ing walls more sharply defined and prominent. They may be sub-divided into two classes :—

(*a*) Those in which the missile "mushroomed" itself evenly over the interior of the "crater" leaving no trace of itself.

(*b*) Those in which the missile, being harder or more coherent left a typical cone or cones in the centre, *e.g.*, Tycho, Copernicus.

The gradual cooling and shrinking of the Moon's cone produced other changes in the crust, crumpling it up into Mountain chains in some cases and causing it to sink in huge depressions in others.. The liquid interior overflowing the sunken portions produced the dark areas which are called seas, and obliterated the marks of the previous bombardment over those areas. In some of the photographs in Pickering's Atlas the ramparts of some of the submerged "craters" show up plainly, for example, in the Mare Humorum. In other cases the sloping "craters" may be seen half submerged, *e.g.*, Frascatorius.

I regret that as the lantern is not in working order, we cannot examine a series of slides which Mr. Tomkins kindly lent me for this occasion. As they show details of the Moon's surface which are much more convincing to the eye than mere words can make them, I should like to postpone the remainder of my notes till our next meeting.

Notes and Queries.

A member sent the following queries. The answers are appended :—

Q. 1. In "Ball's Popular Guide to the Heavens" (3rd Ed., page 68) the equation to determine the distance of a star in light years is given as $\frac{3{\cdot}26}{\text{parallax}}$ = the distance. What does the constant 3·26 represent ?

A. The parallax of a star in circular measure is obviously given by the formula $\frac{R}{D}$ where R and D are the radius of the Earth's orbit and the distance of the star respectively both expressed in terms of the same unit. On inverting this, therefore, we get $D = \frac{R}{\text{parallax.}}$

Since D is expressed in light years, the constant 3·26 in the query is the radius of the Earth's orbit expressed as a fraction of light year multiplied by the number of seconds of arc in a radian, *i.e.*, in $\frac{180^\circ}{\pi}$.

The reduction can be effected directly from a knowledge of the aberration constant which is in radians equal to

$$\frac{\text{Velocity of the Earth in its orbit}}{\text{Velocity of light}}$$

$$=\frac{\text{Circumference of the orbit in miles}}{\text{Number of miles in a light year}}$$

$$=2\pi R \text{ (in light years).}$$

Since the value of the aberration constant is known from astronomical observation to be 20·49 seconds of arc,

$$\text{Distance of a star in light years}=\frac{20{\cdot}49}{2\pi\times\text{parallax (in seconds)}}$$

$$=\frac{3{\cdot}26}{\text{parallax}}.$$

Q. 2. The position of the Moon on May 15th, 1913, at 3 hours Greenwich Mean Time is given in the Nautical Almanac as R.A. 11 hrs. 33 mts. 30 secs. Dec. 3°-47′-13″ North. This, of course, is the position as viewed from Greenwich, Latitude 51°-28′ North. What is the declination when viewed from India at the corresponding Standard Time, *viz.*, 8-30 P.M. at the latitude of, say, 22° North ?

A. The figures in the Nautical Almanac are the *true* right ascensions and declinations, *i.e.*, with reference to the centre of the Earth as origin. To find the *apparent* position of the Moon among the stars as observed at any given place on the Earth's surface, corrections for parallax have to be applied. The method of detailed calculation is explained in the text-books, see for instance Loomis's Practical Astronomy on the method of calculating occultations of stars.

Q. 3. Several writers describe the figure of "The Lady in the Moon" visible on and after the Moon is nine days old. I have not been able to recognise any such figure. Can you kindly inform me which particular craters, etc., form it ?

A. The "Lady in the Moon" is merely a fanciful delineation of the dark and bright areas on the Moon as seen with the naked eye. Her profile faces towards Copernicus and is practically the boundary of Sinus Aestuum and Mare Nubium.

Her coiffure is composed of Mares Serenitatis, Tranquilitatis, and Fœcunditatis. A good picture of the Lady can be seen in Fig. 5 of Plate H of Pickering's book on the Moon.

Memoranda for Observers.

Standard Time of India is adopted in these Memoranda.

For the month of August 1913.

Sidereal time at 8 p.m.

	H.	M.	S.
August 1st	16	38	22
,, *8th*	17	5	58
,, *15th*	17	33	34
,, *22nd*	18	1	9
,, *29th*	18	28	45

From this table the constellations visible during the evenings of August can be ascertained by a reference to their position as given in the Star Chart.

Phases of the Moon.

	H.	M.	
August 2nd—New Moon	6	28	P.M.
,, *9th*—First Quarter	9	33	A.M.
,, *17th*—Full Moon	1	57	A.M.
,, *25th*—Last Quarter	5	48	A.M.

Meteors.

Date.	Radiant. R. A.	Radiant. Dec.	Character.
July—September ...	335°	+73°	Swift, Short.
July—August ...	339°	−27°	Slow, Long.
July—August ...	280°	+57°	Slow, Short.
August 10th—12th *The Perseid shower*	45°	+57°	Swift, Streaks.