

THE *Bulletin Pharmaceutique* states that a new remedy for Phylloxera has been discovered by M. Laffon, of Capendu, and it has proved successful. It consists of a weak solution of nitrate of mercury.

THE additions to the Zoological Society's Gardens during the past week include a Red-winged Parrakeet (*Aprosmictus erythropterus*); eight Peaceful Doves (*Geopelia tranquilla*) from Australia, presented by the Hon. Stormont Finch-Hatton; a Fulmar Petrel (*Fulmarus glacialis*) from Norfolk, presented by Mr. H. M. Upcher, F.Z.S.; a Jardine's Parrot (*Psecephalus guillemi*) from West Africa, received in exchange.

OUR ASTRONOMICAL COLUMN.

THE ROYAL ASTRONOMICAL SOCIETY'S MEMOIRS.—The first part of vol. xlix. of the Memoirs of the Royal Astronomical Society has just been published, and contains a new General Catalogue of nebulae, by Dr. J. L. E. Dreyer. Sir John Herschel's General Catalogue, published in the Philosophical Transactions for 1864, was almost entirely founded upon his own and his father's observations, and hence, since several observers have devoted themselves to the work of searching for nebulae since that catalogue was prepared, the number known to us has been very largely increased. D'Arrest's great work on nebulae, which appeared three years later than the General Catalogue, gave the means of correcting many of its positions, and hence Dr. Dreyer had been induced as early as 1876 to compile a supplement to the General Catalogue, which he published in the Transactions of the Royal Irish Academy in 1878 (vol. xxvi.), containing a list of corrections to it, and a catalogue of recently-discovered nebulae. In 1886, Dr. Dreyer presented a second similar supplement—in which the later discoveries of Messrs. Stephan, Swift, Ormond Stone, and other observers had been incorporated—to the Council of the Royal Astronomical Society; but the Council, considering that the General Catalogue was practically out of print, and that the use of three catalogues and two lists of corrections would be very inconvenient, proposed to Dr. Dreyer that he should prepare from the whole of his materials a single new General Catalogue. This work he has now carried out, and the present catalogue contains 7840 objects, the positions of which have been as thoroughly corrected and revised as the materials available permitted. The epoch of the first General Catalogue, and of D'Arrest's final positions—1860—has been retained, as it is close to the epochs of the great star-charts of Argelander, Schönfeld, Chacornac, and Peters, and nearly all the modern micrometric observations of nebulae are referred to an epoch but little later. The precessions have been given for 1880, as done by Sir John Herschel, and the descriptions have been carefully revised. The work also contains an index to published figures of nebulae and clusters, and an appendix giving the places of several new nebulae discovered by Prof. Safford and Mr. Swift, but published too late to be incorporated in the catalogue itself. These are added that the volume may contain a complete record of all nebulae of which the places have been published up to December 1887.

PUBLICATIONS OF DUNSINK OBSERVATORY.—The sixth part of the observations of the Observatory of Trinity College, Dublin, at Dunsink, has just been published, and contains the separate results reduced to 1885.0, and the mean places for 1012 southern stars observed with the transit circle by Dr. Dreyer, the late, and Mr. Rambaut, the present, Assistant Astronomers. These stars are nearly all in the Southern Durchmusterung Belt, between S. Decl. 2° and 23°, and were suggested for observation by Prof. Schönfeld on account either of their proper motion or of discordances between their places as given in different catalogues. A few other stars were observed either at the request of Prof. Peters or Dr. Auwers. The work had been commenced by Dr. Dreyer in September 1881, who continued it until his appointment to the Armagh Observatory in May 1882, and Mr. Rambaut took it up, on succeeding to Dr. Dreyer's position, in November of the same year. Mr. Rambaut gives the probable error of a single observation—most of the stars were observed only once—as  $\pm 0.065$  in R.A.,  $\pm 0.0864$  in Decl.; the faintness of the objects and their low altitude at meridian passage making observation somewhat difficult. A plate at the end of the volume shows a portion of one of the chronograph sheets, and

illustrates a convenient method of making notes whilst at the telescope by sending special signals to the chronograph.

