

liquid tar, which had been poured into tin boxes, and pieces of solid tar which had been placed in the ground near the vines. Large clouds of smoke quickly enveloped the vineyard. The fires lasted for about two hours, but the smoke did not clear off till a considerable time after. The object of the experiment was completely gained, as not one young shoot was destroyed by the frost.

THE American Institute of Electrical Engineers, organized three years ago, is making arrangements for the purchase of a suitable building in New York. It is proposed that there shall be an electrical library and museum, and, if space permits, an experimental laboratory. Suitable accommodation will be provided for council and general meetings, and the entertainment of members and their guests, and the house will be open "at all reasonable hours."

THE additions to the Zoological Society's Gardens during the past week include a Squirrel Monkey (*Chrysothrix sciurea*) from Guiana, presented by Miss Grace Williams; a Negro Tamarin (*Midus ursulus*) from Guiana, presented by Miss Julia Neilson; a Rhesus Monkey (*Macacus rhesus*) from India, presented by Miss R. M. Hurt; a Common Marmoset (*Hapale jacchus*) from South-East Brazil, presented by Mrs. Constance Hoendorff; a Common Raccoon (*Procyon lotor*) from North America, presented by Mr. G. F. Van Zandt; two Lanner Falcons (*Falco lanarius*), European, presented by Mr. William Thomson; two Scaly Ground Doves (*Scardafella squamosa*) from Brazil, presented by Mr. William de Castro; a Cockateel (*Calopsitta nove-hollandia*) from Australia, presented by Mr. H. H. James; a Ring-necked Parrakeet (*Palaornis torquatus*) from India, presented by Mrs. Hill; a Yellow-billed Sheathbill (*Chionis alba*) from Cape Town, presented by Mr. R. C. Ashton; nine Barbary Turtle Doves (*Turtur risorius*) from Africa, presented by Mr. E. L. Armbricht; a Red Brocket (*Cariacus rufus*), a Great American Egret (*Ardea egretta*) from Brazil, deposited; three Sandwich Island Geese (*Bernicla sandvicensis*) from the Sandwich Islands, a Wryneck (*Inyx torquilla*), European, purchased; a Wapiti Deer (*Cervus canadensis*), a Barbary Wild Sheep (*Ovis tragelaphus*), a Variegated Sheldrake (*Tadorna variegata*), nine Summer Ducks (*Aex sponsa*) bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

THE GREAT SOUTHERN COMET (1887 a).—Dr. J. M. Thome, of the Cordoba Observatory, has published in the *Astronomical Journal*, No. 156, some interesting particulars as to the appearance and observed positions of the great comet which he discovered on January 18. On the 21st it became evident that the comet was, in effect, all tail, the head being much the fainter part of the object, and being at least 15' in diameter, very thin, and without nucleus or condensation of any kind. After various attempts at determining its co-ordinates, Dr. Thome adopted the plan of moving the telescope along the axis of the tail, until reaching a point beyond which nothing of a nebulous character could be distinguished, and determining its position. These points were approximately half a degree in advance of the true centre of the nebulousity, and nearly in its axis. The observations of position extend from January 21 to January 27. With regard to the appearance of the comet to the naked eye, Dr. Thome remarks that it was a beautiful sight—a narrow, straight, sharply-defined, graceful tail, over 40° long, shining with a soft starry light against the dark sky, beginning apparently without a head, and gradually widening and fading as it extended upwards.

The same number of the *Astronomical Journal* contains a discussion of the orbit of the comet by Mr. S. C. Chandler, Jun. The observations extend from January 20 to 29, and were made at Melbourne, Co. doba, the Cape, and Windsor, N.S.W. Two sets of elements—which do not materially differ, considering the extreme uncertainty of the observations—have been obtained; the first by taking the Cordoba observations as they stand, the

second by attempting to determine the true centre of the nebulousity from Dr. Thome's statement that the recorded positions are 30' in advance of the true centre and nearly in its axis. The elements are:—

T (G.M.T.)	I.		II.	
	1887 Jan. 9	080	Jan. 8	730
ω	...	173° 36' 2"	...	174° 48' 6"
Ω	...	130° 46' 2"	...	132° 48' 6"
i	...	61° 48' 9"	...	57° 52' 1"
log q	...	8.30484	...	8.36280

Mr. Chandler points out that these elements are very unlike those of comet 1880 I., with which this comet was at first associated. In fact the orbit found resembles more those assigned to the comets of 1680 and 1689, than that of the group 1843-80-82.

NEW MINOR PLANETS.—A new minor planet, No. 267, was discovered by M. Charlois at Nice on May 27. Another, No. 268, was discovered by M. Borelly at Marseilles on June 9.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1887 JUNE 19-25.

(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 June 19.

Sun rises, 3h. 44m.; souths, 12h. om. 58' 8s.; sets, 20h. 17m.; decl. on meridian, 23° 26' N.; Sidereal Time at Sunset, 14h. 8m.

Moon (New on June 21) rises, 2h. 48m.; souths, 10h. 20m.; sets, 18h. 1m.; decl. on meridian, 15° 57' N.

Planet.	Rises.		Souths.		Sets.		Decl. on meridian.	
	h.	m.	h.	m.	h.	m.	h.	m.
Mercury	...	5 21	...	13 39	...	21 57	...	23 39 N.
Venus	...	7 21	...	15 9	...	22 57	...	19 11 N.
Mars	...	2 50	...	11 2	...	19 14	...	22 50 N.
Jupiter	...	14 28	...	19 47	...	1 6*	...	8 50 S.
Saturn	...	5 43	...	13 47	...	21 51	...	21 41 N.

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

June.	h.
21	18	...	Sun at greatest declination north; longest day in northern latitudes.
23	5	...	Saturn in conjunction with and 2° 26' north of the Moon.
23	10	...	Mercury in conjunction with and 3° 27' north of the Moon.
23	19	...	Jupiter stationary.
25	0	...	Venus in conjunction with and 2° 1' north of the Moon.

Variable Stars.

Star.	R.A.		Decl.	h.	m.
	h.	m.			
U Cephei	...	0 52.3	81° 16' N.	...	June 23, 0 14 m
R Virginis	...	12 32.8	7 37' N.	...	21, M
δ Libræ	...	14 54.9	8 4' S.	...	25, 1 0 m
U Ophiuchi	...	17 10.8	1 20' N.	...	20, 1 46 m
and at intervals of 20 8					
W Sagittarii	...	17 57.8	29 35' S.	...	June 25, 2 0 m
U Sagittarii	...	18 25.2	19 12' S.	...	25, 1 0 m
η Aquilæ	...	19 46.7	0 43' N.	...	20, 1 0 M
S Sagittæ	...	19 50.9	16 20' N.	...	24, 23 0 m
R Capricorni	...	20 5.0	14 36' S.	...	23, M
δ Cephei	...	22 25.0	57 50' N.	...	21, 23 0 m

M signifies maximum; m minimum.

Meteor-Showers.

	R.A.	Decl.
Near β Ursæ Majoris	...	168° ... 55° N.
α Cephei	...	315 ... 60° N.

GEOGRAPHICAL NOTES.

EMIN PASHA contributes to the Scottish Geographical Society's Journal an account of an exploration he made recently of part of Lake Albert Nyanza, which contains some data bearing on the probable origin and the physical geography of