

(*Coturnix californica*) from California, a Scarlet Ibis (*Eudocimus ruber*) from Para, deposited; a Roan Kangaroo (*Macropus erubescens*) from South Australia, an Eroded Cinixys (*Cinixys erosa*) from West Africa, a Merrem's Snake (*Liophis merremi*) from South America, purchased; an Axis Deer (*Cervus axis*), born in the Gardens.

OUR ASTRONOMICAL COLUMN

RELATION OF ASTEROID ORBITS TO THAT OF JUPITER.—Prof. H. A. Newton, in the *American Journal of Science*, April 1886, points out that the orbits of the asteroids should have a relation to that of Jupiter. For supposing the orbits of the asteroids to be distributed in any manner whatever, provided only that they make small angles with the plane of Jupiter's orbit, the action of Jupiter would give to each orbit a motion of its node which would differ for the different orbits, and eventually the orbits would come to be distributed somewhat symmetrically about the orbit of Jupiter. And as a matter of fact, the centre of gravity of the poles of the 251 known asteroid orbits, computed as for points of equal weight, lies only 30' from the pole of Jupiter's orbit; so that the plane of Jupiter's orbit lies nearer to the mean plane of all the asteroid orbits than any single asteroid orbit does, the nearest orbits being those of Medusa and Euterpe, inclined to it 46' and 49' respectively.

In the same periodical Dr. H. Geelmuyden, of Christiania, remarks, relative to Prof. Searle's deduction that the plane of the zodiacal light has some relation to the asteroid orbits (*NATURE*, February 11, p. 350), that "the most northerly point of Jupiter's orbit has the heliocentric longitude 188°, or with 60° east elongation 178°; and for matter in the same plane, but nearer the sun, the approximation to coincidence with 160° is still greater."

THE PROPOSED CHANGE IN THE ASTRONOMICAL DAY.—M. Raoul Gautier has recently published in the *Archives des Sciences Physiques et Naturelles* of Geneva an account of the proceedings of the International Meridian Conference held at Washington in October 1884. Remarking that the resolutions passed at Washington are similar in many respects to those of the Roman Conference of the preceding year, M. Gautier goes on to point out how they differ in the important particular of the manner of reckoning universal time, and that on this account a large number of astronomers have expressed their reluctance to conform to these recommendations, more especially to the sixth resolution (which proposed that the astronomical and nautical days should be arranged everywhere to begin at mean midnight of Greenwich), the adoption of which would involve considerable changes in the astronomical and nautical ephemerides, which are used by all observers and navigators. Astronomers, M. Gautier states, as well as sailors, begin the day at noon; the former to avoid changing the date in the middle of the night during a series of observations, the latter because they find it convenient to commence the day at the moment when they observe the sun on the meridian. Why then, he asks with some force, oblige them to modify their habits, now of long standing, considering that the fourth resolution passed at the Washington Conference expressly stipulates that the universal day ought not to interfere with the use of local or other standard time where the latter appears desirable?

THE PLEIADES AS SEEN AND AS PHOTOGRAPHED.—MM. Henry have recently compared their beautiful photographic map of the Pleiades with the map so carefully laid down by M. Wolf in 1873-75, and published in vol. xiv. of the *Mémoires de l'Observatoire de Paris*, and find that the photograph possesses the following advantages over the map made by direct eye-observation. The photograph shows faint objects which are lost to the eye through their proximity to bright stars; thus the Maia nebula, and another near Electra, have been made evident, as well as details recognised hitherto only by Mr. Common in the Merope nebula. A number of faint companions have also been detected close to several of the brightest stars of the group, and in several cases where M. Wolf had detected a faint companion to a bright star, the photograph has shown that the magnitude of the former was under-estimated. Many more stars are seen on the photograph than are given in M. Wolf's map, the former showing 1421 stars, the latter 625; the aperture of the instrument employed being about the same in both cases. A yet more striking instance of the superior sensitiveness of the plate is

seen in the fact that M. Rayet, in his revision of M. Wolf's map in the pure air of Bordeaux, and with a much more powerful instrument, added only 151 stars in a region where the photograph gave 338. All the stars observed by M. Wolf are seen in the photograph but ten, and these cannot be found in the sky.

