

identical with those which have been demonstrated to be the cause of the fibrine disease which, in an epidemic form, from 1849 to 1865 ravaged the silkworm nurseries of France, and reduced them to a state of ruin, but which, thanks to M. Pasteur, is now practically eradicated from Europe.

PROF. GIOVANNI LUVINI has just issued, in pamphlet form, a summary of the results of his important experiments on the electric conductivity of vapours and gases. As the readers of NATURE are already aware, these experiments have finally exploded the old theory that the moist atmosphere and other vapours are good conductors. The pamphlet, which is published in Florence, includes an historical survey of the subject, and a full account of the processes adopted by the author. Electricians are reminded that this essay, together with his previous treatise on atmospheric electricity, are merely preparatory to a comprehensive work on the phenomena connected with the aurora borealis, which is now nearly completed.

LIGHTNING-FLASHES have sometimes been observed which, starting from one point, have ended in several. Some remarkable forms of flash have been lately described by Herr Leyst, of Pawlowsk Observatory. In one case a flash went a certain distance in a north-easterly direction, then divided, the two branches forming an angle of about 75°. When these had reached about 35° from each other, they turned and united again to one line. The path of the lightning thus formed a quadrilateral figure. It was further observed that the lightning flashed back in the same path, as if there were an oscillating discharge. In another interesting flash, the path was not a crooked line but a wavy band, which was lit up four times in succession with equal brilliancy. The time between the second and third and the third and fourth flashes seemed longer than that between the first and second. The thunder which followed lasted about 80 seconds.

THE additions to the Zoological Society's Gardens during the past week include a Patas Monkey (*Cercopithecus patas* ♀) from West Africa, presented by Capt. T. W. Robinson; a Puma (*Felis concolor* ♂) from El Gran Chaco, presented by Mr. Alfred Grenfell, F.Z.S.; a Malayan Bear (*Ursus malayanus*) from Malacca, presented by Miss A. Stewart Saville; a — Souselik (*Spermophilus* —) from California, presented by Mr. B. F. Russell; a Gazelle (*Gazella dorcas* ♂) from Barbary, presented by Edward J. Hough; four Chukar Partridges (*Caccabis chukar*) from Persia, presented by Dr. J. Huntley; a — Toad (*Bufo* —) from Africa, presented by Mr. E. N. Wroughton; six Roseate Cockatoos (*Cacatua roseicapilla*), seventeen Cockateels (*Calopsitta nova-hollandia*), six Swainson's Lorikeets (*Trichoglossus nova-hollandia*), two Red-winged Parrakeets (*Aprosmictus erythropterus*), eight Chestnut-eared Finches (*Amadina castanotis*), two Peaceful Doves (*Geopelia tranquilla*) from Australia, a Nutmeg Bird (*Munia punctularia*), two Eastern Turtle Doves (*Turtur meena*) from India, three Magpie Tanagers (*Cissopis leveriana*), two Red-crested Cardinals (*Paroaria cucullata*), a Red Ground-Dove (*Geotrygon montana*), a Yarell's Curassow (*Crax carunculata*), a Crested Curassow (*Crax alector*) from South-East Brazil, two Hawfinches (*Coecotheaustes vulgaris*), British, deposited.

OUR ASTRONOMICAL COLUMN

THE MASS OF MERCURY.—In the *Bulletin Astronomique* for October Herr Backlund has published a new determination of the mass of Mercury deduced from the perturbations produced in the motion of Encke's comet arising from its close proximity to the planet in 1878. From the apparitions of the comet in 1871, 1875, 1878, 1881, and 1885, Herr Backlund finds the reciprocal

of the mass of Mercury to be 2,668,700,—thus making the mass of the planet considerably larger than has been found by recent investigators. And Herr Backlund states that, even supposing the acceleration of the comet's mean motion to have been constant during the entire period 1871–85, it is not possible to represent satisfactorily the five apparitions of the comet during that period on the assumption that the reciprocal of the mass of Mercury is greater than 5,000,000.

THE NATAL OBSERVATORY.—Mr. Neison has issued his Report, as Superintendent of the Natal Observatory, for the year 1885. The staff of the Observatory consists of the Government Astronomer, an Astronomical Assistant, and a Meteorological Assistant. Four ladies have also been employed during the year as astronomical computers. The equatorial appears to have been but little used in 1885, all the astronomical observations recorded having been made with the 3-inch transit. The total number of observations made with this instrument was 706, including transits of stars, of the sun, of the moon's limb, of the lunar crater Murchison A, and observations of zenith stars for latitude. With regard to the latter class of observations, it is proposed to determine the latitude of the Observatory with the greatest care, as one of the primary points of the geodetic triangulation of South Africa. Forty pairs of stars have been selected for this purpose, mostly differing in zenith distance by not more than 3' or 4'. Also, with the view of better connecting the fundamental declinations of the star catalogues of northern and southern observatories, arrangements have been made for comparing, by Talcott's method, the zenith distances of a number of southern circumpolar stars with suitably placed northern stars of corresponding zenith distance. A list of thirty-two stars has been prepared for this purpose. Mr. Neison also reports on the state of his own work on the lunar theory, which he appears to consider of an official character.

COMET FINLAY (1886 e).—The following ephemeris of this object is by Dr. A. Krueger (*Astr. Nachr.*, No. 2755):—

For Berlin Midnight							
1886	R.A.			Decl.	log r	log Δ	Bright-ness
	h.	m.	s.				
Nov. 28	21	0	50	19 10'·7 S.	9'9941	9'9142	3'0
30	21	10	58	18 20'·4			
Dec. 2	21	21	12	17 27'·2	9'9971	9'9060	3'1
4	21	31	30	16 31'·0			
6	21	41	53	15 31'·9	0'0016	9'8992	3'1
8	21	52	20	14 30'·0			
10	22	2	49	13 25'·6 S.	0'0074	9'8941	3'1

The brightness at date of discovery is taken as unity.

COMET BARNARD (1886 f).—The following ephemeris of this object for Berlin midnight is by Dr. Oppenheim (*Dun Echt Circular*, No. 130):—

1886	R.A.			Decl.	log r	log Δ	Bright-ness
	h.	m.	s.				
Nov. 27	14	34	10	16 50'·4 N.	0'0029	9'8864	17'8
29	14	54	42	17 23'·5			
Dec. 1	15	16	12	17 46'·0	9'9879	9'8640	21'2
3	15	38	23	17 56'·0			
5	16	0	54	17 51'·8	9'9839	9'8448	23'6
7	16	23	24	17 33'·0			
9	16	45	27	17 0'·1 N.	9'9920	9'8303	24'3

The brightness at date of discovery is taken as unity.

GORE'S NOVA ORIONIS.—It seems to be clearly established that this interesting star is indeed—as was from the first suspected from the character of its spectrum—a simple variable, and not one of the class to which the title “temporary” can be fitly applied. M. Dunér, who had observed the star at intervals from last December to the end of April, found (*Astr. Nachr.*, No. 2755), on renewing his observations at the end of October and the beginning of the present month, that it had unmistakably increased in brightness in the interval, and was continuing to do so. Herr Fr. Schwab and Mr. Espin confirm this conclusion, the former having observed this star early in last July, and found it then fainter than the 12th magnitude. Its period would appear to be not far from one year; Herr Schwab gives it as one or two weeks longer than a year, and as ranging in brightness from 6m. to 12½m., whilst M. Dunér assigns a period of 359·5d. to it. It is clearly of importance that it should be carefully watched during the coming winter.