mannite, by A. Sivoloboff and A. Alekhin.—On the structure of the atmosphere and on the general laws of gases (second paper), by E. Rogovsky. The criticism of the author brings him to the conclusion that the kinetic theory of gases must be revised before deducing the hypsometrical formula. The inquiry is to be continued.—On the magnetism of iron wires which are partially inclosed by a magnetising bobbin, by P. Bakhmetieff. The curve which expresses the relations between the magnetic momentum (m) and that part of the wire (l) which is directly submitted to the action of the bobbin has an irregular shape; the fraction $m : l$ reaches a maximum, which is reached sooner when the magnetising force is greater.—On the specific heat of liquids, by A. Nadejdin.—On the theory of dimensions, by N. Sloughinoff.—On a general law of dilatation of liquids, by M. Avenarius.—Remarks on M. Bardsky's paper on the intramolecular force.

Vol. xvi. fasc. 5.—On alizarine oils, by P. Loukianoff. They are found to consist chiefly of basic salts of common fatty and sulpho-fatty acids, the former in greater amount.—On the dependency of photo-chemical phenomena upon the amplitude of the luminous wave, by C. Timiriazeff. On the ground of several observations the author concludes that it is probable that the more energetic reactions are due to waves having a greater amplitude; and that, out of the waves absorbed by a body, those having a greater amplitude act more energetically.—Action of ethylic iodide on the azobenzoate of silver, by P. Goloubeff.—On naphtochinone and its derivatives, by O. Miller.—On the separation of calcium from strontium by Snidersky's method, by J. Bogomoletz.—On triphenylamidomethan, by W. Hemilian and G. Silberstein.—On some salts of mesotartaric acid, by S. Przibytek.—On the heat of magnetisation of a circular magnet, by P. Bakhmetieff. It is much less than in rectilinear magnets, and seems to follow other laws; the development of heat is altogether doubtful in such magnets.—The steam-engine made by Polzounoff in Siberia in 1763, by W. Lermontoff.—Notes on elementary optics.—Note on M. Kraævitch's paper on a hydrodynamic equation, by N. Petroff.—On the dilatation of liquids and its relation to their absolute boiling-points; an answer to M. Avenarius, by D. Mendeleeff, being a few remarks on the history of the subject and on M. Avenarius's logarithmic formula of dilatatiin.

Schriften der Physikalisch-Ökonomischen Gesellschaft, Königsberg, 1883.—On hybrid varieties of the violet; inaugural dissertation, by A. Bethke.—Memorial address on Charles Darwin, by Dr. Richard Hertwig.—Report on the twenty-first meeting of the Prussian Botanical Society at Osterode, October 1883, by Dr. Caspary, President.—Memoir on the latest discovery of the Stone Age in the East Baltic region, and on the beginning of plastic art in North-East Europe, by Dr. Otto Tischler.—On the sources whence plants derive their nourishment, by Dr. Klien.—Report on the expedition to Aiken to observe the transit of Venus, by Dr. Franz.—On some disputed questions connected with the anatomy of the eye, by Dr. Schwalbe.—On the degrees of sensitiveness in living substances, by Dr. Grünhagen.—On abnormal vision, by Dr. Richard Hilbert.—On the geology of the region between Elbing and Dirschau.—On the primeval history of the Caucasus, by Dr. Otto Tischler.—Anatomical description of the cinnamon plant, by Prof. Sanio.—On the microscopic Algæ and spores of the Russian coal-measures, by Prof. Robert Caspary.—Anatomical and physiological remarks on the wasp family (*Nematus pollipes* and *N. rufipes*), by Prof. Gustav. Zaddach and C. G. A. Brischke.—Description of a new myograph for measuring the velocity of the nervous processes, by Prof. A. Gruenhagen.—On subjective impressions of colour, by Dr. Berthold.—On some new and rare plants found in Prussia, by Prof. Caspary.—On the fossil fishes in the provincial museum, by Dr. Jentzsch.—On the Jurassic system of the Inovrazlav district, by Dr. Jentzsch.—On the site of the Oracle of Dodona, by Dr. G. Hirschfeld.

Atti della R. Accademia dei Lincei, April 20.—Report on the archæological discoveries made in various parts of Italy during the month of March, by S. Fiorelli.—On the normal annual recurrence of certain meteorological phenomena deduced from the observations made at the Collegio Romano, by Pietro Tacchini.—Note on the equilibrium of elastic and rigid surfaces (continued), by S. Betti.

May 4.—Inaugural address by the new President, Cavaliere Francesco Brioschi.—Obituary notice of M. Dumas, by S. Cannizzaro.—On the relations existing between the refrangent power and chemical constitution of organic substances, by Drs. R. Nasini and O. Bernheimer.—On the groups of the series of $a, b \ldots k$ dimensions, by Giovanni Frattini.—Observations of the new planet 236 between Mars and Jupiter, made at the Observatory of the Collegio Romano, by Elia Millosevich.—Observations of the Pons-Brooks comet made at the Observatory of the Campidoglio, by Francesco Giacomelli.—Remarks on the declination and horizontal composition of terrestrial magnetism in Rome during the last ten years, by Filippo Keller.—Influence of magnetism on the embriogenesis and sterility of the ovum, by Carlo Maggiorani.—Meteorological observations at the Observatory of the Campidoglio during the month of March.

