

From Sanskrit to Nepali: The mathematical poetry of the Dhananjayas



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Big Maths Jam
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Tikaram and Chandrakala Dhananjaya



Chandrakala Marashini
(née Paudel, 1915–2002)

Tikaram Marashini
(1909–1936).

Photo on previous slide
courtesy of Dhundiraj Rijal,
son of the Dhananjayas

Lilavati

- ▶ *Lilavati* was written by twelfth century Indian astronomer and mathematician Bhāskarāchārya (1114–1185). It consists of around 270 Sanskrit verses and covers a range of areas in arithmetic and geometry.
- ▶ The concise Sanskrit verses — which also circulated as part of an oral tradition — were generally accompanied by commentaries which explained the methods in more detail.
- ▶ It is very likely that Tikaram would have studied this work while studying in Varanasi (Benares).

Two translations by the Dhananjayas

- ▶ *Śiśubodha Taraṅgiṇī*, Vol 2 (1933).
- ▶ Author named as Chandrakala Devi Dhananjaya
- ▶ The majority of ST2 consists of direct and indirect translations of 85 verses from *Lilāvatī* into Nepali.
- ▶ *Lilavati* (1936).
- ▶ Author named as Tikaram Dhananjaya, headteacher of Pokhrathok Pathashala. The commentary is titled Chandrakala and at the end of each chapter is written the expression “explained by Chandrakala”.
- ▶ New verses are introduced that are not from *Lilavati*.

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But in 2001, in an interview with Modanath Prashrit, Chandrakala refuted that she had taken any meaningful role in the writing of these texts, as she received only a limited education.

A puzzle

Two people decide to circumambulate the sun beginning at the same time, and for the same amount of time. One made 234 circumambulations, the other made 432. How many times did they meet along their way? Tell the answer quickly to show off your knowledge in mathematics.

Sloka 35, Śiśubodha Tarāṅgiṇī 2, translated by Deepak Basyal in his 2015 PhD thesis (page 82).

Read more in [Basyal & Stenhouse \(2023\)](#), Tikaram and Chandrakala Dhananjaya: A collaborative couple in mathematics from Nepal

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