

inst. Cape Matifan appeared from Algiers close at hand with a sharply cut rock of granite at its extremity. The temperature was 43°·2 C. in the shade, showing that the air above the sea was very hot, and that the explanation of the phenomenon is to be found in the same causes as those determining a mirage in the Sahara. The lowering of the temperature was very rapid, falling as much as 2° C. at Bouzarcah Observatory. The 7th inst. was the hottest day that has yet been felt there this season. Lightning struck the Government barrack at Mustapha, and ignited piles of hay, inflicting damage to the extent of 4000l.

THE additions to the Zoological Society's Gardens during the past week include a Rhesus Monkey (*Macacus rhesus*) from India, presented by Mr. F. W. Steward; a Ring-tailed Lemur (*Lemur catta*) from Madagascar, presented by Mrs. Collcutt; six Prairie Marmots (*Cynomys ludovicianus*) from North America, presented by Mr. F. J. Thompson; two Common Foxes (*Canis vulpes*) from Russia, presented by Mr. Harrison Cripps, F.R.C.P.; a Common Rhea (*Rhea americana*) from South America, presented by Mr. J. W. Bell; four Red-bellied Squirrels (*Sciurus variegatus*) from Trinidad, presented by Mr. R. J. Lichmere Guppy; two Peba Armadillos (*Tatusia peba*) from South America, presented by Mr. J. Clements; a Greater Black-backed Gull (*Larus marinus*), British, presented by Mr. Henry Stevens, M.D.; twenty-four Sand-Lizards (*Lacerta agilis*), a Slowworm (*Anguis fragilis*), a Common Snake (*Tropidonotus natrix*) from Germany, presented by Mr. S. Schaefer; two Sarus Cranes (*Grus antigone*) from North India, eight European Tree Frogs (*Hyla arborea*) from Germany, purchased; two Long-fronted Gerbilles (*Gerbillus longifrons*), an Elliot's Pheasant (*Phasianus ellioti*), a Bronze-winged Dove (*Phaps chalcoptera*), a Barred-shouldered Dove (*Geopelia humeralis*), bred in the Gardens.

OUR ASTRONOMICAL COLUMN

SCHULHOF'S RESEARCHES ON THE ORBIT OF COMET 1873 VII. (COGGIA—WINNECKE).—The elements of Comet 1873 VII. bear a certain resemblance to those of Comet 1818 I., which was observed by Pons. Prof. Weiss asserts the identity of these two comets, and adopts sixty-two years as the most probable value of the period of revolution. In the *Bulletin Astronomique*, tome iii. p. 125 *et seq.* M. L. Schulhof has published a most exhaustive discussion of the orbit of Comet 1873 VII., and has gone into the question of its possible identity with 1818 I., as well as with 1457 I. (the observations of which by Toscanelli have recently been discussed by Prof. Celoria) in a most thorough manner. The opinion which he expresses, with some reserve, as the result of his investigations, is that the Comets 1873 VII. and 1818 I. are distinct bodies with a short period of revolution, having a common origin. The Comet 1457 I. is probably identical with 1873 VII., but it is also possible that the two comets, 1873 VII. and 1818 I. are fragments of 1457 I., which must have been a much more conspicuous object than either of them, to have been seen by Toscanelli and by the Chinese with the naked eye.

SOLAR ACTIVITY DURING THE FIRST HALF OF 1886.—The numbers and areas of sunspots have shown upon the whole a decided falling off during the past half-year as compared with the last six months of 1885, although no month of the present year has shown so low a daily average as December 1885. There has been, however, a steady increase in the number of days on which the sun's disk was free from spots, one side of the sun being, on the average, much less spotted than the other, causing an apparent short period in the variation of the spotted area, of about a synodic rotation of the sun in duration. The month in which the mean daily number of sunspots was least was February; that in which it was most was March. An exceedingly fine group was observed on May 8.

