research necessary for the fulfilment of your self-imposed task; you have sacrificed the advantages of professional life to devote your energies to the advancement of science. On all accounts it is with much pleasure that I hand to you the Wollaston Medal. The President then presented the Murchison Medal to Prof. Archibald Geikie, F.R.S., F.G.S., and addressed him as follows:—Prof. Geikie,—If any one Fellow of our Society more than another could be selected to receive the Murchison Medal for his valuable contributions to geology, it would be yourself; since no man living has contributed more to the advancement of that science which it is the special object of our Society to cultivate and diffuse. Your labours in the field connected with your duties as Director of the Geological Survey of Scotland, your learned and valuable contributions to the *Journal* of our Society, the *Transactions* of the Royal Society of Edinburgh and the Glasgow Geological Society, and other publications too numerous to mention, eminently qualify you to be the recipient of the medal founded by your late chief and friend Sir Roderick Murchison. To enumerate your contributions to the literature of the geology of Scotland, or your many important writings connected with our science, would lead me too far—some thirty papers, besides educational works, have resulted from your industry and knowledge. Your able paper alone, on the "Old Red Sandstone of Scotland," published in the *Transactions* of the Royal Society of Edinburgh, would entitle you to the highest consideration of the Society. Able indeed are other contributions, especially those "On the Chronology of the Trap Rocks of Scotland," "On the Date of the Last Elevation of Central Scotland" (in vol. xviii. of our *Journal*), "On the Phenomena of Succession amongst the Silurian Rocks of Scotland" (*Trans. Glasgow Geol. Soc.* vol. iii.), and "On Earth Sculpture." The President next handed the Lyell Medal to Mr. Warrington W. Smyth, F.R.S., for transmission to Dr. J. W. Dawson, F.R.S., of Montreal, and addressed him as follows:—Mr. Warrington Smyth, I need hardly say that the Council, in awarding the Lyell Medal to Principal Dawson, have done so with a sincere appreciation of the high value of his truly great labours in the cause of palæontology and geology. When I refer to his published papers I find that they number nearly 120, and that they give the results of most extensive and valuable researches in various departments of geology, but more especially upon the palæontology of the Devonian and Carboniferous formations of Northern America. Considering the nature of these numerous contributions, the Council would have been fully justified in awarding to Dr. Dawson one of its medals, upon the

sole ground of the value of their contents; but these are far from representing the whole of the results of his incessant activity in the pursuit of science. His "Acadian Geology," "Post-pliocene Geology of Canada," and "Fossil Plants of the Devonian and Upper Silurian of Canada," are most valuable contributions to our knowledge of North American geology; whilst in his "Archæa," "The Dawn of Life," and other more or less popular writings he has appealed, and worthily, to a wider public. We are indebted to his researches for nearly all our knowledge of the fossil flora of the Devonian and other Precambrian rocks of America, and of the structure and flora of the Nova-Scotian coal-field; and finally I must refer especially to his original investigation of the history, nature, and affinities of *Loxoon*. These researches are so well known that they have gained for Dr. Dawson a world-wide reputation. The President then handed the Bigsby Medal to Prof. Morris, F.G.S., for transmission to Dr. Charles Barrois, and addressed him as follows:—Professor Morris, Dr. Barrois's chief or most important work (written in the year 1876, and published at Lille) is "Recherches sur le terrain crétacé supérieur de l'Angleterre et de l'Irlande," a production almost exhaustive in its description of the cretaceous rocks of England and Ireland, and of the utmost value to English students of geology. Dr. Barrois in this work has been the first to attempt to arrange the English Cretaceous rocks in paleontological zones, and eminently has he succeeded in defining and correlating the horizons of France and Britain. In handing to Prof. J. W. Judd, F.R.S., Sec. G.S., the balance of the Wollaston Donation Fund for transmission to Dr. Ramsay H. Traquair, F.G.S., the President said:—Professor Judd, in handing to you, to be forwarded to Dr. Traquair, the balance of the proceeds of the Wollaston Donation Fund, I have to request that you will inform him of the feeling of the Council, that it is rarely that they can have the opportunity of awarding this fund to a more able and accomplished naturalist than himself. His long-continued researches upon the ganoid fishes of the Carboniferous formation have rendered his name eminent in this department of paleontology. The President next presented the balance of the proceeds of the Murchison Donation Fund to Mr. Frank Rutley, F.G.S.; one moiety of the balance of the proceeds of the Lyell Donation Fund to Mr. G. R. Vine; the second moiety of the Lyell Donation Fund to Prof. H. G. Seeley, F.R.S., F.G.S., for transmission to Dr. Anton Fritsch, of Prague. The ballot for the council and officers was taken, and the following were duly elected for the ensuing year: President, R. Etheridge, F.R.S.; Vice-Presidents: John Evans, F.R.S., J. W. Hulke, F.R.S., Prof. J. Morris, M.A., and H. C. Sorby, F.R.S.; Secretaries: Prof. T. G. Bonney, F.R.S., Prof. J. W. Judd, F.R.S. Foreign Secretary, Warington W. Smyth, F.R.S.; Treasurer, J. Gwyn Jeffreys, F.R.S. Council: H. Bauerman, Rev. J. F. Blake, M.A., Prof. T. G. Bonney, F.R.S., W. Carruthers, F.R.S., Prof. P. M. Duncan, F.R.S., Sir P. de M. Grey-Egerton, Bart., M.P., F.R.S., R. Etheridge, F.R.S., John Evans, F.R.S., Lieut.-Col. H. H. Godwin-Austen, F.R.S., J. Clarke Hawkshaw, M.A., Rev. Edwin Hill, M.A., W. H. Hudleston, M.A., J. W. Hulke, F.R.S., J. Gwyn Jeffreys, F.R.S., Prof. J. W. Judd, F.R.S., Prof. N. S. Maskelyne, M.P., F.R.S., J. Morris, M.A., J. A. Phillips, F. W. Rudler, Prof. H. G. Seeley, F.R.S., Warington W. Smyth, F.R.S., H. C. Sorby, F.R.S., H. Woodward, F.R.S.

