

posing cuprico-calcic acetate which had previously been finely pulverized. The salt was slowly liquefied, and on the pressure being removed the surface of the instrument in contact with the salt was found covered with a coating of copper. Other experiments at lower and higher temperatures, but still much under the point of transition, showed that this substance is decomposed under the action of pressure, the process being accelerated according as the pressure and temperature are increased.—On forecasting the weather, by B. G. Jenkins. The author publishes a weather chart for London ranging over 62 years, showing, as he claims, that the moon not merely influences but is the actual cause of the weather, and consequently that it can be forecast by studying accurate barometric and thermometric readings recorded for a sufficiently lengthened period of time. He finds, for instance, that the readings for London for 1887 will be practically the same as those recorded for 1825, those for 1885 and 1886 corresponding in the same way with those for 1823 and 1824, and so on. He adds that in December last he issued a forecast for January 1887 based on the readings for January 1825, with the subjoined results:—Forecast: mean bar., 29.98; mean ther., 35°5; rain, 1.5. Result: mean bar., 29.99; mean ther., 35°9; rain, 1.3.

Notes from the Leyden Museum, vol. ix., No. 2, April 1887, contains, as usual, a large number of papers on entomology, and also a paper on a collection of mammals made at Mossamedes, from the pen of Dr. F. A. Jentink, the Director of the Museum. Mr. P. J. van der Kellen was one of the members of an Expedition to the Cunene River, which was commanded by Mr. Veth. On Mr. Veth's death, which took place very shortly on the Expedition reaching Mossamedes, Mr. van der Kellen determined himself to explore the district, and to make a collection of the fauna for the Leyden Museum. The country he is collecting in is, from a zoological point of view, unknown, and although none of the twenty-six species of Mammalia enumerated in this paper by Dr. Jentink are new to science, yet they form a most welcome addition to our knowledge of geographical distribution, and several of the forms are still very rare.

Engler's Botanische Jahrbücher, vol. viii. part 4, contains:—A contribution to the botanical geography of South Africa, by R. Marloth. This is a description of the plants growing in the south-west Kalahari district.—Contributions to the knowledge of the *Aponogetonaceæ*, by A. Engler. The chief conclusions arrived at are that the inflorescence of *Aponogeton* is not axillary in position, but two leaves and an inflorescence together form a collective whole, the inflorescence not being in the axil of either of them, but opposite the margin of one of the leaves; that in *A. distachyus*, which is the commonest cultivated species, the large white bract-like organ, which subtends each flower, is not a bract, but the single developed segment of the perianth; and finally that if the *Aponogetonaceæ* be united with the *Juncaginæ* and *Potamogetonaceæ* in the large family of *Najadaceæ*, the *Alismaceæ* should also be included in that family.—Then follows a condensed translation of the memoir on the vegetative organs of *Phylloglossum Drummondii*, by F. O. Bower, already published in the *Trans. Roy. Soc.*, London: the chief result of this investigation is that as regards the vegetative organs, *Phylloglossum* appears to be a permanently embryonic form of *Lycopod*.—A list of plants found in West Greenland, together with remarks on their distribution, is contributed by Th. Holm, of Copenhagen, who accompanied the Danish vessel *Fylla* in its expeditions of 1884 and 1886.—The part closes with the continuation of the usual extracts from current literature.

SOCIETIES AND ACADEMIES.

LONDON.

