

it "parhelium" (Pa) and assigns to it an atomic weight of about 3.—Distance action of the force of absorption, by W. Müller-Erbach. The author claims to have proved that the absorptive force exercised, say, by iron oxide upon carbon bisulphide vapour is capable of acting across a thin layer of a substance like water or glycerine which is perfectly neutral itself. This molecular force is, unlike that of ordinary molecular attraction, capable of action at distances not exceeding 0.0025 mm. across intervening bodies.—Röntgen rays, by Otto Müller. In the course of an attempt to produce diffraction of X-rays, a shadowgraph of wire gauze was obtained under a metallic cylinder which screened the plate from the action of the rays. The distance between cylinder and plate was 20 cm. The author interprets the observation as a proof of the turbidity of the air to some at least of the X-rays, and ascribes the effect to diffusion.

*Bollettino della Società Sismologica Italiana*, vol. ii., 1896, No. 2.—New methods for geodynamical investigations, by G. Grablovitz. A valuable description of the instruments erected in the geodynamic observatories of the island of Ischia, including various forms of levels, horizontal pendulums, instruments for measuring the vertical movements of the ground, and seismoscopes.—New form of continuously recording seismograph, by A. Cancani.—On the so-called presentiment of earthquakes by animals, by A. Cancani.—On some facts resulting from microseismic observations, by G. Vicentini. A reprint of a paper already noticed in NATURE.

## SOCIETIES AND ACADEMIES.

### PARIS.

**Academy of Sciences, August 31.**—M. A. Chatin in the chair.—The Perpetual Secretary announced the death of M. Henri Résal, member of the Section of Mechanics.—On the subject of prime numbers, of which any given number cannot be a primitive root, by M. de Jonquières.—External characters and modes of distribution of the small tubercles or tuberculooids of the Leguminosæ, by M. D. Clos. A morphological study of the tuberculooids on the roots of nine sub-species of the Papilionacæ. In the two other groups of the Leguminosæ Cæsalpinix and the Mimosæ, the presence of the tubercles is by no means so frequent as in the Papilionacæ.—Memoir on the Law of Newton and on some problems in general mechanics, by M. E. La Combe.—On the effect of systematic errors in levellings of precision, by M. Ch. Lallemand. It is shown that, with a few exceptions, levellings of precision are subject to systematic errors, which may vary from .05 mm. to 0.3 mm per kilometre, and hence are of more importance than the accidental errors to which, up to now, attention has been chiefly directed. It has not been found possible to connect these systematic errors with the particular instruments employed, with the observers, with the nature of the ground, or with the atmospheric conditions.—On a class of propositions analogous to the Miquel-Clifford theorem, by M. Paul Serret.—The deflection of the X-rays behind opaque bodies, by M. E. Villari. A gold-leaf electroscope, placed in the cone of shadow of a sheet of lead, was found to be discharged by the X-rays at rates which showed that the shadow was deepest at the centre.—Researches on the double chlorides, by M. R. Varet. A thermochemical study of the double chlorides formed by mercuric chloride with other chlorides.—Action of the soluble oxidising ferment from mushrooms on the phenols insoluble in water, by M. E. Bourquelot. The two naphthols are oxidised by this ferment in a manner that may serve to distinguish them,  $\alpha$ -naphthol giving a violet colouration,  $\beta$ -naphthol a white precipitate, which dissolves to a yellow solution in ether.—On the freezing-point of milk, by MM. Bordas and Génin. Fifty samples of milk gave freezing points varying from  $-0^{\circ}.44$  C. to  $-0^{\circ}.56$  C., and the conclusion is drawn that the determination of dilution with water by cryoscopy is neither simple nor certain.—On the organisms causing disease of the silk-worm, by M. J. M. Krassiltschik.—A telegraph cable attacked by Termites, by M. E. L. Bouvier.—On the secretory nerves of the trachea, by M. V. Thébault.—On the conjugation of the zoospores of *Ectocarpus siliculosus*, by M. C. Sauvageau.—On the velocity of sound, by M. G. W. Pierces.—On the resolution of the general equation of the fifth degree, by M. L. Mirinny.—On the geographical situation of submarine islands, by M. Reilly.

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### GÖTTINGEN.

**Royal Society of Sciences.**—The *Nachrichten*, Part 2 (Mathematico-Physical Section), 1896, contains the following memoirs communicated to the Society:—

April 25.—On the theory of automorphic modular groups, by R. Fricke.—On an optical effect of an electric field conditioned by the dependence of the dielectric coefficients on the strength of the field, regarded from the standpoint of the electromagnetic theory of light, by F. Pockels.

May 9.—Researches from the Göttingen University Laboratory (IV.), by O. Wallach. (1) Condensation-products of cyclic ketones, and syntheses within the terpene group; (2) a bicyclic ketone  $C_{14}H_{22}O$ ; (3) benzylidene-methylhexanone  $C_7H_{10}O$ :  $CHC_6H_5$ ; (4) dibenzylidene-methylhexanone  $C_6H_5CH$ :  $C_7H_8O$ :  $CHC_6H_5$ ; (5) benzylidene-menthone; (6) benzylidene pulegone; (7) dibenzylidene-suberone  $C_6H_5CH$ :  $(C_7H_8O)$ :  $CHC_6H_5$ ; (8) dibenzylidene-methylpentanone  $C_6H_5CH$ :  $C_6H_6O$ :  $CHC_6H_5$ .—On the principles of Hamilton and Maupertuis, by O. Hölder.

June 20.—Attempted demonstration of orientation in the surface-conduction of electricity; on the continuous transition of an electrical property through the boundary-layer between solid and fluid bodies; on the conduction of electrified air; an experiment on magnetic currents, each by Ferdinand Braun.

July 4.—A contribution to the theory of complex magnitudes consisting of  $n$  primary units, by David Hilbert.

July 18.—Fluorescence and the kinetic theory, by W. Voigt.—On the change in the mode of vibration of light in passing through a dispersing or absorbing medium, by W. Voigt.

### BOOKS AND SERIALS RECEIVED.

**BOOKS.**—Outlines of Psychology: E. B. Titchener (Macmillan).—Babylonian Magic and Sorcery: L. W. King (Luzac).—By the Deep Sea: E. Step (Jarrod).—British Association, Liverpool, 1896. Excursion Guide-book (Liverpool, Philip).—A Dictionary of the Economic Products of India. Index (Calcutta).—The Book of the Dairy: Dr. W. Fleischmann, translated by C. M. Aikman and R. P. Wright (Blackie).—Elementary Quantitative Chemical Analysis: Dr. F. Clowes and J. B. Coleman (Churchill).—Lehrbuch der Algebra: Prof. H. Weber, i. Band (Braunschweig, Vieweg).

**SERIALS.**—Geological Magazine, September (Dulau).—Geographical Journal, September (Stanford).—Edinburgh Medical Journal, September (Pentland).

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