

“Vedic Mathematics”: a dubious pursuit

S.G.Dani

Important words, like other important things, are often vulnerable to misuse by elements inclined to derive undeserved benefits from their glory. Following the gigantic successes of science and scientific approach in recent centuries, practitioners of many a trade have found it advantageous to use the adjective ‘scientific’, even when their basic tenets and methods are quite inconsistent with the scientific method. ‘Vedic’ is another such a word, use of which promises dividends, especially in the overall context in India. Also, the users seldom seem to be called upon to justify themselves, on account of the pious way such claims tend to be approached.

The so called ‘Vedic Mathematics’ (VM for short) is a case in point. It is well-acknowledged that, as being practised it is based on a book of Swami Sri Bharati Krishna Tirthaji, who was the Shankaryacharya at Puri from 1925 until his passing away in 1960. As commonly understood and implicitly assumed, the adjective ‘Vedic’ means being from the ‘Vedas’ or the civilisation around their time. While there are variations on the estimates of the period involved, by any reckoning they are at least 2500 years old. In what sense do the contents of the book belong there? Neither Tirthaji nor any of the proteges have provided any evidence or clue in this respect, that a rational mind can appreciate.

The book has a Preface grandiosely titled as ‘A Descriptive Prefatory Note on the Astounding Wonders of Ancient Indian Mathematics’, which would be the first place to look for answers to the our question. All one finds there is a whole lot of raving and ranting, followed by a vague statement to the effect ‘exceedingly tough mathematical problems’ can be easily solved with the help of some ‘sutras’ in the Parishishta (Appendix) of the Atharvaveda. That is all; no substantiation or elaboration concerning their being genuinely from Vedas. It can not be that it did not occur to Tirthaji to include such details in the Preface or elsewhere in the book. He was in fact confronted by Professor K.S. Shukla, a doyen in the studies on ancient Indian mathematics to show the sutras, to which Tirthaji is said to have replied that they are not in any standard Parishishta, but only in his ‘own Parishishta to the Atharvaveda’!.

The book also contains a short biographical sketch and an account of the genesis of the work, written by Smti. Manjula Trivedi, a disciple of

Tirthaji instrumental in the posthumous publication of the book, which is also very revealing with regard to absence of any genuine Vedic source for the contents. She mentions in particular that ‘Revered Guruji used to say that he reconstructed the sixteen mathematical formulae from the Atharvaveda after assiduous Tapas for about eight years in the forests surrounding Sringeri’. They were not found in any version of the Vedas, whether previously known or a newly found one, but they were ‘reconstructed’.

Dr. V.S. Agrawala, the General Editor of the book, also mentions in his Foreword to the book that the work ‘deserves to be regarded as a new Parishishta by itself and it is not surprising that the sutras mentioned herein do not appear in the hitherto known Parishishtas’. He also notes that ‘the style of language also points to their discovery by Sri Swamiji himself’. It is rather important to note that these people closely associated with Tirthaji and the genesis of the book were well aware that the material is not from the Vedas in any tangible sense, and have recorded the facts.

Contrary to what is made out ‘Vedic mathematics’ is no ‘system’ of solving problems in mathematics, or even plain arithmetic. It is only an assortment of tricks, based on simple algebraic principles. It is thoroughly lacking in coherence or harmony; I can well imagine the torment of the souls of Vedic sages at the disharmony being associated with them! As one goes along the text of the book one is introduced to various tricks for solving certain special problems, and while doing so Tirthaji gives some names to some of the operations to be performed in the course of them, which are chosen to be strings of words in Sanskrit. Like ‘Ekadhikena Purvena’, which means ‘by one more than the previous one’ is the name assigned to an operation which involves something or other to be done with something or other that happens to be the ‘previous’, in one or other sense. Lo and behold: you have a sutra at your hand for the problem. Mind you the string of words does not by itself enable you to solve the problem, and in most instances even the operation it connotes needs to be supplemented by several others. These one has to learn separately. It only enables you remember the operation by a name. In the style of how matters proceed in the book ‘hold the bucket’ can be said to be a sutra for milking a cow!

From a mathematical point of view the sutras of VM are of little value. To some extent they serve as memory aids to the practitioners. Other than that their sole role has been as props to the false pretense of antiquity. The main positive contribution of Tirthaji’s book lies in highlighting a few tricks

with which certain specific calculations can be done faster. In this sense it is comparable to Trachtenberg's methods of 'high speed' computation. Trachtenberg even ran a Mathematical Institute in Zurich in the nineteen-fifties on the methods. However the theme did not catch on. The main drawback of such methods is that they are very problem-specific and depend heavily on identifying special features which may be exploited to attack the problems. Secondly, speed in computing mentally, which is the sole feature to which they contribute to some extent, has become rather redundant in our computer age.

The idea that using the methods can somehow improve mathematical education is also devoid of any justification. Recognising patterns in given problems is a special skill, and only those who are naturally endowed with it stand to benefit, and that too only in special problems. Others are more likely to be confounded if they have to follow such esoteric paths. Of course, like tricks of other varieties, some of the mathematical tricks, whether from VM or Trachtenberg or others, can be entertaining and could be used in the form of a few examples here and there by teachers in schools. That is about all there is to it. It is absurd to talk of 'introducing Vedic mathematics' in the school curricula etc.. Such an exercise would be disastrous in view of the inherent deficiencies of the approach.

Heritage of Vedas, like other heritages down the ages, is a precious endowment. It should not be allowed to be corrupted through misuse or misinterpretation at the hands of vested interests, whether acting for pecuniary gains or for fulfillment of one or other chauvinistic urge or agenda. We should respect it, propagate it and learn from it in a rational way.

Suggested reading:

There are many books on (genuine) ancient Indian mathematics, dealing in particular with the Vedic period. Let me however mention here two books that I would recommend to interested persons, for an introduction to the subject:

A.K. Bag and S.N. Sen, The Sulbasutras, Indian National Science Academy, New Delhi, 1983.

S. Balachandra Rao, Indian Mathematics and Astronomy: Some Landmarks, Jnana Deepa Publications, Bangalore, (second revised edition) 2000.