Zoological Society, May 17.—Prof. W. H. Flower, F.R.S., President, in the chair.—The President read some extracts from a letter which he had received from Dr. Emin Pasha, dated Wadelai, November 3, relating to some skulls of the Chimpanzee from Monbottu, to some portions of the skeleton of individuals of the Akka tribe, and to some other objects of natural history which he had forwarded (*via* Uganda) to the British Museum of Natural History.—Mr. A. Thomson exhibited some specimens of a rare Papilio (*Papilio porthaon*) from Delagoa Bay, reared in the Society's Gardens.—Prof. Howes exhibited a drawing of a head of *Palinurus penicillatus*, received from M. A. Milne-

Edwards, and remarked on the assumption of antenniform characters by the left ophthalmite shown in this specimen.—A paper was read by Mr. W. F. Kirby, Assistant in the Zoological Department, British Museum, entitled "A Revision of the Sub-family *Libellulinae*, with descriptions of new Genera and Species." The last compendium of this group was published by Dr. Brauer in 1868, in which forty genera were admitted. Mr. Kirby now raised the number to eighty-eight, all fully tabulated and described in his paper, which likewise included descriptions of fifty-two new species. Mr. Kirby gave a short sketch of the characters of the *Libellulinae*, and more especially of the neurulation, which he considered to be of primary importance.—Mr. R. Bowdler Sharpe read the third part of his series of notes on the Hume Collection of Birds, which related to *Syrnium maingayi*, Hume, and to the various specimens of this Owl in the British Museum.—A communication was read from Mr. A. Smith Woodward, on the presence of a canal-system, evidently sensory, in the shields of Pteraspidian fishes. Mr. Woodward described a specimen which seemed to prove that the series of small pits or depressions upon the shields of these ancient fishes, observed by Prof. Ray Lankester, are really the openings of an extensive canal-system traversing the middle layer of the shield.—A second communication from Mr. A. Smith Woodward contained some notes on the "lateral line" of *Squaloraja*, in which it was shown that the "lateral line" of this extinct Liassic Selachian was an open groove supported, as in the Chimæroids, by a series of minute ring-like calcifications.

Anthropological Institute, May 10.—Mr. Francis Galton, F.R.S., President, in the chair.—Prof. Flower read a letter received by him from Emin Pasha, dated Wadelai, November 8, 1886.—Prof. Victor Horsley read a paper on the operation of trephining during the Neolithic period in Europe; and on the probable method and object of its performance. The paper was copiously illustrated by photographs of trephined skulls and of implements that may have been used in the operation. The fact that most of the holes are found in that part of the skull that covers the fissure of Rolando heightens the probability that the operation was performed as a remedy in cases of epilepsy, since the curve of brain-matter around that fissure is specially connected with what is known as cortical or Jacksonian epilepsy. It seems probable that the operation was, in the first instance, performed for depressed fractures of the skull, or for the traumatic form of epilepsy, and afterwards in other cases in which similar symptoms were observed.

Mathematical Society, May 12.—Sir J. Cockle, F.R.S., President, in the chair.—Prof. Anderson, Queen's College, Galway, was elected a member.—The following papers were read:—General theory of Dupin's extension of the focal properties of conic sections, by Dr. J. Larmor.—Sur une propriété de la sphère et son extension aux surfaces quelconques, by M. D'Ocagne.—On the motion of two spheres in a liquid, and allied problems, by Mr. A. B. Basset.—Second note on elliptic transformation annihilators, by Mr. J. Griffiths.

Chemical Society, May 5.—Mr. William Crookes, F.R.S., President, in the chair.—The following papers were read:—A contribution to the study of well water, by Mr. R. Warrington, F.R.S.—Crystals in basic-converter slag, by Mr. J. E. Stead and Mr. C. H. Ridsdale.—Note on the influence of temperature on the heat of dissolution of salts in water, by Dr. William A. Tilden, F.R.S.—The distribution of lead in the brains of two factory operatives dying suddenly, by Mr. A. Wynter Blyth. At a certain lead factory in the east of London five cases of more or less sudden death at different dates have been attributed to the effects of lead. In two of the cases the author had an opportunity of making a toxicological investigation. There has hitherto been no reasonable hypothesis to explain the profound nervous effects of the assimilation of minute quantities of lead, but if it is allowed that lead forms definite compounds with essential portions of the nervous system, it may then be assumed that in effect it withdraws such portions from the body; in other words, the symptoms are produced not by poisoning in the ordinary sense of the term, but rather by destruction—a destruction, it may be, of important nerve-centres.—Researches on silicon compounds and their derivatives: a new chlorobromide of silicon, by Dr. J. Emerson Reynolds, F.R.S. In purifying a large quantity of silicon tetrabromide prepared by means of crude bromine, the author has separated a portion boiling at 140°–141°, of the relative density 2.432, which analysis shows to be the chlorobromide of the formula SiBr₃Cl.