**Zoological Society, February 15.**—Prof. W. H. Flower, F.R.S., president, in the chair.—The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of January, and called special attention to a White-nosed Saki (*Pithecia albina*), purchased January 11; an American Monkey of the genus *Callithrix*—probably referable to *C. brunnea*, purchased along with the preceding; and an example of an Insectivore of the genus *Tupaia* (probably *T. tana*), obtained by purchase on the same day.—Mr. Selater exhibited and made remarks on some eggs of *Opisthocomus cristatus*, obtained at Obydos on the Amazons.—Mr. Howard Saunders exhibited on behalf of Capt. E. A. Butler, and made remarks on specimens of the eggs of *Dromas ardeola*.—The Rev. O. P. Cambridge, C.M.Z.S., exhibited and made remarks on a Hymenopterous parasite, hatched from larvæ found on two spiders—*Linyphia obscura*, Blackw. ♀ and *L. zebra*, Menge ♂. The larvæ were stated to be apodous, and to adhere to the abdomen of the spider, which, when full-grown, they fully equalled in size.—Mr. E. W. H. Holdsworth exhibited a specimen of White's Thrush (*Turdus varius*), killed in South Devonshire in January last.—Mr. C. O. Waterhouse read a paper on

the Coleopterous Insects belonging to the family *Hispidae*, collected by Mr. Buckley in Ecuador. Seventeen species of *Hispidae* had hitherto been recorded as inhabiting that country; of these Mr. Buckley had met with fifteen, which, together with nineteen new species, made a total of thirty-six species in the series now described.—Mr. W. L. Distant read a paper on some additions which had been lately made to the Rhynchotal Fauna of the Ethiopian Region, nine new species belonging to the families *Pentatomidæ*, *Coreidæ*, and *Pyrrhocoridæ* were pointed out, and in the *Coreidæ* two new genera, allied to *Petillia* and *Petascelis*, were described. The specimens had been obtained from Western, Southern, and Eastern Africa.—A communication was read from Mr. Edgar A. Smith on some shells from Lakes Tanganyika and Nyassa and from other localities in East Africa, lately received by the British Museum. Great interest attached to some of the shells from Lake Tanganyika, from the fact that they had all the appearance of being modified marine types.—Lord Walsingham read a paper on some new and little known species of North American *Tineidæ*, amongst which were three new generic forms.

