

SOCIETIES AND ACADEMIES

LONDON

Chemical Society, June 3.—Prof. Abel, F.R.S., &c., in the chair.—The following papers were read:—On the effects of pressure and cold upon the gaseous products of the distillation of carbonaceous shales, by Mr. J. T. Coleman. He finds that 1,000 cubic feet of the gas produced in such large quantities at shale oil works when submitted to pressure will give about one gallon of volatile hydrocarbons fit for improving the illuminating power of ordinary coal-gas.—On the agricultural chemistry of the tea plantations of India, by Dr. C. Brown, giving analyses of the ashes of tea and the effect of fertilisers on the growth of the plant.—On the structure and composition of certain pseudo-morphic crystals having the form of orthoclase, by Mr. J. A. Phillips.—Note on the sulphates of narceine and other narcaine derivatives, and On the action of organic acids and their anhydrides on the natural alkaloids, Part V., both by Mr. G. H. Beckett and Dr. C. R. A. Wright.—On the action of chlorine on pyrogallol, by Dr. J. Stenhouse and Mr. C. E. Groves; with an appendix by Mr. Lewis, on the crystalline forms of *maivogallol*, one of the products.—On nitro-alizarin, by Mr. W. H. Perkin, F.R.S. This compound, obtained by the action of nitric acid on acetyl-alizarin, dyes fabrics mordanted with alumina of an orange colour, whilst the amido-alizarin obtained from it by reduction gives a fine purple.—On some metallic derivatives of coumarin, by Mr. R. Williamson.—On the action of dilute mineral acids on bleaching powder, by F. Kopfer.

Geological Society, May 26.—Mr. John Evans, V.P.R.S., president, in the chair.—The following communications were read:—On some peculiarities in the microscopic structure of feldspars, by Mr. Frank Rutley. The observations recorded in this paper related mainly to some exceptional features in the striation of feldspars from various localities, involving a consideration of the extent to which dependence may be placed on the discrimination of monoclinic and triclinic feldspars by the methods usually recognised in ordinary microscopic research. Some other peculiar structural features were likewise noticed, and the effects which might be produced on polarised light by the overlap of twin lamellæ in thin sections of feldspars, when cut obliquely to the planes of twinning, were also considered. The paper terminated with a list of conclusions deduced from the observations recorded. These conclusions mostly related to matters of detail; but the general inference drawn by the author was that the present method of discriminating between monoclinic and triclinic feldspars by ordinary microscopic examination answers sufficiently well for general purposes, although it is often inadequate for the determination of doubtful examples, and that such examples are of more frequent occurrence than one would at first be led to suspect.—On the Lias about Radstock, by Mr. Ralph Tate, A.L.S. In this paper the author described several sections in the Lias of the neighbourhood of Radstock, in Somersetshire, with special reference to their palæontological contents and to the question of the division of the Lias into zones in accordance with the species of Ammonites occurring in different parts of the series. He maintained that although the Lower Lias in this district only attains a thickness of twenty-four feet, this is due to poverty of sediment; and that whilst by this means the zones are compressed, and the species of Ammonites brought almost into juxtaposition, the succession of Ammonite-life is as regular in the Radstock Lias as in the most typical districts. Much of the opposition to the doctrine of zoological zones he ascribed to erroneous discrimination of species. The paper included tables of sections and lists of fossils, with the arguments founded upon them, in support of the above opinion. A few new species were described under the names of *Trochus solitarius*, *Cryptena affinis*, *Cardita consimilis*, and *Cardinia rugulosa*.—On the axis of a Dinosaur from the Wealden of Brook, in the Isle of Wight; probably referable to *Iguanodon*, by Prof. H. G. Seeley, F.L.S. This perfect specimen, preserved in the Woodwardian Museum of the University of Cambridge, is $3\frac{1}{2}$ inches long and $3\frac{1}{4}$ inches high. The odontoid process is ankylosed to the axis, and projects forward as in the axis of birds, so as to articulate with the occipital condyle of the skull. The pre- and postzygapophyses are situated much as in birds; as are the two ovate pedicles, on the anterior part of the side of the vertebra to which the cervical rib was articulated. But posteriorly the articular surface for the third cervical vertebra is transversely ovate and slightly concave. The neural spine is compressed from side to side, more so in front than behind. Among