ROUSDON OBSERVATORY.—Astronomical observations have been steadily carried on during the past year at Mr. Peek's private observatory, Rousdon, Lyme Regis. The principal work undertaken, besides transit observations for time, has been the observation of twenty long-period variable stars. It is proposed, so soon as any star has been observed over several complete periods, to publish a memoir with plates showing the variations in the light curve. The record of the Observatory shows that there were 165 good observing nights in 1887, as against 146 in 1886.

$\beta$  DELPHINI.—Mr. J. E. Gore published two years ago elements for this difficult and interesting binary (NATURE, vol. xxxiii. p. 518), in which he gave the period as 30.91 years, a value fairly corresponding to that found by Dubiago a couple of years earlier, viz. 26.07. Sig. Celoria having been placed in possession of Prof. Schiaparelli's observations made in 1875 and 1886-87, and those of Engelmann made in 1885 and 1886, has re-investigated the orbit, and deduced elements differing widely from these two earlier sets, particularly in the period, which he finds to be a little short of seventeen years (*Astr. Nachr.* No. 2824). If this last orbit be correct, the star has already been watched through nearly a complete revolution. There is, however, a considerable divergency between the recent observations of Schiaparelli and Engelmann, and those of the latter would accord better with a longer period. It is, therefore, much to be desired that astronomers who possess sufficient optical power should give early and careful attention to this star. The following are Sig. Celoria's complete elements:—

T = 1868.850	...	$\epsilon = 0.09622$
$\Omega = 10^{\circ} 9' 38''$	...	$\alpha = 0^{\circ} 46' 00''$
$\lambda = 220^{\circ} 9' 52''$	...	P = 16.955 years
$\gamma = 61.582$		

OLBERS' COMET.—The following ephemeris for Berlin midnight is in continuation of that given in NATURE, vol. xxxvii. p. 234:—

1888.	R.A.	Decl.	Log r.	Log $\Delta$ .	Bright- ness.
Feb. 11...	h. m. s.	° ' " S.	...	...	...
11...	17 46 35	6 5' 7"	0.3320	0.3974	0.29
13...	48 57	6 17.2			
15...	51 15	6 28.4	0.3394	0.3970	0.28
17...	53 28	6 39.3			
19...	55 36	6 50.0	0.3477	0.3962	0.27
21...	57 39	7 0.4			
23...	59 36	7 10.7	0.3558	0.3951	0.26
25... 18	1 28	7 20.8			
27...	3 15	7 30.7	0.3638	0.3936	0.25

The brightness on 1887 August 27 is taken as unity.

NEW MINOR PLANET.—A new minor planet, No. 272, mag. 13, was discovered by M. Charlois, of the Nice Observatory, on February 4.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1888 FEBRUARY 12-18.

(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 12

Sun rises, 7h. 22m.; souths, 12h. 14m. 28.6s.; sets, 17h. 7m.; right asc. on meridian, 21h. 42.4m.; decl. 13° 46' S. Sidereal Time at Sunset, 2h. 36m.  
Moon (New, February 12, oh.) rises, 7h. 47m.; souths, 12h. 41m.; sets, 17h. 43m.; right asc. on meridian, 22h. 9.2m.; decl. 13° 19' S.

Planet.	Rises.		Souths.		Sets.		Right asc. and declination on meridian.	
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	° ' "	
Mercury..	7 54	13 19	18 44	22 47.5	7 39	5		
Venus ...	5 37	9 41	13 45	19 8.2	21 38	8		
Mars ...	22 59*	4 20	9 41	13 46.6	8 18	8		
Jupiter ...	2 27	6 42	10 57	16 9.1	20 4	8		
Saturn ...	14 51	22 46	6 41*	8 15.4	20 22	8		
Uranus... 22	4*	3 37	9 10	13 3.9	6 4	8		
Neptune..	10 33	18 13	1 53*	3 41.6	17 55	8		

\* Indicates that the rising is that of the preceding evening and the setting that of the following morning.

