Magazine informs us, is preparing for a second arctic voyage during the season to Novaya Zemlya. He intends to launch provision-laden balloons in various directions in the hope of succouring the Austro-Hungarian *Tegethoff* expedition.

WE learn from the *Geographical Magazine* that the surveys in connection with the European measurement of a degree have been resumed, under the direction of Col. Granhal of the Austrian and General de Vecchi of the Italian Engineers, who are now measuring a base-line in the neighbourhood of Udine.

ON Saturday last the foundation-stone of a fine new museum in connection with the Torquay Natural History Society was laid by the president, the Rev. T. R. R. Stebbing. The Society was founded in 1844, by a few gentlemen of Torquay, among whom was Mr. Pengelly, and has had a most prosperous career in all respects. The contents of the Museum, wholly Devonian, are of high scientific value. Among the contents of the bottle placed in the cavity of the foundation-stone, was a copy of the last number of NATURE, containing a portrait of Mr. Darwin.

AN extract from a letter by Mr. Dunn, the geologist, now on a special exploring expedition to the Transvaal, published in the *Cape Argus* of May 5, gives a description of a thunder and hail-storm which he experienced at Pietermaritzburg, on April 17:—"Hail-stones, liberally mingled with great masses of ice of very irregular forms, poured down with great violence. The hail-stones were seldom less than 1 in. in diameter; the average was from 1½in. to 2 in. in diameter. These were of very regular spherical form, and consisted of a nucleus of white snow, with an envelope of hard transparent ice. Sometimes they presented, when broken through, a concentric arrangement of zones, alternately white and opaque and transparent. The irregular masses were formed of a nucleus generally longer in one direction than the others, from 2 in. to 4 in. in diameter; projecting all over were stalactites, each one about the thickness of a little finger, and presenting, when broken across, an agate-like structure, as though segregation had built them up. Of these masses I weighed a few with the following results:—Three weighed over 8 oz., two over 6 oz., and one over 4 oz. The mischief done will not be covered by 2,000*l.* or anything like that sum."

M. W. DE FONVIELLE made a balloon ascent on May 27, in the "Guillaume Tell." He ascertained the existence of an aërial stream 2,000 ft. thick, blowing with a velocity of 4 yards per second, in a south-east direction. From that current up to 10,000 ft. the air was running in a southerly direction, with nearly the same velocity. The temperature was only 42° F. at 8,000 ft., and rapidly increased when nearing the earth, where it was 77°. The lower part of the northern current for 1,800 ft. was limpid air. At an immense height were floating strata of cirrhus, almost parallel. The landing took place after having run 42 miles in only 40 minutes. Several experiments on sound were made, and others will be made shortly.

THE additions to the Zoological Society's Gardens during the last week include a Great Anteater (*Myrmecophaga jubata*) from the Argentine Republic, presented by Mr. J. Mendez; a Temminck's Snapper (*Macroclemmys temmincki*), a North American Trionyx (*Trionyx ferox*) and other Chelonia, presented by the Smithsonian Institution of Washington; a Red Deer (*Cervus elaphus*), European, presented by Lord H. Russell; a Vervet Monkey (*Cercopithecus lalandii*) from West Africa, presented by Commander J. H. Smith; a Pig-tailed Monkey (*Macacus nemestrinus*) from Java, presented by Mr. J. E. Kincaid; a Griffon Vulture (*Gyps fulvus*), European, presented by Mr. S. Reid; a Stanley Crane (*Tetrapteryx paradisea*) from South Africa, purchased.

