

to be a parabola for the sake of simplicity, and the following observation made by Herr Palisa at Vienna being used :—

August 27, 15h. 27m. 12s. Vienna M.T.  
R. A. = 8h. 42m. 55.71s., Decl. 29° 34' 24".7 N.

*Ephemeris for Berlin Midnight.*

1887.	R.A.	Decl.	Log r.	Log Δ.
	h. m.	°		
September 5 ...	9 21.1	30 16 N.	0.120	0.311
9 ...	9 39.7	30 20	0.112	0.304
13 ...	9 58.8	30 16	0.105	0.297
17 ...	10 18.4	30 2 N.	0.099	0.291

THE MORRISON OBSERVATORY.—The first number of the publications of the Morrison Observatory, Glasgow, Missouri, U.S.A., has just appeared. This Observatory was founded, in 1875, by the liberality of Miss Berenice Morrison, and possesses an equatorial refractor by Alvan Clark, of 12½ inches aperture, and a transit-circle by Troughton and Simms, with objective of 6 inches aperture and 77 inches focal length, the circles being 24 inches in diameter. In this first volume Prof. C. W. Pritchett, the Director, gives a history and description of the Observatory, with an account of the determination of the longitude and latitude of the meridian pier, besides a selection of such observations and notes made at the Observatory as are likely to be of use to astronomers. These latter include measures of double stars, observations of occultations, of the transit of Mercury, 1878, measures of the diameter of Mars, observations of comets, of Jupiter and Saturn, and of the figure and dimensions of Uranus. Prof. Pritchett's work appears to have been seriously crippled through lack of means, and, considering the excellent use which he has made of the resources at his command, it is to be hoped that he may speedily find himself in a position to carry on the operations of the Observatory on a more extended scale.

NEW OBSERVATORY AT JUVISY.—The current number of *L'Astronomie* contains a description of a new Observatory belonging to M. Camille Flammarion, which has just been completed. An admirer of M. Flammarion had presented him some five years ago with a little chateau and park situated on the road from Paris to Fontainebleau of historic name and interest. The house, which was built in 1730, possessed walls so thick and solid as to serve as a perfectly stable base for the equatorial and dome with which M. Flammarion has surmounted it. The dome is 5 m. in interior diameter, and covers an equatorial by Bardou of 0.24 m. aperture and 3.75 m. focal length, with clockwork by Bréguet, furnished with a Villarceau governor. Two smaller telescopes—one by Secretan of 108 mm. aperture, the other by Foucault of 160 mm., stand on the adjoining terrace. The Observatory, the co-ordinates of which are East longitude from Paris oh. om. 8s., N. latitude 48° 41' 36", commands an uninterrupted horizon, and an atmosphere noticeably purer than that of Paris.

THE TOTAL SOLAR ECLIPSE OF AUGUST 19.—We learn from the current number of *Ciel et Terre* that M. Niesten, of the Brussels Observatory, was fairly successful in his observations of the eclipse. It had been his intention to push on as far east as Perm, but a delay in the arrival of his instruments led him to accompany M. Belopolsky to Jurjewitz on the Volga. The sky was cloudy here as at most of the other stations, but cleared a little round the sun at the time of totality, and M. Niesten was able to see the chromosphere and prominences, and the appendices of the corona, and his assistant secured eight photographs, of which six were good. The exposures varied from 8 seconds to half a minute; the chromosphere and prominences were shown on all, and two gave traces of the corona and also of Regulus, which was near the sun. M. Karinne, a Moscow photographer of the same station, also secured several photographs. A drawing which M. Niesten made of the corona showed a strongly-marked coronal ray, about a degree in length, in the direction of the solar equator.

MINOR PLANET No. 267.—M. Charlois, of Nice, who discovered this object, has named it Tirza.