Feb.	h.	
13	9	Mercury in conjunction with and 3° 8' north of the Moon.
16	12	Mercury at greatest elongation from the Sun 18° east.
17	0	Mercury at least distance from the Sun.

Variable Stars.

Star.	R.A.	Decl.	h.	m.
U Cephei ...	0 52.4	81 16 N.	Feb. 14,	19 58 m
Algol ...	3 0.9	40 31 N.	"	12, 22 19 m
R Aurigæ ...	5 8.3	53 28 N.	"	18, M
R Canis Majoris...	7 14.5	16 12 S.	"	13, 21 35 m
			"	15, 0 51 m
S Cancri ...	8 37.5	19 26 N.	"	16, 21 43 m
S Ursæ Majoris ...	12 39.1	61 42 N.	"	15, m
R Boötis ...	14 32.3	27 13 N.	"	17, m
δ Libræ ...	15 55.0	8 4 S.	"	15, 2 24 m
U Coronæ ...	15 13.6	32 3 N.	"	15, 0 9 m
W Herculis ...	16 31.3	37 34 N.	"	18, M
U Ophiuchi...	17 10.9	1 20 N.	"	14, 2 16 m
		and at intervals of	20	8
W Sagittarii ...	17 57.9	29 35 S.	Feb. 16,	0 0 m
U Sagittarii...	18 25.3	19 12 S.	"	16, 4 0 m
R Scuti... ..	18 41.5	5 50 S.	"	18, M
R Lyræ ...	18 51.9	43 48 N.	"	16, m
R Aquilæ ...	19 1.0	8 4 N.	"	16, M
S Vulpeculæ ...	19 43.8	27 1 N.	"	12, M
Y Cygni ...	20 47.6	34 14 N.	"	12, 19 56 m
			"	15, 19 50 m
δ Cephei ...	22 25.0	57 51 N.	"	13, 2 0 m

M signifies maximum; m minimum.

Meteor-Showers.

	R.A.	Decl.	
Near 49 Camelopardalis	110°	62° N.	Slow.
From Monoceros	120	5 S.	Slow.
Near ν Herculis	238	46 N.	February 17.
„ σ Ophiuchi...	260	3 N.	Swift; streaks.

GEOGRAPHICAL NOTES.

THE French traveller, M. Thouar, who was believed to have perished on his way to the Gran Chaco, has returned to Port Pacheco with his companions. This news was lately sent from Buenos Ayres to Chuquisaca (Sucre).

IN the new number of *Appalachia* Mr. F. H. Chapin describes his ascent of a glacier on Mummy Mountain, Northern Colorado, lying directly north of Long's Peak, and in line with the centre of Estes Park. A single glance at the series of crevasses convinced Mr. Chapin that it was really a glacier, and not a mere accumulation of snow. To the same number Mr. S. H. Scudder contributes a paper on the White Mountains as a home for butterflies.

IN the paper contributed to the Berlin Geographical Society by Dr. H. Meyer on his ascent of Mount Kilimanjaro, he modifies his first statements as to the height which he attained; according to a statement of his companion, Dr. Meyer did not get within 2000 feet of the top.

IN the new Bulletin of the American Geographical Society will be found a useful paper by Mr. A. S. Packard, in which he brings together a *précis* of what was known of Labrador. Accompanying the paper is a good map, in which Mr. Packard has embodied information hitherto unpublished. Dr. Fr. Boas gives the results of his year's sojourn among the Eskimo.

IN the last number of the Proceedings of the Victoria Branch of the Australasian Geographical Society will be found a detailed account of Mr. Cuthbertson's expedition to explore the highlands of British New Guinea. The accompanying map gives a good idea of the nature of the country. Mount Obree was found to be only 8000 feet high, 2000 feet lower than previous estimates.

WE learn from the *Izvestia* of the East Siberian Branch of the Russian Geographical Society (vol. xvii. fasc. 1) that the vertical section of the Angara at its issue from Lake Baikal is 17,920 feet, and that the volume of water discharged from the great Siberian lake reaches 121,353 cubic feet per second. If

this outflow were checked, the level of the lake would rise 7 feet in thirteen months.

