

THE French official paper publishes an *arrêté* from the Minister of Public Works requiring that all trains be furnished with continuous brakes, and if possible automatic.

THE inundation of the Seine, which had reached a level of about 6½ metres above the summer season, and has caused many disasters, has terminated abruptly by the cold weather which has set in with the new moon.

AT the last meeting of the St Petersburg Society of Naturalists, M. Beketoff reported that the expedition for the exploration of the Altai sent out during last summer was very successful. MM. Sokoloff, Polenoff, Nikolskiy, and Krasnoff have returned with very rich botanical, zoological, mineralogical, and geological collections. He added also that the appeal of the Society for botanical collections (addressing them to the St. Petersburg University) had been responded to. No less than eighteen very good collections had been received, among which one by the scholars of all *Realschulen* of Western Siberia merits special attention.

IT is worthy of note that snow fell on Sunday in Madrid to the depth of one foot. It is said that no such weather has been experienced in the Spanish capital for twenty years.

THE diaries, pocket-books, cards, and the other useful and beautiful things issued by Messrs. De La Rue for the coming year are in all respects equal to those of which we were able to speak so highly last year. It would be difficult to imagine anything more beautiful of their kind than the cards, and what with Japanese beauties, flowers, birds, and insects, they might be utilised for giving the young ones a liking for natural history. The astronomical and other useful information contained in the diaries is as full and accurate as ever, and adds greatly to their value in our eyes.

AMONG the articles in the *Companion to the British Almanac* for 1883 are "Halley's Comet," by Mr. W. T. Lynn; "Modern Fish Culture" and "Fishery Exhibitions," by Mr. J. G. Bertram; "Insects Injurious to Agriculture," by Mr. W. E. A. Axon; "Electric Lighting," by Mr. L. T. Thorne; "The British Museum," by Mr. Charles Makeson; and a brief sketch of the Science of the Year, by Mr. J. F. Iselin.

HARTLEBEN, of Vienna, has sent us a catalogue of German works, some of which might commend themselves to those who may wish to entice their young friends to the study of German.

A GERMAN translation is announced of Dr. Ingvald Undset's "Study in Comparative Prehistoric Archaeology"; Meissner, of Hamburg, is the publisher, and the last number (23) of *Globus* contains an abstract of Dr. Undset's researches into the first appearance of iron in Northern Europe.

THE last number (vol. xvii, part I) of the *Journal* of the North China Branch of the Royal Asiatic Society contains a short article by Dr. Guppy, R.N., on the Geology of the Neighbourhood of Nagasaki, and a few notes on the South Coast of Saghalin, by Mr. Anderson. The principal paper, occupying 180 pages, is on Annam and its Minor Currency, by M. Toda. Besides the portion devoted to numismatics, the author gives a short historical and geographical account of Annam, which should be valuable at the present time, when public attention is being strongly drawn by political events to these regions. Of the remaining papers, one, by Mr. Giles, discusses Chinese Composition; the other, by Dr. Hirth, describes a manuscript work written at the end of the last century, referring to the manner in which the Customs dues on foreign goods were then levied at Canton. It is called the "Hoppon" book, "Hoppon" being the title popularly given, even now, by foreigners to the principal native chief, or commissioner, of Customs at Canton.

THE additions to the Zoological Society's Gardens during the past week include a Bonnet Monkey (*Macacus radiatus* ♀) from India, presented by Mr. W. Percy Laing; a Black-headed Lemur (*Lemur brunneus* ♂), a Black Lemur (*Lemur macaco* ♀) from Madagascar, presented by the I Company 3rd Battalion King's Royal Rifles; two Leopards (*Felis pardus* ♂ ♀) from India, presented by Lady Brassey; a North African Jackal (*Canis anthus*) from Tunis, presented by Capt. W. F. Wardroper; two Mexican Souseliks (*Spermophilus mexicanus* ♂ ♀) from Mexico, presented by Mrs. Simmonds; a Great Eagle Owl (*Bubo maximus*), European, presented by Mr. R. Leigh Pemberton; a Martinique Waterhen (*Porphyrio martinicus*) from Venezuela, presented by Mr. F. L. Davis; a Common Squirrel (*Sciurus vulgaris*), British, presented by the Hon. L. W. H. Powys; two Raccoon-like Dogs (*Nycterentes procynides*) from North-Eastern Asia, purchased.

OUR ASTRONOMICAL COLUMN

COMET 1882 *b*.—A number of very beautiful photographs of the great comet have been received from Mr. Gill during the past week. Several of them are remarkable for the amount of delicate detail that is brought out. Mr. Gill writes: "These photographs are interesting, not only as pictures of the comet, but they appear to me to show the possibility of making, with very little labour, a photographic *Durchmusterung* of the heavens." One of them taken on November 8 was exposed two hours, and shows all the 8th magnitude stars and the curious envelope extending 4° or 5° beyond the nucleus. This envelope was barely visible either to the naked eye or in the telescope.