**Meteorological Society, February 16.**—Mr. G. J. Symons, F.R.S., president, in the chair.—I. L. Bell, F.R.S., J. Bernays, A. W. Blyth, J. Church, F. W. Cory, S. Cutler, T. L. K. Edge, C. Horsley, W. D. Howard, C. Kelly, M.D., G. Lingwood, W. Macgeorge, Capt. J. P. Maclear, R.N., A. Rigg, and H. C. Stephens were elected Fellows of this Society.—The following papers were read:—Relative humidity, by Charles Greaves, M. Inst. C.E., F.G.S. The object of this paper was to show that the term "relative humidity" was frequently the cause of misunderstanding, and that it was desirable that some other tables with a more correct denomination should be used in order that reliable values of this factor in our climate should be recorded.—On the frost of January, 1881, over the British Isles, by William Marriott, F.M.S. The author pointed out that the severe frost of the 7th to the 26th was remarkable for its unexpected appearance, its long continuance, and its sudden breaking up. The weather during the first week of January was comparatively mild, but frost set in over the north of Scotland on the 5th. The author then gave the lowest thermometrical readings from about 300 stations in the United Kingdom for each day of the frost, which were plotted upon diagrams, clearly showing the relative severity of the weather experienced in each district. The lowest readings were  $-15^{\circ}$  at Garstang on the 16th, and  $-22^{\circ}$  at Blackadder,  $-16^{\circ}$  at Kelso,  $-15^{\circ}$  at Stobo,  $-11^{\circ}$  at Thirlestane Castle, and  $-10^{\circ}$  at Melrose, on the 17th. Reference was also made in detail to the rivers and lakes which had been frozen over, and to other incidents proving the remarkably low temperatures which had occurred. Some idea of the intensity of the frost may be gathered by the fact that in the south of Scotland the temperature fell below  $10^{\circ}$  on more than eleven occasions, below  $20^{\circ}$  on nineteen occasions, and was below  $32^{\circ}$  on twenty-five to twenty-nine occasions. In the London district readings below  $10^{\circ}$  occurred on two or three days, below  $20^{\circ}$  on ten days, and below  $32^{\circ}$  on twenty days. In Ireland temperatures below  $10^{\circ}$  were registered on six or seven occasions, below  $20^{\circ}$  on twelve or fourteen occasions, and below  $32^{\circ}$  on twenty-two to twenty-four occasions. No place in the British Isles was exempt from the frost, even at Scilly the temperature was below  $32^{\circ}$  on three days, the lowest being  $29^{\circ}$  on two occasions. The winter sea-side health resorts afforded no protection from the frost; at Penzance the temperature fell below  $32^{\circ}$  on ten occasions, at Torquay on eleven occasions, and was below  $20^{\circ}$  on six occasions. At Ventnor it was below  $32^{\circ}$  on nineteen occasions, and below  $20^{\circ}$  on three occasions, and at Bournemouth it was below  $32^{\circ}$  on twenty-three, and below  $20^{\circ}$  on ten occasions. The heavy falls of snow prevented the frost from penetrating far into the ground, but where the snow was cleared away the temperature of the soil fell considerably. A diagram was exhibited showing the mean temperature of January, in the neighbourhood of London, for each year, from 1774 to 1881, from which it appeared that the low mean temperature of  $31^{\circ}6$  for last month had only been surpassed on five occasions, and that the three years, 1879-81, have been very cold, the mean for this period being only  $32^{\circ}2$ ; there is no instance during the past 100 years of any three consecutive Januaries having so low a mean temperature.

**Royal Microscopical Society, February 9 (Anniversary Meeting).**—Dr. Beale, F.R.S., president, in the chair.—The Report of the Council showed an addition of forty-nine Fellows

during the year (making 611 in all), with a considerable increase in the revenue and capital accounts of the Society. The attendance at the meetings was also shown to have increased by nearly 50 per cent. The President read his annual address, in which he dealt with the theory of evolution. A vote of thanks was passed by the meeting on the occasion of his retirement from the presidency, as also to the retiring treasurer, Mr. J. W. Stephenson.—The following Council was elected for the ensuing year:—President, Prof. P. Martin Duncan, F.R.S.; Vice-presidents: Prof. F. M. Balfour, F.R.S., W. B. Carpenter, C.B., F.R.S., John Millar, L.R.C.P. Edin., John Ware Stephenson; Treasurer, Lionel S. Beale, F.R.S.; Secretaries: Charles Stewart, M.R.C.S., Frank Crisp, LL.B., B.A.; Members of Council: Robert Braithwaite, M.D., Charles James Fox, William H. Gilbert, James Glaisher, F.R.S., A. de Souza Guimaraens, William J. Gray, M.D., John E. Ingpen, John Matthews, M.D., John Mayall, jun., Albert D. Michael, Frederic H. Ward, M.R.C.S., C. Thartars White, M.R.C.S.

**Photographic Society, February 8.**—J. Glaisher, F.R.S., president, in the chair.—A paper on sensitometers, was read by Leon Warnerke. After alluding to those already existing, he exhibited and explained one of his own, the "standard sensitometer." This consisted of a frame constructed to hold a thin block made of phosphorescent calcium sulphide mixed with paraffin, and made luminous by burning one inch of magnesium ribbon in close proximity; next is a glass, having upon it a series of squares (with consecutive figures on them) increasing in opacity; then a photographic plate, or any other material sensitive to light, is placed in front, and the phosphorescent light is then permitted to pass through the glass containing the squares; and the highest number visible represents the sensitiveness of the matter experimented upon; the numbers enabling relative values to be determined.

**Statistical Society, February 15.**—Mr. Jas. Caird, C.B., F.R.S., president, in the chair.—A paper was read on the number of deaths from accident, negligence, violence, and misadventure in the United Kingdom and some other countries, by Mr. Cornelius Walford, Barrister-at-Law, wherein he reviewed the numbers and causes of deaths of this class from the earliest periods at which records existed in the United Kingdom, bringing them down also to the latest date, and noting the circumstances which had helped to increase them, as also those which had a retarding influence. He was of opinion, supported by the statistics adduced, that violent deaths of various kinds had advanced with the progress of civilisation. New forces, as also increasing mechanical productiveness, rendered the risk to life and limb continually greater.

