

gates, and practically tested on the Pyrenees frontier during the cholera in Spain two years ago. On that occasion the passengers' linen was disinfected in heating ovens by steam under pressure, and the cholera patients, real or suspected, were isolated. It having been shown that it is practically impossible for a vessel to pass the Suez Canal in quarantine, without contact with the shores, it was resolved that no vessel should be allowed to pass into the Mediterranean unless it was free from infection or had been completely disinfected. Vessels from the Orient which have had no case of cholera since their departure will be allowed a perfectly free passage. Those which have had cases of cholera during the voyage, but none for seven days before arrival, will be allowed to pass the Canal in quarantine if they have a medical officer and a disinfecting stove on board. If not, they will be retained at the entrance of the Canal, where a sanitary station will be erected, and where the disinfection will take place. Infected vessels will be detained at the entrance, the patients will be disembarked and isolated, and the vessels will be disinfected. It is calculated that, out of 15,000 vessels that have passed through the Canal in five years, under the regulations now adopted 28 would have had to undergo a delay of a few hours for disinfection, and 2 would have been detained for a few days.—On the law of correspondence of tangent planes in the transformation of surfaces by curved symmetry, by M. S. Mangeot.—On the distribution of pressures in a rectangular solid charged transversally, by M. Flamant.—On the law of resistance of the cylinders utilized in the cru-her manometers, by M. P. Vieille.—On the Doppler-Fizeau method, by M. Moessard. If the relative motions of the source and the observer be alone considered, without reference to the distortion of the wave-front due to motion through the connecting medium, the ratio of the real to the apparent wave-length will be  $\frac{V}{V - v + v'}$ , where V is the velocity of wave propagation, v that of the source, v' that of the observer. The true formula for this ratio is  $\frac{V - v'}{V - v}$ ,

which, in the case of  $V = v$ , will differ from the former by infinity.—An examination of the possibility of a reciprocal action between an electrified body and a magnet, by M. Vaschy. Showing that such an action cannot exist unless it be due to a physical quality of the ether different from that implied by the coefficients k and k' in the electric and magnetic laws of attraction, viz.  $f = k\frac{qq'}{r^2}$ , and  $f = k'\frac{mm'}{r^2}$ .—Action of nitric oxide on

the metallic oxides, by MM. Paul Sabatier and J. B. Senderens.—On a bromo-nitride of phosphorus, by M. A. Besson.—On permolybdic acid, by M. E. Péchard.—On the alteration of preserved ferruginous mineral waters, by M. J. Riban.—On the transformation of gallic acid into pyrogallol: fusion point of pyrogallol, by M. P. Cazeneuve.—On the intestinal calculi of the cachalot (*ambre gris*), by M. Georges Pouchet.—The heliotropism of the *Nauplius*, by M. C. Viguier.—Researches on the proximate composition of vegetable tissues, by M. G. Bertrand.—On the action of some mineral salts on lactic fermentation, by M. Ch. Richet.—On the respiratory exchange, by MM. Chr. Bohr and V. Henriquez. An account of experiments showing that the lungs are not only the seat of the process of gaseous exchange, but also of the oxidation of tissue elements.—Origins and trophic centres of the vaso-dilatatory nerves, by M. J. P. Morat.—Researches on the requirements of the vine, by M. A. Muntz.—On the topography of some lakes of the Jura, the Bugey, and the Isère, by M. A. Delebecque.

## AMSTERDAM.

Royal Academy of Sciences, May 28.—Prof. van de Sande Bakhuyzen in the chair.—Mr. Behrens dealt with specimens of brass made by compression of the constituents at ordinary temperature by Prof. W. Spring, Liège, Belgium. One of the specimens, kindly forwarded by Prof. Spring, was of a reddish colour, and had been produced by compressing a mixture of 9 parts of copper and 1 part of zinc; another, pale yellow, by compressing a mixture of 7 parts Cu and 3 parts Zn. Both specimens had been filed up twice, and again consolidated by pressure. The reddish metal was a little softer than common cast brass; it could be somewhat flattened under the hammer. The yellow metal was harder than common brass, and brittle. Both varieties contain a great quantity of yellow alloy, which seems to be in an amorphous state, showing a uniform, finely granular appearance, without any vestige of the beautiful crystallites, so characteristic for copper-zinc alloys, obtained by

fusion. Further, a good deal of angular fragments of red copper, some of them cracked and doubled up, with yellow threads between the red lumps and strands, and finally some zinc, angular fragments and threads, trending outwards and uniting near the curved surface of the cylindrical specimens. The metal is nearly, but not wholly compact. There is much that gives evidence of a flow in the yellow alloy and in the zinc, but nothing pointing to a truly liquid state of the alloy or one of its components. Regelation seems to be put aside, while there does not remain any doubt that zinc and copper have been intimately mixed and actually united by repeated filing and compression. One may venture to say, that a more complete union of metallic powders by compression will lead to alloys of most remarkable properties, and may give some alloys that cannot be produced by fusion.

## BOOKS, PAMPHLETS, and SERIALS RECEIVED.

BOOKS.—Our Earth—Night to Twilight, vol. i.: G. Ferguson (Unwin).—The Alternate Current Transformer, vol. ii. The Utilization of Induced Currents: Prof. J. A. Fleming (*Electrician* Company).—Essai sur la Vie et la Mort: A. Sabatier (Paris, Babé).—Chambers's Encyclopædia, vol. ix. (Chambers).—Iconographia Floræ Japonicæ, vol. i. Part 2: Dr. K. Yatabe (Tokyo).—Thermodynamique à l'Usage des Ingénieurs; A. Witz (Paris, Gauthier-Villars).—U.S. Relief Map (Washington).—Bees for Pleasure and Profit: G. G. Samson (Lockwood).—Waterdale Researches; or, Fresh Light on the Dynamic Action and Ponderosity of Matter: 'Waterdale' (Chapman and Hall).—Helen Keller: Souvenir of the First Summer Meeting of the American Association to Promote the Teaching of Speech to the Deaf; second edition (Washington, Volta Bureau).

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SERIALS.—Journal of the College of Science, Imperial University, Japan, vol. v., Part 1 (Tokyo).—Journal of the Institution of Electrical Engineers, June (Spon).—Journal of the Polynesian Society, vol. i. No. 1 (Wellington, N.Z.).—Proceedings of the Society for Psychological Research, June (Kegan Paul).—Deutsche Ueberseeische Meteorologische Beobachtungen, Heft 4 (Hamburg).—Journal and Proceedings of the Royal Society of New South Wales, vol. xxv., 1891 (Kegan Paul).—Beiträge zur Biologie der Pflanzen, v. Band, 3 Heft (Williams and Norgate).—Bulletin from the Laboratories of Natural History of the State University of Iowa, vol. ii. No. 2 (Iowa).—Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie, Sechzehnter Band, 1 Heft, Fünfzehnter Band, 3 Heft (Williams and Norgate).—Encyclopædia der Naturwissenschaften, Erste Abthg., 67 Liefg., Zweite Abthg., 69-70 Lief. (Williams and Norgate).

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