

will be in two volumes, the first of which is to appear next October.

THE additions to the Zoological Society's Gardens during the past week include a Silky Marmoset (*Midas rosalia*) from Brazil, presented by Mr. Percy Bewick Bewick; a Green Monkey (*Cercopithecus callitrichus* ♂) from West Africa, presented by Mrs. Dunn; a White-crowned Mangabey (*Cercocobus aethiops*) from West Africa, presented by Mr. N. King; a Grey Ichneumon (*Herpestes griseus*) from India, presented by Mr. W. A. Roof; a Black-backed Jackal (*Canis mesomelas* ♀) from South Africa, presented by Mrs. E. Thomas; a Grey Ichneumon (*Herpestes griseus* ♀) from India, a Demoiselle Crane (*Grus virgo*) from North Africa, presented by Mr. T. W. Proger; a Moor Monkey (*Semnopithecus maurus* ♀) from Java, deposited; a Talapoin Monkey (*Cercopithecus talapoin* ♀) from West Africa, received in exchange.

OUR ASTRONOMICAL COLUMN

DARK TRANSITS OF JUPITER'S FOURTH SATELLITE.—Prof. Davidson, of the U.S. Coast Survey, has communicated to the Californian Academy of Sciences some interesting notes of observations of "dark" transits of Jupiter's satellite IV. made by Mr. Burckhalter with a 10½-inch reflector. Mr. Burckhalter's observations on May 21, 1885, suggest the possibility that the satellite has an area of white surface and also an area of dark surface. When the satellite approached the planet it appeared bright, the white area being then the visible part; but when it had advanced some way on the disk, this white part was (on this supposition) lost in the superior brightness of the planet, and the dark area became visible. Prof. Davidson thinks it might even lead to the determination of the rotation period of the satellite if it were watched throughout the whole transit, and the different phases noted. Again, observing on June 7, 1885, Mr. Burckhalter saw the satellite as a dark spot on the edge of the north dark belt. But as soon as the satellite was clear of the planet's disk, it was noted to be north of this belt; so that it would appear from this observation also as if the satellite were divided into bright and dark areas, the south pole being the dark one. Prof. Davidson also observed the transit of June 7 with a 6¼-inch refractor, and confirms generally the appearances noted by Mr. Burckhalter.

NOVA ANDROMEDÆ OF 1885, AND NOVA SCORPII OF 1860.—With reference to Prof. Seeliger's researches on the subject of the Nova in Andromeda (NATURE, vol. xxxiii. p. 397), Herr Auwers draws attention in the *Astronomische Nachrichten*, No. 2715, to the great similarity of this outburst to the phenomenon observed by him in 1860 in the nebula 80 Messier in Scorpio. He considers that the probability that, in an interval of twenty-five years, two variable stars of so exceptional a character should be projected on the central part, in one case of a close star-cluster, in the other case of an object which appears to be, in part at least, a close star-cluster, is so small that the identity of the circumstances attending the phenomena of 1860 and 1885 makes it almost necessary to refer both outbursts to physical changes in the nebulae in which they respectively appeared. As Prof. Seeliger makes no mention of this (in Herr Auwers' opinion) very strong argument in favour of his supposition respecting the cause of the outburst in Andromeda, Herr Auwers is induced to do so, and takes the opportunity of publishing the details of his observations of the Nova of 1860, an account of the discovery of which was printed in the *Astronomische Nachrichten*, No. 1267. Herr Auwers states that having turned the Königsberg heliometer on 80 Messier on the evening of May 21, 1860, he saw a 7th magnitude star in the nebula, a little following the central part, which it quite outshone in brilliancy. By June 16 this star had degraded to magnitude 10.5. It will be remembered that the "new" star in Scorpio was independently discovered in this country by Mr. Pogson, whose attention was arrested on May 28, 1860, "by the startling appearance of a star of the 7.6 magnitude in the place which the nebula had previously occupied." On June 10, according to this observer, the stellar appearance had nearly vanished, but the cluster still shone with unusual brilliancy and a marked central condensation.

FABRY'S COMET.—The following ephemeris, by Dr. H.

