which have been identified beyond doubt with members of the Pikermi fauna. Amongst them are the Ictitherium (three species), a mastodon (*M. pentelici*), a rhinoceros, a hipparion (*H. mediterraneum*), *Sus erymanthius*, and seven antelopes. Representatives were also found of the two families of Edentates still living in the Old World; a gigantic Ruminant belonging to the giraffe family, but forming a new genus (*Samotherium boissieri*, Major); and an ostrich (*Struthio karatheodoris*, Major), equal in size to the largest members of the *Struthio camelus* group.

BERLIN.

Physical Society, November 30, 1888.—Prof. Kundt, President, in the chair.—Prof. Neesen spoke on a photographic method of registering the oscillations of projectiles. The conical end of the projectile is hollow, and at the point of it there is a small round opening; a sensitive photographic plate is placed in the cavity of the projectile. If the latter is now fired towards the shining sun, a ray of light must fall on the centre of the sensitive plate as long as the projectile moves horizontally; any deviation in a vertical or horizontal direction must produce an elongated image on the plate, and from this the deviation of the projectile from its true flight may be determined. If the projectile rotates in its flight a spiral will be obtained on the plate. The speaker had made some preliminary observations on rotating and vibrating hollow conical balls, and exhibited the negatives which he had obtained. The rotation of projectiles presents great difficulties, inasmuch as in a series of experiments the sensitive plate must not participate in the rotatory motion. The arrangements necessary for securing this result were described. Experiments as above described must be of the greatest interest in connection with the theory of projectiles, since up to the present time but little is known of the extent of the vertical and horizontal deviation during flight.—Prof. Neesen also gave an account of a stroke of lightning whose effects he witnessed while on a journey last summer. The lightning struck the centre of the roof of a two-storied house, passed along externally for a short distance, then made a round hole through the wall, and came upon the hook from which a mirror was suspended; it then passed over to the glass, fusing it at the upper corner, in the middle where the two halves of the glass joined, and at the lower opposite corner, and finally passed out again through a round hole in the wall below the glass. The way in which the latter was injured by the lightning was especially remarkable, as also was the way in which the lightning, instead of passing straight along the outside of the wall, made its way by one hole to the looking-glass in the room, and then passed out again by another similar opening.

Physiological Society, December 7, 1888.—Prof. du Bois-Reymond, President, in the chair.—Prof. Munk continued the communication which was interrupted at the last meeting of the Society, on the physiology of the thyroid.

December 21, 1888.—Prof. du Bois-Reymond, President, in the chair.—Dr. Barth gave a detailed description of his method of preparing the membranous labyrinth, and exhibited a series of preparations which had been made by this method. He intends to study fully the minute anatomy of the internal ear with the help of these preparations.—Dr. Weyl gave an account of his researches made with a view to determining the toxic or harmless action of the colouring-matters derived from tar. Inasmuch as the German Statute-book only forbids the use of two of these colouring-matters derived from tar as being poisonous, the speaker had made a systematic examination of an extended series of these colours, including such as might possibly be employed for the coloration of food-materials and might hence be a matter of dispute. He first tested the nitroso-and nitro-derivatives of benzol and phenol, and found the first to be non-poisonous, taking phenyl green as a typical representative. The nitro-derivatives which he examined—namely, picric acid, dinitro-kresol, and Martius's yellow—he found to be poisonous; the sulpho-compounds of the last-named colouring-matter, of which two are now articles of commerce—namely, naphthol-yellow S, and brilliant-yellow S—he found to be harmless. This fact points to a relationship between the chemical constitution and physiological action of these bodies. He busied himself further with an examination of the azo-colours, of which many hundred are used commercially. These fall naturally into two groups—namely, one in which the colouring substances contain only one azo-group, and a second in which they contain the azo-group twice, or as it may be called the Congo-group. These groups are distinguished physiologically by the fact that the first does not impart any colour to the urine, while the second does; they are further distinguished technically by the fact that the first group can only be used for dyeing by the help of a mordant, whereas the second does not require the use of any mordant. Dr. Weyl first investigated the action of substances containing one azo-group—namely, aurantia or imperial-yellow of commerce (hektanitro-diphenylamine); this colouring-matter was non-poisonous, and remained so after it had become soluble by the introduction of the sulpho-group (HSO_3) into its molecule. In the above researches the speaker used fibres of wool or silk, either mordanted or not according to the nature of the colouring-matter, for the purpose of determining their presence in the fluids and urine from the animals on which he was experimenting, dipping the threads into the fluids: he found that the commencing coloration of the fibres was the most certain sign of the presence of the colouring-matter.

Note.—In NATURE for December 13, p. 167, column 2, the sixth line from the bottom of the page, instead of "fall" read "rise."

AMSTERDAM.

Royal Academy of Sciences, December 29, 1888.—Mr. J. A. C. Oudemans criticized the value of the retrogradation of the plane of Saturn's ring, determined by Bessel in 1835, and generally adopted also for the plane of the orbits of the inner seven satellites of that planet. He remarked that Bessel's value 3″·848, being exceeded by its mean error, is not trustworthy. He prefers the theoretical value, for which he finds 0″·25.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

A Text-book of Elementary Biology: R. J. H. Gibson (Longmans).—Chance and Luck, new edition: R. A. Proctor (Longmans).—The Photographer's Diary and Desk Book, 1889 (Wyman).—A Text-book of Physiography: E. Hull (Deacon).—The Telephone: W. H. Preece and J. Maier (Whittaker).—Triennial Calendar of the Tungwen College (Peking).—Descriptive Catalogue of the Sponges in the Australian Museum, Sydney: R. von Lendenfeld (Taylor and Francis).—Corona; the Bright Side of the Universe: F. T. Mott (Williams and Norgate).—Manual of Orchidaceous Plants, Part 4, Cypripedium (Veitch).—Explosion of an Air Receiver at Ryhope Colliery (Newcastle-upon-Tyne).—The Anatomy of Megascolides australis (the Giant Earth-worm of Gippsland): W. Baldwin Spencer (Melbourne).—Journal of Anatomy and Physiology, January (Williams and Norgate).—Mind, January (Williams and Norgate).—Quarterly Journal of Microscopical Science, December (Churchill).—Quarterly Journal of the Royal Meteorological Society, October (Stanford).—Geological Magazine, January (Trübner).—Journal of Society of Telegraph Engineers and Electricians, No. 75, vol. xvii. (Spon).—Journal of the College of Science, Imperial University, Japan, vol. ii. Part 4 (Tōkyō).—Proceedings of the Society for Psychical Research, Part 13 (Trübner).

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