

Rovelli finds that 8° of dark heat neutralise the effect of the weak light emitted by a common candle at the distance of 45 centimetres from the radiometer. The instrument may serve advantageously to demonstrate the relation between the absorptive and the emissive power of bodies, and to determine their respective values.

M. FERRY, the new Premier in the French Cabinet, as well as Minister for Public Instruction, will deliver the usual address to the Congrès des Sociétés Savantes at the end of this month.

M. HOUZEAU, the director of the Brussels Observatory, has returned from San José, but has obtained leave from his Government, and will spend the remaining part of the winter at Cannes. The King of Belgium is anxious to have the Observatory transferred to Laeken, to an eligible site placed in the vicinity of his castle, but nothing is decided in that respect. A temporary shed has been erected for the new meridian circle by Repsold, but the readings are taken with the old one.

M. SHULACHENKO, who managed the Russian military telegraph during the Kulja expedition, communicates to the Russian Physical Society the following results of his experiments with Siemens' telephones:—At a distance of 93 miles, music, singing, and speaking were heard quite distinctly; at 130 miles, conversation was difficult,—it was necessary to shout loudly, and those who received messages had to display a great sensibility of ear; but it was possible to have conversation even at a distance of 212 miles. When six pairs of telephones were put side by side, having each its wire, and the wires not being connected with one another, the conversation on one of them was heard on all the others. When the connecting wire of one pair of telephones was broken, the conversation on this pair was heard on the next pair of telephones the wire of which was in good state.

A COMMEMORATIVE stone has been placed on the house No. 17 in Via Dei Prefetti, Rome, to Morse, the telegraphist. The inscription was as follows, translated into English:—“Samuel Finkeze Breese Morse inhabited this house from 20th February, 1830, to January, 1831, inventor of the writing electromagnetic telegraph. He was born at Charlestown 27th April, 1791; died at New York 2d April, 1872.”

THE last number of the *Izvestia* of the Russian Geographical Society gives interesting particulars of the naphtha-wells in the province of Ferghana, in Turkistan. There are no less than 200 wells which are situated at the foot of both mountain ridges that inclose the valley of Ferghana. One range of wells, twenty-seven miles long, is situated on both banks of the Naryn, twenty miles north of Namangan. The other, about sixty-five miles long, is situated in the latitude of Makhram, in the districts of Marghilan and Kokan. There is a third intermediate group some thirty miles east of Andijan. The wells are situated in the limestones and slates of the “Ferghana level” of the chalk formation. The specific weight of the Ferghana naphtha is 0.950 at 17° Cels., 0.9517 at 28°, and 0.945 at 43°; it belongs therefore to the heavy mineral oils. The heavier parts remaining after the evaporation of naphtha in open air are known under the name of *khillk*, and when mixed with sand give an excellent waterproof cement, sometimes used by natives for irrigation canals. There are also mines of mountain-wax on the Kok-tube Mountain, in the district of Namangan, and a very good mine of sulphur at Karim-duvany.

M. DOMOJROFF continues to publish in the *Izvestia* of the Russian Geographical Society his anemometric observations on board the clipper *Djighit*. In June, 1881, during the cruise from the Zond Strait to the Seychelles Islands, he met mostly with south-east winds, the velocity of which varied from 3 to 7.5 metres per second, with one exception, on June 9, when it

reached 15 metres. On the cruise from the Seychelles to Aden, from June 25 to 30, the wind was mostly south-west, and varied from 5 to 12.7, reaching 14.3 metres per second on June 29. The observations are carried on in the same way as was described in a preceding number of NATURE.

THE young West Siberian branch of the Russian Geographical Society proposes to publish in its next volume of *Memoirs* a botanical description of the district of Tara, which has the interest of having an intermediate flora between the forest region and the Steppes, the Irtish being a boundary-line between the two. The same Society continues the excavation of several kooorgans in the district of Yalutorovsk.

FROM various parts of the Greek Archipelago and from the Pelikon district continued volcanic phenomena are reported. The neighbourhood of Volo in Thessaly is particularly affected. Also the island of Chios seems again to be a centre of disturbance. The volcano at Santorin is very active.

ON February 16, at 8.10 a.m., a slight earthquake was noted at Bologna and the whole Southern Romagna. Mount Vesuvius increased its activity on that occasion.

A DISCOVERY, which is expected to throw some light on prehistoric times in what is now Germany, has been made near Andernach on the Rhine. Remains of prehistoric animals have been found in a pumice-stone pit, and Prof. Schaaflhausen of Bonn has investigated the spot closely. A lava-stream underlying the pumice-stone was laid bare, showing a width of only two metres. The crevices between the blocks of lava were filled with pumice-stone to a depth of one-half to one metre; and below this, however, there was pure loam and clay, and in this were found numerous animal bones, apparently broken by man, as well as many stone implements. It is supposed that there was a settlement there, of which the food-remains fell into the lava-crevices before the whole was covered with pumice-stone.

