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ABSTRACT

**6 Āryabhaṭīya Bhāṣa of Nīlakaṇṭha Somayājī - Salient Features by Dr. N.K Sundareswaran,
Calicut University**

It is well known that Kelallur Nīlakaṇṭha Somayājī is one of the prominent members of the Kerala school of Astronomy. Also his Āryabhaṭīyabhāṣya is acclaimed for its extensive nature, wealth of quotations and lucidity of expression. Here, in this paper, an attempt is made to closely study a particular section – viz. the commentary on Gaṇitapada - of this commentary. An approach to unravel the thought process and the internal language behind the expressions is very important with regard to such works.

The Āryabhaṭīya passage runs as

bhagam haredavarganityam dviḡunena vargamūlena/
vargādvarge śuddhe labdham stānāntare mūlam//

It deals with square rooting. While commenting on this, Kelallur Nīlakaṇṭha Somayājī gives a beautiful, lucid explanation of many fundamentals of arithmetic. They include

1. Fundamental operations of natural numbers,
2. Commutative and distributive property of multiplication,
3. Pythagorean theorem,
4. Āryabhaṭan system of numeral notation,
5. N^2 is the sum of ‘N’ terms of the arithmetic progression 1,3,5,7,...and
6. The evaluation of $\sqrt{2}$ given by Baudhāyana as $1+1/3 +1/(3 \times 4) - 1/(3 \times 4 \times 34)$. The last one is explained geometrically.