THE additions to the Zoological Society's Gardens during the past week include two Maholi Galagos (*Galago maholi*) from West Africa, presented by Mrs. Max Michaelis; a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Mrs. Corbet; an Indian Otter (*Lutra nair* ♂) from Ceylon, presented by Capt. J. C. Withers; a Ring-tailed Coati (*Nasua rufa* ♂) from South America, presented by Lieut. J. H. N. Theed, R.N.; a Red-bellied Waxbill (*Estrelda rubriventris*) from West Africa, presented by Mrs. T. Johnson; two Alligators (*Alligator mississippiensis*) from the Mississippi, presented by Mr. F. J. Dawe; a Malbrouck Monkey (*Cercopithecus cynosurus* ♀) from West Africa, two —— Lemurs (*Lemur* —— ♂ ♂) from Madagascar, a Common Boa (*Boa constrictor*), an Anaconda (*Eunectes murinus*) from South America, deposited; a Great Kangaroo (*Macropus giganteus*), born in the Gardens.

OUR ASTRONOMICAL COLUMN

THE DOUBLE-STAR 61 CYGNI.—The determination of the orbit of this double-star has hitherto baffled those astronomers who have attempted to deduce it from the numerous measures which have been made. Thus one computer finds the relative motion of the components to be rectilinear, another hyperbolic, and another circular, but in no case have the determinations been altogether satisfactory. Recently, however, Dr. C. W. Peters, of Kiel, has succeeded in obtaining elliptic elements, with a periodic time of 782·6 years and angle of eccentricity = 10°, which appear to represent the great mass of observations which have been made from the earliest times down to 1883, with considerable accuracy. Herr Peters has computed the following ephemeris from his elements:—

Epoch ...	1885·0	1886·0	1887·0	1888·0
Position ...	119° 44′	120° 7′	120° 31′	120° 55′
Distance ...	20″·60	20″·71	20″·81	20″·92

Taking the parallax of 61 Cygni to be 0″·45, it appears from these elements that the combined mass of the system is about one-half of the sun's mass, whilst the mean distance between the components is about 70 times that of the earth from the sun.

THE ZODIACAL LIGHT.—In October 1883 Prof. Arthur Searle presented to the American Academy of Arts and Sciences a very valuable paper on the zodiacal light, in which he had collected and reduced on a uniform system the evening observations of all the principal observers. The principal points then brought out were that in all probability the apparent changes in the latitude of the zodiacal light were due mainly, if not entirely, to the effect of atmospheric absorption, and that the method of observation by drawing outlines must be replaced by careful photometric observations if definite knowledge was to be substituted for the vague information we now possessed as to the "Gegenschein," the "zodiacal bands," &c.; and Prof. Searle concluded with the suggestion that the ordinary meteoric theory would gain greatly in simplicity by the substitution of meteoric dust scattered generally throughout the solar system for the meteoric rings that have been usually imagined. Prof. Searle has continued his investigations in a recent memoir, in which he corrects, for the effect of atmospheric absorption, Jones's observations of what the latter called the "stronger light" at the elongation 60°, whether made in the morning or evening. The result of the inquiry is to confirm the view arrived at previously, that atmospheric absorption largely affects the apparent position of the zodiacal light, and Prof. Searle again lays stress on the need for photometric observations. Prof. Searle concludes that, after correcting for atmospheric absorption, there seems reason to think that the zodical light has had, during the present half-century, a more northern latitude near the longitude 180° than near the longitude 0°. He also shows, from a careful study of the distribution of the stars in the *Durchmusterung*, that "upon the meteoric theory of the zodiacal light it is to be expected that a continuous zodiacal band should be present; but the question of its actual visibility is complicated by the slight maxima of stellar density which are situated along those parts of the ecliptic most readily accessible to observation from stations in the northern hemisphere." An interesting result is obtained from an examination of the elements of the 237 asteroids first discovered, from which it would seem that "the belt of sky occupied by the projections of the orbits of" these asteroids "presents certain peculiarities which correspond to those of the zodiacal light, and suggest the hypothesis that the light may be partly due to minute objects circulating in orbits like those of the smaller planets."

