SPECTRUM

Science in our tongue

A science encyclopaedia in Kannada? That's exactly what Navakarnataka Publications has achieved, with professional rigour and a historical perspective. SUGATA S leafs through the four volumes of the encyclopaedia

The four volumes of the encyclopaedia; Prof R Narasimha, former Director of NAL, releasing the volumes

THERE have been persistent efforts through the 20th century by various cultural organisations and individuals to shape science writing in Kannada. But, these efforts have mostly been quasi-literary exercises in the backdrop of Kannada sub-nationalism.

In the early part of this century, it was the Central College Karnataka Sangha, a forum for young Kannada writers under the inspiring stewardship of Prof A R Krishnashastri, which produced a book on energy, entitled *Shakti*. Later, *Prabhudda Karnataka*, basically a literary journal, brought out a special volume on science subjects in Kannada during its golden jubilee year. The Christ College Kannada Sangha followed the tradition by bringing out a book on the mathematical concept 'pi' in the 1970's. It was much later that the Karnataka Vignana Parishat and the Karnataka Vaidya Vignana Parishat were set up.

Also, if one were to make an inventory of science writers in Kannada, there would be a preponderance of litterateurs in it, starting from K Shivarama Karanth, B G L Swamy, R Shivaram and Anupama Niranjana to the current day Poornachandra Tejaswi and Nemichandra. The philosophy behind the working of these organisations and individuals has been, on the one hand, to popularise the findings of science in Kannada and on the other to fulfil a certain social, 'rational' duty of promoting scientific thinking or temper. The stress, more or less, has been on the latter. Ours is a unique cultural situation where writers of literary texts double as amateur writers of science, sociology, history, anthropology, ornithology and so on.

But, what Navakarnataka Publications has been doing, since its inception 37 years ago, in the good old days of the USSR, has been slightly different. It has, to say the least, not viewed science writing as an extension of literary writing. As a result, it has engaged professionals in its many attempts to re-write science in Kannada, although they too have catered only to the non-specialist reader. The recent publication of a four-volume encyclopaedia of science, *Jnana Vignana Kosha*, by them further endorses the statement.

One could say *Jnana Vignana Kosha* is the first professionally planned encyclopaedia of science in Kannada. The production of the volumes has involved 32 experts in different branches of science. They took nearly 30 months, under the chief editorship of Prof M A Sethu Rao and K L Gopalakrishna Rao, to put together the volumes which contain 700 pages (more than 1000 articles) in all, with 1500 colour pictures and illustrations. In fact, according to Kumarappa, who is with the National Library, Calcutta, and also edits the biannual journal *Encyclopaedia*, the *Jnana Vignana Kosha* is the first of its kind in an Indian language. The project also had an editorial advisory board with big names like Prof J R Lakshmana Rao and Prof Adyanadkha Krishna Bhat on it.

However, it should be noted here that this is not the first encyclopaedia of science in Kannada. The legendary Shivarama Karanth had single-handedly written three volumes of *Bala Prapancha*, a general encyclopaedia for 'young and curious minds' which also introduced a variety of science topics, as early as in 1936. Later, between 1959-64, he wrote four volumes of *Vignana Prapancha*. In the 1970's novelist Niranjana edited seven volumes of *Jnana Gangothri*, a comprehensive encyclopaedia for youngsters modelled after the Oxford Junior Encyclopaedia, for Mysore University, out of which three volumes were dedicated to science and technology.

Even while underscoring the historical and cultural importance of these earlier science volumes in Kannada and the vision behind their production, one has to admit that they have their own set of limitations professionally. Karanth's presentation of science subjects is no doubt lucid, but they definitely lack the required and expected mastery over the subjects.

On the other hand, in English, there has been a tradition of reputed scientists, including J B S Haldane, Albert Einstein, Richard Feynman and Stephan Hawking, writing lucidly about their own subjects of research for the benefit of youngsters or the layman. It is in this light that I earlier said that ours is a unique cultural situation where writers of literary texts double as lucid commentators of other disciplines of study.

But, there is more immediate justification to the publication of *Jnana Vignana Kosha* than merely the fact that a more professional encyclopaedia is needed. As Managing Director of Navakarnataka Publications R S Rajaram says, "Science is progressing rapidly, it needs constant updating. The earlier volumes of science in Kannada have become outmoded. Besides, they are no longer available in the market."

The first volume of *Jnana Vignana Kosha* is dedicated to topics in physics, chemistry and mathematics. The second volume contains chapters on astronomy, geology, marine sciences, eco sciences and space technology. The third volume deals with medicine, psychiatry, dental sciences, plant and animal sciences. The last and fourth volume contains articles on meteorology, computer science, military science and man-made wonders of the world. There is a separate index volume to easily access any topic in the four volumes. At the end of each section in all the volumes, a timeline of important discoveries and inventions of the 20th century has been listed. At the very end of the encyclopaedia there is an inspiring list of scientists who have been awarded the Nobel prize. There are also brief sketches of life and work of eminent scientists spread across the four volumes. Something very special in all the volumes is whenever there is reference to India or an Indian scientist in any of the articles, they have been highlighted with a colour tint. There is an accent on local scientific developments, more particularly Karnataka, in the encyclopaedia which makes it all the more relevant.

