

1881:—"On the Jail Fever, from the earliest Black Assize to the last recorded outbreak in recent times." The essays to be sent in on or before June 30, 1881. The Council have decided to grant the sum of 20*l.* to the writer who may gain the "Howard Medal" in November, 1881.

THE additions to the Zoological Society's Gardens during the past week include a Sykes's Monkey (*Cercopithecus albicularis*) from West Africa, presented by the Officers of the Royal Yacht; a Green Monkey (*Cercopithecus callitrichus*) from West Africa, presented by Mr. A. Haynes; a Rhesus Monkey (*Macacus erythraeus*) from India, presented by the Rev. J. Saunders, B.A.; a Two-toed Sloth (*Choloepus didactylus*) from Demerara, presented by Mr. G. H. Hawtayne, C.M.Z.S.; an Egyptian Jerboa (*Dipus agyptius*) from Egypt, presented by Major Money; a Common Trumpeter (*Psophia crepitans*) from Demerara, presented by Mr. J. Stovell; two Silver Pheasants (*Euplocamus nycthemerus*) from China, presented by Miss C. Hallett; an Indian Gazelle (*Gazella bennetti*) from India, deposited; an Ursine Dasyure (*Dasyurus ursinus*) from Tasmania, a Common Wigeon (*Mareca penelope*), a Grey Plover (*Squatarcola helvetica*), a Knot (*Tringa canutus*), a Greenshank (*Totanus cadidris*), British, a Horned Ceratophrys (*Ceratophrys cornuta*) from Santa Marta, purchased.

OUR ASTRONOMICAL COLUMN

THE COMETS OF 1812 AND 1815.—We learn from M. Schulhof, of the Bureau des Longitudes, Paris, that in conjunction with M. Bossert he has undertaken a rigorous investigation of the orbit of the comet of 1812, which Encke showed to have a period of about seventy years, and which will consequently be again approaching its perihelion. M. Schulhof hopes to complete the calculations early in the ensuing year. He has discovered a series of original observations by Blanpain at Marseilles, which he considers to be amongst the best, if not the best series that are available; the original observations by Lindenau have also been received, but unfortunately nothing is to be found of the long series by Zach and Triesnecker. From the manuscripts preserved at Paris some corrections have been applicable to the results as printed. To this we may add that Flaugergues' differences of right ascension and declination from his comparison stars are published in the fifth volume of Zach's *Correspondance astronomique*. These observations of Flaugergues' at Viviers, and those made at Paris as they appear in the first folio volume, were reduced several years since by Mr. W. E. Plummer, now of the University-observatory, Oxford, and from three very carefully formed normals he deduced a period of revolution about a year and a half shorter than that assigned by Encke in *Zeitschrift für Astronomie*, t. ii., so that the comet may now be expected at any time. At the instance of Prof. Winnecke sweeping ephemerides have been prepared by M. Mahn of Strassburg. It is however M. Schulhof's intention, on the completion of his investigation of the orbit, to furnish observers with ephemerides similar to those which have led to the re-discovery of several lost planets.

An able calculator at Vienna has nearly finished a new discussion of the observations of the comet of 1815 (Olbers' comet), which, according to Bessel's researches, is due at perihelion in February, 1887. This result may be materially changed by the more complete reduction of such series of observations as we possess in their original form, and a recomputation of the perturbations, with more accurate values of the planetary masses than were available at the date of Bessel's work.

CERASKI'S CIRCUMPOLAR VARIABLE STAR.—From the estimated magnitudes of Schwed and Carrington, and Mr. Knott's epoch of minimum given in NATURE last week, the most probable period appears to be 2.49085*d.*, to be reckoned from 1880, October 23.4672 Greenwich mean time. While the telescope is turned towards Ceraski's star, it may be suggested that Lalande 1013.4 in Cassiopeia should receive attention; at present we have the discordant estimates 10*m.* and 5*m.* of Lalande, 1790 September 29, and 1797 November 10 respectively, and 7.7 in the *Durchmusterung*; the star is 6*m.* on Harding's Atlas, and is not found in Fedorenko's catalogue, or

in Argelander's zones; its position for 1880 is in R.A. oh. 33*m.* 22*s.*, N.P.D. 38° 46' 8".

