results of great value.—A note by M. E. Liais on the spectrum analysis of the zodiacal light and on the corona of eclipses was read. The author states that he has found that the spectrum of the zodiacal light is continuous, and calls attention to his previous observations on the solar corona, the nature of which he claims to have established in 1858.—MM. Becquerel presented a note on the temperature of soil observed at the Jardin des Plantes, at the Observatory, and at Montsouris during December 1871 at 10 centimetres below the surface.—M. I. Pierre read a note on the simultaneous distillation of water and iodide of butyle, in which he stated that iodide of butyle boils under water at 204·8° F., rising through the water in drops with a bubble of vapour attached to each, and that during this ebullition the two liquids pass over in the proportion of 21 water to 79 iodide. Iodide of ethyle behaves similarly.—M. H. Sainte-Claire Deville presented a report on a memoir by M. Grüner on the action of oxide of carbon upon iron and its oxides.—A note by M. A. Rosenstiehl, on a method of separating the two isomeric toluidines, was read.—M. P. Thenard presented a note by M. A. Houzeau on the preparation of ozone in a concentrated state.—The discussion on the subject of heterogenesis, commenced at the last meeting, was continued in two notes by MM. Balard and Fremy, and in a paper by M. Pasteur on the nature and origin of ferments.—M. J. de Seynes also presented a note in reply to a passage in M. Trécul's memoir.—M. Monnier read a paper on the functions of the respiratory organs in aquatic larvæ.—M. C. Bernard presented a memoir by MM. A. Estor and C. Saint-Pierre on the analysis of the gases of the blood; and M. Brongniart communicated a note by M. de Saporta on the fossil plants of the Jurassic epoch.

VIENNA

I. R. Geological Institution, January 16.—M. von Hauer presented the third number of the "Memoirs of the Geological Institution," containing a monograph of the Echinoderms of the more recent tertiary deposits of the Austro-Hungarian empire, by Dr. G. Laube.—M. G. Tschermak explained the contents of a memoir sent by Dr. C. W. C. Fuchs, from Heidelberg, for the "Mineralogische Mittheilungen." The author details the chemical processes which take place in lavas at the moment of the eruption, and by the observation of broken crystals in the lava, concludes that the melted masses, some time before the eruption, must have had a higher temperature than in the moment of eruption.—M. Th. Fuchs demonstrated some detailed sections of the upper tertiary strata in the neighbourhood of Vienna. They seem to prove that the marine sands appear in some localities below, in others above, the Leitha limestone.—M. Ch. Paul, on the upper tertiary strata of Sclavonia. They are divided into three different members, corresponding to the three great divisions of the strata of the Vienna basin. The lowest division, the marine beds, consists chiefly of calcareous strata, the Leithakalk. The middle division, the sarmatic beds, is formed of a large mass of sandstones which are overlain by white sands of fresh water origin. The congerian beds, finally, are separated into two members—the lower containing large layers of lignite, and characterised by *Unio maximus*, *Paludina Sadleri*, and other species of this genus with smooth shells; and the upper, without lignites and containing an entirely different fauna, also with many species of *Paludina* with ribbed and ornamented shells.—Fr. von Hauer, on new geological discoveries in Eastern Transylvania, made by F. Herbich. Between Barsyek, on the Moldavian frontier, and the region south of Kronstadt, a large range of mountains consisting chiefly of calcareous strata is developed, which had formerly been regarded as belonging almost entirely to the Jurassic formation. The recent investigations of Mr. Herbich, on the contrary, show that here are developed almost all the particular types of Alpine formations of mesozoic ages. The Trias is represented by the Wurfenslater and Guttenstein limestone, which are overlain by red Hallstatt marbles, with *Ammonites Metternichii*, &c.; the Lias by the Grosten and Adneth strata, &c. It is very remarkable that some of these strata—for instance, the Hallstatt marbles—are entirely wanting in the whole range of the Northern Carpathians, which connect the Transylvanian mountains with the Eastern Alps.

BOOKS RECEIVED

ENGLISH.—Zanzibar; City, Island, and Coast: Capt. R. F. Burton. 2 vols. (Tinsley Brothers).—Queen Charlotte Islands: F. Poole, edited by J. Lyndon (Hurst and Blackett).—Chemical Notes for the Lecture Room, 3rd edition: Thos. Wood (Longmans).—The Differential Calculus: F. Wilson (Longmans).—The Pipits: by the Author of Caw-Caw (Glasgow, J. Maclehose).

