

worded definitions to separate the sub-kingdoms, classes, and sub-classes of the vegetable kingdom. Modern research is now all destructive, nor seems it to have a thought as yet of proceeding on the lines of scientific construction.  
E. PERCEVAL WRIGHT

#### OUR ASTRONOMICAL COLUMN

OLBERS' COMET OF 1815.—The Royal Society of Sciences of Haarlem have offered a prize for a new determination of the elements of this comet, founded upon the whole series of observations which remain in a form admitting of more accurate reduction than they have yet received, by the use of improved positions of the comparison stars and a calculation of the effect of perturbations, while the comet was visible, with the more precise values of the planetary masses which we now possess. Bessel, in his final memoir upon this comet, not only investigated the elements of the orbit from the *ensemble* of the observations in the form in which they were known to him in 1815, but essayed to determine the effect of planetary attraction upon the epoch of next return to perihelion, which he fixed to February 9, 1887, but he found that the period of revolution resulting from the observations in 1815, was liable to a probable error of  $\pm 101$  days. Unless the semi-axis major admits of determination within narrower limits, a recomputation of the perturbations would lose much of its value and interest, and accordingly the Haarlem Society, in stating the terms of the prize, limit the investigation now demanded to a definitive calculation of the orbit of the comet in 1815, at least we so understand the notification in *Astronomische Nachrichten*, No. 2,264. Allusion is made to NATURE, vol. xix. pp. 268, 366, where we gave references to publications in which the observations of this comet that admit of a new reduction are to be found. The Society at the same time offer a prize for a critical examination of Serpieri's theory of the zodiacal light, "especially if it is to be sought within or without the earth's atmosphere," and it does not clearly appear from the article in the *Astronomische Nachrichten*, whether one prize is intended to apply to the two subjects; we can hardly suppose that this is the case, as it seems unlikely that any one person would engage upon problems of so widely different a character.

THE NEW COMET.—The elements of the comet discovered by Mr. Lewis Swift do not bear resemblance to those of any comet previously computed, and it does not appear that the body is one of any special interest. The perihelion passage took place towards the end of April, and the comet is now slowly receding from the earth. From the direction of its path, so far as position is concerned, it might remain visible for a considerable time, but its brightness is stated to be sensibly diminishing.

THE COMET 1759 (III).—The following orbit of this comet by Mr. Hind rests upon a new reduction of some of the observations made at Paris, and upon Cassini de Thury's last observation as given by Pingré.

Perihelion passage, 1759, Dec. 16<sup>h</sup> 84<sup>m</sup> 10<sup>s</sup> G.M.T.

Longitude of perihelion	... ..	138° 28' 35"	} Mean equinox 1760 <sup>o</sup> .
" ascending node	... ..	79° 50' 4"	
Inclination	... ..	4° 52' 31"	
Log. perihelion distance	... ..	9.9848692	
Motion—retrograde.			

This is the comet which became suddenly visible in Western Europe on January 8, 1760, when its distance from the earth was within 0.075 of the earth's mean distance from the sun.

VARIABLE STARS.—The following are Greenwich times of geocentric minima of Algol according to Prof. Schön-

feld's elements, from the middle of July to the middle of October:—

h. m.		h. m.		h. m.	
July 15	... 12 29.2	Aug. 27	... 12 37.4	Sept. 22	... 7 54.4
18	... 9 17.8	30	... 9 25.9	Oct. 6	... 15 57.6
Aug. 4	... 14 9.1	Sept. 16	... 14 17.2	9	... 12 46.2
7	... 10 57.7	19	... 11 5.8	12	... 9 34.9
24	... 15 48.9				

The rise in brightness of *Mira Ceti* to its maximum on September 11 may be well observed this summer. S Cancri will be at a minimum on September 18 at 10h. 4m. On the variations of the latter star Schönfeld's memoir published at Mannheim in 1872 may be advantageously consulted.

#### GEOGRAPHICAL NOTES

THE new number of the Geographical Society's periodical contains Mr. Keith Johnston's notes on "Native Routes in East Africa, from Dar-es-Salaam towards Lake Nyassa," accompanied by a very interesting map, in which are embodied the particulars gleaned by Mr. Johnston from native travellers. This paper is followed by Prof. Geikie's lecture on geographical evolution, of which an abstract appeared in NATURE, vol. xix. p. 490, and several pages are next devoted to a not very happy attempt to present the salient geographical features of Mr. Ryall's account of his explorations in Western Tibet, which forms one of the appendices of the *General Report* of the operations of the Survey of India for 1877-8. Among the geographical notes we find intimations that the science lectures are to be discontinued, and that the Council have arranged to provide means of instruction and training for intending travellers. There is also a note of Mr. M. C. Doughty's visit to El-Hejjer, a reported Troglodyte city in North-west Arabia, which disposes of singular fables that have been accepted by some learned Orientalists.

THE question of the availability of elephants in African exploration, lately so much discussed, is now about to be put to the crucial test of experiment. The four elephants presented by the Indian Government to the King of the Belgians for the use of his expedition have arrived safely at Zanzibar, and have been landed near Dar-es-Salaam, not, however, without some difficulty, as the following extract from a letter written by a lady who witnessed the scene will show:—"We never thought the first elephant could get alive to shore. It swam more than a mile in distance, and was in the water for more than an hour. Long after it was half way it would keep turning round and trying to come back to the ship. I cannot describe to you the excitement there was on board. I fairly cried once with anxiety and excitement, it would have been too horrible to see it drowned! It tried to climb up the ship's side once. It was pouring with rain, which made things seem more dismal; we were all wet through, but nobody cared. We had to get our experience as we went on, as no one knew anything about elephants on landing. We managed the other three much better, and made the Captain take the ship nearer in shore. Capt. Carter has stayed over there to take the elephants to Dar-es-Salaam, a distance of four miles, and will stay to see them comfortably settled."

THE *Novoye Vremya* gives some further news as to the progress of the Russian traveller, Col. Prjevalsky. The distance from the Saisan port to the River Buguluk, in the southern Altai mountains, was accomplished by the Colonel towards the end of April. All this tract is a barren desert, having neither flora nor fauna, though the banks of the River Urungu were found to bear some slight vestiges of vegetation. As for the climate, Col. Prjevalsky describes it as characterised by frost at night-time, with heat and storms during the day. Eight degrees of frost in the morning were often followed by 20 deg. of