May 19.—Mr. Wm. Crookes, F.R.S., President, in the chair.—The formation of hyponitrites, by Prof. Dunstan and Mr. T. S. Dymond.—Ozone from pure oxygen, by Mr. W. A. Shenstone and Mr. J. Tudor Cundall.—The volumetric relations of ozone and oxygen: a lecture experiment, by Mr. W. A. Shenstone and Mr. J. Tudor Cundall. Soret and Brodie have shown that if v be the contraction produced on the electrification of a mass of oxygen, then $2v$ will represent the further contraction that will occur on absorbing the ozone formed by means of turpentine. If it be true that ozone completely dissolves in turpentine, this indicates that three measures of oxygen are concerned in the formation of two measures of ozone. The authors describe an apparatus which they have constructed for readily exhibiting Soret's observations to a class. The President said that he had been accustomed to join tubes *in situ* in the manner described by Mr. Shenstone. He added that it was possible to join together two different kinds of glass by means of a little soft white enamel, such as could be obtained from Powell's. Mr. Fairley had also joined tubes in the manner described by the authors; calling attention to Brodie's ozonizing apparatus, he remarked that the tube used by Brodie was probably thinner than was used by the authors. Dr. Armstrong thought that the results of the authors' experiments on the action of mercury on ozone were a valuable contribution to our knowledge of the influence of minute amounts of third bodies on the course of chemical change. He suggested that it was important, if possible, to determine the extent to which oxidation took place in presence of varying minute amounts of moisture, in order to ascertain if this exercised an influence comparable with that exhibited in Prof. H. B. Dixon's experiments on the rate of propagation of the explosive wave in a mixture of carbonic oxide and oxygen. Mr. Shenstone said that experiments such as were suggested by Dr. Armstrong, although very difficult with mercury, might probably be carried out with silver, which effected the decomposition of ozone with extraordinary facility. In reply to the question put by Mr. Page, he was quite unable to account for the peculiar condition assumed by the mercury when submitted to the action of the ozone. He had not been successful in joining tubes with the aid of the enamel spoken of by the President, but on the other hand had found it easy to join even combustion tubing to soft glass by means of an oxyhydrogen jet.—On the thermal phenomena of neutralization and their bearing on the nature of solution and the theory of residual affinity, by Mr. S. U. Pickering.—The action of metallic alkylates on mixtures of ethereal salts and alcohols, by Prof. T. Purdie.

Royal Meteorological Society, April 20.—Mr. W. Ellis, President, in the chair.—The following papers were read:—The storm and low barometer of December 8 and 9, 1886, by Mr. C. Harding. This gale will long be remembered as the one in which twenty-seven lives were lost in the lifeboat disaster off Formby through the capsizing of the Southport and St. Anne's lifeboats. The violence of the storm was felt over the whole of the British Islands as well as over a great part of the Continent of Europe, the force of a gale blowing simultaneously from Norway to Spain. The strongest force of the gale in the United Kingdom was experienced in the west and south-west, and the highest wind force recorded by any anemometer over the country was a velocity of eighty miles in the hour registered at Fleetwood, whilst at Valentia, Scilly, and Holyhead, the velocity reached seventy miles in the hour. The most exceptional feature of the storm was the extraordinary low reading of the barometer and the long time that the mercury remained at a low level. The absolutely lowest authentic reading was 27.38 inches at Belfast, and the barometer fell below 28 inches over a great part of England, Scotland, and Ireland. At Aberdeen the mercury was below 28 inches for eighteen consecutive hours, and below 29 inches for more than sixty hours, whilst in the north of England the barometer readings were equally exceptional.—Report of the Wind Force Committee, drawn up by Mr. G. Chatterton. In this Report, which is a preliminary one, the Committee have dealt mainly with that portion of the investigation relating to Beaufort's scale of wind force and the equivalent velocity in miles per hour.—A new form of velocity anemometer, by Mr. W. H. Dines. In this instrument an attempt has been made to measure the velocity of the wind by the rotation of a small pair of windmill sails, the pitch of the sails being altered automatically, so that the rate may always bear the same rates to that of the wind.—Description of two new maximum pressure registering anemometers, by Mr. G. M. Whipple.

