

which they were hatched out were collected in the first instance by the Board and forwarded to the National Fish-Culture Association to incubate, which was done most successfully. The Severn Fishery Board are to be commended upon the action they have taken to replenish their river with fish, as they set an example to other bodies having the interests of their waters at heart. The hatchery at South Kensington and Delaford belonging to the Association might become an extensive medium in carrying such an object into effect at a minimum cost.

THE additions to the Zoological Society's Gardens during the past week include a Nisnas Monkey (*Cercopithecus pyrrhonotus*) from Nubia, presented by the Rev. W. MacGregor; a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Mr. J. Coston; a Common Badger (*Miles taxus*), British, presented by Mr. C. A. Ross; six Black-footed Penguins (*Spheniscus demerus*) from South Africa, presented by Capt. John Hewat; four Siamese Blue Pies (*Urocissa magnirostris*) from Siam, two Small Hill-Mynahs (*Gracula religiosa*) from Southern India, a Rufous-necked Weaver Bird (*Hyphantornis textor*) from South Africa, presented by Mr. J. M. Cook, F.Z.S.; a Golden Eagle (*Aquila chrysaetos*) from Russia, presented by Mr. Walter Holdsworth; six Long-eared Owls (*Asio otus*), British, presented by Mr. G. B. Burnand; a Malbrouck Monkey (*Cercopithecus cynosurus*) from West Africa, three Ruffs (*Maculites pugnax*), British, deposited; a Glaucous Macaw (*Ara glauca*) from Paraguay, four Crested Pigeons (*Ocyphaps lophotes*) from Australia, four Amherst's Pheasants (*Thaumalea amherstiae*) from China, two Great American Egrets (*Ardea egretta*) from South America, two Lapwings (*Vanellus vulgaris*), British, four Indian Tree Ducks (*Dendrocygna arcuata*) from India, purchased; a Japanese Deer (*Cervus sika*), born in the Gardens.

OUR ASTRONOMICAL COLUMN

COMET BROOKS II.—The following ephemeris for this comet is by Prof. C. Frisby (Science Observer Special Circular, No. 67):—

For Greenwich Midnight							
1886	R. A.		Decl.	Log r	Log Δ	Bright-ness	
	h.	m.	s.	°			
June 11	6	23	20	69 15'0 N.	0.0380	0.1783	0.26
15	6	58	55	66 54'1	0.0557	0.2015	0.21
19	7	27	41	64 28'3	0.0734	0.2275	0.17
23	7	39	51	62 58'9	0.0909	0.2486	0.14
27	7	59	57	60 49'5 N.	0.1081	0.2704	0.12

The brightness on May 2 is taken as unity.

COMET BROOKS III.—Dr. S. Oppenheim has calculated the following elements and ephemeris for this comet from observations made on May 25, 28, and 30, at Arcetri, Rome, and Vienna:—

T = 1886 June 2.90285 Berlin M. T.

$$\left. \begin{aligned} \omega &= 173 \quad 57 \quad 49 \cdot 6 \\ \delta &= 47 \quad 14 \quad 43 \cdot 5 \\ i &= 16 \quad 8 \quad 52 \cdot 3 \end{aligned} \right\} \text{Mean Eq. 1886.0.}$$

log q = 0.170230

Ephemeris for Berlin Midnight							
1885	R. A.		Decl.	Log r	Log Δ	Bright-ness	
	h.	m.	s.	°			
June 8	12	18	3	1 1'8 S.	0.1709	9.9183	0.87
12	12	26	1	3 32'8	0.1721	9.9274	0.83
16	12	34	25	6 1'6	0.1739	9.9375	0.79
20	12	43	15	8 27'4	0.1763	9.9486	0.75
24	12	52	27	10 49'2	0.1793	9.9605	0.70
28	13	1	59	13 6'1 S.	0.1828	9.9732	0.65

The brightness on May 25 is taken as unity.

The comet is faint, and not bright as stated in the telegram announcing the discovery.