THE additions to the Zoological Society's Gardens during the past week include a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Miss Annie M. Davis; an Ocelot (*Felis pardalis*) from South America, presented by Mrs. A. Harley; a Grey Ichneumon (*Herpestes griseus*) from India, presented by Miss G. Gordon Clark; a Black Rat (*Mus rattus*), British, presented by Mr. H. B. Stott; a Tawny Eagle (*Aquila nevioides*) from South Africa, presented by Mr. Roland Trimen, F.Z.S.; a Slender-billed Cuckoo (*Licmetis tenuirostris*) from South Australia, presented by Mr. A. Anderson; a Common Magpie (*Pica rustica*), British, presented by Mr. Charles Davis; a Ring-necked Parrakeet (*Puleornis torquatus*) from India, presented by Miss Bibby; a Common Curlew (*Numenius arquata*), a Golden Plover (*Charadrius pinnialis*), British, purchased.

OUR ASTRONOMICAL COLUMN

THE COMET 1883 a.—In a circular issued from the Imperial Academy of Sciences, Vienna, are the following elements of a comet discovered at Rochester, N.Y., on the 23rd ult., founded by Dr. Hepperger upon observations on February 24, 25, and 26.

Perihelion passage, February 20.20206 M.T. at Berlin.

Longitude of perihelion ... ..	33° 23' 51"	} M. Eq. 1882.0.
“ ascending node ... ..	280 4 20	
Inclination ... ..	77 32 48	
Logarithm of perihelion distance ...	9.879124	

Motion—direct.

Prof. Millosevich kindly communicates observations made at the Collegio Romano in Rome:—

	Rome M.T.			R.A.			Decl.			
	h.	m.	s.	h.	m.	s.	°	'	"	
Feb. 28 ...	7	43	12	...	23	43	19	58	...	+31° 37' 54.5"
March 1 ...	7	53	14	...	23	53	12	27	...	+31° 49' 7.0"

From Prof. A. Riccò, who writes from Palermo on February 28, we learn that he has found the spectrum to be formed of the three bands of hydrocarbons, with an extremely faint continuous spectrum of the nucleus; the sodium line (D) was not present.

The comet is receding from the earth as well as from the sun. The elements have but little similarity to those of any comet previously calculated.

THE GREAT COMET OF 1882.—Prof. Julius Schmidt has published some particulars of his observations of this remarkable body since the commencement of the present year. On Jan. 3 the tail was traced through upwards of 11° with the naked eye; on the 10th it was visible for 8°, on the 28th it had diminished to 5½°, but was readily seen without the telescope; on the 30th its length was 3°. On February 5 a tail 2' in length was perceptible to the naked eye; Prof. Schmidt obtained his last distinct glimpse of the comet without the telescope on February 7.

Dr. B. A. Gould, director of the Observatory at Cordoba, who is now in London *en route* for the United States, informs the writer, that on February 11, three days out from Rio Janeiro, he was satisfied of the visibility of the tail of the comet to the naked eye; its distance from the earth at this time was 2'48, and its distance from the sun 3'05.

THE VARIABLE STAR U CEPHEI.—Mr. G. Knott secured a good observation of the minimum of this variable, at Cuckfield, on the night of March 2. An uninterrupted clear sky enabled him to keep a watch on the star from 7h. 24m. to 14h. 30m. G.M.T. At about 8h. 15m. it began to fade from 7.2m., and at 14h. 30m. it had risen again to 8.1m. The observed time of minimum was 12h. 36m., or seven minutes earlier than the time assigned in the ephemeris in NATURE, and the magnitude at minimum was 9.45. The star remained at minimum for nearly 2½ hours. The low magnitude attained, Mr. Knott considers, is confirmatory of a suggestion he made from his earlier observations, that at alternate minima the star touches a lower magnitude than at those which intervene.

NEW NEBULÆ.—M. Stephan, director of the Observatory at Marseilles, publishes a catalogue of fifty nebulae observed there, forty-five of which he believes to be new. A group of four pretty bright nebulae he gives as identical with *h*, Nos. 2352, 2356, 2358, and 2359, but their relative positions resulting from his observations are not in accordance with Sir John Herschel's Catalogue. The Marseilles places and descriptions are—

No.	R.A. 1880°.			N.P.D.			
	h.	m.	s.	°	'	"	
42	11	9	8'45	71	14	8'7	Assez belle, assez petite, ronde, condensation centrale.
43	11	10	28'49	71	19	39'1	Assez belle, assez petite, ronde, condensation centrale.
44	11	10	36'52	71	17	35'0	Belle, ronde, assez étendue, condensation graduelle centrale très forte.
45	11	10	40'73	71	11	46'7	Assez belle, ronde, condensation graduelle centrale assez forte.

The catalogue is published in the *Comptes Rendus de l'Académie des Sciences* of February 26.