Both Mr. Gill and Dr. Elkin had made a careful search for the cometary body seen within a few degrees from the nucleus of the great comet, by Prof. Julius Schmidt at Athens.

We have more than once pointed out that calculations based upon such observations as were available here at the time of writing, indicated sensible disturbance of the comet's motion at the perihelion passage. It is right, therefore, that we should state at once that this inference is hardly countenanced by calculations made by Mr. Finlay and Dr. Elkin at the Cape, who have had the advantage of more numerous, and probably in general more accurate and uniform series of observations. Mr. Gill writes: "The great comet is a puzzle. The whole question of its orbit now turns on which point of its nucleus should be observed. So long as the nucleus was single, *i.e.* from September 8 to September 28, Dr. Elkin has been able to represent its motion by parabolic elements within 3" of observation. But after September 28 matters change; the head begins to break up. What we took for the principal nucleus is no longer the centre of gravity. Finlay and Elkin's original elements are now nearly 2' out. Elkin's subsequent elements founded on observations September 8 to 28, give a place corresponding nearly with the end of the elongated nucleus (about 1½' long) furthest from the head. Now (November 21) the nucleus is getting very ill-defined. We have done the best we can in the matter, and shall continue the best observations we can, as long as the comet is visible."

COMET 1882 *c* (Barnard, September 10).—From an approximate orbit calculated by Mr. Hind, and communicated to Mr. Gill at the Royal Observatory, Cape of Good Hope, which reached him on November 11, this comet was found the same evening, and was observed on the meridian on several days up to November 19. The first position from a lower transit is as follows:—

	R.A.	Decl.
Nov. 11 ...	12h. 53m. 21s. 74 ...	-65° 57' 28".3

Mr. Gill's observations will allow of a much better determination of the orbit of this comet, than could have been made from the European observations alone; the comet arrived at perihelion on November 13.

GEOGRAPHICAL NOTES

MR. JOSEPH THOMSON sailed yesterday for Zanzibar as leader of the Geographical Society's Expedition to Mount Kenia and the East Coast of the Victoria Nyanza. Mr. Thomson expects to be away for two years.

THE new number of the *Deutsche Geographische Blätter* continues the interesting account by Dr. Arthur Krause of the researches of himself and his brother in the Chukchi peninsula and Alaska; there is, besides, a separate catalogue of the ethnological collections, and a short paper by Dr. Kuntz of the plants collected. The number contains a useful paper on South New Guinea from the observations of D'Albertis, Moresby, Macfarlane, and others. In the *Zeitschrift* of the Berlin Geographical Society are several papers of interest. Major Lovemann gives the leading results of the new survey of Russia, which is being carried out; Dr. Hann examines the data of Dr. Rholt's for the altitudes in the oasis of Kufra; Herr G. A. Krause gives some account of the Saharan town of Chat, which is followed by an abstract of the census of Bulgaria; and a preliminary account of Prof. Haussnecht's Oriental travels. Dr. W. Götz contributes a valuable paper on a subject which is taking great prominence in Germany—commercial Geography, while Dr. Reiss contributes an analysis of recent researches in some tributaries of the Amazon. In the December number of the *Deutsche Rundschau* for geography and statistics (Vienna, Hartleben), we have the conclusion of Baron von Lehnest's paper on his Land Formations in the Lunda region, the first of a series of pictures from East Africa, by Karl Berghoff; a short paper on the distribution of islands, and a biography of Mr. A. R. Wallace, with a good portrait. The number contains many other short papers and notes.

THE new quarterly number of the *Bulletin* of the Paris Geographical Society reports at length several important papers: Commander Gallieni gives an account of his mission to the Upper Niger and Segou, with a map and several interesting illustrations, some of which show curious formations, suggesting the buttes of some of the North American rivers. M. A. d'Abbadie has a useful paper on the spelling of foreign words; M. Jules Garnier an account of his excursion to the country of the Don Cossacks; M. M. Biollay, a paper on Finland; M. Dutreuil de Rhins, on Père Creuse's journeys to Southern China; M. Romanet du Caillaud, notes on the Ting-King; and M. Theodore Ber the first part of an elaborate paper on the Titicaca valley of the Tiahuanaco.

THE December number of *Petermann's Mittheilungen* contains some supplementary information by Dr. Junker on his Wele explorations, in addition to the letters already referred to. Herr R. A. Hehl contributes a geographico-geological sketch of the Brazilian coast-lands between 20° and 23° S. lat. Along with the chief results of the Hungarian Census is an excellent series of statistical maps showing the various aspects of the figures. Signor P. Gialusi contributes an interesting paper on the changes which have resulted from recent geological action in an Istrian valley, while Herr Hehl gives a detailed account of the German colonies in South Brazil.

