

brum and to effect the decomposition of the aluminate, the rapidity of the reaction being increased by well stirring. In the industrial process of obtaining aluminium from bauxite, these crystals are provided by adding to the sodium aluminate a little of the deposit obtained by treating it with a current of carbon dioxide in the cold, a deposit which consists of crystallised aluminium hydrate. The gelatinous hydrate has no such effect. The alumina precipitated is very pure. Substances such as silica and phosphoric acid, dissolved out of the bauxite by the caustic soda employed, remain in solution.—On the isomerism of the amido-benzoic acids, by M. Oechsner de Coninck.—On the dimorphism of the chloroplatinate of dimethylamine, by M. Le Bel.—On inuline and two new proximate bodies—pseudo-inuline and inulene, by M. C. Tanret.—Absorbing action of cotton on dilute solutions of sublimate, by M. Léo Vignon.—Remarkable resistance of animals of the genus *Capra* against the effects of morphine, by M. L. Guinard.—Alterations of molecular tissue in the barbel due to the presence of myxosporidia and microbes, by M. P. Thélohan.—On the maxillary apparatus of the Eunicidæ, by M. Jules Bonnier.—On the perfume of orchids, by M. Eugène Mesnard.—Experimental researches on the mole and on the treatment of this disease, by M. Julien Constantin.—A disease of the endive, by M. Prillieux; remarks by M. Arm. Gautier.—On the morphology of the cellular nucleus in the *Spyrogyras* and the resulting phenomena in this plant, by M. Ch. Decagny.—Discovery of *Mastodon Borsoui* at Rousillon, by M. A. Donnezan.—On the use of soluble cartridges in oceanographic measurements and experiments, by M. J. Thoulet.—Temperatures observed in the winter of 1789 at Montbéliard, by M. Contejean.

## BERLIN.

**Physical Society**, January 20.—Prof. Kundt, President, in the chair.—Dr. Haentzsch spoke on the potential equation, gave an historical account of researches bearing on it, and added a communication on the results of his own investigations. Prof. Planck explained the arrangement and principle of a truly-tuned harmonium, built on the system of C. Eitz, and bequeathed to the Physical Institute. The instrument includes four and a half octaves, and possesses special notes, arranged in several rows and distinguished by four different colours, for the fifths, the major and minor thirds, and the major and minor sixths. The pure intonation of the harmonium enables it to be used with far greater success than one which is "tempered," for demonstrating that our ear accommodates itself to concords which are not quite pure, and is influenced in its discrimination of concords by the recollection of tones heard previously. The instrument is not suited for concert purposes.

**Physiological Society**, February 3.—Prof. du Bois Reymond, President, in the chair.—Prof. Gad opened a discussion on the communication made by Prof. Behring at the last meeting of the Society (see *NATURE*, vol. xvii. p. 336). The discussion turned chiefly on the applicability of the results of Prof. Behring's experiments to the treatment of tetanus in man. Dr. Wernicke exhibited diphtheritic cultures which had been kept for more than a year, and still developed rapidly in either agar, gelatine, or broth. He then demonstrated on dissected guinea-pigs the more important symptoms of diphtheritic infection, viz. œdema at the place of inoculation, hyperæmia of the liver, kidneys, and adrenals, serous exudations in the abdomen and thorax. He next exhibited some guinea-pigs which, after inoculation with the bacilli of diphtheria, had been treated with blood-serum from other animals immune to diphtheria and had been thereby cured. It was found that the longer the interval which elapsed after inoculation before the curative serum was administered, the greater was the dose of the serum required to effect a cure. He finally reported on experiments on dogs in which immunity and recovery after inoculation had been similarly attained.

**Meteorological Society**, February 7.—Prof. von Bezold, President, in the chair.—Dr. Schubert gave an account of recent researches on the influence of forests on the temperature and humidity of the air, with special reference to certain forests in Austria. So far only the experiments made in Podolia in a leafy forest on level ground have led to uniformly positive results. From these it appears that the forest lowers the mean temperature of the air, but only in so far that the temperature at 8 p.m. is much lower than that existing in the open country, that at 2 p.m. it is higher than in the open, and that the daily

amplitude of variation is greater in the forest. The speaker had however found, from a careful perusal of the existing data, and from comparative determinations made in the forests near Eberswalde, that the results so far obtained are markedly affected by radiation. The true temperatures of the air inside and outside the forest have not yet been measured, and for this purpose it would be necessary to use an aspiration-thermometer. Determinations of humidity are similarly adversely affected by wind and by evaporation due to air-currents. In this case accurate results would be obtained by means of an aspiration-psychrometer. Prof. Sprung communicated an observation he had made at the Potsdam meteorological institute on the recent coldest day in January. While endeavouring to find the most suitable position for a thermometer, he observed, while using similar aspiration-thermometers, the following simultaneous temperatures at four different places, viz.  $-23^{\circ}$ ,  $-23^{\circ}$ ,  $-18^{\circ}$ , and  $-17^{\circ}$ . The four places were: (1) in an adjoining meadow two metres above the ground; (2) at the north side of the observatory two metres above the ground; (3) two metres above the platform of the tower; and (4) at the cage of the anemometer seven metres above the platform. Hence the temperature at the comparatively slight elevation of the anemometer was  $6^{\circ}$  higher than at the ground, whereas usually the same four thermometers showed a slight fall of temperature at the greater elevation.

## BOOKS RECEIVED.

*L'Art de Chiffrer et Déchiffrer les Dépêches Secrètes*: Marquis de Vianis (Paris, Gauthier Villars).—*Traité Pratique de Calorimétrie Chimique*: M. Berthelot (Paris, Gauthier-Villars).—*The Poets and Nature*: P. Robinson (Chatto and Windus).—*The Evolution of Decorative Art*: H. Balfour (Percival).—*Discussion of the Precision of Measurements*: S. W. Holman (K. Paul).—*Report of Observations of Injurious Insects and Common Farm Pests during the Year 1892*: E. A. Ormerod (Simpkin).—*Some Lectures by the late Sir G. E. Paget*, edited from MSS., with a Memoir by C. E. Paget (Cambridge, Macmillan and Bowes).—*Catalogue of the British Echinoderms in the British Museum (Natural History)*: F. Jeffrey Bell (London).—*Lehrbuch der Allgemeinen Chemie*, 2 vols.: Dr. O. Ostwald (Leipzig, Engelmann).—*The Mechanics of the Earth's Atmosphere*: C. Abbe (Washington).—*Das Horizontalpendel*: Dr. E. von Rebeur-Paschwitz (Halle).—*A Manual of Ethics*: J. S. Mackenzie (Clive).—*Notes on Astronomy*: S. P. Johnston, edited by J. Lowe (J. Heywood).—*L'Aquarium d'Eau Douce*: H. Coupin (Paris, J. B. Baillière).—*Les Lichens*: A. Aclouque (Paris, J. B. Baillière).—*Éléments de Paléontologie, première partie*: F. Bernard (Paris, J. B. Baillière).—*Der Nord-Ostsee Kanal*: C. Beseke (Kiel, Lipsius and Tischer).—*Catalogue of American Localities of Minerals*: Prof. E. S. Dana (Gay and Bird).

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