THE MATHEMATICAL SECTION OF THE
NĀRADAPURĀṆA

I. INTRODUCTION

The Nāradapurāṇa (hereafter NP) contains chapters on the “astral science” (jyotiṣa) as one of the six vedāṅgas (auxiliary members of the Vedas), dividing it into “three stems” (triskandhas), namely, mathematics and mathematical astronomy (ganita or tantra), horoscope astrology (horā or jātaka), and natural astrology or divination (samhitā). This is the traditional division of jyotiṣa, which dates back at least to the sixth century A.D., when Varāhamihira wrote several books on each subject, including the Pañcasiddhāntikā on ganita, the Brhadjātaka and Laghujātaka on jātaka, and the Brhatasaṃhitā on samhitā.

To the six vedāṅgas the NP assigns the following chapters (adhyāyas).

Nāradapurāṇa, Purvabhaṣa,
Adhyāya 50: śikṣā (phonetics).
51: kalpa (rituals).
52: vyākaraṇa (grammar).
53: nirukta (etymology).
54 jyotiṣa (astral science).
55 chandas (prosody).

The structure of the jyotiṣa section is:

Adhyāya 54: ganita.
   Stanzas 1–12ab: introduction.
   Stanzas 12cd–60ab: mathematics .................. A
   Stanzas 60cd–187: mathematical astronomy ....... B
Adhyāya 55: jātaka.
   Stanzas 1–366: horoscope astrology ............... C
Adhyāya 56: samhitā.
   Stanzas 1–757: divination .......................... D

Nambar [1973/74, 101–112] pointed out that each section of the NP

(designated A, B, C, and D above) has a number of similarities with the following works:

A — *Līlāvatī* of Bhāskara II (A.D. 1150).
B — *Sūryasiddhānta* (ca. A.D. 800),
C — *Brhaījātaka* of Varāhamihira (ca. A.D. 550),
D — *Nāradasaṃhitā* (before ca. A.D. 1365);

and gave a list of identical stanzas: 3 stanzas with the *Līlāvatī* (hereafter L), about 80 stanzas with the *Sūryasiddhānta* (SS), and about 300 stanzas with the *Nāradasaṃhitā* (NS). Concerning the section on astrology (C), he observed that it “fully agrees in contents with the *Brhaījātaka* of Varāhamihira, though the same words are not used.” As for the sections on astronomy (B) and divination (D), he conjectured that each pair (B — SS and D — NS) “had a common source of information.”

For the section on mathematics (A), he was more prudent, only saying, “The matters narrated in connection with arithmetical operation are mostly available in the *Līlāvatī* of Bhāskarācārya II which contains three identical verses.”

Tagare [1981, 22] supposed a common source also for the mathematical section (A) and the L, while Jha [1985, 158–159] went on to hypothesize that Bhāskara was possibly influenced by the mathematical section of the NP. But this hypothesis is based on the sole and unwarranted conjecture that the NP cannot have been composed later than A.D. 1000.

There are certainly scholars like Kane [1977, 8931 who dates the entire NP before A.D. 1000, but Hazra [1958, 309–345; 1975, 127–132], having compared ritualistic elements contained in various purūṇas, concluded that the NP consists of at least three strata: two written before ca. A.D. 1000 and the rest relatively later.

*Nāradapurāṇa*  
Pūrvabhāga  Adhyāyas 1–41, ca. A.D. 875–1000.  
Adhyāyas 42–125, “comparatively late”.  

Uttarabhāga  Adhyāyas 1–37, ca. A.D. 875–1000.  
Adhyāyas 38–82, “comparatively late”.

According to him, the original nucleus of the NP was a work very close to the present *Brhaṇmārādiyapurāṇa*, which can be dated ca. A.D. 750–900, and it became Adhyāyas 1–41 of Pūrvabhāga, to which Adhyāyas 1–37 of Uttarabhāga was added in about A.D. 875 to 1000; and then, comparatively later, the other parts were further added to it.

This dating, it should be noted, does not deny the possibility that the mathematical section of the NP, which is contained in Adhyāya 54 of the