

forms. Of the species described, 12 are from the middle miocene of Turin, 4 from the middle pliocene of Castellarquato, and the remaining 5 from the upper pliocene of the neighbourhood of Reggio in Calabria.—Professor A. Winckler presented a memoir on some formulæ and methods relating to the theory of definite integrals.—Dr. Tiele, of Bonn, and Dr. T. Oppolzer communicated statements of the elements of Comet III., 1869, and the latter a memoir on the determination of the path of a comet.—Professor E. Hering presented a first memoir on the influence of respiration on the circulation of the blood, in which he maintained that the system of the vasomotor nerves experiences a periodic innervation by the respiratory nervous centre, which causes periodic contractions of the muscular coat of the vessels. These he regarded as respiratory movements of the vascular system.—Dr. F. Steindachner communicated the second portion of his memoir on the Fishes of the Senegal, in which he described the species (28 in number) belonging to the families Gobiidæ, Mugilidæ, Gerridæ, Chromidæ, Anabatidæ, Pleuronectidæ, and a part of the Siluridæ. Four of these were described as new, namely: *Eleotris senegalensis*, *daganensis*, and *Lebretonis*, and *Mugil Dumerili*. The first two belong to Bleeker's sub-genus *Culius*, the previously known representatives of which occur in the Indian Ocean and Polynesia. The author regarded *Chromis mossambicus* (Peters) as specifically distinct from *C. niloticus*, *Hemichromis bimaculatus* and *auritus* (Gill), and *H. guttatus* (Günther) as varieties of one species, *Chrysiichthys acutirostris* (Günther) as identical with *C. nigro-digitatus* (Lac.), and *Gerres octactis* (Bleeker) with *G. melanopterus* of the same author.

BERLIN

German Chemical Society, January 10.—The following papers were read:—Wichelhaus, "On a base isomeric with cyanide of ammonium." By the action of the tribasic formic ether $\text{CH}(\text{OC}_2\text{H}_5)_3$ on acetamide $\text{NH}_2\text{C}_2\text{H}_5\text{O}$, a base of the following composition, $\text{CH}.\text{NC}_2\text{H}_5\text{O}.\text{NHC}_2\text{H}_5\text{O}$, was obtained. This substance is converted by water into the acetate of the new base $\text{CH}.\text{NH}.\text{NH}_2$. The latter is a volatile liquid, yielding crystallised salts.—Philipp, "On perchloride of iodine;" Hansen, "On the ethylides of thallium;" P. W. Hofmann, "On the manufacture of sulphuric acid." The author, who is at the head of the manufactory of Dienze in France, accounts for the loss of oxides of nitrogen in the manufacture of sulphuric acid, by proving that these oxides are partly reduced to nitrogen, when the sulphuric acid in the lead-chambers sinks below a certain strength. The loss can therefore be avoided by carefully regulating the steam admitted into the chambers.—Schoras, (1) "On the influence of sunlight on the reduction of metallic chlorides through oxalic and tartaric acids;" (2) "On the colourisation of dry platinumcyanides through traces of moisture."—Friedel and Ladenburg, "On silicopropionic acid;" Tieman, "On derivatives of guanidine;" Junning, "Mechanical explanations of chemical reactions;" Schuchard, "On the preparation of zirconium."

BONN

Lower Rhenish Society for Natural and Medical Science—*Chemical Section*, November 13.—Professor Binz exhibited a new body, "Dihydroxylochinin," obtained by G. Kerner from quinine by treating the latter with potassic permanganate. It gives all the reactions of the alkaloid, but differs from it amongst other things in the want of basic properties and the absence of influence on the organ of taste. It likewise differs from it essentially in its physiological properties, being entirely indifferent even in large doses. Dr. Zinke gave an account of new synthesis of aromatic acids. He has obtained phenyl-acetic acid from Monochloroacetic acid, and brombenzol by treatment with finely-divided silver. Professor Kekulé communicated the results of some experiments of Dr. Thorpe, showing that bromine free from iodine enters the ethyl-group of ethylbenzole even at a low temperature, and that from the bromide thus formed various derivatives can be obtained, some of which have already been proved by Berthelot. Dr. Budde gave a preliminary report on his researches on the electric conductivity of hydrogen, oxygen, and nitrogen, at various pressures. His results agree most nearly with those of Faraday, and show a greater decrease of resistance than of pressure.

November 27.—Dr. Muck communicated his recent researches on the formation of manganic sulphide from various manganese salts and various soluble sulphides. Professor Rhitthausen likewise made some communications on the occurrence (not hitherto observed) of amygdalialia in vetch seeds.

DIARY

THURSDAY, JANUARY 20.

