CORRESPONDENCE

Yuktibhāṣā on the avāntarayuga (intermediate cycle) of 576 years. According to the reviewer:

‘Text of the Yuktibhāṣā and the translation by Sarma do not refer to Tantrasaṅgraha in the discussion of the avāntarayuga of 576 years (210,389 days). Explanatory notes by Ramasubramanian [sic] et al. give the impression that the minor period owes its origin to Tantrasaṅgraha of Nilakantha. In fact, the Tantrasaṅgraha dyuṣaṇa or day-count of 1,577,917,200 could not have given the perfect integer day count of 210,389 days in 576 solar years... The arithmetic involved is 210,389 × 7500 = 1,577,917,500 of Āryabhaṭa and not 1,577,917,200 of Nilakantha.’

In our explanatory notes in the book (vol. 1, p. 173), there is a reference to the avāntarayuga of 576 years found in Tantrasaṅgraha, but nowhere do we claim that this concept originates with Tantrasaṅgraha. And, unfortunately for the reviewer, the number of civil days is the same in both Āryabhaṭa and Tantrasaṅgraha namely 1,577,917,500. The wrong number 1,577,917,200 happens to be a typographical error on p. 173 of the book, on which the reviewer has built an entire fiction!

On a serious note, we would like to state that, having carefully studied both the texts, it is our considered view that Yuktibhāṣā closely follows Tantrasaṅgraha in its exposition of most of the topics, especially in the second part on astronomy. This is indeed made clear right at the beginning of Yuktibhāṣā, where it is stated that (see Sarma’s translation in our book, vol. 1, p. 1):

‘Here, at the outset, with a view to expound, following the Tantrasaṅgraha, all the calculations as are needed for the computation of the motion of the planets, first the elementary calculations... are being set out.’

However, Yuktibhāṣā is not a commentary on Tantrasaṅgraha. In fact, it includes lot of demonstrations and explanations of the background mathematics, as well as the results and procedures presented in Tantrasaṅgraha. If anything, the reviewer’s claim that ‘Tantrasaṅgraha has no connection with Yuktibhāṣā at all’, seems truly spurious.

We are disappointed that the reviewer has failed to present any scholarly review and critique of the book, and has only made some unwarranted allegations. The moral of the story, according to us, should be that even book reviews need some form of refereeing, or at least an exercise of editorial supervision.


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Unusual citrus

On a mid-November afternoon in 2007, we were on a casual visit to the garden at our Department of Botany, where we saw a twig hanging entrapped on a bough of a citrus tree (Citrus aurantifolia [Christm.] Swingle). Thinking that the twig might have been detached from some nearby tree, a routine happening, we overlooked it.

Later, on a closer look, we noticed that it was not a twig from another nearby tree, but a part of the same citrus tree. A side branch of the tree displayed a unique feature (Figure 1a). Instead of tapering into a deadened tip as all other branches did, this particular branch started broadening exuberantly beyond the tip, and became curved, acquiring a U-shape (Figure 1b). The diameter of the ‘tip’ measured 0.9 cm, which was the average value for the normal twigs. As it grew further, beyond the point of termination, it started broadening and ended into a node (1.6 cm). Beyond this, it broadened further, with a diameter of 2.3 cm.

Then the branch curved upwards, acquiring roughly U-shape, and producing further two major nodes. From these nodes erupted a large number of smaller branches of varying diameters (1.0–1.9 cm). These

Figure 1. a. Citrus tree distant view: unusual feature in the box; b. Close-up of the box.
Chilkigarh Kanak Durga Sacred Grove, West Bengal

Sacred groves are traditionally protected forest patches maintained on socio-religious grounds. Owing to social protection, these groves support a rich collection of plants and animals, including some rare and endemic taxa. In India, about 13,720 sacred groves have been enumerated from different states. Although Andhra Pradesh, Kerala, Maharashtra and Tamil Nadu have the maximum number of these forests, in West Bengal sacred groves are abundantly found in tribal-dominated districts like Bankura, Midnapore and Purulia. The Chilkigarh Kanak Durga Sacred Grove (lat. 22°15’-22°0’N and long. 86°45’-87°0’E) is the largest of its kind. It is located 30 km northwest of Kharagpur railway station in Chilkigarh village under Jamboni Police Station of Midnapore (W) District, West Bengal, along the border areas of Jharkhand and Orissa. The grove, consisting of a mixed vegetation of deciduous, semi-deciduous and evergreen species, occupies about 60 acre land and is bounded by crop fields, households, Sal forests and river. It houses the historically famous temple of goddess Kanak Durga (Figure 1). Presently, the entire sacred complex is maintained by a temple trust. Since the last few years, the trust has introduced many socio-culturally relevant plants in the grove. Moreover, the entire forest is regenerating with flora from West Bengal, Jharkhand and Orissa. The present study highlights the biological significance of the area.

The grove supports 388 species of angiosperms covering 295 genera under 75 families. Herbs, shrubs, trees and climbers represent 208, 45, 89 and 46 species respectively. It bears 11 species with edible fruits, 25 species having sacred value, ten species used as timber plants, 12 species having firewood value and 105 species of medicinal plants, of which a few are rapidly vanishing from the surrounding forest areas.

Owing to the high level of social protection, the sacred grove provides optimum conditions congenial for the growth of plants. Some of the lofty trees seen are Adina cordifolia, Alangium salviifolium, Ailantia scholaris, Anogeissus latifolia, Holoptelea integrifolia, Mimusops elengi and Strychnos nux-vomica. Besides, some woody climbers like Bauhinia vahlii show monstrous growth in the grove. Additionally, due to prevalence of near-wild environs typical of protected forests, the grove supports one amphibian species, six species of reptiles, 13 species of birds and six species of mammals.

The Kanak Durga Sacred Grove, although fairly well protected, is facing mild threats due to minor micro-habitat changes for developmental works, grazing and exotic weed invasion. Therefore, there is an urgent need to preserve the grove. A small task force consisting of the present stakeholders may be entrusted to look after the grove. Steps should be taken to promote awareness among the visitors, tourists and villagers about the importance and relevance of conservation of the grove. Presently, there is no legislation regarding the conservation of sacred groves in West Bengal. Thus, a sacred grove conservation programme may be initiated taking the concerned scientists, local people, administrative bodies, NGOs, etc. into confidence.


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