Oppenheim (*Astr. Nach.* No. 2711) is in continuation of that given in NATURE for 1886 March 4:—

1886	R.A.			Decl.	Log r	Log Δ	Bright-ness
	h.	m.	s.				
March 23	23	16	58	36 5'6 N.	9.8421	0.0589	20
27	23	16	57	37 12.4	9.8233	0.0203	26
31	23	17	59	38 11.5	9.8102	9.9744	34
April 4	23	20	55	38 58.9	9.8043	9.9198	45
8	23	27	4	39 28.7	9.8062	9.8547	61
12	23	38	33	39 31.4 N.	9.8157	9.7767	83

The brightness on December 2 is taken as unity.

BARNARD'S COMET.—The following ephemeris, by Dr. A. Krueger (*Astr. Nach.* No. 2710), is in continuation of that given in NATURE for 1886 March 4:—

1886	R.A.			Decl.	Log r	Log Δ	Bright-ness
	h.	m.	s.				
March 22	1	51	49	27 34.3 N.	0.0217	0.2230	7.12
26	1	51	13	28 57.0	9.9917	0.2144	8.51
30	1	50	34	30 23.2 N.	9.9594	0.2036	10.38

The brightness on December 5 is taken as unity.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1886 MARCH 21-27

(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 21

Sun rises, 6h. 1m.; souths, 12h. 7m. 15.4s.; sets, 18h. 13m.; decl. on meridian, 0° 19' N.: Sidereal Time at Sunset, 6h. 10m.

Moon (one day after Full) rises, 18h. 50m.\*; souths, oh. 53m.; sets, 6h. 45m.; decl. on meridian, 2° 35' S.

Planet	Rises	Souths	Sets	Decl. on meridian
	h. m.	h. m.	h. m.	° ' "
Mercury ...	6 19	13 12	20 5	9 40 N.
Venus ...	4 23	9 43	15 3	8 37 S.
Mars ...	15 54	22 55	5 56*	11 11 N.
Jupiter ...	18 4*	0 13	6 22	0 59 N.
Saturn ...	9 59	18 11	2 23*	22 48 N.

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

Occultations of Stars by the Moon (visible at Greenwich)

March	Star	Mag.	Disap.	Reap.	Corresponding angles from vertex to right for inverted image
			h. m.	h. m.	° ' "
23	γ Libræ	4½	23 19	23 58	93 167
24	η Libræ	6	4 18	5 34	75 285

March	h.	Phenomenon
21	19	Jupiter in opposition to the Sun.
22	2	Mercury at greatest elongation from the Sun, 19° east.
25	—	Venus at greatest morning brilliancy.

Variable Stars

Star	R.A.	Decl.	h. m.
	h. m.	° ' "	h. m.
U Cephei ...	0 52.2	81 16 N.	Mar. 23, 19 35 m
Algol ...	3 0.8	40 31 N.	" 21, 1 7 m
			" 23, 21 56 m
R Aurigæ ...	5 8.1	53 27 N.	" 22, m
ζ Geminorum ...	6 57.4	20 44 N.	" 25, 4 50 M
U Monocerotis ...	7 25.4	9 32 S.	" 21, M
δ Libræ ...	14 54.9	8 4 S.	" 25, 21 18 m
T Libræ ...	15 4.2	19 35 S.	" 24, M
U Coronæ ...	15 13.6	32 4 N.	" 23, 2 29 m
U Ophiuchi ...	17 10.8	1 20 N.	" 24, 4 40 m
			and at intervals of 20 8
X Sagittarii ...	17 40.4	27 47 S.	Mar. 24, 0 0 m
			" 26, 21 30 M
W Sagittarii ...	17 57.8	29 35 S.	" 22, 2 20 M
T Herculis ...	18 4.8	31 0 N.	" 24, M
β Lyræ ...	18 45.9	33 14 N.	" 22, 2 20 M
R Cygni ...	19 33.8	49 57 N.	" 22, M
η Aquilæ ...	19 46.7	0 7 N.	" 25, 0 0 M
δ Cephei ...	22 24.9	57 50 N.	" 22, 19 10 m

M signifies maximum; m minimum.