THE LONGITUDE OF THE CAPE.—We understand that arrangements are being made for the telegraphic connection of the Royal Observatory, Cape of Good Hope, with Aden, which has already been connected with Greenwich, Mr. Gill taking an active part in the operation. The next desirable work of this kind will be the connection of an Australian observatory with the observatory at Madras, which is well-determined with reference to Greenwich.

GEOGRAPHICAL NOTES

COL. PREJEVALSKY writes from "Houi-de-Tin, plateau of the Hoang-ho, May, 1880." Having packed up and sent off all his collections to Alashan, he left his camp, 25 versts from the town of Donkyr, on March 20, to reach the Hoang-ho, 83 versts from Donkyr. Here the Yellow River turns abruptly from north-east to east, at the small valley of Gomi, inhabited by Tungut cultivators, and forming the extreme point of the habitable lands of the Hoang-ho. The river here is pretty wide, and has a very rapid current. The banks are wooded, with here and there pretty clumps of poplars and weeping willows. The river here is 8,000 feet above sea-level. After ten days at Gomi, Prejevalsky's party resumed their route. From Gomi the journey along the Hoang-ho was very difficult, the banks being deeply cut by steep ravines, which can only be noticed when close upon them. A stream usually flows at the bottom of these ravines, which are bordered by trees and wild arbutus. As soon as ever the party touched the Si-Fan territory a horseman appeared and, telling them they would soon be murdered, disappeared—a threat happily not realised. Indeed the Si-Fan became so reconciled to the presence of the intruders as to sell them butter and sheep. At 130 versts from Gomi they found in the ravines bordering the river vast forests frequented by innumerable birds, especially blue pheasants. The second local rarity was rhubarb, which was met with in prodigious quantities. The old roots of this plant reach colossal proportions. One of these roots, taken at hazard, weighed 26 lb. The mouth of the Churmysh, an affluent of the Hoang-ho, was reached 130 versts below Gomi, by the course of the river. Having examined the country for a distance of 40 versts, Prejevalsky was convinced that it was impossible to cross the enormous chain of mountains which extends along the Yellow River, the summits of which are lost in the clouds. Gaping ravines are met with at every verst, and there is not the least trace of vegetation, and therefore no forage for animals. He decided to return to Gomi. Thence he went to Houi-De, 60 versts on the south bank of the river, and sent his interpreter to Sinin to inform the local authorities that Prejevalsky wished to reach the mountain regions of eternal snow. The Amban of Sinin informed Prejevalsky that it was impossible to allow him to proceed to the Koko-nor, or to penetrate further into Houi-De, where there was a revolt of the Tunguts. Prejevalsky decided to spend the month of June where he was, exploring the fauna and flora, and afterwards go north towards Cheibsen, where he would remain during July, and complete his explorations in the mountains. The weather, he says, was delectable, cold and wet, with the thermometer sometimes 12° below zero C. He had collected 250 specimens of plants, 500 species of birds, and many of fish. The geography of the country traversed had, moreover, been observed and noted, astronomical, barometrical, and thermometrical observations made, and sketches taken of the various types of natives. He doubts much whether the Hoang-ho makes the enormous curve represented in maps; he did not observe any such curve in the 250 versts explored by him. He expected to reach Alashan about August 20.

IN the Geographical Society's *Proceedings* for November Mr. C. R. Markham supplies a brief but lucid account of Lieut. Schwatka's expedition to King William Land, and of the previous state of our knowledge respecting the remains, &c., of the Franklin Expedition, and he arrives at the conclusion that we have gained but little by this last attempt to obtain information beyond that gathered by Sir L. McClintock. Lieut. Schwatka's journey, however, he considers to have been a most remarkable one, and in some respects without a parallel. Dr. Christison follows with a paper descriptive of a journey made some twelve years ago to Central Uruguay. The geographical notes are numerous this month, and furnish much useful information, especially in regard to Africa. Under the head of "Corre-

spondence" we find letters by Adm. R. C. Mayne on a possible communication between Skyring Water, Straits of Magellan, and Smyth's Channel, and by Capt. Alexander on the subject of some observations made during a recent voyage along the Loango Coast of West Africa. The maps given this month are of King William Land and the Estancia de San Jorge, Uruguay, with a small inset map of the whole republic.

