head of the major axis of the tidal spheroid Eastward of the Moon, and since the particles there are nearer to the Moon than the particles at the other end of the major axis, the tidal head tends to pull the Moon forward or Eastward, and hence increases her velocity, and her distance (because her areal velocity remains the same) and her period. Thus the month is lengthened by tidal friction, as well as the day. Now, since the Moon's distance from the centre of gravity of Earth and Moon is far greater than the distance of the ocean from its axis of rotation which passes through the centre of the Earth, the effect of tidal friction upon the Earth's rotation is far greater than it is upon the Moon's orbital motion. Hence the final effect of tidal friction is to make the day equal in length of time to the month. Hence after many millions of years to come, the day and the month will be equal, and it can be calculated mathematically that they will both be 1,400 hours long. The Earth will then always present the same hemisphere to the Moon, and lunar tides and lunar tidal friction will then have ceased. But solar tidal friction will still continue. And its effect will be to continue to diminish the Earth's rotatary velocity. And it will have the opposite effect upon the Moon's orbital motion from what the lunar tide had, namely to retard instead of accelerate her velocity and to diminish instead of increase her distance. The Moon will thus ultimately rejoin her parent Earth, and owing to the immense gravitational pressure which will then be set up between Earth and Moon, will to a certain extent coalesce with the Earth, and the two bodies will together form one somewhat misshapen ellipsoid. The last step will be when the rotation of this Earth-Moon body or in other words its day, will coincide with its year, and will follow the example of the two inner planets Mercury and Venus in turning always the same face to the Sun, one hemisphere remaining in eternal day and the other in eternal night.

Observation of the Transit of Mercury, 7th November 1914,

By R. J. Pocock, B.A., B.Sc., F.R.A.S.,
Director, Nizamiah Observatory,
Hyderabad.

At Hyderabad the first and second contacts alone were visible, the third and fourth taking place after sunset.

It was intended to make observations of both 1st and 2nd contact with the finders of both the 15 inch Grubb visual and 8 inch Cooke photo-visual telescopes. The first contact, however (always a difficult observation), was not observed and the 2nd contact was only observed with the finder of the 8 inch Cooke photo-visual, aperture 2½ inches. The observation was made by Mr. T. P. Bhaskaran Shastri, Assistant, with a pocket chronometer belonging to the Director which was compared immediately after with the standard (Cooke) sidereal clock of the Observatory.

	hour.	minute.	second.
The observed Indian Standard time was—	15	29	36·81
The computed time	15	29	35·21
Difference	...	...	1·60

In computing the time of second contact the geographical co-ords of the Observatory (which have never been accurately determined and may well be slightly in error) were taken to be Grocentric Latitude $+17° \; 19' \; 20''$

East longitude 5*h*. 13*m*. 37·66*s*.

HYDERABAD, *10th November*, 1914.

Memoranda for Observers.

for the month of December 1914.

(Standard Time of India is adopted in these Memoranda.)

Sidereal Time at 8 p.m.

			H.	M.	S.
December 1st ...	...	...	0	38	25
,, 8th ...	...	...	0	6	1
,, 15th ...	...	...	1	33	36
,, 22nd...	...	...	2	1	12
,, 29th ...	...	...	2	28	48

From this table the constellations visible in India during the evenings in December can be ascertained by a reference to a star chart, as the above hours of sidereal time represent the hours of Right Ascension on the meridian.