

nomy in the United States, with especial reference to its earliest days; indeed Prof. Safford in his address went back not merely to the surveying work of Mason and Dixon, but even glanced lightly at the history of the institution where the former had been trained—Greenwich Observatory. The Hopkins Observatory was the work of the two brothers, President Mark Hopkins and Prof. Albert Hopkins, the latter of whom worked with his own hands at the erection of the building. Both were gifted men, and of advanced ideas, and their purpose in erecting the Observatory seems to have been the hope that the practical work of observing would increase their students' interest in the science, and develop their powers in fresh directions. It is still used by the students for occasional star-gazing, but for scientific purposes it has been superseded of late years by the meridian instrument of the "Field Memorial Observatory." The Hopkins Observatory was soon followed by others, at West Point, at Harvard College, at Washington, and other places, but though there had been previously one or two private observatories, and also a few telescopes in the possession of some public bodies, as, for example, at Yale College, yet until 1838 no permanent structure had been erected for any public observatory, so that the credit of being the pioneer of the long and distinguished succession of American Observatories belongs to the little building erected by the energy of Prof. Hopkins.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1888 DECEMBER 9-15.

(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 December 9

Sun rises, 7h. 56m.; souths, 11h. 52m. 48' 6s.; sets, 15h. 47m.; right asc. on meridian, 17h. 7' 4m.; decl. 22° 54' S. Sidereal Time at Sunset, 21h. 4m.

Moon (at First Quarter December 10, 7h.) rises, 12h. 36m.; souths 17h. 43m.; sets, 23h. om.; right asc. on meridian, 22h. 58' 8m.; decl. 10° 51' S.

Planet.	Rises.		Souths.		Sets.		Right asc. and declination on meridian.	
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	° ' "
Mercury...	7 1	11 7	15 13	16 21	21 23	S.		
Venus...	10 41	14 37	18 33	19 51	23 4	S.		
Mars.....	11 4	15 19	19 34	20 34	20 5	S.		
Jupiter...	7 52	11 51	15 50	17 57	22 27	S.		
Saturn....	20 53*	4 19	11 45	9 32	15 40	N.		
Uranus...	2 39	8 4	13 29	13 18	7 37	S.		
Neptune..	14 54	22 38	6 22*	3 54	18 34	N.		

* Indicates that the rising is that of the preceding evening and the setting that of the following morning.

Variable Stars.

Star.	R.A.		Decl.		h. m.
	h. m.	h. m.	h. m.	h. m.	
U Cephei ...	0 52	81 16	N.	Dec. 9,	23 25 m
Algol ...	3 09	40 31	N.	" 14,	23 5 m
U* Orionis...	5 49	20 9	N.	" 9,	9 M
T Monocrotis...	6 19	7 9	N.	" 11,	3 0 M
ζ Geminorum ...	6 57	20 40	N.	" 9,	6 0 m
R Canis Majoris ...	7 14	16 12	S.	" 9,	19 9 m
and at intervals of 27 16					
T Canis Minoris ...	7 27	11 59	N.	Dec. 9,	12 M
S Libræ ...	15 15	19 59	S.	" 12,	m
T Herculis ...	18 49	31 0	N.	" 9,	12 M
β Lyræ... ..	18 46	33 14	N.	" 13,	20 0 m
R Serpentis ...	19 10	19 3	S.	" 13,	M
S Aquilæ ...	20 6	15 17	N.	" 15,	m
T Vulpeculæ ...	20 46	27 50	N.	" 9,	19 0 m
Y Cygni ...	20 47	34 14	N.	" 10,	1 48 m
δ Cephei ...	22 25	57 51	N.	" 13,	1 42 m
				" 11,	6 0 M
				" 15,	0 0 m

M signifies maximum; m minimum.

* Mr. Gore's new variable discovered in 1885. This star has hitherto been more generally known as T Orionis, but as Mr. Chandler gives it the above denomination in his new Catalogue of Variable Stars, reserving T Orionis for the tenth magnitude variable in the great Orion nebula discovered by Bond in 1863, it will be well for observers, in order to avoid confusion, to follow his nomenclature.

Meteor-Showers.

	R.A.	Decl.	
Near Castor ...	108	33 N.	Swift; short. The Geminiids. Max. December 10-11.
From Leo Minor ...	144	38 N.	Swift; streaks.
„ Sextans ...	145	7 N.	„ „
Near λ Draconis ...	160	70 N.	

GEOGRAPHICAL NOTES.

THE rumour brought from the Cameroons as to the position of Mr. Stanley is too vague to be of much value. He is said to be behind "the Oil Rivers and the Niger," annexing territories wholesale for the British Crown. He may possibly enough be coming out in this direction. If so, he must have been with Emin, for it is inconceivable that, if able to get so far, he would fail in the chief object of his mission. If he has been with Emin, that must have been some time ago, and surely some word of it would have oozed out. We should not be surprised to find Mr. Stanley coming out by the West Coast; it would be quite in accordance with the purpose he had of settling, if possible, the problem of the Shari and Wellé. He may have sought to discover the parting that separates the basins of Lake Chad and the Congo, and the upper waters of the Binué. If he has really been on the Binué, we should have expected some definite news from the officials of the Royal Niger Company.

THOUGH Mr. Joseph Thomson was summoned home from Morocco to lead an expedition to Emin Pasha, we regret to learn that the British East African Company are hesitating to carry out the purpose they entertained when they telegraphed for Mr. Thomson.

M. RABOT, in describing to the Paris Geographical Society the results of a visit which he recently made to Western Greenland, states the following conclusions:—In comparing the inland ice of Greenland with the glaciers of Lapland, it appears to him absolutely certain that the latter are nothing more than inland ice in miniature. The Lapland glaciers are simply the remains of the Glacial period in Scandinavia, which have persisted to the present time owing to special circumstances. The great glacier of Jakobshavn, on the west coast of Greenland, has been advancing during the last few years. Its front edge is at present 3 kilometres in advance of the point where it was seen by Lieut. Hammer in 1878. The drift ice of the south-west coast transports only a very small quantity of material. M. Rabot saw only one piece among fifty or sixty which bore debris of detritic origin, while traversing pack-ice 60 miles broad. Only one piece was black with earth.

IN connection with Dr. Nansen's journey across Greenland, a paper by Dr. Rink, in No. 137 of the *Zeitschrift* of the Berlin Geographical Society, is of interest. Dr. Rink discusses the data which have been obtained by the various Danish Expeditions to Greenland, as well as by the parties which at different times have attempted to cross the land. He enters in some detail into the general subject of glaciation, and the relation between glaciers and icebergs. He seems to be of opinion that the ice of Greenland is shrinking, as he points out that there are evidences that at one time the ice covered the whole of the coast-land, which is at present free, as well as the peninsulas and islands in its vicinity.

THE same number contains a paper, by Dr. von Danckelmann, on the altitudes of the country at the junction of the Kassa and Congo.

IN No. 8 of the *Verhandlungen* of the Berlin Geographical Society, Dr. Schweinfurth gives a useful sketch of his explorations in Egypt during the past fifteen years. In a letter to the President, in the same number, Dr. Hettner describes his observations on the Peruvian coast between Mollendo and Arequipa.