SCIENTIFIC SERIALS

THE current number of the *Quarterly Journal of Microscopic Science* contains several articles of interest, most being condensed accounts of longer papers from British and foreign sources. The first memoir is by Mr. Francis Darwin, entitled "Contributions to the Anatomy of the Sympathetic Ganglia of the Bladder in their Relation to the Vascular System." The author's object is to show that there is a reflex mechanism effected by peripheral ganglion cells, through which the coats of the arteries are placed under nervous control, independent of the central nervous system; so that the statement of Cohnheim to the contrary in his "New Researches on Inflammation" does not hold. Mr. Darwin illustrates his views by two excellent plates, which demonstrate that in the bladder at least the ganglionic nerve fibre or fibres (for there are generally two) which accompany each small artery, send branches which are partly distributed to the coats of the vessel, and are partly lost on its outer covering.—This paper is followed by a further *résumé* of recent observations on the Gonidia question, by Mr. W. Archer, which commences with the adverse comments of Fries and J. Müller on Schweindener's peculiar theory respecting the relation borne by the gonidia to the lichen-thallus, and is followed by an abstract of the researches of Bornet in the same direction, but favourable to the parasitic hypothesis.—Mr. W. Hatchett Jackson proposes a new method for preserving magenta-stained microscopic sections which he has found successful. Magenta being a trianime, its triacid salts colourless, and nearly all of them soluble in most preservative solutions, it was desirable to obtain a stable mon-acid salt and a suitable preservative fluid. These conditions are fulfilled by employing as the staining agent the monotannate of magenta, and as the preservative fluid syrup, with 3 or 4 per cent. of calcium chloride. Specimens prepared and mounted by this method have been kept for more than a year, the sugar making them very transparent.—A translation is given by Mr. Perceval Wright of part of Prof. Haeckel's now well-known Gastraea theory, the phylogenetic classification of the animal kingdom, and the homology of the germ lamina. The gastraea theory, which is very similar to one published shortly before it by Mr. E. Ray Lankester, divides the animal kingdom into two chief divisions, the Protozoa and the Metazoa, the former of which never form germ laminæ, never possess a true intestinal canal, and, especially, never develop a differentiated tissue; whilst the latter always form two primary germ laminæ, always possess a true intestinal canal, and always develope differentiated tissues. The Metazoa are further divisible into the Zoophyta (or Coelenterata) and the Bilateria (or bilaterally symmetrical animals).—The last article in the number is an account of Dr. Cunningham's report on the microscopical examination of air, from experiments prosecuted at Calcutta, undertaken with the view of throwing light on the origin of cholera and other eastern epidemics.

Journal of the Chemical Society, April.—This part contains the following papers:—On the products of decomposition of castor oil. No. I. Sebacic acid, by E. Neison. The author prepares the acid by mixing equal weights of castor oil and sodium hydrate with sufficient water to form a pasty mass, and then heating this mass till it solidifies. The product thus obtained is quickly distilled in a copper flask (200 grms. at a charge), the residue dissolved out of the flask by boiling water, and the sebacic acid precipitated from the solution by hydrochloric acid, the precise method of precipitation being varied according to the stage to which the distillation has been carried. The yield is small, 1 kilog. of oil giving only about 50 grms. of the acid. Analyses of numerous salts are given.—Action of benzyl chloride on laurel camphor (*Laurus camphora*). Preliminary notice, by Donato Tommasi. The reaction is performed in presence of powdered zinc, and the chief product appears to be toluene.—On the action of trichloracetyl chloride upon amines. I. Action upon aniline, by D. Tommasi and R. Meldola. The result of the reaction is phenyl-trichloracetamide $N\begin{cases} C_6H_5 \\ C_2Cl_3O \\ H \end{cases}$. This by treatment with fuming nitric acid yields a dinitro derivative $N\begin{cases} C_6H_3(NO_3)_2 \\ C_2Cl_3O \\ H \end{cases}$.—Isomeric terpenes and their derivatives. Part III. On the essential oils of wormwood and citronella, by C. R. A. Wright. The author has studied the action of zinc chloride, and of phosphorus pentasulphide upon absinthol and citronellol; also the

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action of phosphorus pentachloride and of bromine on this latter substance. The cymene obtained from absinthol and citronellol yields terephthalic and acetic acids on oxidation.—On the perbromates. Preliminary notice, by M. M. Pattison Muir. The author has undertaken the preparation of a number of these salts.—On two coals from Cape Breton, their cokes and ashes, with some comparative analyses, by Henry How. The remainder of the journal is devoted to abstracts from British and foreign journals.