The Brothers Henry, whilst laying stress on these facts as showing how indispensable a weapon photography has now become to the astronomer, disclaim the idea of criticising M. Wolf's great work, and completely assent to his opinion, expressed in the *Comptes rendus*, vol. cii., No. 9, that the eye of the observer must continue to work at the same time as the sensitive plate; the latter can never supersede the former.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1886 APRIL 25—MAY 1

(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 April 25

Sun rises, 4h. 45m.; souths, 11h. 57m. 51' 4s.; sets, 19h. 10m.; decl. on meridian, 13° 15' N.: Sidereal Time at Sunset, 9h. 25m.

Moon (at Last Quarter April 26) rises, 0h. 57m.; souths, 5h. 28m.; sets, 10h. 2m.; decl. on meridian, 17° 22' S.

Planet	Rises h. m.	Souths h. m.	Sets h. m.	Decl. on meridian
Mercury	4 16	10 37	16 58	3 29 N.
Venus	3 25	9 6	14 47	4 21 S.
Mars	13 19	20 21	3 23*	11 16 N.
Jupiter	15 20	21 37	3 54*	2 32 N.
Saturn	7 51	16 3	0 15*	22 51 N.

* Indicates that the setting is that of the following morning.

Occlusions of Stars by the Moon (visible at Greenwich)

April	Star	Mag.	Disap.	Reap.	Corresponding angles from vertex to right for inverted image
			h. m.	h. m.	
28	ε Aquarii	6	3 38	4 42	42 288
29	78 Aquarii	6	2 49	3 8	139 175
April					
28	6				Mercury at greatest distance from the Sun.
29	17				Venus at greatest elongation from the Sun, 46° west.
30	5				Venus in conjunction with and 0° 19' north of the Moon.

Positions of the Comet Fabry

1886	R.A.	Decl.	Log Δ	Brightness
	h. m. s.	°		
April 25	1 45 25	31 18 N.	9.420	315
27	2 29 43	24 51	9.355	400
29	3 20 22	15 22	9.309	465

Positions of the Comet Barnard

1886	R.A.	Decl.	Log Δ	Brightness
	h. m. s.	°		
April 25	1 39 50	39 53 N.	0.047	67
27	1 38 41	40 19	0.023	80
29	1 38 8	40 31	0.997	94

The comet positions are for Berlin midnight.

Variable-Stars

Star	R.A.	Decl.	h. m.
	h. m.	°	
R Leporis	4 54.4	14 59 S.	Apr. 26, 0 0 <i>m</i>
δ Libræ	14 54.9	8 4 S.	" 25, 3 26 <i>m</i>
U Coronæ	15 13.6	32 4 N.	" 30, 1 53 <i>m</i>
U Ophiuchi	17 10.8	1 20 N.	" 25, 1 31 <i>m</i>
			and at intervals of 20 8
X Sagittarii	17 40.4	27 47 S.	Apr. 28, 2 20 <i>m</i>
			May 1, 0 0 <i>M</i>
W Sagittarii	17 57.8	29 35 S.	Apr. 25, 21 40 <i>m</i>
			" 29, 2 25 <i>M</i>
U Sagittarii	18 25.2	19 12 S.	" 26, 2 30 <i>m</i>
			" 29, 2 20 <i>M</i>
β Lyræ	18 45.9	33 14 N.	" 29, 21 35 <i>M</i>
η Aquilæ	19 46.7	0 7 N.	" 29, 21 40 <i>M</i>
R Vulpeculæ	20 59.3	23 22 N.	" 25, <i>m</i>
δ Cephei	22 24.9	57 50 N.	May 1, 0 0 <i>M</i>

M signifies maximum; *m* minimum.