May 18.—Mr. W. Ellis, President, in the chair.—The following papers were read:—Brocken spectres and the bows that often ac-

company them, by Mr. H. Sharpe. The author has collected all the original descriptions of the Brocken spectre, which is really the shadow of the observer cast by the sun upon clouds. In some cases the shadow is surrounded by a bow, which the author shows is like the rainbow in colour and in the order of colours. The head of a shadow is sometimes surrounded by another sort of phenomenon touching the head, and which the author names the "glory."—Results of thermometrical observations made at 4 feet, 170 feet, and 260 feet above the ground at Boston, Lincolnshire, 1882-86, by Mr. W. Marriott. These observations were made on Boston Church tower which rises quite free from any obstructions, in a very flat country, to the height of 273 feet. A Stevenson screen with a full set of thermometers, was placed 4 feet above the ground in the churchyard, a similar screen and thermometers was fixed above the belfry at 170 feet above the ground, while a Siemens electrical thermometer was placed near the top of the tower, the cable being brought down inside and attached to a galvanometer on the floor of the church, where the indications were read off. The results showed that the mean maximum temperature at 4 feet exceeds that at 170 feet in every month of the year, the difference in the summer months amounting to 3°; while the mean minimum temperature at 4 feet differs but little from that at 170 feet, the tendency, however, being for the former to be slightly higher in the winter and lower in the summer than the latter. As the electrical thermometer was read usually in the day-time, the results naturally showed that the temperature at 4 feet during the day hours was considerably warmer than at 260 feet. The author, however, detailed several sets of readings which had been made during the night as well as the day, the results from which were of a very interesting character.—Snowstorm of March 14 and 15, 1887, at Shirenewton Hall, near Chepstow, by Mr. E. J. Lowe, F.R.S.—During the evening the President made a presentation to Dr. J. W. Tripe of a silver tea and coffee service, which had been subscribed for by the Fellows in acknowledgment of the many services which he had rendered to the Society during a period of over thirty years.

EDINBURGH.

Royal Society, May 16.—Lord Maclaren, Vice-President, in the chair.—Prof. D'Arcy W. Thompson read a paper on the blood of *Myxine*, and also a paper on the larynx and stomach in *Cetacea*.—Mr. W. Peddie read a paper on the increase of electrolytic polarization with time; and another on transition-resistance at platinum electrodes, and the action of condensed gaseous films. He showed that such resistance exists; that it gradually increases with the lapse of time after heating the plates to redness; and that it is due to the condensation of gas on the surface of the electrodes. The specific resistance of the condensed gases is probably of the same order as the specific resistance of ordinary dielectrics.—Prof. Crum Brown communicated a paper by Dr. A. B. Griffiths on the problematical organs of the Invertebrata, especially those of the *Cephalopoda*, *Gastropoda*, *Lamellibranchiata*, *Crustacea*, *Insecta*, and *Obolocheta*.—Mr. J. T. Cunningham gave an account of the nephridia of *Lanice conchilega*, Malmgren.—Prof. Tait informed the meeting that M. Amagat has succeeded in solidifying tetrachloride of carbon by pressure alone.