mammals, the nearest resemblance to this kind of axis is seen similarly in the whale; and among reptiles the crocodile has a two-headed rib; but the other characters are more like those of *Hatteria*, which the author regarded as a near ally of the Crocodilia and Chelonia, and as wrongly united with the Lacertilia.—On an Ornithosaurian from the Purbeck Limestone of Langton, near Swanage (*Doratorhynchus validus*), by Prof. H. G. Seeley, F.L.S. The author obtained these specimens (a lower jaw and a vertebra) in 1868, and described them in the "Index to the Secondary Reptilia, &c., in the Woodwardian Museum in 1869 as *Pterodactylus macrurus*. He now believed that the Ornithosaurian vertebrae from the Cambridge Greensand, which have been regarded as caudal, are really cervical, and therefore that the analogy on which this vertebra was determined to be caudal cannot be sustained; he proposed to adopt for his species Prof. Owen's specific name *validus*, given in 1870 to a phalange of the wing finger from the same deposit. The vertebra is five inches long, relatively less expanded at the ends than similar vertebrae from the Cambridge Greensand, has strong zygapophysial processes and a minute pneumatic foramen. The lower jaw, as preserved, is $12\frac{1}{4}$ inches long. The symphysis extends for five inches, and is about one-eighth of an inch deep, and divided into two parts by a deep median groove. The teeth extended for eight inches along the jaw, and about seven or eight occurred in the space of an inch. They were directed outward in front, and became vertical behind. Where the rami are fractured behind they measure $2\frac{1}{4}$ inches from side to side.

Zoological Society, June 1.—Dr. Günther, F.R.S., V.P., in the chair.—Mr. Sclater made some remarks on the most noticeable of the animals seen by him during a recent visit to the Zoological Gardens of Rotterdam, the Hague, Amsterdam, Antwerp, and Ghent.—Mr. Sclater exhibited the typical specimen of his *Centropsar mirus* (P.Z.S. 1874, p. 175, Pl. xxvi.), and stated that on a more careful examination of it he had come to the conclusion that it was a made-up skin.—Mr. Edwin Ward exhibited the two lower canine teeth of a Hippopotamus from St. Lucia Bay, S. Africa, obtained by the Hon. C. Ellis, and supposed to be the largest ever obtained. They measured from end to end round the outer curve thirty inches.—Mr. G. E. Dobson read a paper on the genus of Insectivorous Bats named *Chalinolobus*, by Dr. Peters, and gave the descriptions of several new or little known species of this group, which he proposed to divide into two sections, *Chalinolobus* and *Glauconycteris*.—A communication was read from Mr. Henry Adams, wherein he gave the descriptions of two new land shells. These were proposed to be named respectively *Euryveratera farafanga*, found on a sandy plain in the S.W. of Madagascar, near the Farafanga River, and *Pupinopsis angasi*, from the Louisiade Archipelago, in the S.E. of New Guinea.—Mr. G. French Angas communicated the descriptions of three new species of shells from Australia, proposed to be called *Helix forrestiana*, *H. broughami*, and *Euryta brazieri*.—Mr. A. G. Butler read a paper describing several new species of Indian Heterocerous Lepidoptera.—A communication was read from Rev. O. Pickard-Cambridge on some new species of spiders of the genus *Erigone* from North America.—Mr. Herbert Druce communicated a list of the collection of Diurnal Lepidoptera made by Mr. J. J. Monteiro in Angola, with descriptions of some new species.—Mr. P. L. Sclater read a paper on several rare or little known mammals now or lately living in the Society's collection, amongst which was specially noticed an apparently new species of Mungiac, proposed to be called *Cervulus micrurus*.—A communication was read from Mr. E. L. Layard, containing notes on the birds observed by him in the Fiji Islands.—Lieut.-Col. R. H. Beddome read a paper in which he gave the descriptions of some new operculated land shells from Southern India and Ceylon. The discoveries of true *Diplomatina* in Southern India and of *Nicida* in Ceylon were alluded to as being of special interest.—Sir Victor Brooke, Bart., read some supplementary notes on African Buffaloes, in the course of which he stated that he had come to the conclusion that the West African Buffalo (*Bos pumilus*) was distinct from the East African form (*Bos equinoctialis*).—Mr. C. G. Danford exhibited specimens of the Wild Goat (*Capro aegagrus*, Gm.), from Asia Minor, and read some notes on the distribution, habits, &c., of that species.