As we announced last week, the Vienna Geographical Society has issued an appeal for subscriptions for an Austrian expedition, which Dr. Emil Holub has decided on undertaking. Dr. Holub intends crossing the whole length of Africa from south to north. He will start from the Cape of Good Hope and penetrate to the Zambesi, thence explore the Marthemambunda territory, the watershed district between the Zambesi and the Congo, visit the lake sources of the Congo, and from there through Darfur he will try to reach Egypt. Dr. Holub expects the journey to extend over three years. The expenses, he reckons, will amount to about 50,000 florins, 5000 of which he can himself supply.

LORD ABERDARE will preside at the first meeting of the Geographical Society next Monday evening, when Mr. Jos. Thomson, the Commander of the East African Expedition, who has lately returned from Zanzibar, will give an account of his journey to the Lukuga outlet of Lake Tanganyika, *via* the head of Lake Nyassa. Mr. Thomson's paper promises to be unusually interesting, as the country traversed by him was for the most part previously unexplored.

ANOTHER African traveller, Mr. James Stewart, C.E., has just returned to England from Livingstonia, Lake Nyassa. Mr. Stewart, it will be remembered, also crossed the unknown belt of country between Lakes Nyassa and Tanganyika by a different route, for the most part, from Mr. Thomson's, and arrived at the south end of the latter lake only a day or two after him.

IN the November number of their *Chronicle* the London Missionary Society publish a full account of Dr. Southon's interview with Mirambo on the subject of the murder of Messrs. Carter and Cadenhead, and the main facts elicited by him appear to exonerate that chief from any direct share in the unfortunate occurrence. Mohammed, Capt. Carter's servant, succeeded in saving the journals of both Carter and Cadenhead, and all the most important manuscripts and letters of the former.

THE Baptist Missionary Society hope to publish in the December number of their *Herald* an admirable map which they have just received from the Rev. T. J. Comber of their Congo Mission, who has been for some time stationed at San Salvador. It is stated to be very carefully drawn to scale, and to exhibit the many and important discoveries made by the missionaries in their various journeys towards Stanley Pool; it will also show the relative positions of the various towns to Banana, Mboma, San Salvador, Makuta, and other important centres.

THE new *Bulletin* of the Antwerp Geographical Society contains papers by M. Bernardin on the Fiji Islands, their resources, progress, &c., and by Dr. L. Delgeur, vice-president of the Society, on cartography among the ancients.

WE have received from Danzig an excellent little guide-book to that city, with special reference to the scientific and medicinal points of interest of the town and district, compiled from the recent meeting of the German Association. It is a model of its kind, and contains an admirable series of special maps.

DOCTORS ROHLFS AND STECKER have left Suez for Massowah and Abyssinia.

IN the *North American Review* are appearing M. Desiré Charnay's notes of his exploring work in Mexico. The November number contains the third instalment.

KEW GARDENS REPORT

FROM the just-issued "Report on the Progress and Condition of the Royal Gardens at Kew" for 1879 we take the following items:—

