

by the University, and may be held in conjunction with them. Further particulars may be obtained by application to the Registrar of the University, London, W.

SCIENTIFIC SERIALS

Annalen der Physik und Chemie, No. 7, 1878.—Theory and experiment having given different results for the heat-conduction of certain (polyatomic) gases, Prof. Willner supposed the reason to be that the values were not comparable, because they related to different temperatures. He shows from experiment that the ratio of the two specific heats varies with the temperature. For those gases whose specific heat at constant pressure does not vary with the temperature, the variation is of about the same order as the divergence of gases from Mariotte's law. For gases, whose specific heat varies with the temperature, the ratio of the specific heats varies in a greater degree, and approximately so that the difference of the specific heats at 0° and 100° is constant. Herr Willner finds here an explanation of the discrepancy.—In a lengthy paper Herr Hittorf vindicates the affirmation that "electrolytes are salts," in reply to Dr. Bleekrode's criticism. We note, also, papers on the energy of reciprocal action, by Herr W. Weber, and on the law of storms, by Herr Schröder.

No. 8.—This number opens with a paper by Herr Herwig, on the amount of electricity required for full charge of a condenser platina water-cell, and on the distance of the molecules in liquid water. The upper limit he deduces for the latter is 0.186 millionth mm.; which agrees well with other determinations, Lorenz 0.1 millionth mm., Thomson (for lower limit) 0.05. He finds in the result a confirmation of the hypothesis of rotatable electrolytic molecules.—In a paper on the wandering of ions, M. Kirmis shows that the amount of transference of copper from the solution of its sulphate salt increases with decreasing concentration.—Investigating the history of the invention of the pendulum clock Herr Gerland considers that Bürgi and Treffer have not the least claim to this merit. It belongs to Galileo and Huyghens, who made the discovery independently. As the former, however, came on it fifteen years earlier, the pendulum clock is properly his work.—Herr Auerbach endeavours to show that Grossmann's vowel theory applies not to actual vowels, but to typical ideal clangs, and when the changes thus rendered necessary are introduced into it, it affords, if not incorrect results, nothing new as against Helmholtz's theory.—Herr Bauer has a paper on summation tones as difference and beat-tones from the over-tones of the primary tones; and Herren Nilson and Pettersson write on the production and valence of beryllium.

Journal de Physique, August, 1878.—In this number M. Bouty explains the construction and use of electric diagrams, for representing as completely as possible all the peculiarities of an electric field.—Some curious experiments with the electric tourniquet are described by M. Bichat.

SOCIETIES AND ACADEMIES

PARIS

Academy of Sciences, September 9.—M. Fizeau, president, in the chair.—The following papers were read:—On some phenomena of a vaso-motor action observed in the course of researches on the physiology of the excito-secretive nerves, by M. A. Vulpian.—On some new effects produced by the telephone, by M. du Moncel.—On the new palæozoic group of Dolerophylleæ, by M. G. de Saporta.—On a new gyroscopic apparatus, by M. Gruy.—On the accumulation of magnetism on the summit of hemispheric poles, by M. L. Romain.—On the waves of the high sea, by M. Ch. Antoine.—Some notes, by MM. Vasseur, Lassalle, and Cameron, regarding aerial navigation.—An additional paper by M. Giraud respecting the treatment of cholera.—A note by M. F. Bettelhauser respecting the various means employed for the destruction of phylloxera.—Prof. Asa Gray, who has been nominated a correspondent of the Botanical Section, presented the first part of his "Synoptic Flora of North America."—Rectification of the position previously assigned to the new planet discovered during the eclipse of the sun on July 29, by Prof. J. Watson, and note on the observation of a second star seen under the same circumstances.—On a new method to decompose numbers into square binary sums and its application to inde-

termined analysis, by M. E. de Jonquières.—On the depression which, at the surface of a horizontal elastic and isotropous ground, is produced by a weight deposited thereon, and on the distribution of this weight between its various points of support, by M. J. Boussinesq.—On the variations of intensity which take place in a current if the pressure between the two contacts, which complete the circuit is modified, by M. Treve.—On the application of the telephone to the determination of the magnetic meridian, by M. H. de Parville.—On the constitution of the inactive glucose of crude cane sugar and molasses, by M. U. Gayon.—Comparison between the *Balaena (Macleayius) australiensis*, of the Paris Museum, and the *Balaena biscayensis*, of Naples University, by M. Fr. Gasco.—On the reproduction of the *Hydra*, by M. Korotneff.—On the comparative structure of *Lepidodendron* and *Sigillaria*, by M. B. Renault.

VIENNA

Imperial Academy of Sciences, July 18.—Critical researches on the species of the natural family of the stags (Cervi), (third part), by Dr. Fitzinger.—Influence of temperature on the galvanic conductivity of liquids, by Drs. Exner and Goldschmidt.—On some new or imperfectly-known fish-species, by Dr. Steindachner.—On the Orthoptera of Istria, by Dr. Kraus.—On new Cymothoides, by Herr Kölbl.—On the form of spark-waves, by Prof. Mach and Herr Weltrubsky.—The origin of tubes in the Nostoc-colonies in Biasia, by Herr Waldner.—Influence of the density and the temperature on the spectra of vapours and gases, by Herr Ciamician.—Action of chloroform and ether on respiration and circulation of the blood, by Dr. Knoll.—On Roussin's binitro-sulphuret of iron, by Herr Demel.—On a new method of quantitative investigation of gold and silver alloys, by Herr von Jüptner.—On the spinal ganglia and cord of Petromyzon, by Herr Freud.—Rocks from Greece, by Herr Becke.—On nitrocuminol and its derivatives, by Prof. Lippmann and Herr Strecker.—On compounds of nickel and cobalt chloride with tar bases, by Prof. Lippmann and Herr Vortmann.—On the Malabrian kinogumi, and a new substance got from it, kinoin, by Herr Etti.—On Borneo camphor, by Herr Kachler.—On cinchonidin, by Herren Skraup and Vortmann.—Action of water on the haloid compounds of alcohol radicals, by Herr Niederist.—On the geological formation of the western part of Central Greece, by Prof. Neumayr.—On the geological formation of the island Eubœa, by Dr. Teller.

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