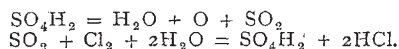


Anthropological Institute, Feb. 22.—Mr. J. Park Harrison, treasurer, in the chair.—The Director, Mr. E. W. Braybrook, read a paper by the Rev. John Earle, M.A., on the Ethnography of Scotland. The author alluded to the great similarity in the physiognomy of the Norwegians and the Scotch as exhibited in photographic portraits, the likeness between the two peoples having also struck Dr. Beddoe. The conquest of the northern parts of Scotland, and especially Caithness, (Icelandic Kata-ness=ship promontory) is celebrated in the Sagas: and the author believed that the "harrying west" of the Danes along the eastern coast of Great Britain extended at least as far as the Firth of Forth. Vigfusson's Icelandic Dictionary supplies materials to illustrate numerous striking features in the Scottish language and the Norsk, e.g. bairn, carline, eldine, ettle, fey, (make); gar, greet, (to weep); speer, firth, &c. The Danish and Norsk districts in Scotland are the meeting ground of the great and divergent branches of the Gothic family—the Teutonic and the Scandinavian. In the Scottish language the Norsk element is almost undiluted with Saxon, and we gain from it Ethnological evidence, which recorded history does not distinctly afford. An analysis of the language Mr. Earle believes would bring out additional proofs that it is the permanent expression of the overlapping of the races above alluded to.

## BERLIN

German Chemical Society, Feb. 14.—A. W. Hofmann, president, in the chair.—E. Paterno and G. Briosi made preliminary communications on hesperidine obtained from oranges; 1,000 oranges yield less than 150 grains of the pure substance.—A. Ladenburg has found that isomeric diamines are acted upon by nitrous acid in very different ways. Parametatoluyendiamine yields a well crystallised body  $C_7H_9N_3$ , amidazoetoluyene.—T. v. d. Hoff finds that succinic acid obtained in reducing malic acid with HI is optically inactive.—V. Wartha has discovered indigo in commercial litmus.—P. Weselsky described a reaction of phloroglucine. Mixed with nitrate of toluidine and nitrite of potassium it yields a precipitate of the colour of cinnabar.—A. Claus has found that the body until lately known as crotonchloral when treated with cyanide of potassium, yields not only chlorocrotonic acid  $C_3H_3ClCO_2H$ , but also a bibasic acid  $C_3H_4(CO_2H)_2$ , and tricarballic  $C_3H_5(CO_2H)_3$ .—The same chemist described combinations of sulfo-urea with bichloride of mercury, and with oxalic acid.—R. Hasevleors, in using Deacon's chlorine-apparatus has remarked that the amount of HCl decomposed, sunk within six weeks from 80 to 2 per cent. He found the hydrochloric acid passing through the apparatus to be contaminated with sulphuric acid, and believes this to be the reason of the deterioration of the process. Sulphuric acid, so he believes, is decomposed into sulphurous acid, and oxygen and the sulphurous acid is reoxidised by retransforming the chlorine into hydrochloric acid:—



A support of this view is found in the fact that manufacturers that take great care in introducing hydrochloric free from sulphuric acid, are able to use the process for a comparatively longer period.—M. Neneky, who by the action of formic and acetic acids on guanidine obtained formo-guanamine  $C_3N_5H_5$ , and aceto-guanamine  $C_4N_5H_7$ , has also obtained two isomeric bases  $C_6N_5H_{11}$  by the action on guanidine on butyric and isobutyric acids. Aceto-guanamine, by taking up one or two molecules of water under the influence of potash, respectively yields guanide  $C_4N_4H_5O$ ; guanamide  $C_4N_5H_5O_2$ . By oxidation it yields cyanuric acid  $C_3N_3H_3O_3$ .—E. Bandrowsky, treating guanidine with valerianic acid and caproic acid, obtained the corresponding guanamines,  $C_7N_5H_{13}$  and  $C_8N_5H_{15}$ .

## PARIS

Academy of Sciences, Feb. 14.—Vice-Admiral Paris in the chair.—The deaths of MM. Andral and Seguiet were announced.—The following papers were read:—On the ethers of hydracids, by M. Berthelot.—On the formation of amides, by M. Berthelot.—On hyposulphite of potash, by M. Berthelot.—Memoir on the approximation of functions of very large numbers and on an extensive class of developments in series (second part), by M. Darboux.—Vibrations of a homogeneous solid in equilibrium of temperature, by M. Felix Lucas.—On the movements of the heart when it is submitted to artificial

excitations, by M. Marey. The results obtained show that the heart is refractory to excitation during the greater part of its systolic phase. The systole produced (by excitation) is greater the longer its interval from the spontaneous systole which precedes it. After each systole produced, there is a compensating repose which restores the temporarily altered rhythm of the heart. This is important as confirming a law the author believes he has established, viz., that the work of the heart tends to remain constant.—On deviations from the laws relating to gases, by M. Mendéléeff.—On isomeric rosanilines, by M. Rosenstiehl. There are three of these, one derived from 1 molecule of aniline and 2 molecules of toluidine; another, 1 of aniline and 2 of pseudo-toluidine; the third, 1 of aniline, 1 of toluidine, and 1 of pseudo-toluidine; the latter constitutes, for the most part, commercial fuchsine.—On the optical inactivity of the reducing sugar contained in commercial products, by MM. Aimé Girard and Laborde.—On a new element in the determination of chimi-calories, by M. Maumené. Very various liquids undergo a molecular alteration (readily revealed by chemical action) without their nature being changed; the purely physical influence of heat gives them a sort of temper (*trempe*), during which their chemical actions produce extraordinary numbers of chimi-calories. Olive oil recently heated to about 300° behaves no longer like its former self when treated with hot acid, but it is not perceptibly altered in colour, odour, or density.—On a new acid pre-existing in the fresh milk of mares, by M. Duval. It appears to be distinct from hippuric acid, and the author proposes to call it *quinic* acid.—On the aptitude of oysters for reproduction from the first year, by M. Gerbe. Observation shows this to be a fact. Among these precocious mothers there are some whose shell, in transverse diameter, measures hardly 25 mm. Hence the prosperity of the reproducing portion of a natural oyster bed, does not depend only on the presence of large oysters. The quantity of eggs, indeed, is generally in proportion to the size of the oyster. Many oysters, especially the young, propagate twice in the season, under favourable conditions. The laying of eggs occurs at long intervals, possibly corresponding to lunar phases.—Reply to a note of M. Arm. Gautier, relative to the rôle of carbonic acid in the coagulation of blood, by MM. Mathieu and Urbain.—Description of the diplometer, by M. Landolf. This is an instrument for measuring the diameter of an object at a distance and independently of its movements.—On the origin and mode of generation of atmospheric whirlwinds, and on the unity of direction of their gyratory motion, by M. Cousté. The whole mechanism of whirling movements in the atmosphere depends on two causes, gravity and heat; the weight of the air drives vertically from below upwards the less dense water-vapour which the heat has produced; and further, the weight of the air causes this gas to be precipitated (in horizontal, or at least *inclined* directions into the vacuum which the vapour tends to leave behind it in rising.

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ERRATUM.—Vol. xiii. p. 328, last line, for *him* read *me*.