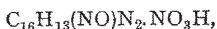
Royal Microscopical Society, June 2.—Mr. Charles Brooke, F.R.S., vice-president, in the chair.—Mr. J. W. Stephenson exhibited and explained a simple method which he had devised for enabling any person to measure the angle of aperture of an objective, and a number of copies of the engraved

scale employed for the purpose were placed upon the table for distribution amongst the Fellows.—Mr. Charles Stewart gave an interesting account of the results of an examination into the minute structure of *Bucephalus polymorphus*, and illustrated his observations by drawings.—Mr. Slack then at some length explained the use and management of Mr. Wenham's reflex illuminator, and pointed out the means of obviating the difficulties which were found to arise when it was used in connection with objectives of large angles.

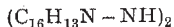
Victoria (Philosophical) Institute, June 7.—The President in the chair. This was the ninth annual meeting, and the report showed that since last year the number of subscribing members had increased by 116, and now reached 601, two-thirds of whom were country and foreign members. Papers had been read during the session by Professors H. A. Nicholson, T. R. Birks, J. Challis, and others; and the outside demand for the publications had doubled each succeeding year since 1871. The report having been adopted, the annual address was then delivered by the Rev. Robert Main, Radcliffe Observer. The address was of three sections:—1. A sketch of most important discoveries in physics, chiefly astronomical, which have been made during the last few years. 2. A slight review of some of the assumptions in two recent publications, namely, Mill's "Essay on Theism," and Strauss's "Old and New Faith." 3. A consideration of the Atomic Philosophy in connection with Dr. Tyndall's Belfast address.

BERLIN

German Chemical Society, May 24.—W. Petrieff described the products of the decomposition by heat of dibromomalonic acid, namely an oil, C_2HBr_3 , and dibromacetic acid.—W. Wisth and A. Landolt have transformed bromaniline into parabromobenzoic acid, by converting it into the corresponding mustard oil $C_6H_4Br-N=C=S$, and transforming this into the nitrate $C_6H_4Br-C \equiv N$.—A. Weber has studied mononitrodimethylaniline and monobromodimethylaniline.—M. Nencky has transformed indol into nitrosoindol-nitrate



which sulphide ammonium converts into hydrazindol



—H. Limpricht retracts his opinion of the existence of four isomeric monobromobenzenesulphonic acids, the fourth being identical with that obtained from sulphanic acid.—F. Fittica, however, still insists upon the existence of four mononitrobenzoic acids, but makes it more improbable than ever by stating that the fourth isomeride is transformed by tin and hydrochloric acid into the body $C_{12}H_{12}N_2O$!—H. Hassenpflug has been able to convert nitrobenzene into paranitrobenzoic acid, by treating it with peroxide of manganese and sulphuric acid.—L. Klippert has studied the action of fluoride of silicium on ethylate of sodium. It results in the formation of sodium fluoride, silicium fluoride, and silicic ether.

VIENNA

Imperial Academy of Sciences, Jan. 7.—Prof. K. Puschl presented a memoir on the changes in the volume of caoutchouc by heat. The author gives as the results of his experiments, (1) that the density of caoutchouc reaches a minimum at a certain temperature; (2) that the temperature of this minimum changes according to the mechanical tension, and is the lower the greater the tension; (3) that with caoutchouc upon which no tension is applied, the temperature of the minimum of density is higher than the ordinary temperature; (4) that the reverse of this is the case with caoutchouc under strong tension.—Director von Littrow then made some communications regarding Borrelly's comet.—Prof. E. Suess presented a paper on the volcano Venda, near Padua.—Prof. Dr. Winckler then read a treatise on the integration of two linear differential equations.—Dr. Doelter gave a preliminary account of the geological nature of the Pontic islands.—Dr. von Littrow communicated a paper on the relative capacity of different soils for conducting heat and the corresponding influence of water.—Dr. Lippmann presented a memoir on the action of iodine upon mercuric oxide. The author shows that whenever a hot solution of iodine acts upon mercuric oxide, an iodate always is formed besides the mercuric iodide, and that it is indifferent whether the solution be made in alcohol, benzene, chloride of carbon, butylic alcohol, acetone, or water.—Prof. Schlesinger then presented a memoir on a metallic barometer without mercury.

