

The Sun first "crosses the line" about the 20th of March. This is called the vernal equinox and is the commencement of our Spring. Anciently, also, it was the beginning of the year. At this point he enters the sign Aries, and passes on eastward through Taurus and Gemini, completing the latter about the 21st of June. Here he has reached his farthest northern point, which is for this reason called the *Summer solstice* (from *sol*, the Sun, and *sto* to stand); and thence begins to recede southward. Passing on through Cancer, Leo, and Virgo, he comes to the autumnal equinox, and again "crosses the line" Sept. 23, at the beginning of Autumn. On the 22d of December he has reached the Winter solstice, and thence begins his return northward, completing the whole circle of the Ecliptic at the next vernal equinox, March 20. The times of these periods in 1863 are more exactly as follows:—

		H. M.
Winter begins,	1862, Dec. 21st,	8 12 a
Spring "	1863, March 20th	9 22 a
Summer "	" June 21st,	5 54 a
Autumn "	" Sept. 23d,	8 8 m
Winter "	" Dec. 22d,	1 58 m

	D. H. M.		D. H. M.
Sun in Winter Signs	89 1 10	Sun Nor. of Equator	186 10 46
Sun in Spring Signs	92 20 32	Sun S. of Equator	178 19 0
Sun in Summer Signs	93 14 14	Difference	7 15 46
Sun in Autumn Signs	89 17 50	Mean Tropical Year	365 5 49

It will be observed that the lengths of the seasons are not exactly the same, and that the stay of the Sun north of the Equator is nearly eight days longer than on the south. This arises from the fact that the Earth's orbit is not an exact circle, but an *ellipse*, or flattened circle, the focus of which is a little one side of the true centre, making the Sun a little nearer the Earth in one part of its orbit than in the opposite. Here its motion is a little faster than at the farthest point, so that one-half the orbit will be completed so much sooner than the other. This nearest distance of the Sun, curiously enough, is in the Winter, consequently the Winter half of the orbit, which is the portion of it south of the Equator, is correspondingly shorter than the Summer half.

It should be remembered that when we speak of the motion of the Sun, we mean its *apparent* motion. The *real* motion is in the Earth, and is exactly the reverse of the former. It is more convenient, however, as it is more easily understood, to speak, as we have done, as if the motion pertained to the Sun.

CHRONOLOGICAL CYCLES.

Dominical Letter, D; Golden Number, 2; Epact, 11; Solar Cycle, 24; Roman Indictions, 6; Julian Period, 6576.