Curiously, there is an article on the growing slums in Bangalore in the environmental sciences section. In the mathematics section, an entry on fractals compares it with the rangolis that our women folk draw. The effort, in other words, is to also understand our immediate surroundings and conditions better: it could be rocks, minerals, crops, calender calculations, rain patterns, climatic conditions or missile technology. In many articles, to drive in a particular point, local examples are cited and plenty of local photographs are used to illustrate an idea or phenomena. All this imparts a certain immediacy to the whole enterprise.

All the volumes have been elegantly produced and very moderately priced (Rs 1,800), when compared with English volumes of the same size available in the market. The publishers also have an arrangement with five nationalised banks which would give loan to a potential buyer of the encyclopaedia.

In the course of preparing these volumes, the publishers, in co-operation with the Directorate of State Education Research and Training (DSERT), organised a workshop in which 100 selected students and teachers from 15 junior colleges participated. Sample copies of the encyclopaedia articles were given to them for a feedback. This, the editors claim, enabled them to make suitable stylistic alterations in the material that finally went into the encyclopaedia.

There is one special comment that could be reserved for this encyclopaedia. The facts that are represented in the four volumes are not mindlessly assembled. A definite ideological pattern, normally referred to as 'progressive' in casual parlance and 'Left' in academic lingo, is quite evident. Normally, writers of science lack a clear historical perspective, they assume themselves to be apolitical and ahistorical, but here, there is the meticulousness of historiography in the entries. For instance, the profile on Aryabhatta (456-550 AD) in Volume 2, page 159. Besides listing his other contributions to astronomy and mathematics, it highlights the little known fact that he was the first to decry the traditional, or rather scriptural, Indian belief about solar and lunar eclipses, which is that they occur when 'rahu' swallows the sun and moon respectively. The entry says: "He stood by his scientifically deduced views and put forward the shadow theory to explain the eclipses, although it upset the established belief of his day. He must have been a courageous man as he remained true to his learning." By portraying Aryabhatta as an 'anti-establishment man', not only a historical 'truth' is represented but also a subtle political message is communicated. Similarly, in the military sciences section, there is an entry on the women physicist Lise Meitner (1878-1968) who refused to build an atom bomb. She worked with Max Planck and later with O Hahn. She discovered jointly with O Hahn the spliting of uranium, so very essential to building an atom bomb. But, in 1944, O Hahn was awarded the Nobel prize and she was left out, the entry says. Through this entry, besides other issues, the gender question comes to the fore.

In another entry in the space technology section, there is a profile of Konstantin Tsyalovoski. The entry claims he was the first one to present a scientific understanding of rocket propulsion and get the hang of rocket technology much before the American scientists, considered pioneers in the field. The entry identifies him as the father of the idea of space travel.

With all this, there is one serious limitation that pervades all the previous and present volumes of science in Kannada. This limitation has nothing to do with the inadequacies of the writers or editors of these volumes, but, is concerning the historical and political situation in which a language like Kannada is placed vis-a-vis English. That is there is no pressure on the language to develop its own linguistic 'registers' in science and technology, for that matter in other specialised disciplines too. The 'registers' are not merely limited to jargon but also extend to diction and syntax. So literal or semi-literal translation of jargon, while writing science and technology in Kannada, has very limited use because it lacks a certain 'authenticity.' In the Indian context, English has largely been meeting the 'scientific' needs of the literate class. With the growing popularity of the Internet, not only a certain concept of 'universal' education, mostly US-centric, is gaining ground through a 'universal' language, but also the identities of languages in smaller geographical spaces are getting submerged. This is because, the software required to browse the Internet is written in English and the Internet is customised to the English language. It is in this context that Kenneth Keniston, in a recent article ('Politics, Culture and Software', Economic and Political Weekly, Vol. XXXIII, No. 3), spoke about the need for 'localisation' of software, quoting the experiments in the Chinese and other European languages.

All these complex issues ultimately make one curious as to the kind of readers that these fresh volumes of science in Kannada would attract. My insuperable pessimism provokes me to ask if the buyers of these volumes would buy them for sheer Kannada pride, knowing pretty well that they would have to read it collaterally with the 'authentic' English version? But pessimism is not a good guide. And I also learn from Rajaram that even before the encyclopaedia was released, more than 3,000 people had placed an order for it through pre-publication coupons. A record of sorts in the publication history of Kannada.