THE *Geographical Magazine*, June.—This number opens with a valuable article by Mr. C. R. Markham, on the Railways of Peru.—The longest and most important paper, from a scientific point of view, is by Mr. H. P. Malet on Bone Caves, in which the author's conclusions differ in several points from those generally accepted.—Other articles are on Singapore, and on the British colonial wool trade, by Mr. W. Robinson.—In connection with the American Geographical Society, letters are given from Capt. Buddington, and three other officers of the *Polaris* expedition, in which all but Buddington agree in stating that had Hall lived the ship would have pushed much further north, and that there would be no difficulty in some future properly equipped expedition doing so.

THE *Geological Magazine*, June.—The original papers in this number are the following:—Description of *Cycloptychius*, a coal measure fish, by Dr. R. H. Traquair, with a plate; Physical changes preceding deposition of cretaceous strata, by C. E. de Rance, F.G.S.; On *Columnopora*, a new tabulated coral, by Prof. H. A. Nicholson, F.R.S.E., with a woodcut; Glaciation of West Somerset, by W. C. Lucy, F.G.S.; On the South of England ice-sheet, by James Croll, of the Geological Survey of Scotland; On *Polypora tuberculata* in Scotland, by Prof. J. Young, M.D., and Mr. John Young, Hunterian Museum, Glasgow; Landslips and Sinkings in Cheshire, by J. M.

Journal of the Society of Telegraphic Engineers, No 5.—The principal original papers in this part are the following:—On a method of testing short lengths of highly insulated wire in submarine cables, by Prof. Fleeming Jenkin, F.R.S.; On the mechanical testing of telegraph wires, by R. S. Culley; On the strength of cylindrical wrought-iron telegraph poles, by F. C. Webb; On the percentage of averages, by W. H. Preeece; On lightning protectors, by John Fletcher; On equations connected with telegraph wire, by H. Mallock; Tables to facilitate the calculation of strains of overhead line wires, by Robert Sabine.

Transactions of the Glasgow Society of Field Naturalists. Part II. Session 1873-74.—This Society was established in 1871, and seems to be in a prosperous condition so far as members are concerned, and, to judge from the brief reports of the meetings, is doing good work. The Society meets all the year over, specimens being exhibited and papers read at all the meetings; the papers contain the results of observation as well as occasionally of speculation, and show that the members can observe and think to good purpose. In summer the Society makes excursions to various places in Scotland, an account of the results of these excursions being read at the meetings. The paper of greatest novelty in this publication is Contributions to a knowledge of the Scotch Cynipidæ, by Mr. P. Cameron.

Astronomische Nachrichten, Nos. 1,989, 1,990.—In these numbers is contained a long paper by J. G. Galle on a method of calculating the paths of bright meteors, and he gives the orbits of the meteors of July 11 and 19, 1873. The elements of Planet (127) are given by Henry Renan. The elements of Coggia's comet are given by A. C. Dunér as follows:—

$$T = 1874,\ \text{July}\ 20{\cdot}1670\ \text{Berlin time}$$
$$\omega = 150^\circ\ 3'\ 16''$$
$$\Omega = 123^\circ\ 1'\ 55''$$
$$i = 72^\circ\ 52'\ 53''$$
$$\log.\ q = 9{\cdot}86894$$

The ephemeris for this comet is added, going up to Aug. 11.

Reale Istituto Lombardo di Scienze e Lettere. Rendiconti: t. vii. Fasc. v.—In this number M. Celoria has a note On the extremes of temperature observed in Milan since the year 1763. It appears from his table that the minimum temperatures of the several years occurred 63 times in January, 27 in December, 19 in February, once in March (1785), and once in November (1866). The maximum temperatures occurred 62 times in July, 33 in August, 13 in June, once in May (1786). It is further observed that the minimum temperature in Milan is, on an average, $-9^\circ{\cdot}57$ (oscillating between $-2^\circ{\cdot}8$ and $-17^\circ{\cdot}2$); while the maximum temperature is, on an average, $34^\circ{\cdot}38$ (oscillating between $31^\circ{\cdot}5$ and $37^\circ{\cdot}7$). The average mutability of temperature is thus $43^\circ{\cdot}9$. The author also furnishes some data as to days of frost at Milan in 1838-73. The average number of these is found to be about 58; there was a minimum of 17 in 1872, and in the two years 1848 and 1858 the number rose to 85.—Prof. Mantegazza contributes a paper On the expression of pain. He groups all modes of painful expression in three categories; viz. expressions of reaction, expressions of paralysis, and mixed expressions of pain and of different sentiments.—Prof. Garvaglio has a paper in vegetal pathology, treating of a parasitic fungus which produces a form of blight in rice.—Prof. Sayno describes some applications of the spiral of Archimedes to graphic calculation.—In the section of moral and political science, Prof. Cossa contributes a paper On political economy of people and states.