GEOGRAPHICAL NOTES

We are now enabled, on the authority of Dr. Oscar Dickson, to give the following particulars of the programme of Nordenskjöld's proposed expedition:—The expedition will leave Sweden early in May next, in all probability in the Government steamer *Sophia*, and if the state of the ice is favourable to a landing on the east coast this will be effected; but as this is not expected to be the case until later in the season, Baron Nordenskjöld will proceed to the west coast, not for geographical discovery, but to study the appearance and extent of the inland ice on this side before attempting to penetrate from the eastern side. There are also known to exist on the west coast some very large blocks of ironstone, perhaps of meteoric origin, which a party of the expedition will be despatched to examine. When these researches are finished, and the state of the ice more favourable, the vessel will make her way from Cape Farewell along the eastern shore in the open channel, which is generally found between the coast and the drift-ice. With regard to the "break" or oasis, believed by Baron Nordenskjöld to exist in the interior of Green-

land, to which we have previously referred, the explorer has been led to this conviction during his wanderings on the inland ice on a former occasion. He maintains that not only the constant advance of the ice-mass, but the fact that the country does not rise continually in the interior, show that the whole land is not covered with perpetual snow and ice; and this theory, he states, has been further corroborated by the studies made by him and others of the temperature and moisture of the air on the inland ice. The expedition, which will be accompanied by a complete scientific staff, will also aim at studying the conditions of the drift-ice between Iceland and Cape Farewell, the fossil remains in Greenland, as well as the appearance and quantity of the cosmic dust there. One object will also be, if possible, to discover traces of the former Norse settlements. It is expected that the party will return in September next. We understand that the reason why Baron Nordenskjöld has not issued any official programme concerning his expedition is that, being occupied with preparations for his journey and public duties, he would not be able to enter into any critical controversies as to his plans and theory.

It appears from a letter of Dr. L. E. Regel to the Secretary of the Russian Geographical Society, that this Central-Asian traveller successfully pursued his explorations during last summer. He left Samar-land at the end of June last, and to reach Hissar he chose the shortest route, *viâ* Penja-kent. This route, by which the expedition visited the Fan River and Lake Iskander-kul, and crossed the Mur Pass, was very difficult; but the botanical collections and the geographical results were all the richer. In the centre of this region is situated a great mountain range, whose summits—the peaks of Kul-i-kalan and the Chandar and Bodhan Mountains—are seen from Samarkand. To the south of this range runs the Saridagh valley, beyond which rises the Hissar range proper; to the north it has the Kul-i-kalan plateau and the valleys of a tributary of the Voron and the Pasrut River. The plateau of Kul-i-kalan has a circumference of about thirteen miles, and is dotted with five lakes 10,000 feet above the sea-level. The mountains around it have no real glaciers, but there are old moraines which can be traced also along the tributary of the Voron, which is fed by one of these lakes. We have here a separate Alpine landscape, the mountains of which are mostly fossiliferous limestones (sandstones with casts of thick fossil trees are found in the Pasrut valley), and with a vegetation not only richer than that of any other part of the basin of the Zarafshan, but also more varied as to its distribution. The forest vegetation is richest in the zone between 4000 and 8000 feet above the sea-level: M. Regel found there apple, cherry, and nut trees, together with the *Archa*. The upper zone, where the *Archa* also predominates, contains birches, willows, and an arborescent *Ephedra*; it reaches 10,500 to 11,000 feet, and the vegetation altogether goes higher up than the limit of perpetual snow. The Mur Pass—about 14,000 feet high—is very steep; the expedition had to cross snow-fields for nearly four miles, and found on the southern slope immense accumulations of snow, which probably is due to the foggy climate of Hissar, although the amount of rain is small in this region. The vegetation of the southern slope is very rich and much like that of Karateghin. The range is composed of syenite; the next range, of the same height, between Khoja-Hassan and Hakimi, consists of granite, syenite-gneiss, and fossiliferous slates. Between Hakimi and Karatagh there is a series of lower parallel ridges, consisting of fossiliferous sandstones. The same sandstones are met with also between the two main ranges; they contain fossils at Khoja-Hassan. Changing his former plan, M. Regel proceeded further directly to Kala-i-Khumb, while his topographer was despatched to Kulab, *viâ* Hissar, the two to meet in the Darvaz. The remainder of M. Regel's letter gives several interesting topographical details, and information about different routes, as well as an enumeration of the chief questions that must be resolved as to the topography of this region.

We announced last week that a Danish expedition would explore the east coast of Greenland during the summer. The funds required for this expedition were voted by the last Danish Parliament, and it will consist of two lieutenants in the navy, G. Holm, and T. Garde, with two scientific men, but the remaining members will be natives of Greenland. The expedition will only employ boats for their purpose.

THE Ural Mountains are again becoming the field of exploration for Russian geologists and geographers. We learn from the *Izvestia* of the Russian Geographical Society that M. Nasi-