

sloped like the tunnel, and like it was covered with *débris*. At the lower side they were about 60 ft. below their landing-place, and therefore about 240 ft. beneath the surface. The entire roof and walls of this cavern were covered with splendid stalagmitic deposits. From the roof were hung fine stalactites, whilst the sides were covered with almost every conceivable form of deposited carbonate of lime. In some places it was smooth and white as marble, in other places like frosted silver, whilst the rougher portions of the rock were clothed with all sorts of fantastic shapes glistening with moisture. From this cavern no opening of any length or depth was found save the one by which the party had entered it. There can be no doubt, the author believes, that this chasm has been formed by the chemical action of carbonic acid in water, and that it has attacked this particular spot either from the unusual softness of the rock originally situated here, or because there was here a joint or shrinkage in the strata. There is nothing, however, in the position of Elden Hole to lead one to suppose that any stream has ever flowed through it; no signs of such a state of things appear anywhere around. It is not related to any valley or ravine, or to any running water, and there is, as observed, an absence of any well-defined exit for water at the bottom. No mechanical action of a flowing stream can therefore have assisted the process of enlargement. The author thinks it must be due to the gradual silent solvent properties of rain-water falling on the surface, and escaping through jointings and insignificant channels in the hard rocks below. Whether the excavation took place from above or below is uncertain.—Certain lines observed in snow crystals, by Arthur W. Waters, F.G.S.

GLASGOW

Geological Society, Jan. 14.—Mr. John Young, F.G.S., vice-president, in the chair.—Mr. D. Bell read a paper on the geology of Switzerland, embodying some observations made during a recent visit to that country.

Philosophical Society, Dec. 2.—Physical Section.—The following papers were read:—On the absence of air and water from the moon, by Mr. Francis Napier.—Experiments on fluid jets and induced currents, by Mr. Alex. Morton.

Dec. 16.—On an apparatus for testing the lubricating powers of various liquids, showing some hitherto unrecognised facts at variance with the commonly received laws of friction, by Mr. R. D. Napier.—On the effect of Loch Katrine water on various metals, by Mr. Jas. R. Napier, F.R.S.

PARIS

Academy of Sciences, Feb. 8.—M. M. Frémy in the chair.—The following papers were read:—A remark by M. Puiseux on M. Genocchi's paper read at the last meeting with regard to the existence of the integral in equations with partial derivatives.—A letter from M. Janssen, dated Kompira-Yama (Japan), Dec. 10, 1874, describing the general results of the observations of the Transit of Venus. The first part of the letter shows that the party of observers suffered much from bad weather during their installation at Kompira-Yama, near Nagasaki. During a heavy gale one of the equatorials was completely destroyed, the telescope and micrometer broken, but their outfit was excellent, and before the day of the transit arrived they were able to repair all the damage done. Both the first outer and inner contacts, as well as the second inner one, were successfully observed, and only the last outer one missed through clouds. No black drop appeared at the sun's limb, although M. Janssen remarks that a considerable time elapsed before the moment when the first inner contact appeared geometrically perfect and the re-appearance of a fine line of sunlight beyond the disc of Venus; this M. Janssen ascribes to the planet's atmosphere.—On the general theorems of the displacement of a plane figure on its plane, by M. Chasles.—A note, accompanied by the presentation of an autograph mathematical treatise, by M. Faye.—On the magnetisation of steel rods provided with armatures, by M. J. Jamin.—A note by M. Chevreul on M. Menier's paper, read at the last meeting, on the pulverisation of manures and the best means to increase the fertility of soils.—A memoir by M. Des Cloiseaux, on the bi-refractive and characteristic optical properties of the four principal triclinic feldspars, and a process to distinguish them immediately from each other; four feldspars the author treats of are albite, oligoclase, labradorite, and anorthite.—On an easy method to determine the latitude of a place without instruments and with sufficient correctness, by M. d'Avout; the method is

based on the observations of the shadows of two points situated in a vertical at known distances, projected upon a horizontal plane, the observations being made both before and after the sun's passage through the meridian.—On the fertilisation of Basidiomycetes, by M. P. van Tieghem.—A note on M. Mendeleef's new balance, by M. Salleron.—On rolling-curves obtained by photography, by M. Huet; an ingenious process to note down permanently the curves described by ships rolling in heavy seas.—On a new electro-magnet, formed by concentric tubes separated by layers of conducting wire, by M. J. Camacho.—On the place to be given to Gymnosperms in natural classification, by M. L. Lerolle.—Several communications on Phylloxera, by MM. Lichtenstein, Boutin, Hemmerich, and others.—A note by M. C. Guérin, on an electric pile similar to Bunsen's, but in which zinc would be replaced by iron.—A note by M. G. Peyras, on the use of fumigations to combat murrains.—A letter from M. Fua, with reference to his former communications on the means to prevent explosions in coal-pits.—A note by M. Houzé de l'Aulnoit, on articular immobilisation applied to the dressings of the amputated.—MM. Henry and Baillaud communicated their observations of planet (141), made at the Paris Observatory.—On the existence of integrals of any system of differential equations, by M. C. Méray.—A note on his paper, read at the last meeting, on the molecular equilibrium of a solution of chrome alum, by M. Lecoq de Boisbaudran.—On the action of hydrate of baryta upon certain mineral and organic compounds contained in beet-products, by M. P. Lagrange.—On so-called *rooty* beetroot, by M. C. Violette.—On the peripheral nervous system of marine Nematodea, by M. A. Villot.—An account of experiments made by M. Philipeau, showing that the paps extirpated from young pigs will not regenerate.—General Morin presented to the Academy a new part of the *Revue d'Artillerie*, published by order of the War Minister, and made some remarks on the contents.

BOOKS AND PAMPHLETS RECEIVED

BRITISH.—Marsden's Numismata Orientalia: E. Thomas, F.R.S. (Trübner).—Anleitung zu Wissenschaftlichen Beobachtungen auf Reisen: Dr. G. Neumayer (Trübner).—Number; a Link between Divine Intelligence and Human: Charles Girdlestone, M.A. (Longmans).—Weinhold's Introduction to Experimental Physics. Translated and edited by Benj. Loewy, F.R.S. (Longmans).—Heredity and Hybridism: Edward W. Cox, S.L. (Longmans).—The Cone and its Sections treated Geometrically: S. A. Renshaw (Hamilton, Adams, and Co.).—Statistical Society Almanack for 1875 (E. Stanford).—Animal Physiology; the Structure and Functions of the Human Body: John Cleland, M.D., F.R.S. (Wm. Collins).—Physical Geography: John Young, M.D., L.R.C.S. (Edin.), F.G.S., F.R.S.E. (Wm. Collins).—Proceedings of the Literary and Philosophical Society of Liverpool.—Six Months among the Palm Groves, Coral Reefs, and Volcanoes of the Sandwich Islands: Isabella L. Bird (Murray).—Humboldt's Natur- und Reisebilder: C. A. Buchheim, Ph.D., F.C.P. (F. Norgate).—An Introduction to Human Anatomy, including the Anatomy of the Tissues: Wm. Turner, M.B. (A. and C. Black).—Lessons in Elementary Mechanics: Philip Magnus, B.Sc., B.A. (Longmans).—Fungi: their Nature, Influence, and Uses: M. C. Cooke, M.A., LL.D. Edited by the Rev. M. J. Berkeley, M.A., F.L.S. (Henry S. King and Co.)

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