## PARIS

**Academy of Sciences, February 14.**—M. Wurtz in the chair.—The following papers were read:—Progress of the zoological station of Roscoff, by M. de Lacaze-Duthiers. Since 1872 there have been 114 workers of various nationalities at the station, the numbers rising from three in 1872 to twenty-seven last year. Last August seventeen were accommodated at once. A keeper now stays at the station constantly, and despatches live animals to various laboratories in France. Zoologists can be lodged in winter. The station has a good sea-going vessel, and is about to acquire a diving-dress. (Particulars of the aquarium, laboratory, &c., are given.) A new station is being formed at Port Vendres, on the Mediterranean.—Existence of large spiral cells distributed in the parenchyma of certain *Crinum*, by M. Trécul.—Theorems relative to the equation of Lamé, by M. Brioschi.—On periodic movements of the ground, by M. Plantamour. In the year ending September 30, 1880, a great lowering took place on the east side, from October 4 to January 28, viz. 95°'80 (as against 28°'08 the previous year). The mean temperature of December was unusually low, but the author thinks some other cause must have operated also. The level placed in the meridian showed nearly the same oscillation as the previous year (4''56). In winter the south side rises with rise of temperature; in summer it falls.—On the earthquake in Switzerland on Jan. 27, 1881, by M. Colladon.—Lithological and geological examination of the meteorite that fell on Oct. 13, 1872, in the neighbourhood of Soko Banja, in Servia, by M. M. Sunier.—On Fuchsian functions, by M. Poincaré.—On the laws which rule periods and coefficients of intensity in one of the principal groups of elementary electromotive forces due to solar induction, and on the possibility of using the magnetic needle to measure the velocity of rotation of the sun about its axis, by M. Quet.—

On the relations which exist between the temperature, pressure, and circulation of the air on the Iberian peninsula, by M. Teisserenc de Bort. In winter the peninsula is colder than the seas around; it shows a barometric maximum, the air flowing outwards to the coasts. In summer the isotherms group round a maximum in the middle of Spain, where, on the other hand, the pressure shows a minimum, and the winds tend inwards. In intermediate seasons the isotherms are nearly perpendicular to the meridians; the isobars are grouped uniformly round great centres of atmospheric action, the most important being the oceanic barometric maximum. Spain is somewhat like monsoon countries. (The author also studies the action of the peninsula as revealed in daily phenomena).—On m'boundou (test-poison of the Gaboonese), new physiological, chemical, histochemical, and toxicological researches, by MM. Heckel and Schlagdenhauffen. It contains only one alkaloid, strychnine. The division of *Strychnos* into *tetanusis* and *paralyticis* is unwarranted. The effect depends on the dose employed.—On the treatment of phylloxerised vines by insufflation of vapours of sulphide of carbon, by M. Bourdon. He sends the vapours through a permanent drainage-system.—The Secretary made reference to the death of M. Kuhlmann.—Researches on the specific magnetism of ozone, by M. Becquerel. Ozone is found to be more magnetic than oxygen, and the ratio of the one specific magnetism to the other is considerably greater than the supposed ratio of the densities. Thus the specific magnetism of ozone is greater than that corresponding to the quantity of oxygen contained in it.—On the electric phenomena of tourmaline and of hemihedral crystals with inclined faces, by MM. Jacques and Curie.—On the combination of hydrochloric acid with bichloride of mercury, by M. Ditte. These substances may unite in several proportions.—Violet illumination of the retina under the influence of luminous oscillations, by M. Charpentier. If the sky, uniformly illuminated by diffused white light, be looked at steadily, and two fingers (separate about 0'02 m.) passed to and fro rapidly before the eye for about half a minute, one perceives a mosaic system of hexagons of violet purple colour separated by white lines. The author supposes the hexagons to represent the cones in the fovea and yellow spot, and the white lines filaments from the choroidian cells.—Determination of fundamental colour sensations by study of the distribution of complementary colours in the chromatic circle (continued), by M. Rosenstiehl.—On a glucoside extracted from common ivy, by M. Vernet.—On cultivation of the microbe of rot, by M. Toussaint. This succeeds best in rabbit and mutton bouillon. The microbe appears in two states, that of bacteria and that of spores.—Structure and texture of the ink-bag of Sepia, by M. Girod.—Artificial reproduction of basalts, by MM. Fouqué and Lévy. They followed the igneous method. The peridot was crystallised at a higher temperature than the other minerals. The black earth used consisted of six of olivine, two of augite, and six of labrador.—Map of the central part of the Spanish Pyrenees, by M. Schroder.

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