

personally presented to the King and Queen, who conversed most graciously with each of them. On the 22nd the Minister of Agriculture entertained the Congress at a State dinner. On the 20th the Syndic of Rome had given a reception in the Capitoline Museum, which was illuminated for the occasion. For their own part the foreign delegates invited their Italian hosts to a dinner at the Hotel de Russie on the 19th.

The proceedings were closed by a very graceful and munificent act of hospitality. The entire Congress, with the ladies who had accompanied some of the members, received free tickets for Naples and became the guests of the Italian Government for two days and a half. An expedition to Vesuvius, which was arranged for them, proved a complete success. The courtesy and forethought of the Italian officials extended to every detail which could contribute to the comfort of their visitors. The day was one of unclouded enjoyment; the weather was a perfect specimen of an Italian spring, and Vesuvius was tranquil enough to allow the more adventurous members of the party to explore every part of the crater, only deigning to eject a few stones as Parthian arrows at the descending meteorologists.

The Congress at Rome will remain in the memory of all who took part in it as one of the pleasantest and most successful opportunities of international scientific intercourse which has ever been organised.

OUR ASTRONOMICAL COLUMN

TEMPEL'S COMET (1867 II).—The following ephemeris of this comet is deduced from M. Gautier's elements, but with the perihelion passage corrected to May 6^h 9^m 37^s G.M.T. to accord with the approximate position observed by Dr. Tempel on April 24:—

At Greenwich Midnight						
1879.	Right Ascension.			Declination.	Log. distance from Earth.	Log. distance from Sun.
	h.	m.	s.			
May 15 ...	16	50	3	... - 16° 17' 6"	... 9'8959	... 0'2487
17 ...	— 49	15	...	16 36' 6		
19 ...	— 48	20	...	16 55' 9	... 9'8911	... 0'2492
21 ...	— 47	20	...	17 15' 6		
23 ...	— 46	16	...	17 35' 8	... 9'8880	... 0'2498
25 ...	— 45	8	...	17 56' 3		
27 ...	— 43	58	...	18 17' 1	... 9'8866	... 0'2506
29 ...	— 42	45	...	18 38' 1		
31 ...	— 41	31	...	18 59' 3	... 9'8871	... 0'2515
June 2 ...	— 40	16	...	19 20' 6		
4 ...	— 39	2	...	19 42' 0	... 9'8895	... 0'2527
6 ...	— 37	49	...	20 3' 4		
8 ...	— 36	38	...	20 24' 8	... 9'8937	... 0'2539
10 ...	— 35	29	...	20 46' 1		
12 ...	— 16	34	23	... - 21° 7' 2"	... 9'8996	... 0'2554

The intensity of light is at a maximum about May 26, but is not then very materially greater than on April 24, when the comet was described by Dr. Tempel as a faint object. In 1867 it was observed at Athens until the theoretical intensity of light had diminished to 0.21, so that with the larger telescopes in the southern hemisphere observations may be possible in August. The position for August 13.5 is in R.A. 16h. 58.8m., Decl. - 29° 11'. When brightest in 1867, the nucleus was star-like and of 9.7 m., the value of I. at the time being 1.23.

During the ensuing revolution considerable perturbation may again result from the action of the planet Jupiter, though not to so great an extent as in the revolution 1867-73. Using the above time for perihelion passage in the present year and taking the mean daily motion, 593".184, it appears that the least distance of the comet from the planet will be about 0.58 of the earth's mean distance from the sun, in the middle of October 1881, and that from the beginning of July, 1881, to the middle of January, 1882, the comet will always be within 0.65; this

will again necessitate a rigorous calculation of the perturbations to insure a near prediction of the comet's track in the heavens in 1885.

It was at one time suggested that the object detected by M. Goldschmidt on May 16, 1855, while searching for De Vico's comet of short period, might have been the comet of which we are writing; but the late Dr. von Asten undertook the calculation of the perturbations backward for two revolutions from 1867, and found that the comet being in perihelion on February 1, 1856, with elements not very different from those of 1867, could not have been identical with Goldschmidt's nebulousity. So far, therefore, as is known at present, there is no recorded observation of Tempel's comet previous to April 3, 1867, notwithstanding it may have performed many earlier revolutions in the restricted orbit it now describes; but the case is similar with other comets of short period.

BRORSEN'S COMET.—Dr. Krueger has kindly sent us two meridian observations, made at Helsingfors, of the star over which Major Tupman witnessed a nearly central transit of this comet on May 3 (NATURE, vol. xx. p. 27). The star was rated 8.7 mag., and its mean position for 1875.0 was R.A. 6h. 9m. 14.84s., Decl. + 61° 28' 8".5. Whence the apparent position of the comet by Major Tupman's observation was on May 3, at 10h. 11m. 14s. G.M.T. in R.A., 6h. 9m. 39.15s., Decl. + 61° 28' 30".9, showing corrections to the ephemeris, published in this column, of + 13s. in R.A., and + 2' in declination.

ANNUAIRE POUR L'AN 1879, PUBLIÉ PAR LE BUREAU DES LONGITUDES.—It has not been from want of appreciation of the astronomical contents of this small volume, so ably edited by M. Lœwy, that earlier allusion to it has not been found in this column. It provides information of a kind which is not to be met with in so collective a form elsewhere, and must be a valuable adjunct to the astronomical amateur, who needs reference to a really reliable authority on such details as the maxima and minima of variable stars and the general elements of the solar system, including periodical comets. M. Lœwy presents in one list the positions and limiting magnitudes of the variable stars of which the periods are known, and in a second list similar particulars of a large number of stars known to be variable, but of which the periods have not yet been determined; these lists are followed by an ephemeris of maxima and minima, arranged in order of date, with the minima of the more rapid variables, Algol, λ Tauri, S Cancri, δ Libræ, and U Coronæ. There is also a carefully-prepared list of the elements of the minor planets to No. 191 inclusive, such a catalogue, in fact, as has often been inquired for by those who do not see the *Berliner Astronomisches Jahrbuch*. The general contents of the *Annuaire* are as full and varied as usual, but for the reasons named it has now an especial value for amateurs of astronomy, and its almost nominal price places it within reach of all. M. Janssen makes an important addition in his "Notice sur les Progrès récent de la Physique solaire," which is accompanied by a photograph of a portion of the sun's disc, taken at the observatory at Meudon, June 1, 1878, illustrating the rapid transformations occurring in the photospheric network and granulations within less than an hour.

AN INTER-OCEANIC CANAL

TODAY the long-talked-of International Congress on the subject of a canal across the Central American Isthmus meets in Paris under the presidency of M. De Lesseps. This question is a very old one, but the movement which has led up to the present Congress commenced only in 1875, at the instigation of Lieut. Lucien N. B. Wyse, of the French Navy. At the International Congress of Geography of that year the subject of the