

and one molecule of chloride of acetyl takes its place. The first supposition, therefore, appears the more probable of the two.—P. Groth has entered into a long series of important and difficult researches to investigate the connection between the chemical constitution and crystalline form of organic bodies. He communicates his first results, founded on his measurement of the form of benzol during the great cold of last winter, and comparing with it the forms of benzoic derivatives, in which one or more hydrogen are replaced by O H, N O₂, or Cl. He has come to the conclusion that, by these substitutions, *the numeric relations of two axes remain intact, the third axis only increasing or decreasing with the chemical substitution*. The influence thus exercised by certain elements or groups taking the place of hydrogen, he calls their *morphotropic* power. The morphotropic power of chlorine appears far greater than that of N O₂ or of O H. The morphotropic changes, however, depend likewise on the position the element or group occupies in the molecule, and on the crystallographic system of the primary substance. The author has also investigated certain combinations of naphthalene in the same sense. They bear out the law quoted above. For the conclusions drawn from these highly interesting results we must refer to the original paper.—M. Lex has found that phenol mixed with nitrite of potassium and a reducing substance (such as sugar and lime, or hydrochloric acid and zinc), and then exposed to the air, or the oxidising action of chloride of lime, gives rise to a blue colour, much like indigo, but very unstable.—A. W. Hofmann reported on the curious researches of Prof. Church on the red colouring matter of the feathers of the Turacon.—C. Rammelsberg has analysed Indian steel, or wootz, without finding in it a trace of aluminium.—M. Topsøe has analysed platinic acid and platinate of barium, to which he gives the formula: Pt O₂, 2 H₂ O and Ba Pt O₃ + 3 H₂O respectively.—M. Clemens, by treating the impure choride of pyroracemic acid with alcohol and with ammonia, has obtained the corresponding ether and amide.—MM. Kékulé and Quinke report on some reactions of metaldehyde and of paraldehyde.—M. Czumpelik has prepared the cyanide of nitrobenzyle and of amidobenzyle, and some derivatives of cuminic and of oxycuminic acids. The same author, by introducing one atom of chlorine into cymol, and treating the compound with acetate of potassium, obtained the corresponding organic acetate.—Mr. Buchanan, from Glasgow, has studied the complex action chloride of phosphorus shows with hyposulphite of lead.

MONTREAL

Natural History Society, April 25.—The Rev. Dr. DeSola presiding. Dr. Smallwood read the first paper, "On some phenomena of the Solar Eclipse of August 1869." It was intended to illustrate more fully a paper which he had contributed to the *Canadian Naturalist*, referring to the rose-coloured prominences of the sun's chromosphere, and their appearance before first contact. He exhibited diagrams of the several eclipses of 1851, 1860, 1868, and 1869, which showed the various shapes of the protuberance, and referred more particularly to the large one observed during the eclipse of last August, some 30,000 miles high, which was seen in a direct line with the passage of the moon across the sun's disc. He attributed the appearances which were observable a few seconds before the first contact of the Moon with the Sun's true limb to this circumstance, and cited and illustrated the experiments of Mr. J. N. Lockyer and Janssen, in confirmation of this opinion. The remarks of the Astronomer Royal, on the causes which, up to 1861, had prevented these prominences being seen, except during a solar eclipse, were quoted from the Transactions of the British Association. The spectroscope and other optical appliances have now made it possible to examine these phenomena at any time when the sun is shining. The experiments of Lockyer and Janssen seem fully to bear out the conclusions to which Dr. Smallwood had arrived, and the lecturer ended by expressing a hope that observations made on the eclipse of next December would tend to illustrate further the somewhat unusual appearances which he had recorded.—The Acting President made some remarks on the above paper, and expressed his regret at the want of good astronomical instruments in the city.—Mr. A. S. Ritchie then read a paper entitled "Aquaria Studies, No. 1." After some preliminary remarks, the principles upon which a fresh-water aquarium should be constructed and stocked were explained in detail, and particulars were given as to how the balance between animal and vegetable life might be best maintained. The author went on to describe some of the peculiarities of the larger tenants of his own aquarium. Com-

mencing with the fishes, the various points of interest connected with the habits of several of the smaller Canadian fresh-water fishes were dwelt upon at some length. The species described were a new Stickleback, lately described by Principal Dawson in the pages of the *Canadian Naturalist*; the Darter, a fish which has no air-bladder, and swims by jerks; the Striped Minnow, the Sun-fish, American Perch, Black Bass, Cat-fish, Pond-sucker, the Black Minnow, a species allied to the Pike; and, although not a Canadian species, the Gold-fish. Illustrations were also given of the behaviour in captivity of the Painted Turtle, the Water Newt, the Shad Frog, and the American Crayfish. In conclusion the lecturer stated that in part No. 2 of *Aquaria Studies*, he hoped to give descriptions of the microscopical denizens of his miniature pond.

DIARY

THURSDAY, MAY 26.

SOCIETY OF ANTIQUARIES, at 8.30.—Election of Fellows.
ZOOLOGICAL SOCIETY, at 8.30.—On *Dinornis* (Part XVI.), containing Notices of Internal Organs of some Species, with a Description of the Brain and some Nerves and Muscles of the Head of the *Apteryx australis*: Professor Owen, F.R.S.—Notes on the Anatomy of the Prongbuck (*Antilocapra americana*): Dr. J. Murie.—Some Remarks on the Poison Glands of the Genus *Callophis*: Dr. A. B. Meyer.—Notes on some Fishes from the Western Coast of India: Surgeon Francis Day.
ROYAL INSTITUTION, at 3.—Electricity: Prof. Tyndall.

FRIDAY, MAY 27.

ROYAL INSTITUTION, at 8.—Primitive Vegetation of the Earth: Principal Dawson.
QUERKETT MICROSCOPICAL SOCIETY, at 8.

SATURDAY, MAY 28.

ROYAL INSTITUTION, at 3.—Comets: Prof. Grant.

MONDAY, MAY 30.

LONDON INSTITUTION, at 4.—Botany: Prof. Bentley.

TUESDAY, MAY 31.

ANTHROPOLOGICAL SOCIETY, at 8.—On the Armenians of Southern India: Dr. John Shortt.—The Races of Morocco: J. Stirling, M.A.
ROYAL INSTITUTION, at 3.—Present English History: Prof. Seeley.

WEDNESDAY, JUNE 1.

ETHNOLOGICAL SOCIETY, at 8.30 (at the Royal United Service Institution, Whitehall Yard).—Report on the Prehistoric Antiquities of Dartmoor: C. Spence Bate.

THURSDAY, JUNE 2.

ROYAL SOCIETY, at 8.30.
SOCIETY OF ANTIQUARIES, at 8.30.
CHEMICAL SOCIETY, at 8.—On the Platinum Ammonias: Dr. Odling.
LINNEAN SOCIETY, at 8.—On some New Forms of Trichopterous Insects.
ROYAL INSTITUTION, at 3.—Electricity: Prof. Tyndall.

BOOKS RECEIVED

ENGLISH.—On the Strength of Beams, Columns, and Arches: B. Baker (E. and F. Spon).—Flint Chips, a Guide to Prehistoric Archaeology: E. T. Stevens (Bell and Daldy).—The Interior of the Earth: H. P. Malet (Hodder and Stoughton.)

FOREIGN (through Williams and Norgate).—Palaeontographica, Beiträge zur Naturgeschichte der Vorwelt; Supplement (Die Fauna der ältern Cephalopoden): R. A. Zittel.—Protozoë Helvetica: W. A. and C. F. Ooster.

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