

Vedic literature. This solar year is divided into two halves—the Uttarāyana,¹⁸ when the sun goes north, and the Dakṣiṇāyana,¹⁹ when it goes south. There can be no doubt that these periods denote the time when the sun turns north from the winter solstice, and when it turns south from the summer solstice, for the Kauṣītaki Brāhmaṇa²⁰ says so in perfectly clear language. The alternative theory is to regard the periods as those when the sun is in the north—*i.e.*, when it is north of the equator, and when it is in the south, taking as points of departure the equinoxes, not the solstices; but this view has no support in Vedic literature, and is opposed to the fact that the equinoxes play no part in Vedic astronomical theory.²¹ There are only doubtful references to the solstices in the Rigveda.²²

The Brāhmaṇas,²³ and perhaps the Rigveda,²⁴ regard the moon as entering the sun at new moon. According to Hillebrandt,²⁵ the Rigveda²⁶ recognizes that the moon shines by the borrowed light of the sun, but this seems very doubt-

¹⁸ The form Uttarāyana is later (Manu, vi. 10, etc.). Udagayana occurs in the Bṛhadāraṇyaka Upaniṣad, vi. 3, 1; Kauśika Sūtra, lxvii. 4; Lātyāyana Śrauta Sūtra, viii. 1, 1; Gobhila Gṛhya Sūtra, i. 1, 3; Āśvalāyana Gṛhya Sūtra, i. 4, etc.; Weber, *Naxatra*, 2, 201, 212; *Jyotiṣa*, 107 *et seq.*; Yāska, *Nirukta*, xiv. 10.

¹⁹ The form is late (Manu, i. 67, etc.). In the Śatapatha Brāhmaṇa, ii. 1, 3, the two Ayanas are equated each with three seasons—the northern course with spring, summer, and rains; the southern with autumn, winter, and cool season. But this is merely an inevitable inaccuracy, since no real season begins with the winter solstice.

²⁰ xix. 3. Cf. Taittirīya Saṃhitā, vi. 5, 3; Bṛhadāraṇyaka Upaniṣad, vi. 1, 18 (Mādhyamīna = vi. 2, 18 Kāṇva); Weber, *Naxatra*, 2, 345 *et seq.*

²¹ Thibaut, *Indian Antiquary*, 24, 96; *Astronomie, Astrologie und Mathematik*, 10; Oldenberg, *Zeitschrift der Deutschen Morgenländischen Gesellschaft*, 48, 631

et seq.; 49, 473 *et seq.*; *Nachrichten der königlichen Gesellschaft der Wissenschaften zu Göttingen*, 1909, 564, n. 1; Keith, *Journal of the Royal Asiatic Society*, 1909, 1103. On the other side. see Tilak, *Orion*, 22-31.

²² See Hillebrandt, *Vedische Mythologie*, 3, 279-283, who cites Rv. i. 61, 15; v. 29, 5; x. 171, 4; 179, 2. But none of these passages are conclusive. Cf. Thibaut, *op. cit.*, 6.

²³ Śatapatha Brāhmaṇa, i. 6, 4, 18; iv. 6, 7, 12; x. 6, 2, 3; xi. 1, 6, 19; Bṛhadāraṇyaka Upaniṣad, i. 2, 13; Aitareya Brāhmaṇa, viii. 28, 8.

²⁴ v. 47, 3; ix. 25, 6; 71, 2; x. 55, 5; 138, 4. Cf. Hillebrandt, *op. cit.*, 1, 463-466.

²⁵ *Ibid.*, 3, 467, 468.

²⁶ ix. 71, 9; 76, 4; 86, 32; perhaps i. 190, 3; Sāmaveda, ii. 9, 2, 12, 1. Thibaut, *op. cit.*, 6, considers that the meaning of the passages is merely that the moon is filled up during the bright half of the month by light emanating from the sun.