The following table gives the corresponding figures for the corresponding length of an absolute rotation :—

Absolute Solar Rotations.	Length in Years.	Number of Periods in	
		1 Year.	5 Years.
⊙			
12	0·835	1·198	6·0
11	..	1·31	6·55
10	..	1·44	7·2
9	..	1·6	8·0
8	..	1·8	9·0
7	..	2·06	10·3
6	..	2·4	12·0
5	..	2·88	14·4
4	..	3·6	18·0
3	..	4·8	24·0
2	..	7·2	36·0
1	..	14·4	72·0

Granted sustained small oscillatory changes in the above periods, it is easy to see that a resultant 15-year periodicity would ensue.

$\odot_{8\ 11}$ and $\odot_{12}$ both approximate closely to 10 months in length. By a combination of years we found we could produce symmetry for 10 months, and in 1913 and 1918 we could trace similarity of trend over 10 months. It may be, then, that the amplitude in one or both of these periods is considerable. As a working hypothesis the above may be of service in the analysis of our magnetic periodogram.

Mean Diurnal Inequalities.

The curves of mean monthly and mean seasonal diurnal change of D and of H are reproduced as usual.

The curves in D are very similar to those in 1919. The peculiar flattening indicating constancy of declination from 2h. to 6h. G. in January, 1919, has a distinct tendency to be repeated nearly two years later, in December, 1920, but it is not so pronounced. The extraordinary drop at 3h. G. in the March curve for 1920 D is almost entirely due to the influence of a very stormy day, the 23rd March ; but the peak at 18h. in March is repeated in April, and is a systematic effect. This is not to say, however, that the apparently abnormal storms may not be ultimately found to be systematic in their occurrence. The rapid turn of the curve at 6h. G. in September finds its counterpart in July and August of 1919. The fall from 10h. to 11h. in September, 1919, is repeated in the 1920 October curve.

The average curves for the years 1919 and 1920 differ principally about 12h., owing chiefly to differences in the winter and equinoctial months about that hour.

As to the corresponding H curves, the June and July curves are generally smoother in 1920 than in 1919. The drop of H at 12h. in the average curve for the year is found also in the summer, winter, and equinoctial curves.

Mean Monthly Ranges of the Diurnal Inequalities.

In H the maximum range in 1920 is found in February, as was the case in 1919.

Reference to the diagram published in last year's report will show that for the second half of the year 1920 the trend of the curve follows that for 1918 much more closely than that for 1919. In both 1918 and 1920 there was a large range in August.

In the corresponding ranges for D, in both 1919 and 1920 the maximum range occurred in February and November, being almost equal in these two months ; the minimum range occurred in June.

The tendency in 1919 to a peak of range in May and August is in 1920 very much less.

It is rather to be expected that relationships exist between the annual marches of the mean monthly ranges of the diurnal inequality in different years, and indeed it is significant that some such relationship is shown by these in 1910 and 1920, especially in regard to the declination. The accompanying diagram shows these, and shows clearly the minima of difference at three-monthly intervals, and the strikingly similar annual march. In the corresponding ranges of H (diagram given) similar "nodes" occur, but one month later than in D. In fact, the average ranges of the diurnal inequality in H in the months April, July, and October were almost identical in 1910 and 1920.

In 1919 peaks of D range occurred in February, May, August, and November ; in 1910 peaks occurred in H range in these months, while in 1920 pronounced peaks occurred in February and August. Generally the 1910 D range curve much more closely resembles in trend the 1920 range curve than it does the 1919 D range curve. The mean range of the diurnal inequality of D in 1910 was 6·6′ ; in 1920 it was 7·2′. In H the corresponding figures were 27·3γ and 30·4γ. The difference of range in E_m was therefore about 3·6γ and in H about 3·1γ.