SPECTROSCOPIC DETERMINATION OF THE MOTION OF THE SOLAR SYSTEM IN SPACE.—Dr. R. von Kövesligethy mentions (*Astronomische Nachrichten*, No. 2731) that some three years ago he tried to deduce the speed with which the

sun is travelling in space and the point to which its progress is directed, from the observations of the displacements of lines in stellar spectra published in the *Monthly Notices*. The latter inquiry he gave up, as the data supplied did not seem sufficiently trustworthy for a satisfactory result to be obtained from them. He therefore assumed the apex as found from the discussion of the proper motions of stars, viz. R. A. = 216° 0, Decl. = 35° 1 N. Taking the simple arithmetical mean of the observations of the individual stars observed—about 70 in number—he found the speed of translation of the solar system to be about 8.6 geographical miles per second. This rate of motion would agree far better with Struve's value, derived from the consideration of the proper motions of stars, than Herr Homann's (*NATURE*, vol. xxxiii. p. 450) result does. Dr. Kövesligethy does not, however, place much reliance on the result he has thus obtained.

PUBLICATION OF THE ZONE-OBSERVATIONS OF THE "ASTRONOMISCHE GESELLSCHAFT."—M. Doubiago, who has succeeded the late Marian Kowalski as Director of the Kasan Observatory, has recently issued a volume containing the observations made at Kasan during the years 1869-77, of the stars situated in the zone between 75° and 80° of north declination. The principal object of this work, undertaken by M. Kowalski by arrangement with the *Astronomische Gesellschaft*, was the determination of the positions of the stars contained in this zone down to the ninth magnitude. M. Kowalski, however, determined to include in his work all the stars of the *Bonner Durchmusterung* situated in the above-mentioned zone, about 5000 in number, as well as a considerable number of fainter stars. The observations, commenced in 1869, were finished in 1879, and the present volume contains 14,329 observations, that is, about half the total number necessary to complete the projected scheme of having four observations of each star. The results are given in the usual form in which zone-observations are published, viz. the apparent positions for each day of observation are given, together with the reduction to the mean place for the beginning of the year. As far as we remember, Kasan has the honour of being the second of the observatories engaged on the zone work of the *Astronomische Gesellschaft* which has published their observations, Prof. Krüger having already published his Helsingfors zones (55° to 65° of north declination) in two volumes, the first volume having appeared in 1883, and the second in 1885.

THE MADRAS OBSERVATORY.—Mr. Pogson's report for the year 1884 has recently been issued. He points out that during the year a work on "Telegraphic Longitude Determinations in India" was printed and published. The number of observations made with the meridian circle during the year was 844, which brings up the total number of observations made with this instrument since 1862, now awaiting publication, to 51,722. The separate results and annual catalogues will fill eight volumes, to be followed by a final catalogue of about 5000 stars, reduced to the epoch 1875. All the reductions are completed up to date, and Mr. Pogson hopes that these volumes will appear in fairly rapid succession. We hope so too. The speedy publication of a catalogue of 5000 stars would do much towards restoring the Madras Observatory to the position, as a scientific institution, which it formerly held.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1886 JUNE 13-19

(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 13

Sun rises, 3h. 45m.; souths, 11h. 59m. 45.2s.; sets, 20h. 15m.; decl. on meridian, 23° 14' N.; Sidereal Time at Sunset, 13h. 43m.  
Moon (Full on June 16) rises, 16h. 50m.; souths, 21h. 51m.; sets, 2h. 44m.\*; decl. on meridian, 13° 26' S.

Planet	Rises		Souths		Sets		Decl. on meridian
	h.	m.	h.	m.	h.	m.	
Mercury	...	3 43	...	12 7	...	20 31	... 24 26 N.
Venus	...	2 0	...	9 10	...	16 20	... 12 52 N.
Mars	...	11 36	...	18 1	...	0 26*	... 4 7 N.
Jupiter	...	12 5	...	18 22	...	0 39*	... 2 32 N.
Saturn	...	5 2	...	13 13	...	21 24	... 22 41 N.

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