

COMET BROOKS (NOVEMBER 19, 1892).—The following ephemeris of Comet Brooks is due to Ristenpart, and is given in *Astronomische Nachrichten*, No. 3142 :—

1893.	R.A. (app.) h. m. s.	Decl. (app.) ° ' "	Log r .	Log Δ .	Br.
Jan. 26 ...	23 35 8 ...	+40 34'3 ...	0'0921 ...	0'0471 ...	2'94
27 ...	38 53 ...	39 34'1 ...	...	...	...
28 ...	42 22 ...	38 36'8 ...	0'0950 ...	0'0688 ...	2'62
29 ...	45 37 ...	37 42'2 ...	...	...	...
30 ...	48 40 ...	36 50'2 ...	0'0981 ...	0'0898 ...	2'35
31 ...	51 32 ...	36 0'5 ...	...	...	...
Feb. 1 ...	54 14 ...	35 13'1 ...	0'1015 ...	0'1101 ...	2'11
2 ...	23 56 48 ...	34 27'7 ...	...	...	...

This comet, which will be found to be in the constellation of Andromeda, will lie about $3\frac{1}{2}^\circ$ to the south of α Andromedæ on January 27.

PHOTOGRAPHIC ABSORPTION OF OUR ATMOSPHERE.—The question of the degree with which our atmosphere absorbs photographic rays has become very important owing to the adoption of photography, so that any work enlightening us on this subject is anxiously listened to. Prof. Schaeberle, who has been making investigations in this direction, has just completed a memoir which is being published by the University of California, but in the meanwhile he has issued a table setting forth simply the final results. The absorption in the following table is expressed in photographic magnitudes, and must be added to the unknown atmospheric absorption at the zenith.

Z. D.	Phot. Absorp.	Z. D.	Phot. Absorp.
5 ...	0'00	50 ...	0'44
10 ...	0'01	55 ...	0'56
15 ...	0'04	60 ...	0'71
20 ...	0'07	65 ...	0'89
25 ...	0'11	70 ...	1'12
30 ...	0'16	75 ...	1'45
35 ...	0'21	80 ...	1'94
40 ...	0'28	85 ...	2'68
45 ...	0'35	90 ...	5'00

HARVARD COLLEGE OBSERVATORY.—The forty-seventh annual report of this Observatory, by Prof. Pickering, opens with a reference to the death of Mr. George B. Clark, to whose "genius for mechanical devices, indomitable perseverance, and devotion to the interests of the observatory, we are indebted for the success of many of our most useful instruments." Of the most important matters mentioned in the report are the permanent establishment of an observing station in South America, where the unsteadiness of the air is for the most part eliminated, the construction of a suitable building for the housing of photographs and the approaching completion of the Bruce photographic telescope. The work done with the various instruments during this period has been considerable. With regard to the Draper telescope, as many as 2777 photographs have been taken, while those taken with the Bache instrument number nearly 2000. The Boyden department, which is situated at Arequipa, in Peru, has been making great progress, the results of which have been frequently inserted in *Astronomy and Astrophysics*. The eight surfaces of the objective of the Bruce telescope have, as Prof. Pickering informs us, been ground and polished, and the results up to the present, according to tests made on a star, are very satisfactory. This instrument, when finished, is destined for the Arequipa station.

SOLAR OBSERVATIONS AT ROME.—Prof. Tacchini has issued the results of the observations made with regard to the distribution in latitude of the solar phenomena at the Royal Observatory during the third semester in 1892. From the tabulated statement which he gives the following facts may be gathered.