Rendiconti del R. Istituto Lombardo, June 19, 1884.—The concept of linear length is independent not only of the idea of derivation but also of that of continuity, by Prof. G. Ascoli.—A contribution to the study of the Northern Apennines, by Prof. T. Taramelli.—On the representation of the Newtonian forces, by means of the elastic forces, by Prof. E. Beltrami.—On the integration of the differential equations of the conic pendulum, by Dr. Gian Antonio Maggi.—On the revival of the critical philosophy of Kant, by Prof. C. Cantoni.—Note on a poem of Alessandro Volta in honour of Saussure's ascent of Mont Blanc in 1787, by Zanino Volta.—Meteorological observations made at the Brera Observatory, Milan, during the month of May.

July 3.—New measurements of the planet Uranus, by Prof. G. V. Schiaparelli.—Researches on the alkalis of the blood and their variations in intensity artificially produced; physiopathological and therapeutic importance of these experiments, by Prof. C. Raimondi.—Integration of the differential equation $\Delta^2 u = 0$ in the area of a circle, by Prof. Giulio Ascoli.—A pathological study of the cellules and parasites in the animal system, by Prof. G. Sangalli.—Meteorological observations made at the Brera Observatory, Milan, during the month of June.

SOCIETIES AND ACADEMIES

PARIS

Academy of Sciences, August 4.—M. Rolland, President, in the chair.—Reply to two notes of M. Wroblewski on the subject of the liquefaction of hydrogen and other gases, by M. L. Cailletet.—On the influence of temperature on the property of absorbing and losing moisture, possessed by vegetable earth and other substances exposed to contact with the atmosphere, by M. Th. Schlœring.—On the change in the excentricities of the planetary orbits due to the concentration of matter in space, by M. Hugo Glydén.—Report of Messrs. Gosselin, Vulpian, Marey, Bert, Pasteur, Richet, Bouley, and Charcot on various communications received by the Academy on the subject of cholera. An examination of forty-three letters, notes, and memoirs has led to no results calling for special consideration. The chief remedies proposed are hypodermic injections of chloride of pilocarpine, the internal application of sulphate of quinine, of oxygenated water, sulphuric lemonade, &c. More important are the views of Dr. Duboué of Pau, who recommends as a preventative the strengthening of the endothelial and epithelial systems by the daily administration of two doses of 0·25 grain of pure tannin prepared with ether. His curative method consists in restoring the circulation by copious intravenous injections of an artificial serum to which should be added one grain per litre of pure tannin.—Observations of the Barnard comet made in Algiers, by M. Trépied.—Note on the distribution of the facules on the solar disk during the year 1883, with tabulated results, by M. P. Tacchini.—Description of a fixed astronomic telescope, being a modification of M. Lœwy's "*equatorial coudé*," by M. G. Hermite.—An account of the method by which the absolute value has been determined of the horizontal component of terrestrial magnetism at the observatory of the Park Saint-Maur, Paris, by M. Mascart.—Description of a new apparatus for collecting the snow of carbonic acid required in producing low temperatures (one illustration), by M. Ducretet.—On the decomposition of white cast iron by heat, by M. L. Forquignon.—Note on the composition of the cyanides of mercury, zinc, and of some other elementary compounds of cyanogen, by M. G. Calmels.—On the nature of the visual faculty, and on the respective parts played by the retina and the brain in the elaboration of optical impressions, by M. H. Parinaud.—Researches on the biological *rôle* of phosphoric acid, and on the part played by this

substance in the formation of the animal tissues, by M. A. Mairet. —On the permanent immunity from charbon of rabbits vaccinated with the attenuated virus of this disease, by M. Feltz. Seven months after the vaccination six rabbits so treated and six others were operated on with a strong preparation of the virus. The six fresh animals all died of charbon, while the six that had been vaccinated remained unaffected by the second operation. But when again treated, eighteen months afterwards, they yielded to the virus, and all ultimately perished. The author infers that the operation preserves its efficacy in the rabbit not longer than eighteen months.—Description of a filter which yields absolutely pure water free of all animal life, by M. Ch. Chamberland.—On the anatomical origin of spermaceti; description of the so-called spermaceti case, by MM. Pouchet and Beauregard.—Memoir on the carboniferous measures of the Central Pyrenees, by M. L. Lartet. —On the composition and quality of coal in connection with the nature of the plants from which it has been formed, by M. Ad. Carnot.—On the oxychloride of calcium, and the simple and chloruretted silicates of lime, by M. Alex. Gorgen.—On the origin of the phosphorites and of the ferruginous clays in limestone districts, by M. Dieulafait.—Account of the effects produced by a stroke of lightning at Campan on July 24, by M. A. Soucaze. A house near the telegraph station was entered through the closed door by a living mass of flame, which, after a few seconds withdrew by the same way without injuring any of the inmates or damaging the furniture.—A hypothesis on the temperature of the zone of the solar protuberances, by M. Tardy. The author suggests that in this zone the hydrogen is rendered luminous by an atmosphere of oxygen, in which case the temperature would be that of the fusion of platina, while the temperature of the inner zone would be still higher.