THE Carpathian Club, which was formed at Hermannstadt (Transylvania) after the pattern of the Alpine Club in 1880, having for its object the study and minute investigation of the mountains of the country, as well as the endeavour to direct the attention of tourists to that region, already numbers no less than 1200 members. It is divided into nine sections. Quite recently the second year-book of the Club appeared, which contains a number of valuable scientific papers, as well as descriptions of tours in the Carpathian Mountains.

SCHWEIGER-LERCHENFELD'S interesting work "Die Adria," has just been completed in twenty-five parts, and published by Hertleben of Vienna. The fact that the eastern coasts of the Adriatic are so little known by the general traveller, renders the book valuable. In an appendix the commerce of the Adriatic, as well as the fisheries, are spoken of, and an excellent map is added to the work.

THE ROYAL SOCIETY¹

II.

THE subject of the Circumpolar Observations mentioned in my address last year, was since that time brought more formally before our Government by that of Russia. At the

¹ Address of the President, William Spottiswoode, D.C.L., LL.D., delivered at the Anniversary Meeting, November 30, 1882. Continued from p. 137.

request of the Treasury, the President and Council, after consultation with the Meteorological Office, advised as follows:—

"The object of the undertaking is to throw light on the influence of the great inaccessible region surrounding the pole on the meteorology and magnetism of the earth. With this view it is proposed to take simultaneous observations at a chain of circumpolar stations for a full year at least.

"A chain of not less than eight stations will be occupied independently of any co-operation by this country. This chain, however, leaves a gap of 90° in longitude in the northern part of America, the centre of which would be advantageously occupied by a station in the Dominion of Canada. The value of the results will be greatly enhanced by the addition of this link to the chain. Independently of this, such a station would be of great value as being of a continental character, in contrast with the other stations, which are in close proximity to the coast. By choosing for the station one of the forts of the Hudson's Bay Company, no great outlay need be involved in its occupation."

The point first proposed was Fort Good Hope, near the mouth of the Mackenzie River; but it was found too late to erect the necessary huts and to transport the party and its provisions there during the present season. Fort Simpson, on the same river, was next suggested. Guided by considerations of facilities of access and sustentation, the Committee came to the conclusion that either Fort Rae or Fort Providence, on Great Slave Lake, is to be preferred to Fort Simpson, with which the former forts nearly agree in latitude; and accordingly the President and Council recommended one of these.

"In framing an estimate, it was thought well to assume that the expedition might last a year and eight months, so as to allow a sufficient margin for travelling to and from the station, and for possible detention in waiting for the Hudson's Bay Company's brigade. It is calculated that the cost might be safely estimated at 3,000*l.*, which would include salaries of one officer and three men; journey of the party from England and back, including reasonable baggage; rations, allowances, and all other expenses."

To this communication the following reply was received:—

"My Lords have to thank you, and the Committee whom the Council appointed to advise them in the matter, for the valuable information contained in Dr. Michael Foster's letter of the 16th ultimo. Acting upon that information and upon the advice of the Royal Society, Her Majesty's Government have decided that this is an object on which public money may properly be employed and they are prepared to ask Parliament to provide a total sum not exceeding 2,500*l.* for the purpose. My Lords understand that there is good reason to hope that the balance required to make up the total estimated cost of 3,000*l.* will be forthcoming from other sources.

"I am to ask whether the Royal Society would be so good as to take charge of the Expedition under similar conditions to those under which the Transit of Venus Expedition is being conducted; accounts of the expenditure chargeable to the Parliamentary grant being rendered to this Department. The choice of stations, the appointment of observers, and the methods of procedure would be left entirely to the Society, subject to the condition that the total amount chargeable on public funds does not exceed 2,500*l.* My Lords understand that it is expected that not more than 1,500*l.* of this amount would come in course of payment during the present year, and they will present estimates to Parliament for 1,500*l.* and 1,000*l.* at the proper times."

The Canadian Government has since promised a contribution of 4,000 dollars towards the expenses of the expedition.

A committee, consisting of the President, Dr. Rae, Sir George Richards, Mr. R. H. Scott, and Prof. Stokes, was accordingly appointed to superintend the expedition, which, comprising Captain H. P. Dawson, R.A., in command, Sergeants J. English and F. Cookesley as observers, and W. Wendenby, as artificer, left England on May 11, for Quebec, was heard of at Fort Carlton on 27th June, and was about to proceed the next day for Green Lake, on the way to Portage Loche. It was still not quite certain whether it might not be necessary to push on to Fort Simpson, on account of insufficient accommodation, as well as lack of time and materials for building at Fort Rae.

Two parts of *Mittheilungen der Internationalen Polar Commission* have been published, containing full particulars and instructions relating to the whole circumpolar scheme.

The geological, mineralogical, and botanical collections, formerly in the Museum in Bloomsbury, have been properly arranged in the new building in Cromwell Road, and are on exhibition in their respective galleries. A commencement has