PARIS.

Academy of Sciences, May 23.—M. Janssen in the chair.—Obituary notices of the late M. Vulpian, by M. Bertrand, in the name of the Academy, by M. Charcot on behalf of the Section for Medicine and Surgery, and by M. Brown-Séquard on behalf of the Biological Society.—A general method of determining the constant of aberration, by M. Loewy. At the moment of observation, when the two couples of stars are at the same height above the horizon, their common altitude, h , is determined by the formula:

$$\sin h = \cos \frac{\Delta}{2} \cos \frac{\Delta'}{2}.$$

Then, this quantity being known, a complete answer may be given to the questions as to the most rational values to be adopted for Δ and Δ' in order to obtain the greatest effect of aberration.—On the different states of tellurium, by MM. Berthelot and Ch. Fabre. It is shown that in passing from the amorphous to the crystalline state this element absorbs a certain quantity of heat; also that the precipitated tellurium, whether in presence of an alkaline liquid or an excess of hydrotelluric acid, corresponds to the state of the crystallized tellurium, but when precipitated by sulphurous acid it is altogether or mainly amorphous.

The same phenomena have been observed with sulphur, showing a parallelism between the states of these two substances under the physical or chemical conditions determining those states.—Method for determining the specific activity of the intramuscular exchanges, or of the coefficients of the nutritive and respiratory activity of the muscles in repose and at work, by M. A. Chauveau. The author here describes the technical processes adopted in carrying out the experiments, the results of which have already been communicated.—The earthquake of February 23, by M. Albert Offret. A summary description is given of all the seismic apparatus affected by the disturbance. With very few exceptions all those within the whole area of the earthquake yielded some indications, the interpretation of which is reserved for future consideration.—On the history of the Phylloxera of the vine, by M. P. de Laffitte. The existence is denied of the two distinct species determined and described in a recent communication by M. Donnadieu under the names of *P. vastatrix* and *P. femphigoides*.—On Cremonian quadratic groups, by M. Autonne. Having in a previous paper considered the properties of an isolated quadratic Cremonian, the author here explains how such substitutions combine together to form Cremonian quadratic groups.—On a means of regulating and gauging the discharge of open canals, by M. H. Parenty. A theoretic solution is given of various problems connected with the discharge of open canals, with the view of determining automatically the quantity of water supplied in a given period, the total discharge at a given moment, the proportional discharge from one artery through several diverging rills, and similar questions.—On a general law for the vapour-tensions of dissolvents, by M. F. M. Raoult. By the researches here described the author arrives at the general law that one molecule of a non-saline fixed substance by its solution in 100 molecules of any volatile liquid diminishes the vapour-tension of that liquid by a nearly constant fraction of about 0.0105 of its value. The law is completely analogous to that announced by the author in 1882 regarding the lowering of the freezing point of dissolvents.—On the compressibility of cyanogen compared with its refraction, by MM. J. Chappuis and Ch. Rivière. In order to complete their studies on the refraction of cyanogen and the comparison of the measured indices with the corresponding specific weights, the authors have undertaken the present researches on the compressibility of this gas, on which only a few imperfect data were incidentally supplied by Regnault.—On the polarization of copper by the extension of its surface in contact with a conducting fluid, by M. Krouchkoll. Lippmann having determined the polarization of mercury by increasing its surface in contact with a conducting fluid, the author has made a series of studies to ascertain whether the same phenomenon applies to the solid metals and to certain organic expansive substances, such as gelatine and coagulated albumen. The present note is confined to the study of copper in contact with distilled water, and with water containing 2 per cent. of ordinary sulphate of soda. The results of experiments with other ductile metals are reserved for a future communication.—Note on a stroke of lightning, communicated by the Minister of Posts and Telegraphs. A series of phenomena are described, which occurred during a thunderstorm at Mortrée (Orne), on April 24. Fragments of incandescent stones fell in large quantities, some about the size of a walnut, of a grayish-white colour, which crumbled between the fingers, emitting a distinct smell of sulphur. The others, which were of smaller size, looked exactly like coke. Some plaster was also detached from the front of a neighbouring house and transferred to the window of a house on the opposite side of the street. During another storm, on May 13, great havoc was done by the electric fluid at Eza (Maritime Alps), where it made a broad and deep fissure 20 metres long in the side of the mountain, detaching a solid mass measuring several hundred cubic metres.