ROYAL INSTITUTION, at 3.—On the Chemistry of Vegetable Products: Prof. Odling.
ROYAL SOCIETY, at 8.30.—On the Mechanical Performance of Logical Inference: W. Stanley Jevons.—Preliminary Paper on certain Drifting Motions of the Stars: R. A. Proctor.—On Jacobi's Theorem respecting the relative Equilibrium of a Revolving Ellipsoid of Fluid, and on Ivory's Discussion of the Theorem: J. Todhunter, F.R.S.
LINNEAN SOCIETY, at 8.—On the Flora of Iceland: Prof. Babington.—On New British Spiders: Rev. O. P. Cambridge.
ZOOLOGICAL SOCIETY, 8.30.—Descriptions of a new genus and of eighteen new species of Land and Marine Shells: Henry Adams.—On the genus *Pelargopsis* of the family Alcedinidæ: R. B. Sharpe.—Description of a new Fish from the vicinity of Aden: Lieut.-Colonel R. L. Playfair.
CHEMICAL SOCIETY, at 8. ANTIQUARIES, at 8.30.
NUMISMATIC SOCIETY, at 7.

FRIDAY, JANUARY 21.

ROYAL INSTITUTION, at 3.—On Haze and Dust: Professor Tyndall.
PHILOLOGICAL SOCIETY, at 8.15.

SATURDAY, JANUARY 22.

ROYAL INSTITUTION, at 3.—On Meteorology: Mr. Scott.
ROYAL BOTANIC SOCIETY, at 3.45.

MONDAY, JANUARY 24.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.
ENTOMOLOGICAL SOCIETY, at 7.—Anniversary Meeting.
LONDON INSTITUTION, at 4. MEDICAL SOCIETY, at 8.

TUESDAY, JANUARY 25.

ROYAL INSTITUTION, at 8.—On the Architecture of the Human Body: Prof. Humphrey.
ETHNOLOGICAL SOCIETY, at 8.—On the Origin of the Tasmanians, geologically considered: J. Bonwick.—On a Frontier-line of Ethnology and Geology: H. H. Howorth.—The Nicobar Islanders: G. M. Atkinson.
INSTITUTION OF CIVIL ENGINEERS, at 8.
ROYAL MEDICAL AND CHIRURGICAL SOCIETY, at 8.30.

WEDNESDAY, JANUARY 26.

SOCIETY OF ARTS, at 8.—On the Modes of Reading in Use by the Blind, and the Means for arriving at Uniformity: Thomas Armitage, M.D.
GEOLOGICAL SOCIETY, at 8.—On the Crag of Norfolk and associated Beds: Joseph Prestwich, F.R.S., F.G.S.—On the Fossil Corals of the South Australian Tertiary Deposits: Dr. P. Martin Duncan, F.R.S., Sec. G.S.—Note on a very large undescribed Wealdian Vertebrate: J. W. Hulke, F.R.S., F.G.S.
ARCHÆOLOGICAL ASSOCIATION, at 8.

BOOKS RECEIVED

ENGLISH.—The Year-book of Photography for 1870: G. W. Simpson (Piper and Carter).—The Bible in India: Louis Jacolliot (J. C. Hotten).—The Body and its Health: E. D. Mapother, M.D. (Simpkin, Marshall and Co.).—Natural Phenomena and Chronology of the Seasons, Part I.: E. J. Lowe, F.R.S. (Bell and Daldy).—Journal of the Statistical Society.—The Geology, Botany, and Zoology of the Neighbourhood of Alnwick: G. Tate (H. Hunter).
FOREIGN.—Note sur les Surcharges à considerer dans les Calculs des Tabliers Metalliques: M. L. Leygue.—Chènes de l'Amerique Tropicale.—Compendium der Physiologie des Menschen: Julius Budge.—Untersuchungen aus dem Physiologischen Laboratorium in Würzburg: R. Gescheiden.—Die Praktische Markscheidkunst: E. Borchers.—Industries anciennes et moderne de l'Empire Chinois: Paul Champion.—Annales des Sciences Géologiques: Hébert et Alph. Milne-Edwards. Cours Élémentaire de Mécanique Théorique et Appliquée: Ch. Delaunay.—Cours Élémentaire d'Astronomie: Ch. Delaunay.—Recherches sur l'Antiquité de l'Homme dans les Grottes et Monuments Mégalithiques du Vivarais: J. Ollier de Marichad.—Berliner Astronomisches Jahrbuch für 1872: W. Förster.—Handbuch der Chemischen Technologie: P. A. Holley.—Ueber die Ältesten Formen des Organischen Lebens: Ferd. Roemer.—Ueber den Parasitismus in der Organischen Natur: Maximilian Perz (through Williams and Norgate).

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ERRATA.—Page 235, second column, line 34 of footnote: for "habitude" read "habitus."—Page 283, second column, line 37: for "rectorial" read "vectorial."