ASTRONOMICAL PHENOMENA FOR THE WEEK 1886 FEBRUARY 14-20

(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 February 14

Sun rises, 7h. 18m.; souths, 12h. 14m. 23·7s.; sets, 17h. 11m.; decl. on meridian, 12° 56′ S.: Sidereal Time at Sunset, 2h. 50m.

Moon (Full on February 18) rises, 12h. 34m.; souths, 20h. 27m.; sets, 4h. 21m.*; decl. on meridian, 18° 22′ N.

Planet	Rises h. m.	Souths h. m.	Sets h. m.	Decl. on meridian ° ′
Mercury ...	7 15 ...	11 46 ...	16 17 ...	17 29 S.
Venus ...	6 39 ...	12 29 ...	18 19 ...	2 51 S.
Mars ...	19 27* ...	2 4 ...	8 41 ...	6 32 N.
Jupiter ...	20 44* ...	2 45 ...	8 46 ...	0 37 S.
Saturn ...	12 17 ...	20 28 ...	4 39* ...	22 43 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)

Feb.	Star	Mag.	Disap. h. m.	Reap. h. m.	Corresponding angles from vertex to right for inverted image ° °
14 ...	111 Tauri...	... 5½ ...	1 51 ...	2 34 ...	164 273
14 ...	117 Tauri...	... 6 ...	3 10 ...	3 59 ...	130 297
18 ...	ξ Leonis ...	... 6 ...	2 19 ...	3 21 ...	95 296
19 ...	48 Leonis...	... 6 ...	3 44 ...	4 43 ...	87 301
20 ...	τ Leonis ...	... 5 ...	1 5 ...	2 0 ...	23 293
20 ...	13 Virginis	... 6 ...	21 36 ...	22 23 ...	72 176

Feb.	h.	
18 ...	19 ...	Venus at inferior conjunction with the Sun.
19 ...	4 ...	Mercury in conjunction with and 11° 22′ south of Venus.

Variable Stars

Star	R.A. h. m.	Decl. ° ′		h. m.	
U Cephei	0 52·2	81 16 N.	... Feb.	16, 21 58	*m*
λ Tauri	3 54·4	12 10 N.	... ,,	14, 22 43	*m*
			,,	18, 21 35	*m*
W Virginis	13 20·2	2 47 S.	... ,,	17, 0 0	*m*
δ Libræ	14 54·9	8 4 S.	... ,,	18, 23 28	*m*
U Coronæ	15 13·6	32 4 N.	... ,,	20, 0 48	*m*
U Ophiuchi... ...	17 10·8	1 20 N.	... ,,	16, 3 9	*m*
		and at intervals of		20 8	
β Lyræ	18 45·9	33 14 N.	... Feb.	14, 14 30	*m*
			,,	17, 7 0	*M*
δ Cephei	22 24·9	57 50 N.	... ,,	14, 21 30	*M*

M signifies maximum; *m* minimum.

CHEMICAL NOTES

WE have already mentioned M. Konovaloff's researches into contact actions, published in the *Journal* of the Russian Chemical Society (1885, vii. and viii.) The following conclusions of his inquiry are worthy of being noticed:—The capacity of solid bodies for condensing gases on their surfaces is generally recognised, but their capacity of dissociating them under certain conditions must also be recognised now as a property of all solid bodies, although shared in by them in different degrees. Platinum enjoys this property to a high degree, but also many other solid bodies, glass among them, the intensity of its contact action obviously depending upon several circumstances: its chemical composition, the structure of its surface, and its temperature, as also upon the density of the gas it is brought in contact with. It being so, it appears possible, in the author's opinion, that in the dissociation phenomena studied by Sainte-Claire Deville (and having so great an importance for the theoretical discussions upon the dynamics of chemical reactions), the dissociation observed was a consequence of the contact action of