

ASTRONOMICAL PHENOMENA FOR THE WEEK, 1885, MARCH 29 TO APRIL 4

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on March 29

Sun rises, 5h. 44m.; souths, 12h. 4m. 44'7s.; sets, 18h. 27m.; decl. on meridian, 3° 34' N.; Sidereal Time at Sunset, 6h. 56m.

Moon (Full on March 30) rises, 17h. 20m.; souths, 23h. 32m.; sets, 5h. 33m.*; decl. on meridian, 0° 35' S.

Planet	Rises h. m.	Souths h. m.	Sets h. m.	Decl. on meridian
Mercury ...	6 3 ...	13 0 ...	19 57 ...	10° 27' N.
Venus ...	5 37 ...	11 32 ...	17 28 ...	1° 31' S.
Mars ...	5 32 ...	11 30 ...	17 28 ...	1° 10' S.
Jupiter ...	14 12 ...	21 28 ...	4 44* ...	13° 49' N.
Saturn ...	8 38 ...	16 43 ...	0 48* ...	21° 51' N.

* Indicates that the setting is that of the following day.

Occultations of Stars by the Moon

March	Star	Mag.	Disap.		Reap.		Corresponding angles from vertex to right for inverted image
			h. m.	h. m.	h. m.	h. m.	
29 ...	75 Leonis ...	5½ ...	0 14 ...	1 25 ...	75 284		
29 ...	76 Leonis ...	6 ...	1 36 ...	2 17 ...	43 334		
29 ...	79 Leonis ...	5½ ...	3 57 ...	4 54 ...	112 287		
31 ...	B.A.C. 4591 ...	6 ...	21 20 ...	22 26 ...	18 240		

Phenomena of Jupiter's Satellites

March	h. m.	Phenomenon	March		April	
			h. m.	h. m.	h. m.	h. m.
29 ...	1 32	I. ecl. reap.	31 ...	19 14	III. ecl. disap.	
	19 44	I. tr. ing.		22 41	III. ecl. reap.	
	22 4	I. tr. egr.				
30 ...	20 0	I. ecl. reap.	1 ...	19 11	II. occ. disap.	
31 ...	0 6	II. tr. ing.		23 53	II. ecl. reap.	
	3 1	tr. egr.	2 ...	2 59	IV. tr. ing.	
	19 13	III. occ. reap.	4 ...	3 5	I. tr. ing.	

The Occultations of Stars and Phenomena of Jupiter's Satellites are such as are visible at Greenwich.

March 30.—Partial eclipse of the Moon. The times of first contact with the penumbra and shadow are 13h. 49m. and 14h. 58m. respectively; the middle of the eclipse is at 16h. 34m.; the times of last contact with the shadow and penumbra are 18h. 9m. and 19h. 18m. respectively. The Moon will rise at Greenwich after having left the shadow but whilst still obscured by the penumbra.

GEOGRAPHICAL NOTES

IT seems probable that the Geographical Societies of Berlin and Munich will join that of Vienna in sending Dr. Lenz to Africa.

MR. O'NEILL, our Consul at Mozambique, who has done some excellent exploring work in the Lake Nyassa region, has just arrived in this country, and will shortly read a paper before the Royal Geographical Society.

AT the meeting of the Geographical Society on Monday, when a paper by Major Holdich was read on the geographical work of the Afghan Frontier Commission, Sir Richard Temple spoke in strong terms of the complete ignorance of geography in this country and the consequent incompetency of the public to judge of the true bearings of such a matter as that now pending between Russia and England. The Society, he remarked, performs a public service in bringing before the public such papers as that of Mr. Holdich, and we hope they will succeed in obtaining for geography the position it ought to have in English education.

WE learn from the *Times* Paris Correspondent that the War Ministries of France, Germany, and Italy have recently been examining attentively geographical maps in relief, constructed on a system of which M. de Mendouca, a Portuguese Councillor of State, President of the Banco Lusitano, possesses the patent, and is the promulgator. These relief maps are stated to combine the advantages generally admitted to be possessed

by relief maps and the convenience and accuracy of maps on flat surfaces. The Correspondent states that this new method rapidly reproduces, by a chemical and mechanical process, plane maps with the curves and altitudes in relief, so represented as to correspond absolutely with the elevations established by accurate observations. These maps are drawn on paper, which may be described as thin. They are not, however, put out of shape even by being trodden upon. Yet they may be rolled up and placed in the narrowest case, so that they are very portable and light. They are not injured by water. The Correspondent soaked one of them for forty-eight hours in water, and, on taking it out, all the part which was in relief—that is all the part subjected to chemical processes—remained absolutely intact. The relief, the Correspondent states, is produced on them in such a manner that at a single glance one can take in the whole topography of a district, its defiles and heights, its water-courses, and all the lesser obstacles of the country in which military operations have to be carried on. Of course relief maps are well known and plentiful. The drawback to those which include large areas is that the altitudinal scale has to be greatly exaggerated. Both in Germany and Switzerland beautiful reliefs of limited areas are made, not only in plaster, but also in papier-mâché, the horizontal and altitudinal scales of which are the same. These new maps, however, seem to possess many advantages over either plaster or papier-mâché, and we should like to know how large are the areas which are contained in them. We are also curious to learn the chemical process used, and whether embossing is not to some extent employed.

IN the *Mittheilungen* of the Vienna Geographical Society for February (Bd. xxviii. No. 2), Prof. Blumentritt describes the states existing in the Philippine Islands at the time of the Spanish Conquest. These were of two kinds: Mohammedan principalities, which were the larger and more important, the polity of which was based on the feudal system; and a vast number of small states, consisting of only a few villages each, in which the Government was based on a complicated system of slavery. The latter is described at considerable length, and is exceedingly interesting. Herr Heller completes his paper on the Rilo-Dagh; while Baron Kaulbars translates from the Russian the recent letters of Col. Prjevalsky from Central Asia. The President, we are glad to observe, was able to announce that the recent appeal of the Council for more members to enable the Society to take a place worthy of the Austrian capital in geographical science has been very successful, 402 new members having joined up to February 24. At the meeting held on that date the Librarian, Dr. Le Monnier, described Mr. Thomson's recent journey into Eastern equatorial Africa; and Dr. Zehden read a paper on Shamanism in Upper Austria, which will be printed in the next part of the *Transactions*.

THE last number of the *China Review* contains a lengthy paper on Formosa by Messrs. Colquhoun and Stewart-Lockhart. It professes to be based on all available sources of information, and on the evidence of those who have resided and travelled in the island. The most interesting section is one on the Dutch in Formosa, which is followed by an account of the Chinese rule. The physical geography, and the cities and communications, are treated in some detail; but the portion on the aborigines was written without much reference to "available sources." The precise position of these aborigines is one of the most curious problems in ethnology, and very much more has been written about them than the authors of this paper seem to be aware of. They note a very curious custom among the males. They are deprived of their eye-teeth, which are knocked out when they are quite young. By some it is thought that this improves the wind for hunting, whilst others consider that it increases the beauty of their appearance.

ACCIDENTAL EXPLOSIONS PRODUCED BY NON-EXPLOSIVE LIQUIDS¹

II.

THE disaster on board the *Triumph*, combined with the fact that this xerotine siccativ had been issued to H.M.'s ships generally, the authorities and officers of the navy having been in ignorance as to its dangerous nature, re-directed official attention

¹ Address delivered at the Royal Institution of Great Britain, Friday March 13, 1885, by Sir Frederick Abel, C.B., D.C.L., F.R.S., M.R.I. Continued from p. 472.