Some idea of the magnitude of the destruction caused by the hailstorm of August 3, 1879, may be obtained from the fact that the number of panes broken was 38,649, and the weight of broken glass eighteen tons. The plantations along the Grass Avenue skirting the river have all been greatly improved, very poor specimens removed and replaced by Holm oaks, which will

eventually render the avenue practically an evergreen one. This portion of the grounds suffers greatly from the unconsumed smoke of the gas-works and manufactories at Brentford, which is not only most prejudicial to the plants, but so blackens the labels that they become illegible in a few years. Some interesting notes are given on the cultivation of the various kinds of india-rubber. According to Hecht, Levis, and Kahn's Report for 1879, Para rubber (*Hevea*) is still the largest source of supply. The total import into England during the year was 4651 tons. Liverpool received 25 tons of Ceará Scrap rubber and 900 tons of African (*Landolphia*), while London imported 350 tons from Assam (*Ficus elastica*), 250 tons from Borneo (*Willughbeia*), and 550 from Mozambique (*Landolphia*). Considerable attention has been paid at Kew during the past year to the examination of the African *Landolphias* and Malayan rubber-yielding *Willughbeias*, and the results will be given in the next report. Additional facts to those contained in the previous Report are given on the introduction of South American species into the Old World. From Singapore Mr. Murton reports:—"The plants of *Hevea* and *Castilleja* in the gardens are now large plants, but hitherto propagation from the strong growths they are making seems rather difficult, whereas they used to propagate freely from the weak wood produced while in pots.' Preparations are being made in Burma for the cultivation of Ceará Scrap (*Manihot glaziovii*), while Dr. King reports that the Ceará rubber promises to grow well in Calcutta; seeds have been distributed to various parts of India, and the plant seems to thrive well in Upper India. Singapore does not seem to suit Ceará Scrap, according to Mr. Murton, while at Zanzibar it yields seed most abundantly, but the seeds are slow to germinate. At Zanzibar the Pará rubber is a less quick grower than the Ceará and does not branch. At Mergui eight Para trees, the survivors of a batch of seedlings received from Dr. King in 1877, continue to do well in the office compound. At Calcutta, according to Dr. King, Para rubber continues to be as disappointing as ever; he believes it is useless to try it anywhere except in the south of Burma or the Andamans, and perhaps in Malabar. Mr. Jenman reports that the atmospheric conditions in Jamaica appear favourably adapted to the Para rubber. Equally important information is given as to the cultivation of mahogany in the Old World. On this the Report says: "This may now be regarded as an accepted success. The tree grows well in many parts of India and in Ceylon, and in the former there is a local demand for the wood. In this country new uses are found for it, one of the most recent being for the linings and panellings of railway carriages instead of teak, which is now exclusively used for ship building. It is not easy to see any valid arguments against the cultivation of a tree the timber of which is of admitted excellence for a variety of purposes and the growth of which is apparently attended with little difficulty. As late as 1876 the Government of Bengal was adverse to mahogany planting. This policy has now, however, been modified, and in his report for 1878-79 Dr. Brandis, the Inspector-General of Forests, reports: 'Of the exotic trees which are cultivated by way of experiment mahogany is the most important, and its success seems not improbable, though it is too early yet to form final conclusions upon the subject.' Mahogany is also cultivated as an experiment in Burma and the Chittagong district of Bengal. The tree is known to thrive well near Calcutta, and every effort should be made to cultivate it in those forest districts where climate and other circumstances are favourable." Experiments are being made in Queensland, and favourable reports come from Saharanpore and Singapore. Some curious notes are contained in the Report on Chestnut Flour: "We are indebted to Mr. D. E. Colnaghi, H.B.M.'s Consul at Florence, for specimens of the dried chestnuts, flours, and *necci* (the cakes made from them), which are so important an article of subsistence in the Apennines. The collection of the specimens for Kew was due to the kindness of Dr. L. Bacci of Castigliano, in the mountains of Pistoja. The fresh chestnuts are dried, or rather roasted, for three days and nights in a *seccatoio*, or drying room, on a latticed floor covering a chamber in which a fire is lighted. The husk is then easily removable, and the kernel is ready to be ground into flour, which is of a pinkish colour. This is mixed to the consistence of cream with water, and poured on fresh chestnut leaves to be baked into small circular cakes, *necci*, between heated stones. The collection having been divided between the museum of the Royal Gardens and the Food Collection, Bethnal Green, Prof. Church, who has charge of the latter, has obligingly furnished us with the following analysis of the flour:—