**ASTRONOMICAL PHENOMENA FOR THE WEEK 1887 SEPTEMBER 11-17.**

(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 September 11*

Sun rises, 5h. 30m.; souths, 11h. 56m. 36".1s.; sets, 18h. 24m.; decl. on meridian, 4° 35' N.: Sidereal Time at Sunset, 17h. 46m.

Moon (New, September 17, 14h.) rises, 22h. 27m.\*; souths, 6h. 22m.; sets, 14h. 22m.; decl. on meridian, 19° 12' N.

Planet.	Rises.	Souths.	Sets.	Decl. on meridian.
	h. m.	h. m.	h. m.	°
Mercury ...	5 28	12 1	18 34	5 48 N.
Venus ...	7 23	12 40	17 57	9 9 S.
Mars ...	1 43	9 29	17 15	18 55 N.
Jupiter ...	9 46	14 48	19 50	12 1 S.
Saturn ...	1 8	9 0	16 52	19 47 N.

\* Indicates that the rising is that of the preceding evening.

Sept.	h.	
14 ...	2	Saturn in conjunction with and 1° 39' north of the Moon.
14 ...	18	Mars in conjunction with and 1° 48' north of the Moon.
17 ...	16	Venus in conjunction with and 12° 50' south of the Moon.
17 ...	22	Mercury in conjunction with and 2° 33' south of the Moon.

*Variable Stars.*

Star.	R.A.	Decl.	Sept. 11.	h. m.
	h. m.	°		
Algol ...	3 0.8	40 31 N.	11	2 19 m
λ Tauri ...	3 54.4	12 10 N.	11	3 6 m
δ Libræ ...	14 54.9	8 4 S.	11	1 59 m
U Coronæ ...	15 13.6	32 4 N.	11	2 34 m
R Draconis ...	16 32.4	67 0 N.	11	12, 4 5 m
U Ophiuchi ...	17 10.8	1 20 N.	11	16, 19 48 m
and at intervals of 20 8				
X Sagittarii ...	17 40.5	27 47 S.	14	23 0 m
W Sagittarii ...	17 57.8	29 35 S.	14	4 0 M
U Sagittarii ...	18 25.2	19 12 S.	14	0 0 m
R Aquilæ ...	19 0.9	8 4 N.	16	0 0 m
η Aquilæ ...	19 46.7	0 43 N.	14	4 0 M
W Cygni ...	21 31.8	44 52 N.	11	11, 2 0 M
δ Cephei ...	22 25.0	57 50 N.	11	15, 20 0 m

M signifies maximum; m minimum.

*Meteor-Showers.*

	R.A.	Decl.	
Near χ' Orionis ...	88°	18° N.	Very swift; streaks.
„ 50 Aurigæ ...	98	43 N.	Very swift; streaks.
„ α Lyræ ...	282	42 N.	Swift; bright; long.
„ γ Piscium ...	346	0 N.	Slow; bright.

**SCIENTIFIC SERIALS.**

THE most interesting item of information in the *Journal of Botany* for August is the record of an addition to the flowering plants of Great Britain, in the discovery, by Mr. H. C. Hart, of the Arctic *Arabis alpina* in Skye.—Mr. Tokutaro Ito, has an interesting paper on the history of botany in Japan.

*Rendiconti del Reale Istituto Lombardo*, June 30.—On the normal derivatives of the potential function of surfaces, by G. Morera. This paper forms a supplement to the author's late communication (*Rendiconti*, vol. xx, Part 8) on the derivatives of the potential function of space. The extremely simple analytical method by which he succeeded in determining general conditions for the existence of those derivatives and their effective expressions has also enabled him to solve the analogous question regarding the normal derivatives of the potential function of surfaces.—On the part played by sensuous images on the development and exercise of the reasoning faculty, by Tito Vignoli. In this paper the author investigates the actual form and genesis of perceptions acquired through the senses, from the standpoint of their efficacy in developing and sharpening the intelligence of animals. The subject is treated comparatively, it being impossible to understand any act or fact of human psychology unless studied in connexion with similar manifestations in