BERLIN

Physiological Society, July 18.—The conception that, just as the chemical elements in *status nascendi* are characterised by greater energy of action than in the ordinary state, so also in the living organism the substances in process of generation and development would exhibit a different or more intense action than substances already fully formed, has been subjected to an experimental proof by Dr. Falk. He first made an examination in the case of prussic acid. A dilute mixture of emulsin and amygdalin, which yielded prussic acid both outside as well as in the body, was divided into two halves, one being injected by a syringe, immediately after the process of mixture, subcutaneously or directly into the sanguineous channel of one of the animals operated on, the other into that of the other animal intended to serve the purpose of comparison, but not till twenty-four hours after the process of mixture, and therefore after all the hydrocyanic acid had become completely formed in the solution. In both cases the phenomena of poisoning occurred, produced by the prussic acid. In the first case, however, in which the prussic acid was developed in the organism, the phenomena of poisoning occurred always at a later stage and in a milder form than in the second case, in which the prussic acid was administered when it was already completely formed. The second substance examined by Dr. Falk was the oil of mustard, which was produced from the myrosin and myronic acid salts contained in black mustard. The experiment in this case was performed in the same manner, and yielded a similar result, as in the former case. Thirdly, an experiment was instituted with hydroquinine, which was formed from arbutin; and here, too, the substance acted more weakly and slowly when it had first to develop itself in the body. From these experiments Dr. Falk drew the conclusion that substances in process of formation, or in the so-called *status nascendi*, possessed no peculiar or greater activity than in the ordinary state.—Prof. Kronecker spoke of a series of precautionary measures to be observed in cases of saving life by an infusion of common salt solution. He first described how animals after severe loss of blood recovered in the best and most rapid manner by introducing into their blood-channels a like quantity of physiological common salt solution. In the case of infusions of albuminous solutions, of serum sanguinis, and even of the blood of another individual of the same species deprived of its fibrin, there was, according to direct measurements, an invariable destruction of blood-corpuscles. With infusions of common salt solution, on the other hand, blood-corpuscles were seen to increase somewhat rapidly. Prof. Kronecker then proceeded more particularly to lay down precautionary rules to be observed in applying this agency to man. In the first place, the composition of the solution must be such as was most compatible with the human organism. It would appear that a solution of 0·73 per cent. exercised the least irritation on the human body, and was therefore the most appropriate for infusions designed to save life. The addition of carbonate of alkali, recommended by some, had an injurious effect. Of great importance were the velocity and pressure with which the infusion was injected; both ought to correspond with the velocity and pressure in the vein into which the solution entered. The common salt solution should, further, be disinfected beforehand by boiling, and the air which penetrated into the reservoir while it was being emptied must be filtered off by means of a wadding stopper. The injurious effect of too strong pressure was illustrated by a comparative experiment on two rabbits.—Dr. Krause reported some attempts towards the experimental production of contractions of the vocal chords. The possibility he had demonstrated on a former occasion, by pulling forward the tongue and pushing back the epiglottis, of observing the vocal chords of dogs by daylight, facilitated these experiments in a very considerable degree. He applied a prolonged, weak, mechanical stimulation of the nervus recurrens or vagus. A thin slice of cork having, by means of a piece of catgut, been loosely wound together with the nerve so as to exercise on it a continuous moderate pressure, he observed, about the second day of the experiment, the vocal chords under inhalation lie close to each other, and only under exhalation form a small opening between each other. This continuous closure of the glottis was followed, in about four to five days, by a paralysis of the chords, which lasted to the death of the animal. Sections showed in the first stages of the experiment reddening of the nerve and infiltration of the surrounding tissue; later on were found inflammation and extravasation in the nerve; and ultimately molecular decay of the nerve-fibrillæ. The closure of the glottis during the continuance of a prolonged moderate pressure on the recurrens or vagus was explained by Dr. Krause as a contraction of the laryngeal muscles, of which the stronger sphincters of the glottis obtained the preponderance. That the contraction occurred only the second day after the operation was effected, according to the ideas of the speaker, in this way: that the moderate pressure in the normal nerve produced no stimulation beyond what caused the minimum of irritability, and that only after the nerve had become inflamed by the pressure did that pressure suffice to produce a contraction of the muscles and to maintain it till the destruction of the nerve-fibrillæ brought about a paralysis.

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