PARIS

Academy of Sciences, May 31.—M. Frémy in the chair.—The following papers were read:—Researches on sulphides, by M. A. Cahours.—A note by M. L. Saltel, on left curves.—On the alterations in the level of the Seine in the environs of Paris, from November 1874 to May 1875, by M. A. Gérardin.—On a new method of preparing highly concentrated formic acid, by means of anhydrous oxalic acid and a polyatomic alcohol, by M. Lorin.—A note by M. J. Riban, on the isomerism of the chlorohydrates $C_{10}H_{16} \cdot HCl$.—Researches by M. E. Faivre, on the functions of the front ganglion of *Dytiscus marginalis*.—On the organisation and the natural classification of the Acarina of the Gamasea family, by M. Megnin.—Experimental researches on the toxic properties of putrefied blood, by M. V. Feltz.—On chronic aortitis, by M. P. Jousset.—On a new method of treating rheumatism of the brain by chloral hydrate, by M. E. Bouchut.—On the improbability of an interior sea or lake having existed formerly on the Sahara desert, by M. Pomef.—On the influence of drought upon *Cryptogamæ*, by M. E. Robert.—On the origin of Phylloxera at Cognac, by M. Mouillefert.—A note by MM. Ph. Zoeller and A. Grete, on the use of xanthate of potash against Phylloxera.—A note by M. Julien, on the presence of Phylloxera in the Auvergne.—A letter from M. Ville-dieu, on the influence of moisture upon Phylloxera.—A letter from M. Reymonet, on the possibility of grafting vines on little trees the roots of which cannot serve as food for Phylloxera.—A letter from M. F. Moll, on the use of a mixture of soft soap and dead oil (as used for railway sleepers) against the larvæ of cockchafers and snails.—A number of communications of minor interest were then read; most of them were competition papers for the various prizes the Academy distributes annually.—Researches on the rate of magnetisation and demagnetisation of wrought-iron, steel and cast-iron, by M. M. Deprez.—A note by MM. V. de Luynes and A. Girard, on the rotatory power of crystallised sugar and on the polarimetric analysis of various sugars.—Researches on the emissive power of leaves, by M. Maquenne.—Remarks by M. A. Bechamp, concerning a note by M. Gayon, read at the meeting of April 19 last, on the spontaneous alterations in eggs.—A note by M. A. Gautier, on the production of blood fibrine.—A note by M. Grimaud de Caux, on a case of psittosis.

BOOKS AND PAMPHLETS RECEIVED

AMERICAN.—Report of the Vertebrate Fossils discovered in New Mexico; Prof. E. D. Cope (Washington).—Eighth Annual Report of the Trustees of the Peabody Museum.—Astronomical and Meteorological Observations made during the Year 1872 at the United States Naval Observatory; Rear-Admiral B. F. Sands, U.S.N. (Washington).—Progress Report upon Geographical and Geological Explorations and Surveys West of the 100th Meridian in 1872, under the direction of Brigadier-General A. A. Humphreys, by First Lieut. George M. Wheeler; with Topographical Maps (Washington).—Religion and Science in their relation to Philosophy; Charles W. Shields, D.D. (New York: Scribner, Armstrong, and Co.).—Seventh Annual Report on the Noxious, Beneficial, and other Insects of the State of Missouri; Charles V. Riley.—Bulletin of the U.S. Geological and Geographical Survey of the Territories. No. 3, Second Series (Washington).—U.S. Geological and Geographical Survey of the Territory of Colorado; F. V. Hayden (Washington).—Third Annual Report of the Board of Managers of the Zoological Society of Philadelphia, U.S.—On the Devonian Trilobites and Molluscs of Ereré, Province of Pará, Brazil; Prof. Ch. Fred. Hartt and R. Rathbun.

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