

matter—opinions vary almost as hopelessly as on the size. No doubt the “vast clouds of the most pungent sulphurous steam,” which are described as rising swiftly out of the caldron, render exact observation difficult. The *Times* Correspondent speaks of catching glimpses of the crater-wall at depths which a very moderate estimate would place at 300 feet. But the gradual convergence of the cavity apparent at this depth forbids the acceptance of the enormous profundity for which some visitors have contended, and suggests that the depth can hardly much exceed 500 feet. After a weird description of the appearance presented to the spectator by the volcano at work, the writer concludes by remarking that the present crater is apparently the youngest and innermost of three. Further down on the south west side are to be seen, along with numerous fissures of unfathomable depth, remains which point to the existence of two former craters, concentric and of large dimensions, and separated from one another by a considerable interval. Possibly the existing cone was formed by the great eruption of 1783.

A TELEGRAM from New York of December 2, states that eight slight shocks of earthquake are reported from Summerville, one severe shock from Columbia, and two slight ones from Charleston. No damage was caused. Dr. Forel writes that earthquakes were felt in Switzerland on November 25 at 3h. at Pontresina and Bernina (Grisons), and again at 3h. 53m. (both Greenwich times) at Pontresina.

ACCORDING to the *Ceylon Observer*, Mr. C. Stevens, a naturalist, has returned to Colombo from a most successful and interesting sojourn amongst the Veddahs, whose district he has thoroughly explored, and with whom he was enabled to establish a closer intimacy than any European ever did before. He has been able to clear up a good many dubious points relating to the manners, customs, and religious beliefs of these veritable wild men of the woods. He has succeeded in obtaining several perfect skeletons, and a number of skulls.

THE *London and China Telegraph* states that a Folk-Lore Society has been established in the Philippines, at the prompting of a Society for the study of folk-lore in Spain. The archipelago certainly presents a wide field for investigation and inquiry in this respect, on account of the diversity of native races inhabiting it. The survivals in the shape of traditions, customs, and observances amongst the primitive tribes still to be found in the inaccessible interior of many of the islands may be expected to throw much light on the early history of the people, and on the origin of many superstitious practices common in more civilised lands.

THE Report of the Public Free Libraries of the City of Manchester, while expressing the deep regret of the Committee at the loss of Sir Thomas Baker, their chairman for nearly twenty-five years, is at the same time a testimonial to the ability and judgment with which the work under his care has been carried on. Additional libraries, a tenfold increase in circulation since the two first of them were opened, and over 4000 volumes withdrawn this year as worn out, are proofs of the earnestness of this work. Nor does the increase seem likely to cease, for the extension of the time of keeping open the reading-rooms till 10 o'clock, although it adds to the already long hours of those engaged in their management, is sure, we think, to increase their counter-attraction to the public-houses, and to bring up the number of visitors annually to the libraries to three millions. Two recently incorporated districts also have requested that equal advantages may be extended to them, and help in carrying this out has been liberally supplied by independent public bodies. A remarkably large proportion of books are taken out to be read in the reading-rooms. Boys especially avail themselves of these rooms on a Sunday, nearly twice as many of

them attending then as on a week-day; a direct reversal of the practice of other classes. The success of Manchester is the more marked that so moderate a proportion of fiction is supplied to its readers.

THE additions to the Zoological Society's Gardens during the past week include two Macaque Monkeys (*Macacus cynomolgus* ♂ ♀) from India, presented by the Countess Dowager of Lonsdale; a Mona Monkey (*Cercopithecus mona* ♀) from West Africa, presented by Miss Bashall; a Domestic Sheep (*Ovis aries*, var.) from West Africa, presented by Sir Albert Kaye Rollitt, F.Z.S.; a Grey-striped Mouse (*Smithus vagus*) from the Tatra Mountain, presented by Dr. A. Wryesniowski; a Poë Honey-eater (*Prothemadera nove-zealandia*) from New Zealand, presented by Capt. B. J. Barlow, s.s. *Taimu*; a Blue-fronted Amazon (*Chrysotis aestiva*) from Brazil, presented by Miss Joachim; two Tuatera Lizards (*Sphenodon punctatus*) from New Zealand, presented by Dr. E. B. Parfitt; a Cerastes Viper (*Vipera cerastes*) from Egypt, presented by Mr. J. H. Leech, F.Z.S.; a Beisa Antelope (*Oryx beisa* ♂) from North-East Africa, a Rough Fox (*Canis rudis*) from Guiana, purchased; a Red Kangaroo (*Macropus rufus*), born in the Gardens.

OUR ASTRONOMICAL COLUMN

CORRECTIONS TO REFRACTION TABLES.—Prof. Cleveland Abbe, in a short note to the *Astronomische Nachrichten*, calls attention to the fact that the reading of the mercurial barometer which is used in the refraction-formula as an index to the density of the air is not a true index to the pressure controlling that density until it is corrected for the effect of the variations in gravity. The correction is accomplished by adding one more factor, *g*, for gravity, when the formula becomes—

$$R = \alpha \tan z \left( \frac{1 - 0.00259 \cos 2\phi}{1 - 0.00259 \cos 2\phi_0} \right) \gamma^\lambda,$$

where  $\phi$  is the latitude of the observer, and  $\phi_0$  of the station for which the tables were computed. Prof. Cleveland Abbe considers that the omission of this correction for gravity may partly explain the origin of small systematic differences in the declinations of different star-catalogues, though such differences, so far as they are due to refraction, must also be caused by local irregularities in the distribution of pressure and temperature, which produce effects equivalent to slight inclinations of the horizontal planes of equal density. The systematic changes in his distribution, due to change of season, must introduce an annual variation in refraction similar to the effect of parallax, and it will occasion a difference in the refractions north and south of the zenith, which may often attain an appreciable amount.

COMET FINLAY (1886 e).—The following ephemeris by Dr Krueger, for Berlin midnight, is in continuation of that given in NATURE of November 25 (p. 85):—

1886	R.A.			Decl.	log <i>r</i>	log $\Delta$	Bright-ness
	h.	m.	s.				
Dec. 10	22	2	49	13 25.6 S.	0.0074	9.8941	3.1
	14	22	51	11 9.7	0.0142	9.8909	3.0
	18	22	44 58	8 46.0	0.0221	9.8901	2.9
	22	23	6 0	6 16.7	0.0309	9.8917	2.8
	26	23	26 49	3 44.6 S.	0.0404	9.8958	2.6

The brightness at date of discovery is taken as unity.

COMET BARNARD (1886 f).—This object is now visible to the naked eye, and is at its brightest. As it is now visible in the early evening, it should be frequently observed. The following ephemeris by Dr. Aug. Svedstrup, for Berlin midnight (*Astr. Nachr.*, No. 2756), is in continuation of that given in NATURE of November 25 (p. 85):—

1886	R.A.			Decl.	log <i>r</i>	log $\Delta$	Bright-ness
	h.	m.	s.				
Dec. 11	17	6	7	16 20.9 N.	9.8266	0.0004	24.7
	16	17	54 19	13 43.9	9.8212	0.0300	22.1
	21	18	34 18	10 32.2	9.8266	0.0679	18.0
	26	19	6 32	7 13.7	9.8421	0.1084	14.0
	31	19	32 32	4 5.2 N.	9.8652	0.1478	10.5

The brightness at date of discovery is taken as unity.