BERLIN.

Meteorological Society, May 3.—Professor von Bezold, President, in the chair.—Dr. Schultz spoke on the contrast between the popular names given to meteorological phenomena and their real nature as determined by means of instruments. Thus, for instance, the sirocco wind in Italy is spoken of as "heavy," whereas the barometer indicates a diminished pressure. Summers are spoken of as wet and dry, according as they are accompanied by much or little rain, without taking into account the usually opposed indications of the psychrometers; similarly our sensations of heat and cold are often directly opposed to the indi-

cations of the thermometer. The speaker further brought forward meteorological observations which he had made in Rome and the Riviera, and which showed occasionally, among other things, the anomaly that the temperature in the shade was higher than in the sun, especially when the thermometer in the sun was exposed to a strong wind. In the course of the elaborate discussion which followed upon the above communication, the President explained the larger part of the anomalies which had been described, and laid stress upon the difference between physical meteorology and the influence of temperature and moisture on the living organism. Alterations of atmospheric pressure have no effect on healthy human beings, although they must on sickly people, inasmuch as a diminution of pressure must lead, as a consequence, to an increased evolution of gases from the soil, and their accompanying miasmas. The idea of sultriness has not as yet been defined from a physical point of view; probably in connexion with this it should be borne in mind that the air is occasionally supersaturated with aqueous vapour, as shown in the experiments of Robert von Helmholtz, and that in this case a commencing condensation may be accompanied by a real evolution of heat. Prof. Schwalbe explained the conditions as to dampness, which had been brought forward by the speaker. Dr. Assmann explained, in connexion with this communication, an experiment which he had made with a view to determining the real temperature of the air, and which had given good results. The bulb of the thermometer was surrounded by a very perfectly reflecting cylinder of polished silver open below and closed above, but communicating by a lateral tube with an aspirator: by this method the air was drawn past the bulb of the thermometer in a constant current, while at the same time all external heat is prevented from reaching the thermometer by means of the reflecting cylinder. This thermometer indicates exactly similar temperature, both in the sun and in the shade. In conclusion, Dr. Sklarek mentioned experiments on the radiation of heat from the human body, which showed, in opposition to the laws of radiation from non-living bodies, that the human body radiates more heat from exposed parts of its surface, which are usually covered with clothes, when the difference of temperature between the skin and the surroundings is less than when it is greater. This anomalous behaviour may be explained by the supposition that, when the difference of temperature (between the skin and the surroundings) increases, the physical properties of the skin and its radiating powers undergo some change.

