

law of Nature, established by experience, that every body when in the neighbourhood of another body is subject to an acceleration which is proportional to its mass, and diminishes in the ratio of the inverse square of the distance between them. Such a law of Nature as this, established as it is on the basis of experience, is on the whole not unsatisfactory.—The same speaker then briefly communicated the results of two researches which he had brought before the Academy of Sciences on the previous day. Of these one is due to Prof Kundt, and has reference to the refractive power of metals. He has succeeded in constructing transparent prisms of metals, and thus determining their refractive index. The other, due to Prof. Hertz, has for its subject the rate of propagation of electro-dynamic action. By an extremely ingenious method, which the speaker explained, and which has been used by Prof. Hertz, in many of his previous researches, for the measurement of electrical vibrations, he has succeeded in proving that electricity is propagated along a metallic wire at the rate of 200,000 kilometres per second, and that electro-dynamic action passes through dielectrics with the velocity of light. These experiments thus provide the experimental confirmation of the Faraday-Maxwell theory of electro-dynamic action.

Meteorological Society, February 7.—Dr. Vettin, President, in the chair.—Lieut. Gross gave an account of a balloon voyage which he made on January 21, and described, while presenting the curves he had obtained, his meteorological observations made during this voyage with wet and dry bulb thermometers. One point of great interest which he described was that the balloon remained constantly at the upper surface of the layer of clouds which it was traversing, so that while the body of the balloon was above the clouds the car was completely immersed in the latter, notwithstanding that ballast was frequently thrown out.—Dr. Hellmann produced the curves of temperature for Northern Italy for the month of January, which showed that the cold in this region had been much more intense than in Berlin: the minimum temperature at Alessandria was -16.5°C .—Prof. Schwalbe spoke on the subject of earthquakes in their relationship to meteorological and cosmic phenomena. He proved, on the basis of a study of the literature of this subject extending over many years, that all sorts of meteorological phenomena, such as temperature, atmospheric pressure, wind, moisture, rain, dryness, atmospheric electricity, clouds, and even optical phenomena, have been referred to earthquakes, either as accompaniments or the outcome or the cause of the same. If the statistics of earthquakes are alone considered, or more especially if microseismic observations are taken into account, the above relationship admits of being readily established; but it breaks down completely if it is worked out in a really scientific way throughout the whole of any one or a series of years. The same remark holds good with respect of those cosmic relationships which have been supposed to exist by various writers, such as that the attraction of the moon and the sun is a cause of earthquakes; this view has recently been held by Falb, and although it is in complete antagonism to the results of careful scientific investigation it has nevertheless been largely accepted by laymen. Just as the whole of Falb's views admit readily of being disproved, so also do his prognostications of earthquakes. According to Falb, each lunar quarter-day may be considered to be essentially connected with the occurrence of an earthquake which may take place either five days sooner or three days later than this time; but, notwithstanding the concession of these wide limits as to time, it has not been found that these periods are always accompanied by an earthquake.

STOCKHOLM.

Royal Academy of Sciences, February 8.—Baron A. E. Nordenskiöld gave an account of a work he is now editing, entitled "Atlas, containing maps (copies) printed during the fifteenth and sixteenth centuries."—On the Aralo-Caspian Sea and the glaciation of the North of Europe, by Dr. H. Sjögren.—On the compression of the crust of the earth under the atmospheric pressure, by the same.—On the method used in computations concerning a certain Life Assurance Company, by Prof. Mittag-Leffler.—On the probability of divergence occurring in employing the hitherto usual methods to represent planetary perturbations analytically, by Prof. Gylden.—On the Bacteria of the swine-plague, by Dr. E. Selander.—On the structure of *Champia* and *Lomentaria*, by Prof. Agardh.—On a series, by Dr. Lindman.—Contributions to the knowledge of the reactions of the plato-oxalate, by Dr. Söderbaum.—On the action of chloron on α - and β -naphthol, by Prof. Cleve.—On two β -amido-naphtha-

lin-sulphon acids, by G. Forsling.—On the action of the metaphosphoric acid on di- and tri-oxides, by K. J. Johansson.—Contributions to the knowledge of carbo-hydrates; No. 2, on graminine, by Drs. Ekstrand and Johansson.—Contributions to the theory of the undulatory movement in a gaseous medium (continuation), by Prof. Bäcklund.—On the rhombic porphyry from the valley of Brumun in Norway, by H. Bäckström.—The form of the crystals, and the optical constants of hydro-carbostyryle, by the same.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

Hand-book of Perspective: H. A. James (Chapman and Hall).—Elementary Hydrostatics: S. B. Mukerjee (Thacker).—Chambers's Encyclopædia, New Edition, vol. i. (Chambers).—The Flora of West Yorkshire: F. A. Lees (Reeve).—The Fisheries and Fishery Industries of the United States; Section 2, Geographical Review: G. B. Goode (Washington).—The Religious Sentiments of the Human Mind: D. G. Thompson (Longmans).—Incwadi Yami: J. W. Matthews (Low).—History of Portugal; E. McMurdo (Low).—Geometry in Space: edited by R. C. J. Nixon (Clarendon Press).—The World to Come: J. W. Reynolds (K. Paul).—Flora of the Hawaiian Islands: W. Hildebrand (Williams and Norgate).—Facts about Ireland: A. B. MacDowall (Stanford).—Everybody's Pocket Cyclopædia (Saxon).—On Cold as a Cause of Disease des Sciences de Belgique, No. 12 (Bruxelles).—Geological Magazine, March (Trübner).—Catalog der Conchylien-Sammlung, Sechste Lieferung (Paetel, Berlin).—Memoirs of the Boston Society of Natural History, vol. iv. Nos. 1 to 4 (Boston).—La Première Comète périodique de Tempel, 1867, ii. (Genève).

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