DR. ROBERT SIEGER contributes to the Geographical Society of Vienna University a paper in which he discusses what information exists as to the changes of level in the African lakes. This shows clearly that for the last ten years at least these have been lowering in level, and, in the case of Tanganyika, to the extent of many feet. The changes which take place are almost entirely dependent on rainfall, and the probability is that there are periods of depression and periods of elevation. It is important that observations should be carried on both in African lakes and African rivers for a period sufficiently long to afford data numerous enough to warrant any conclusion to be drawn.

PROF. EUARD SÜSS, the able author of "Das Antlitz der Erde," recently read a paper to the Vienna Geological Society, on the history of the ocean, which is to some extent supplementary to that work. In this he points out that from the mouths of the Ganges all round the Pacific coasts of Asia and America to Cape Horn, the coasts are outlined by mountain-ranges which close in upon each other in great curves. From Cape Horn, again, all round the Atlantic and the Indian Oceans to the mouths of the Ganges, the coasts are unconnected with mountain-ranges, but are encircled by table-lands or broken mountain patches. We have thus, then, so far as the structure of the ocean basins is concerned, to distinguish between a Pacific and an Atlantic type. As regards the age of the oceans, Prof. Süß concludes from the geological formations that the Pacific is the oldest, next to that the Indian, and last of all the Atlantic. The oceans, he points out, are areas of depression. Each new depression would form a fresh receptacle for water, and so the shore-line of the land would be lowered. Prof. Süß seems to maintain that it is to this, and not to the actual rising of the land, that the elevation of the coast-line in certain regions is due.

MR. J. F. NEEDHAM has been engaged to conduct an expedition from Sadiya to the Hukeng Valley, and thence to Bhamo on the Upper Irrawady. His previous achievements in the Abor Hills, and the country lying between the Brahmaputra and the Zayal Chu, and his success in conciliating the unfriendly tribes on that frontier region, marked him out for selection as the proper officer to conduct the present mission.

THE new part (Nos. 133-34) of the *Zeitschrift* of the Berlin Geographical Society is mainly occupied with Dr. W. Sievers's account of the results of his exploration of the Sierra Nevada of Santa Marta in the north-east of the United States of Columbia, an excellent large-scale map accompanying the number. A considerable section of the paper deals with the geology of the region, after which Dr. Sievers treats of the surface formation, altitudes, climate, vegetation, and agriculture, the land-snails population.

NEWS from Victoria, in the Cameroons, states that the African traveller, Dr. Zintgraff, started for Rio del Rey in the steamer *Nachtigal*, accompanied by thirty porters. He is on his way to the Elephant Lake in order to establish a scientific station. The other half of the Expedition, under the command of Lieut. Zeuner, is to proceed up the Mungo River to Mundame, to reach the Elephant Lake from that part.

OUR ELECTRICAL COLUMN.

IF a platinum plate be immersed in a porcelain or glass vessel containing dilute sulphuric acid, and another similar plate be immersed in another vessel containing caustic potash solution, then if the two vessels be connected by a siphon tube or a cotton wick, a current will be set up, but which rapidly diminishes owing to the polarization of the metal plates by the deposition of oxygen and hydrogen upon them. Becquerel removed the hydrogen by using nitric instead of sulphuric acid, and increased the current considerably. Dr. Alder Wright and Mr. C. Thomson (Royal Society, February 2, 1888) have been examining this form of battery, and have found many other acids which act in the same way, such as potassium permanganate, potassium bichromate, potassium ferricyanide, and bromine dissolved in sulphuric acid, ferric chloride, hydrochloric acid and chlorine. Moreover, they have removed the oxygen by using a concentrated solution of sodium hyposulphite made strongly alkaline with caustic soda, strong caustic soda with pyrogallol, cuprous chloride, ferrous sulphate, and ammonium chloride dissolved in ammonia. They also found the quantity of oxygen