Physical Society, May 6.—Prof. Du Bois-Reymond, President, in the chair.—Dr. König spoke on Newton's law of the mixing of colours (see report on the meeting of the Physiological Society of April 29). In connexion with this, Prof. von Bezold communicated the fact that he had observed during his experiments on the mixing of colours, so called neutral points in the spectrum, not merely when working with dichromatic, but also with normal trichromatic eyes. When, for instance, the intensity of a spectrum is greatly diminished (this may be most simply brought about by inserting a diaphragm with a small opening into the collimator) and a direct-vision spectroscopie is used, then only three colours are seen at all—namely, red, green, and violet: between red and green and between green and violet there are neutral points. If the intensity of the light is still further diminished, then the neutral points undergo a change of position; the red extends to beyond the line D, and the neutral point at the line F moves in the opposite direction. This last fact was no longer recollected with any great exactness by the speaker, inasmuch as the experiments had been made many years ago, but the moving of the neutral point near D towards the green he described as existing without doubt. This appearance of the spectrum of light of small intensity was regarded by Prof. von Bezold as a proof of the truth of the Young-Helmholtz theory of colours. A second observation had reference to the mixing of colours with white. According to the Newton-Grassmann theory of the mixing of colours, every spectral colour, when mixed with white, must maintain its "tone" in the sense of the word as used by the French; this observation has, however, shown that not only red, but also violet, if mixed with white, takes on a purplish tone.—Prof. von Bezold made a further communication to the effect that Dr. Sprung had observed a series of notches on the curve of his barograph between six and seven o'clock on the morning of May 3, without any thunderstorm having taken place: the curves of a Bourdon aneroid barometer, and of the barograph at the Landwirtschaftliche Hochschule, showed the same irregularities. This irregularity of the curve of atmospheric pressure repeated itself on the morning of May 4 between 3 and 4

o'clock, but this time it coincided with a thunderstorm. The irregularity of the atmospheric pressure on May 3 acquires an especial significance, on account of the telegraphic news of the serious eruptions which took place in Mexico and California on the same day, although the time of the eruption is not yet definitely fixed. As a matter of fact, the barographic curve of May 3 shows a great resemblance to that observed at the time of the outbreak of Krakatōo on August 27, 1883; the speaker produced the latter curve for comparison. It is not altogether impossible that the variation of atmospheric pressure on May 3, and possibly that of May 4, may have been in some way connected with the eruptions in America at the same time.

Physiological Society, May 13.—Prof. Du Bois-Reymond, President, in the chair.—Dr. Joseph communicated the results of his anatomical researches on the physiology of the spinal ganglia. According to Waller's older experiments, section of the nerves between the spinal cord and ganglion produces a degeneration of the central part of the nerve, whereas section of the nerve on the other side of the ganglion leads to a degeneration of all the sensory nerve-fibres up to the section. In 1883, however, a pupil of Gudden raised an objection to these experiments, since he found that, by removal of the connecting portion (between the cord and ganglion), not only the central but also the peripheral part of the nerve degenerated. Dr. Joseph has repeated these experiments on cats, and has arrived at the following results, which agree with those which Krause has recently communicated to the Society (see NATURE, May 12, p. 48). Thus (1) There are a number of nerve-fibres which simply pass through the ganglion without being connected with its cells. (2) The ganglion is the trophic centre for the larger number of sensory nerves. (3) The ganglion-cells are bipolar.—Dr. Lewin has examined a series of specimens of urine which contained blood, and were obtained from widely different cases, and found that most of them contained methæmoglobin, as shown by its characteristic spectrum. When these specimens of urine were reduced by means of sulphide of ammonium, he did not obtain the well-known spectrum of reduced hæmoglobin which is always obtained when blood which contains methæmoglobin is reduced; but in many cases he observed the no less well characterized spectrum of reduced hæmatin. It seems to follow from this that the urine of certain patients may contain hæmatin.—Prof. Zuntz gave an introductory explanation of an experiment which was subsequently carried out by Prof. Wolff, to show, namely, that anyone can diminish his weight by taking a deep inspiration. This experiment is most striking when the subject stands on a decimal balance which is so arranged that it can only give a kick upwards; in this case the pan with the weights in it sinks when a deep inspiration is taken. The speaker explained this phenomenon as being the result of the sudden straightening of the spinal column and elevation of the head which occurs when the deep inspiration is taken; owing to its momentum, the head carries the lower part of the body slightly with it, so that the latter presses less forcibly on its support.

STOCKHOLM.

