

The year of 12 months of 30 days each being admittedly quite unscientific, Zimmer²³ is strongly of opinion that it was only used with a recognition of the fact that intercalation took place, and that the year formed part of a greater complex, normally the five year Yuga or cycle. This system is well known from the Jyotiṣa: it consists of 62 months of $29\frac{1}{2}$ days each = 1,830 days (two of these months being intercalary, one in the middle and one at the end), or 61 months of 30 days, or 60 months of $30\frac{1}{2}$ days, the unit being clearly a solar year of 366 days. It is not an ideal system, since the year is too long;²⁴ but it is one which cannot be claimed even for the Brāhmaṇa period, during which no decision as to the true length of the year seems to have been arrived at. The references to it seen by Zimmer in the Rīgveda²⁵ are not even reasonably plausible, while the *pañcaka yuga*, cited by him from the Pañcaviṃśa Brāhmaṇa,²⁶ occurs only in a quotation in a commentary, and has no authority for the text itself.

On the other hand, there was undoubtedly some attempt to bring the year of 360 days—a synodic lunar year—roughly into connexion with reality. A Sāmasūtra²⁷ treats it as a solar year, stating that the sun perambulates each Nakṣatra in $13\frac{1}{2}$ days, while others again evidently interpolated 18 days every third year, in order to arrive at some equality. But Vedic literature, from the Rīgveda²⁸ downwards,²⁹ teems with the assertion of the difficulty of ascertaining the month. The length is variously given as 30 days,³⁰ 35 days,³¹ or

²³ *Op. cit.*, 369, 370.

²⁴ The Yuga is too long by nearly four days. The true year has 365 days, 5 hours, 48 minutes, 46 seconds. Cf. Thibaut, *op. cit.*, 24, 25.

²⁵ i. 164, 14; iii. 55, 18. These passages are, of course, obscure, but to interpret them as referring to the ten half years of the Yuga is particularly gratuitous.

²⁶ xvii. 13, 17. See also Thibaut, *op. cit.*, 7, 8; Weber, *Indische Streifen*, 1, 91, and references. The most that can be said is that a tendency to accept five years as a convenient period for intercalation was arising, which ultimately appears

developed in the Jyotiṣa. But we cannot say that a year of 366 days is known until then.

²⁷ Lāṭyāyana Śrauta Sūtra, iv. 8, has nothing of this, but Nidāna Sūtra, v. 12, 2, 5, is quite clear.

²⁸ i. 25, 8; perhaps 165, 15.

²⁹ Śatapatha Brāhmaṇa, iv. 3, 1, 5; vi. 2, 2, 29; xii. 2, 1, 8; Aitareya Brāhmaṇa, i. 12; Kāṭhaka Samhitā, xxxiv. 13; Pañcaviṃśa Brāhmaṇa, x. 3, 2; xxiii. 2, 3; Taittiriya Āraṇyaka, v. 4, 29; Weber, *Nakṣatra*, 2, 336, n. 1.

³⁰ Av. xiii. 3, 8.

³¹ Śatapatha Brāhmaṇa, x. 5, 4, 5.