

relates to the region of Behring Strait, and to the search expeditions in that direction between 1848-54. The whole series has been discussed in a uniform and most complete manner by Mr. R. Strachan, and all the available information relating to the physical phenomena, and to the movements of animals and birds, has been thoroughly exhausted. The work contains most valuable data for scientific inquiry, and for use in any future expeditions to those remote regions.

THE additions to the Zoological Society's Gardens during the past week include two Toque Monkeys (*Macacus pileatus* ♂ ♀) from Ceylon, presented by Mrs. Ellen Hodson; a Moustache Monkey (*Cercopithecus cephus* ♂) from West Africa, presented by Mr. Andrew Allen; a Common Otter (*Lutra vulgaris* ♀), British, presented by Mr. John Crisp; a Japanese Deer (*Cervus sika* ♂) from Corea, presented by Capt. H. C. Eagles, R.M.I.I.; three Virginian Opossums (*Didelphys virginiana* ♂ ♀ ♀) from North America, presented by Mr. G. F. Whateley, R.N.; a Common Chameleon (*Chameleon vulgaris*) from North Africa, presented by Mr. George Berry; a Collared Mangabey (*Cercocebus collaris*) from West Africa, a Grey Ichneumon (*Herpestes griseus*) from India, two Cockateels (*Calopsitta nova-hollandiæ*) from Australia, four Snow Geese (*Chen albatus*) from North America, a Larger Hill-Mynah (*Gracula intermedia*) from Northern India, deposited; four Radiated Tortoises (*Testudo radiata*) from Madagascar, purchased; an Indian Swine (*Sus cristatus*) from India, a Nilotic Trionyx (*Trionyx aegypticus*) from the River Nile, received in exchange.

OUR ASTRONOMICAL COLUMN.

THE RING NEBULA IN LYRA.—Prof. Holden reports that this object, as seen with the great Lick refractor, shows far more detail than had been detected either by Lassell with his 4-foot reflector, or by the Washington observers with the great 26-inch refractor. With these telescopes thirteen stars had been seen in an oval outside the ring, and one star had been seen within it. The 36-inch Lick telescope shows twelve stars within the ring or projected upon it, and renders it obvious that the nebula consists of a series of ovals or ellipses: first the ring of stars, then the outer and inner edges of the nebulosity, next a ring of faint stars round the edges of the inner ring, and last a number of stars situated on the various parts of the nebulosity and outer oval.

COMETS BROOKS AND FAYE.—The following ephemerides are in continuation of those given in NATURE, vol. xxxviii. p. 576:—

Comet 1888 c (Brooks).				Comet 1888 d (Faye).			
1888.	R.A.	Decl.		R.A.	Decl.		
	h. m. s.	° ' "		h. m. s.	° ' "		
Oct. 29	16 47 54	0 14' 1" S.		7 53 14	8 22' 3" N.		
31	16 52 12	0 59' 0"		7 55 34	7 58' 4"		
Nov. 2	16 56 26	1 42' 0"		7 57 48	7 34' 6"		
4	17 0 33	2 23' 2"		7 59 53	7 11' 0"		
6	17 4 36	3 2' 7"		8 1 50	6 47' 5"		
8	17 8 35	3 40' 6"		8 3 39	6 24' 3"		
10	17 12 30	4 17' 0"		8 5 21	6 1' 3"		
12	17 16 21	4 51' 8" S.		8 6 55	5 38' 7" N.		

COMET 1888 e (BARNARD).—The following ephemeris for Berlin midnight is by Herr A. Berberich (*Astr. Nach.*, No. 2861):—

1888.	R.A.	Decl.	Log r.	Log Δ.	Bright-ness.
	h. m. s.	° ' "			
Oct. 28	5 40 6	3 48' 7" N.	0'3370	0'1498	6.0
30	5 32 12	3 17' 5"			
Nov. 1	5 23 39	2 44' 6"	0'3317	0'1214	7.1
3	5 14 24	2 9' 9"			
5	5 4 28	1 33' 4"	0'3265	0'0949	8.2
7	4 53 50	0 55' 3"			
9	4 42 31	0 16' 0" N.	0'3214	0'0716	9.4

The brightness at discovery is taken as unity.

AMERICAN OBSERVATORIES.—Prof. W. W. Campbell has been appointed to the position in the Observatory of Ann Arbor which was held by Mr. J. M. Schaeberle previous to his appointment as assistant at the Lick Observatory.