FOREIGN.—(Through Williams and Norgate.)—Die Krankheiten des Linsensystems: Dr. Max Salomon.—Lehrbuch der anorganischen Chemie, 2te Abtheilung: Dr. Ph. Th. Büchner.—Jahresbericht über die Fortschritte der Chemie für 1869. Heft 2: Ad. Stricker.—Zoologische Mittheilungen, Band 1: Dr. L. W. Schaufuss.—Thesaurus Ornithologiæ, Band 1: Dr. C. G. Giebel.—Botanische Untersuchungen, 1: Dr. N. J. C. Müller.—Geschichte der Himmelskunde: Dr. J. H. von Mädler.—Thesaurus Literaturæ Botanicæ, Fas. 1: G. A. Pritzel.—Die Foraminiferen des schweiz. Jura: Dr. J. Kübler.

DIARY

THURSDAY, FEBRUARY 1.

ROYAL SOCIETY, at 8.30.—On the Lunar Variations of Magnetic Declination at Bombay: C. Chambers, F.R.S.—On a Possible Ultra-Solar Spectroscopic Phenomenon: Prof. Piazzi Smyth, F.R.S.—On the Normal Paraffins: C. Schorlemmer, F.R.S.

SOCIETY OF ANTIQUARIES, 8.30.—On a Camp opposite Clifton on Leigh Down, with Remarks on Vitrified Forts: Rev. H. M. Scarth.

CHEMICAL SOCIETY, at 8.—On the Relation between the Atomic Theory and the Condensed Symbolic Expressions of Facts and Changes (Dissected Formulæ): Dr. C. R. A. Wright.

LINNEAN SOCIETY, at 8.—On the Classification and Geographical Distributions of Compositæ: The President.

FRIDAY, FEBRUARY 2.

GEOLOGISTS' ASSOCIATION, at 7.—Special General Meeting.—On the Chloritic Marl Deposits of Cambridge: Rev. T. G. Bonney, F.G.S.

ARCHÆOLOGICAL INSTITUTE, at 8.

ROYAL INSTITUTION at 9.—On the Identity of Light and Radiant Heat: Prof. Tyndall, F.R.S.

SATURDAY, FEBRUARY 3.

ROYAL INSTITUTION, at 3.—On the Theatre in Shakespeare's Time: Wm. B. Donne.

MONDAY, FEBRUARY 5.

ROYAL INSTITUTION, at 2.—General Monthly Meeting.

ENTOMOLOGICAL SOCIETY, at 7.

LONDON INSTITUTION, at 4.—Elementary Chemistry: Prof. Odling, F.R.S.

ANTHROPOLOGICAL INSTITUTE, at 8.—Anniversary Meeting.—On Hereditary Transmission: Geo. Harris.—Strictures on Darwinism: H. H. Howorth.—The Wallons: Dr. Charnock and Dr. Carter Blake.

TUESDAY, FEBRUARY 6.

ROYAL INSTITUTION, at 3.—On the Circulatory and Nervous Systems: Dr. W. Rutherford, F.R.S.E.

ZOOLOGICAL SOCIETY, at 9.—Contributions to a General History of the Spongiadæ, Part I: Dr. Bowerbank.—Notes on *Rhinoceros sumatrensis*, with a photograph from life: Dr. John Anderson.

SOCIETY OF BIBLICAL ARCHÆOLOGY, at 8.30.—On an Inscription in Hebrew or Ancient Phœnician Characters, discovered at Siloam, of the Age of the Kings of Juda: Ch. Clermont Ganneau.

WEDNESDAY, FEBRUARY 7.

GEOLOGICAL SOCIETY, at 8.—On the Geology of the Neighbourhood of Malaga: M. D. M. d'Orueta.—On the River-Courses of England and Wales: Prof. A. C. Ramsay, F.R.S.—Migrations of the Graptolites: Dr. H. Alleyne Nicholson, F.R.S.E.

SOCIETY OF ARTS, at 8.—On the Forests of England, their Restoration, and Scientific Management: T. W. Webber.

MICROSCOPICAL SOCIETY, at 8.—Anniversary Meeting.

PHARMACEUTICAL SOCIETY, at 8.

THURSDAY, FEBRUARY 8.

ROYAL INSTITUTION, at 3.—On the Chemistry of Alkalies and Alkali Manufacture; Prof. Odling, F.R.S.

ROYAL SOCIETY, at 8.30.

MATHEMATICAL SOCIETY, at 8.—On the Factors of the Differences of Powers, with especial reference to a theorem of Fermat's: Mr. W. Barrett Davis.—On an Algebraical Form and the Geometry of its dual connection connection with a polygon, plane, or spherical: Mr. T. Cotterill.

SOCIETY OF ANTIQUARIES, at 8.30.

CONTENTS

ERRATA.—P. 243, col. 2, line 6 from top, prefix "vertical" to "band;" line 10, for "table" read "tall."