With regard to the eruptions, these phenomena seem to be quite local to the equatorial regions, the relative frequency being 0'667 and 0'333 for the north and south latitudes respectively. The spots, faculæ, and eruptions have their maxima nearly at the same distance from the equator both north and south, the zones being ($\pm 20^\circ$, $\pm 30^\circ$), but the maxima for the prominences extend further north, about latitudes 60° north and south. Prof. Tacchini remarks that in the equatorial zone ($+20^\circ$ — -20°), where the maxima of faculæ, spots, and eruptions are observed, a feeble relative frequency in the prominences is noted, which shows us that we must consider a large number of prominences as the result of conditions "bien différentes par rapport à celles qui déterminent la production des taches

dans la photosphère," whilst the prominences are formed simply in the solar atmosphere. As a case in point, he mentions an observation made on August 1 of last year, of a cloud which, starting at a distance of $264''$, rose to $364''$ without any corresponding alteration at the surface.

THE TOTAL SOLAR ECLIPSE, APRIL 15-16, 1893.—Writing to M. Flammarion about the scientific expedition sent by the Brazilian Government to study the region of the central plateau and to select a site for the proposed new capital, Dr. Cruis, the Director of the Observatory at Rio de Janeiro, adds the following note :—"About the total eclipse of April 16. Will France send any one to observe it? I beg you to make known through the *Review* (*L'Astronomie*) that the Brazilian Government is willing to send a warship to Ceara, on which foreign astronomers who wished to observe the phenomenon could find a passage."

GEOGRAPHICAL NOTES.

A CHANGE has been made in the arrangements for the expedition to Lake Rudolf referred to on p. 235, vol. xlvii. The expedition is to travel by the Tana river instead of the Juba, although its ultimate destination is the same, and Lieutenant Villiers, instead of accompanying it, has joined Sir Gerald Portal's mission to Uganda.

MR. H. J. MACKINDER, M.A., Reader in Geography at Oxford, delivered the first of a course of ten educational lectures, under the auspices of the Royal Geographical Society, on the relation of geography to history, on the 20th inst. The attendance was largely composed of teachers and University Extension students, to whom special terms were offered. The lecturer treated of "the Theatre of History," tracing the development of accurate geographical knowledge from the earliest times in a series of brilliant generalisations. He dwelt upon the contrast between the knowledge of early Greek geographers regarding the true shape of the earth, and their habitual representation of the regions known to them in a circular form. In the middle ages, amongst the half-learned, the map of the known world was elevated to the highest place, the figure of the globe was forgotten, and the doctrine of a flat earth gained currency. At the geographical renaissance the map was adapted once more to the sphere, and the discoveries of Columbus and his contemporaries resulted directly.

The suggestion of Mr. Joseph Thomson to bestow the name of Livingstonia (vol. xlvii. p. 160) on the British sphere of influence north of the Zambesi, in spite of its singular propriety, has, we fear, failed to convince the authorities in charge of the region, who, it appears, have decided to adopt the cumbersome and scarcely accurate title of British Central Africa.

M. MIZON's second expedition to Adamawa has been stopped on the Benué by the breakdown of his steamers, and the sudden falling of the water, he being left without means of progress about two-thirds of the way between Lukoja and Yola.

THE French flag has been formally hoisted on the little islands of St. Paul and New Amsterdam in the South Indian Ocean, midway between the Cape of Good Hope and Australia. St. Paul is an interesting instance of a volcanic island, the extinct crater of which forms a wide sheltered harbour communicating with the sea by means of a single narrow channel. It was one of the French stations for observing the transit of Venus in 1874. French fishermen from Reunion had practically taken possession of the islands in the early part of the century, but the fishing-grounds have long been abandoned.

MR. B. V. DARBISHIRE, M.A. (Oxon.), has been appointed Cartographer to the Royal Geographical Society. He has had the advantage of preliminary training in Germany, and under the Reader in Geography at Oxford.

THE APPROACHING ECLIPSE OF THE SUN, APRIL 16, 1893.¹

I HAD the honour, two and a half years ago, of describing to you the total eclipse of the sun of December 22, 1889, which I had been to observe in the Salut Isles, French Guiana. In spite of very unfavourable atmospheric conditions I was then

¹ Address to the Astronomical Society of France, on November 2, 1892, by M. De la Baume Pluvinel, translated by A. Taylor.