The Observatory at Iowa College, Grinnell, Iowa, possesses a fine equatorial of 8 inches aperture by the Clarks, and strong efforts are being made to obtain a transit-instrument and chronograph, and sidereal and mean clocks, so that a time service may be maintained.

The Carleton College Observatory, Northfield, Minnesota, is now a very well equipped institution, with transit and prime vertical instruments, besides the old equatorial of 8½ inches, and the new one of 16 inches aperture, the 30-foot dome for which is already in its place. A standard time service has been organized, and standard "Central" time—that is, time six hours later than Greenwich mean time—is distributed to nine railways, embracing in all more than 12,000 miles of road. The charge of this department has been given to Miss C. R. Willard. Dr. H. C. Wilson, late of Mount Lookout, Cincinnati, is Assistant Professor of Astronomy at Carleton College, and Prof. W. W. Payne, editor of the *Sidereal Messenger*, is Director of the Observatory.

MESSRS. FEARNLEY (the Director of the Christiania Observatory) and Geelmuyden have published zone observations of the stars between 64° 50' and 70° 10' north declination, made at the Observatory. The volume is a large one of 319 pages. The observations are preceded by an introduction giving an account of the work.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1888 OCTOBER 28—NOVEMBER 3.

(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 October 28

Sun rises, 6h. 50m.; souths, 11h. 43m. 49' os.; sets, 16h. 38m.; right asc. on meridian, 14h. 12' 8m.; decl. 13° 22' S. Sidereal Time at Sunset, 19h. 8m.
Moon (at Last Quarter October 28, 2h.) rises, 22h. 8m.*; souths 6h. 12m.; sets, 14h. 6m.; right asc. on meridian, 8h. 40' 1m.; decl. 19° 31' N.

Planet.	R.ses.		Souths.		Sets.		Right asc. and declination on meridian.	
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	
Mercury...	7 40	12 12	16 44	14 41' 6"	17 23	17 23	0 S.	
Venus....	9 35	13 38	17 41	16 7' 7"	21 48	21 48	S.	
Mars.....	12 6	15 47	19 28	18 17' 0"	24 58	24 58	S.	
Jupiter...	9 49	13 57	18 5	16 26' 4"	21 13	21 13	S.	
Saturn....	23 33*	7 0	14 27	9 28' 1"	15 51	15 51	N.	
Uranus...	5 12	10 41	16 10	13 10' 1"	6 47	6 47	S.	
Neptune..	17 46*	1 32	9 18	3 59' 4"	18 48	18 48	N.	

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

Oct. 29 ... 4 ... Saturn in conjunction with and 1° 16' south of the Moon.

Nov. 1 ... 0 ... Mercury in inferior conjunction with the Sun.
1 ... 21 ... Venus in conjunction with and 1° 31' south of Jupiter.

3 ... 12 ... Mercury in conjunction with and 4° 50' south of the Moon.

Variable Stars.

Star.	R.A.	Decl.	h. m.
	h. m.	° ' "	h. m.
U Cephei ...	0 52' 4"	81 16' N.	Oct. 31, 2 9 m
Algol ...	3 0' 9"	40 31' N.	30, 20 29 m
λ Tauri...	3 54' 5"	12 10' N.	3, 4 38 m
			Nov. 3, 3 30 m
R Canis Majoris...	7 14' 5"	16 12' S.	Oct. 31, 0 51 m
			Nov. 1, 4 7 m
U Monocerotis ...	7 25' 5"	9 33' S.	Oct. 31, 1 m
S Cancri ...	8 37' 5"	19 26' N.	29, 23 42 m
U Ophiuchi...	17 10' 9"	1 20' N.	Nov. 1, 18 12 m
δ Lyræ...	18 46' 0"	33 14' N.	1, 20 0 M
T Vulpeculæ ...	20 46' 7"	27 50' N.	Oct. 29, 20 0 M
			30, 21 0 m
γ Cygni ...	20 47' 6"	34 14' N.	29, 3 0 m
			Nov. 1, 3 0 m
δ Cephei ...	22 25' 0"	57 51' N.	2, 1 0 m

M signifies maximum; m minimum.

Meteor-Showers.

	R.A.	Decl.	
	h. m.	° ' "	
Near γ Arietis ...	43	22' N.	Slow; brilliant.
30 Tauri ...	56	10' N.	Slow; brilliant.
β Tauri ...	78	30' N.	Swift.