Annali di Chimica applicata alla Medicina. Nos. 3 and 4, March and April, 1874.—Under the heading of "Pharmacy" we notice in these numbers a paper by Carlo Pavesi on the compound of chloral hydrate with glycerine.—One by Giovanni Ruspini on the metallurgy and applications of bismuth.—F. Mayer contributes a note on the assay of alkaloids, and Leger one on metatartrate of magnesia.—Bultot writes on an alteration of bichloride of mercury.—Prof. G. Bizio contributes a paper on protosulphide of phosphorus.—In hygiene there is a paper on the disinfection of drains, by Prof. S. Zinno.—In toxicology C. Méniere d'Angers contributes a paper on the toxical properties of *salmoja*, the residue obtained in salting meat and fish for exportation; N. Zuntz on the nature of the compound of carbonic oxide with hæmoglobulin; Huseman on antidotes for phenic acid.—From the *Journal de Pharmacologie* two papers are translated, one on a case of arsenical poisoning, and one on the frequency of phenol poisoning in England.—In physiology there is a paper by Engel on metals and the human body; and a paper by G. Gallo on a new fact favouring heterogenesis. We notice also an account of experiments on the production of bacteria in organic infusions, by E. R. Lankester, and a paper on the physiological and therapeutic effects of the active principle of ipecacuanha, by A. E. d'Orenellas.—In therapeutics S. Cadet has a paper on the efficacy of black sulphide of mercury in cholera; Dr. Gimbert on the application of *Eucalyptus globulus;* Prof. Binz on the action of bromide of potassium on the animal organism; L. Tassinari on the transfusion of blood; Prof. de Renzi on the use of sulphites in intermittent fever; and on the injection of water and saline solutions into the veins in cholera, by Dr. Dujardin-Beaumetz.

Gazetta Chimica Italiana. Fasciolo iii. contains but two original communications, the first of which is by E. Paterno, On the identity of cymene from camphor and from essence of terebenthene. The cymene was prepared from camphor by a modification of Pott's process, enabling more than a kilog. of this substance to be acted on at once. 100 grm. of red phosphorus, 265 grm. of sulphur, and 780 grm. of camphor are well mixed in a suitable vessel, and then heated over a gas burner till cymene ceases to pass over. Analyses and descriptions of the calcium, barium, lead, potassium, sodium salts of cymene-sulphonic acid, from camphor cymene, as well as of the acid itself, are given.—Cymene from essence of terebenthene was prepared by Riban's method, and the same salts of the sulpho-acid studied.—The other paper is by Ugo Schiff on chromic peroxide and acid, being observations and experiments relating to a paper by E. Hintz (under the direction of Prof. L. Meyer) on these substances. The remainder of this part is occupied by abstracts from other journals.

Cosmos, May.—The principal papers in this number of the Italian geographical journal are an account of N. M. Prjewalsky's exploration of eastern Mongolia, the present contribution relating to his travels in the southern confines of Mongolia from Dala-Noor to Ala-Shan; On the gold-bearing regions between the Limpopo and Zambesi, with a map; and a continuation of the paper on recent expeditions into New Guinea.

SOCIETIES AND ACADEMIES

LONDON

Geological Society, May 27.—John Evans, F.R.S., president, in the chair.—The following communications were read:—On the last stage of the Glacial period in North Britain, by T. F. Jamieson. In this paper the author arranged the Glacial phenomena of Scotland under the three following heads:—(1) The

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