

the same gathering would perhaps be met with specimens otherwise identical, some with and some without eyes, or the eye present on one side only. The pigment greatly varied in amount, or was entirely wanting, but without sections it was difficult to say whether that was the case with the true nervous part of the visual organ, which, from its transparency, was easily overlooked in merely surface views.

PARIS.

Academy of Sciences, May 21.—M. Loewy in the chair.—Researches on trimethylene and propylene, and on a new class of hydrocarbons; dynamical isomerism, by M. Berthelot. Trimethylene and propylene have, respectively, -17.1 Cal. and -9.4 Cal. for heats of formation from their elements. The corresponding dibromides, sulphates, and alcohols have nearly the same heats of formation; just as trimethylene and propylene differ by -7.7 Cal. in heat of formation, so the formation of bromides, sulphates, and alcohols from these substances liberates more heat in the case of trimethylene, the excess being +9.4, +8.8, and +10.2 Cal. in the respective cases. The dibromides liberate heat on the further addition of bromine as follows:—

	+Br.	+Br ₂ .	+2Br ₂ .	+3Br ₂ .
Propylene dibromide	+0.522,	+0.872,	+1.397,	+1.661 cal.
Trimethylene dibromide	+0.592,	+1.010,	+1.567,	+2.052 "

The heat of formation of terebenthene is +4.2 Cal., of citrene is +21.7 cal., and of liquid camphene is about 24 Cal. The corresponding hydrochlorides have nearly the same heats of formation. From these data it is argued that trimethylene and terebenthene belong to a new class of hydrocarbons, and are dynamical isomerides of propylene and camphene respectively.—A note by M. Loewy accompanying the presentation of a volume of the "Annales de l'Observatoire de Bordeaux."—On the formation of urea in the liver after death, by M. Charles Richet. The formation of urea is analogous to the production of sugar. Urea continues to be formed in the liver after removal from the body and cleansing from blood, &c., by washing, probably by hydrolysis due to the action of a soluble diastase.—The insects of the carboniferous period, by M. Charles Brongniart.—On the superficial tension of saline solutions, by M. H. Sents. If F be the superficial tension of the saline solution, f that of water at the same temperature, n the volume of 100 molecules of water, and v that of a mixture of n molecules of the salt with 100 - n molecules of water, we have

$$\phi = F - \frac{100 - n}{100} \cdot \frac{f}{\sqrt{\frac{v}{n}}}$$

where ϕ is the action per unit of length between the molecules of the salt and the molecules of water. With regard to ϕ —(1) This action is independent of the temperature between 0° and 25°; (2) it is proportional to n up to the most concentrated solutions; (3) it is independent of the nature of the salt and approximately equal to 0.78 dyne

per centimetre for each radical equivalent (e.g. $\frac{\phi}{n}$ for NaBr, KCy, MgSO₄, CaCl₂, and K₂CrO₄ is respectively 1.6; 1.5; 1.6; 2.3; and 2.4).—Properties of magnetic substances at various temperatures, by M. P. Curie. Oxygen, manganese chloride, ferrous sulphate, and palladium follow the law expressed by $k = \frac{A}{T}$ where k is the specific coefficient of magnetisation, A is a constant, and T is the absolute temperature.

The temperature of magnetic transformation of nickel is near 340°. Its coefficient k between 373° and 806° is independent of the intensity of the field, and decreases regularly and very rapidly as the temperature rises. The temperature of magnetic transformation of magnetite is about 535°. From 550° to 850° it behaves like nickel, from 850° to 1370° it obeys the same law as oxygen. Iron exhibits very complex phenomena. Between 860° and 1280° there appears to be another modification of iron formed; before 860° and beyond 1280°, iron behaves like nickel.—On a system of new scales, by M. Alexandre de Bertha.—Apparent death produced by alternating currents. Restoration to life by means of artificial respiration, by M. A. d'Arsonval. In the cases where death has apparently been caused by direct action of the current on the nerve centres, without lesion or destruction of the tissues, it is found possible to revive the patient by the treatment adopted

with apparently drowned persons.—On a method permitting the measurement of the mental intensity of vision and the longitudinal aberration of the eye, by M. Charles Henry.—Absorption spectra of hydrobromic solutions of cupric bromide, by M. Paul Sabatier. The absorption between $\lambda = 660 \mu\mu$ and $\lambda = 440 \mu\mu$ is far more intense than in the cases of the alcoholic solution of the anhydrous salt or the aqueous solutions of the green and blue hydrates.—On the molecular transformations of some chromic compounds, by M. A. Recoura.—On some combinations of ammonia with various silver salts, by MM. Joannis and Croizier. The compounds AgBr.3NH₃, AgBr.1½NH₃, AgBr.NH₃, AgI.NH₃, AgI.½NH₃, AgCy.NH₃, AgNO₃.3NH₃, AgNO₃.2NH₃, AgNO₃.NH₃ have been studied, and their temperatures of dissociation, as also their characteristic formulæ for the pressures of dissociation at any temperature, are given.—On the detection of hydrochloric acid, by MM. A. Villiers and M. Fayolle.—On geraniol from the essence of *Andropogon Schœnanthus*.—Does digestion of proteid matters without digestive ferments exist? by M. A. Béchamp.—Essay on a theory of the temporal (bone), by M. S. Jourdain.—On the increase of temperature of earth-layers with the depth in the low Algerian Sahara, by M. Georges Rolland. In many parts of the low Algerian Sahara, between 30° and 35° Lat., the temperature increases with the depth at least 1° for 20 metres, and often much more rapidly.—Agronomic map of the canton of Ferté-sous-Jourarre, by M. Gatellier.

BOOKS and PAMPHLETS RECEIVED.

BOOKS.—Studies in Forestry: Dr. J. Nisbet (Oxford, Clarendon Press).—Systematic Survey of the Organic Colouring Matters: Drs. G. Schultz and P. Julius, translated and edited by A. G. Green (Macmillan).—D. courses, Biological and Geological: T. H. Huxley (Macmillan).—Geology: C. Bird (Longmans).—Primitive Civilizations, 2 Vols.: E. J. Simcox (Sonnen-schein).—Lehrbuch der Zoologie: Dr. J. E. V. Boas (Jena, Fischer).—Blackie's Chemistry Demonstration Sheets; eight Sheets (Blackie).—Micro-organisms in Water: Prof. P. Frankland and Mrs. P. Frankland (Longmans).—Climbing and Exploration in the Karakoram Himalayas: W. M. Conway (Unwin).—Etude Industrielle des Gites Métallifères: G. Moureau (Paris, Baudry).
PAMPHLETS.—The Marine Biological Laboratory 6th Annual Report, 1893 (Boston).—A Description of Two Large Spinel Rubies: Dr. V. Ball (Dublin).

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