

Influence of Mathematics in Literature: Special Reference to Malayalam Poems

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Abstract - Mathematics has its application in all other subjects. This has its influence in the field of literature also. Poems play an important role in Literature. The sound and rhythm of poetry make it unique. Each poem is unique in its own way. Metre is the rhythmic structure of a poem. These are mathematical measures of a poem. This work deals with the influence of mathematics in Malayalam literature from the concept of Metre. This mathematical concept gives peculiar tone and rhythm to the literary works. Here in this work, special reference is given to two Malayalam Metres – Nathonnatha and Tharamgini.

Key Words: Metre (Vritham), Laghu, Guru, Ganam

INTRODUCTION

Mathematics is a branch of Science that has its application in Natural Science, Engineering, Medicine, Finance, Art, and so on. It deals with various factors such as space, quantity, structure, change etc. This work considers its influence in Malayalam Literature, mainly in Poetry. In poetry, Metres are the mathematical measures and basic rhythmic structure. Metres in Malayalam are called **Vritham**. Two types are Sanskrit based and Tamil based.

In Sanskrit based metres, short sound is called **Laghu** and long sound is called **Guru**. Guru is twice long as Laghu. Guru is represented as “-” and Laghu as “∪”. For specification of Metres, **Ganam** are formed by combining Laghu’s and Guru’s. **Mathra** is the word used for the length of Guru and Laghu.

Laghu ∪ = 1 mathra

Guru - = 2 mathra

Here in this work two Vritham are considered. They are Nathonnatha and Tharamgini.

NATHONNATHA (VANCHIPPATTU) VRITHAM

Nathonnatha or Vanchippattu Vritham poems have importance. As name suggests it is used as Vachippattu. The word Vanchippattu is derived from two words: Vanchi means Boat and Pattu means Song. These poems have rhythm similar to that of rowing the boat. Vanchippattu is usually sung by the people performing Boat race during Onam festival season or harvest season in Kerala.



Fig.1 https://commons.wikimedia.org/wiki/File:Vallam_kali.jpg

Lekshanam of Nathonnatha Vritham:

“ganam dwaksharamettenna-
 monnaam paadathil, mattathil
 ganamaarara; nilkeanam
 randumettavathakshare
 guru thanne ezhuthellaa
 misheelin pear nathonnatha”

Example with Mathematical influence in Nathonnatha

¹ഉ ²ട ³ടി ⁴ടി ⁵ടി ⁶ടി ⁷ടി ⁸ടി
 ഉട/ടിടി/ടിടി/ടിടി/ടിടി/ടിടി/ടിടി/ടിടി ^{1/2}
¹ടി ²ടി ³ടി ⁴ടി ⁵ടി ⁶ടി ^{1/2}ടി

- The first line can be of 8 groups each group having 2 letters.
- Totally 16 letters in first line.
- The second line is of 6 ½ groups of above mentioned type.
- Totally 12+1 = 13 letters in second line.
- While reciting have to pause at the 8th letter.

THARAMGINI VRITHAM

Tharamgini Vritham is the metre in Thullal compositions. This is one of most important art form in Kerala with dance along with recitation of stories in poetry form.

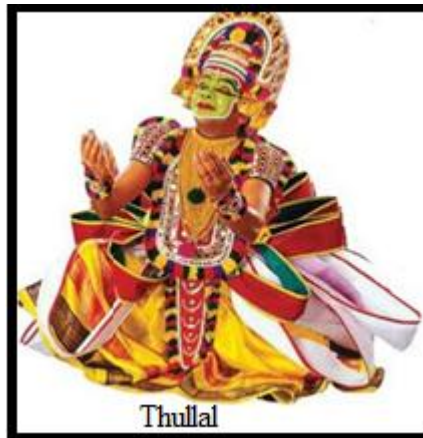


Fig.2 <https://commons.wikimedia.org/wiki/File:Ottal-thullal1.jpg>

Lakshanam of Tharamgini Vritham:

“dvimaathraaganamettennam

yathi madhyam tharamgini”

Example with Mathematical influence in Tharamgini:

അണി/മതി/കല/യു/സുര/വാ/ഹിനി/യു
ഫണി/പതി/ഗണ/ഫണ/മണി/കളു/മണി/യു

- 8 Ganam in each line.
- Each ganam of length 2 (2 mathra).
- While reciting have pause at the middle.

CONCLUSION

Mathematics proves its influence in Literature too. For identifying Metres, one has to use various mathematical ideas. These include

- Calculating Mathra
- Forming Ganam
- Pause in the position wherever necessary and so on

Mathematics is thus also necessary in the field of Literature to give them unique tone and rhythm. That is why the German Mathematician Carl Friedrich Gauss referred Mathematics as the “Queen of Sciences”

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BIOGRAPHIES



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