Royal Academy of Sciences, April 13.—On the Lias of the province of Scania, in the south of Sweden, by Dr. J. C. Moberg.—A theory of unipolar induction, by Prof. E. Edlund.—Report on a visit to the United States and Canada for the purpose of studying the fisheries of those countries, by Dr. F. Trybom.—On the structure of the pericarp in the Boragineæ, by Miss A. Olbers.—On the development of the secondary fibrovascular bundles in *Dracæna* and *Yucca*, by Miss H. Lovén.—A suggestion respecting the theory of the constant electric currents, by Dr. A. Rosén.—A crystallographic study of two new hydro-carbons, by Herr M. Bäckström.—Observations on natural phenomena of corrosion, and new faces of crystals in Adular from Swarzenstein, by Dr. A. Hamberg.—On tetrahedrism in tourmaline, by Dr. W. Ramsay.

May 11.—Contributions to a monograph of the amphipoda Hyperideæ, by Dr. C. Bovallius; part I, the families Tyronidæ, Lancelidæ, and Vibiliidæ.—On the recent Astrophographic Congress in Paris, by Prof. Hugo Gylden.—On a group of differential equations, the solution of which is combined with so-called small divisors, by Dr. C. Bohlin.—On the results of the determinations of the longitude between Stockholm, Gothenburg, and Lund, undertaken during 1885 and 1886, by Prof. Rosen.—On the levellings conducted during 1886, by the same.—On the interior friction of dilute

aqueous solutions, by Dr. S. Arrhenius.—Contributions to the knowledge of the changes of steel in physical respects when it is softened, by Herr C. F. Rydberg.—On the diffusion of radiating heat from spherical surfaces, by Dr. K. Ångström.—On the electric resistance against conductivity in crystals, by Herr H. Bäckström.—On a collection of Coleoptera and Lepidoptera from the Congo, made by Lieut. Juhlin-Dannfelt, and described by Prof. C. Aurivillius.—The following papers by Prof. Nilsson and Dr. G. Krüss, of Munich, were presented:—On the equivalent and atomic weights of thorium.—On the earths and the niobic acid in fergusonite.—On the product of the reduction of niobfluoralkalium with sodium.—On the German fluoride of kalium.—Studies on *Taphrina*, by Dr. C. J. Johansson.—On the species of Echinoidea, described by Linnæus in his work "Museum Ludovicæ Ulricæ," by Prof. Sven Lovén.—On some definite integrals, by Dr. Lindman.—On organic sulphamido-combinations, by Prof. Cleve.—On naphthohydroxamic acids, by Dr. A. G. Ekstrand.—On the crystals of some combinations of zirconium, by Dr. M. Weibull.—*Lagopus bonasioides*, a hybrid between *Lagopus subalpina* and *Tetrao bonasia*, by Herr G. Kolthoff, Conservator of the Zoological Museum of Upsala.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

Cartilla de Zoologia Evolucionista: M. R. Mexia (Jacobsen, Buenos Aires).—The Health of Nations, 2 vols.: B. W. Richardson (Longmans).—Proceedings of the Bath Natural History and Antiquarian Field Club, vol. vi. No. 2 (Bath).—La Matière et l'Énergie: E. Ferrière (Alcan, Paris).—Life of Charles Darwin: G. T. Bettany (Scott).—Report of the Commissioner of Education for 1884-85 (Washington).—Illustrations of the British Flora: Fitch and Smith (Reeve).—Essays and Addresses: Rev. J. M. Wilson (Macmillan).—Climatic Treatment of Consumption: Dr. J. A. Lindsay (Macmillan).—Elementary Practical Histology: W. Fearnley (Macmillan).—Alcyonida: D. C. Danielssen (Grondhal and Son).—A New Basis for Chemistry: T. Skerry Hunt (Trübner).—Sketches of Life in Japan: Major H. Knollys (Chapman and Hall).—Cosmogonie: C. Braun (Münster).—Beiträge zur Kenntnis der Nesean-führenden Auswurflinge des Laacher Sees (Holder, Wien).—Annalen der Physik und Chemie, No. 6, 1887 (Leipzig).

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