Prominences have shown fewer fluctuations in their numbers and size, but have been fully one-fourth less numerous on the average than in 1885.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1886 JULY 25-31

(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 July 25

Sun rises, 4h. 15m.; souths, 12h. 6m. 14'6s.; sets, 19h. 57m.; decl. on meridian, 19° 38' N.: Sidereal Time at Sunset, 16h. 11m.

Moon (one day after Last Quarter) rises, 23h. 35m.\*; souths, 6h. 39m.; sets, 13h. 54m.; decl. on meridian, 11° 23' N.

Planet	Rises		Souths		Sets		Decl. on meridian	
	h.	m.	h.	m.	h.	m.	h.	m.
Mercury	...	6 50	...	13 46	...	20 42	...	10° 6' N.
Venus	...	1 37	...	9 46	...	17 55	...	22 22 N.
Mars	...	10 59	...	16 35	...	22 11	...	5 18 S.
Jupiter	...	9 47	...	15 54	...	22 1	...	0 32 N.
Saturn	...	2 43	...	10 51	...	18 59	...	22 15 N.

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

Occultations of Stars by the Moon (visible at Greenwich)

July	Star	Mag.	Disap.	Reap.		Corresponding angles from vertex to right for inverted image	
				h. m.	h. m.		
27	85 Tauri	...	6	...	0 4	...	90° 224
27	σ <sup>2</sup> Tauri	...	5	...	3 6	...	10 297
27	σ <sup>1</sup> Tauri	...	5½	...	3 23	near approach	334 —
July	h.						
25	...	5	...	Mercury at greatest distance from the Sun.			
28	...	22	...	Venus in conjunction with and 0° 6' south of μ Geminorum.			
28	...	23	...	Venus in conjunction with and 3° 46' north of the Moon.			

Variable Stars

Star	R.A.		Decl.		July	h. m.
	h.	m.	h.	m.		
U Cephei	...	0 52·2	...	81 16 N.	...	28, 22 51 m
Algol	...	3 0·8	...	40 31 N.	...	28, 1 47 m
δ Libræ	...	14 54·9	...	8 4 S.	...	30, 22 36 m
R Scorpii	...	16 10·9	...	22 40 S.	...	31, 21 22 m
U Ophiuchi	...	17 10·8	...	1 20 N.	...	27, 23 52 m
W Sagittarii	...	17 57·8	...	29 35 S.	...	26, 0 0 m
β Lyræ	...	18 45·9	...	33 14 N.	...	26, 2 0 m <sub>2</sub>
η Aquilæ	...	19 46·7	...	0 43 N.	...	25, 0 0 M
δ Cephei	...	22 24·9	...	57 50 N.	...	25, 21 30 M

M signifies maximum; m minimum; m<sub>2</sub> secondary minimum.

Meteor Showers

The principal shower is that of the *Aquarids*, maximum July 28; radiant R.A. 340°, Decl. 13° S. Other showers are as follows:—The *Andromedes* (I.), R.A. 8°, Decl. 36° N.; near χ Persei, R.A. 32°, Decl. 53° N.; near β Ursæ Majoris, R.A. 165°, Decl. 53° N.; and near the Pole, R.A. 300°, Decl. 87° N.

ON LAYING THE DUST IN MINES

IN a paper recently contributed to the South Wales Institute of Engineers,<sup>1</sup> Mr. Archibald Hood, the President, says:—"It was probably first suggested by Faraday and Lyell about the year 1845 that coal-dust was in some way inflammable. This idea was subsequently set forth by several French engineers, but all that was done previous to the year 1875 bears the same relation to subsequent demonstrations as the steam-engine of Hero of Alexandria bears to the steam-engine of the nineteenth century."

Assuming Mr. Hood's date to mark correctly the commencement of the real battle between the new theory and its predecessors, it cannot surely be urged that the period of ten years which has since elapsed has been too long wherein to destroy the vast herd of previously existing chimeras, and to introduce and establish a new and different order of ideas. Doubtless the result attained up to the present has been prodigiously accelerated by the labours of the Royal Commission on Accidents in Mines, and of the

<sup>1</sup> "On the Watering of Dusty Mines." The South Wales Institute of Engineers, March 18, 1886.