

SCIENTIFIC SERIALS

THE *American Journal of Science and Arts*, August.—The article on the observation of the corona and red prominences of the sun, by E. S. Holden, we have already reprinted. The other original articles are :—A note on Walker's Statistical Atlas of the United States, prepared by order of Congress. This is based on the census of 1870. Formerly the results of a census have been given in numerical form only ; now much information is set forth in ingeniously contrived maps, of which there are sixty-five. Ten of the maps are prepared from data not derived from census returns, but which are of especial interest in such a work. The work is divided into three parts, the first relating to physical features of the United States. The relations of some of these maps to each other are very instructive. For instance, the relation between woodlands and rainfall and other climatic conditions has of late been the subject of much dogmatic theorising. A comparison of these maps shows that the forests of Washington Territory are in regions having an annual rainfall of sixty inches and upward. The magnificent forests found from Minnesota to Maine are in regions of twenty-eight to forty inches, a rainfall precisely identical with that of the nearly treeless prairies which extend westward from Chicago. The northern part of the Michigan peninsula with its heavy timber is marked with precisely the same rainfall as large portions of Southern Minnesota lying in the same latitude and nearly treeless. In the second section the interesting question of the "centre of population" is discussed. In 1790 it was about twenty-three miles east of Baltimore. It has travelled westward, keeping curiously to the 39th degree of latitude, never getting more than twenty miles north nor two miles south of it. In the eighty years it has travelled only 400 miles, and is still found nearly fifty miles eastward of Cincinnati.—On the chondrodite from the Tilly-Foster Iron Mine, by E. G. Dana. The chondrodite forms the gangue of the magnetite, being everywhere disseminated through it in varying proportions ; it is identical with humite in chemical composition, and alike in crystalline form. The humite crystals are of three types, but until now the correspondence of the minerals has been known only for the second type. The Tilly-Foster mine affords crystals of all three types, and the comparisons between humite and chondrodite form the subject of this long article.—On an easy method of producing di- and tri-nitrophenetol, by P. T. Austen.—On a foetal Manatee and Cetacean, with remarks on the affinities and ancestry of the Sirenia, by Prof. B. G. Wilder. There is added a list of writers on the subject.—On tidal waves and currents along portions of the Atlantic coast of the United States, by J. E. Hilgard.—On ancient glaciers of the Sierra Nevada, by Prof. Joseph Le Conte. The paper consists of a description of Fallen Leaf Lake Glacier, Cascade Lake Glacier, and Emerald Bay Glacier, a map of which district is given. Among the questions of a general nature discussed are :—Evidences of the existence of the great Lake Valley Glacier ; Origin of Lake Tahoe ; Passage of Slate into Granite ; Glacial Deltas ; Parallel Moraines ; and Glacial Erosion.—Certain methyl and benzyl compounds containing selenium, by C. Loring Jackson.—Description of the Nash County meteorite which fell in May 1874, by J. Lawrence Smith.

Reale Istituto Lombardo, Rendiconti (vol. 8, fasc. xv).—From this part we note the following papers :—On a supposed reform of the theory of electrostatic induction (second paper), by G. Cantoni.—On preventative measures against Phylloxera, by V. Trevisan.—On the intersections of a cone by a plane curve of the fourth order, by G. Jung.—On the central nucleus, and on the curves of resistance to rotation, through the flexion of transversal sections of prisms, by Antonio Sayno.

THE *Archives des Sciences Physiques et Naturelles* (No. 210, June 15) contains an elaborate review of M. Becquerel's work just published, "Des Forces physico-chimiques et de leur interpretation dans la production des phenomenes naturels."—A note by M. Hermann Fol, on the first origin of sexual products.—On the viscosity of saline solutions, by M. Ad. Sprung ; the author first considers the influence of temperature, and then describes the relation existing between the velocity of effluence of a salt and its chemical composition.—A letter from M. E. Liais, dated Rio Janeiro, May 1st, 1875, and relating to the next oppositions of Mars with regard to the determination of the sun's parallax ; and on the remarkable coincidence of the parallax obtained in 1860, with the new measurement of the velocity of

light by M. Cornu.—On the determination of the sun's parallax by observations of the planet Flora, by M. Galle.

Poggendorff's Annalen der Physik und Chemie, No. 7 (1875).—This part contains the following papers :—On friction and conducting of heat in rarefied gases, by A. Kundt and E. Warburg.—Spectral analytical researches, by R. Bunsen (second paper.) This paper treats of spark spectra, flame spectra, and absorption spectra of elements, and is accompanied by several tables.—On the diathermancy of moist air, by J. L. Hoorweg.—On the experimental determination of the dielectricity constant of some gases, by L. Boltzmann.—On crystallisation products in ordinary glass, by Dr. Otto Schott.—On the penetration of gases through thin layers of liquids, by Dr. Franz Exner.—On a simple method to compare two sounding columns of air by means of sensitive flames, by Dr. Bresina.—An experiment on the electro-dynamical effect of the current of polarisation, by N. Schiller and R. Colley, of Moscow.—On a peculiar case of magnetisation, by J. Jannin (translated from the *Comptes Rendus*).—On the magnetic properties of iron prepared by electrolysis, by W. Beetz.—Spectro-electric tube or fulgurator, an apparatus serving for the observation of spectra of metallic solutions, by MM. B. Delachanal and A. Memet.—A reply by Dr. K. Heumann to Herr R. Schneider's remarks on the decomposition of cuprous sulphide by nitrate of silver.—On the sudden breaking of glasses, by Ed. Hagenbach.

SOCIETIES AND ACADEMIES

PARIS

Academy of Sciences, Sept. 6.—M. Frémy in the chair.—The following papers were read :—On the application of a new theorem of the calculus of probability, by M. Bienaymé.—Researches on the cold bands in dark spectra, by MM. P. Desains and Aymonet.—Eleventh note on the electric conductivity of bodies which are known to be only indifferent conductors, by M. Th. du Moncel.—Results from palæontological researches at Durfort (Gard), by M. P. Cazalis de Fondouce, made for the Museum of Natural History, by M. P. Gervais.—New nautical charts of meteorology, giving both direction and intensity of probable winds, by M. Brault.—On the superficial radiations of the sun, by Mr. S. P. Langley.—Observations of the August meteors in 1875 by M. C. Wolf.—A note on Bernoulli's numbers, by M. E. Catalan.—On the larva forms of Bryozoa, by M. J. Barrois.—On two thunderstorms with hail observed on July 7 and 8, in some parts of Switzerland and the South of France, by M. Colladon.

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ERRATUM.—P. 404, Col. 2, delete line 55.