

**Mathematics Education** by Bhimasankaram, C. V. published by Book Field centre, P. B. 7228, Bombay 400 071. Pages: 641; Price Rs 150/-.

Mathematics by virtue of its rigor, abstraction generalization, unification, and numerous applications in other branches of science has long held a distinct place in education. Any attempt towards the better understanding and teaching of mathematics is worthwhile and since mathematics is growing and so are its applications, any attempt to improve mathematics education incorporating the latest trends is welcomed. Although in any study of mathematics education, the global nature of mathematics education has a big share, mathematics education in India is also relevant in terms of syllabus, resources available etc. Mr. Bhimasankaram has done a good job in studying mathematics education in global and local terms.

The theme of the book is new mathematics. In new mathematics, every branch is based on axiomatic structure and starts with abstract notions so that similarity among various situations arising in different branches of science can be visualized which in turn makes mathematics more useful.

This exhaustive study by the author starts with the historical background of mathematics education and its current position in India. Although the author prefers the teaching of new mathematics, the opinions of eminent mathematicians, reports of national and international meetings and seminars, experimental evidences, the testimony of tests given by mathematical study groups and views expressed through newspapers and magazines are incorporated both for and against new mathematics. Then follow the chapters on the nature of mathematics and the approaches in classical (old) mathematics and new mathematics. This has been done with good sense of judgement and with lot of examples. The chapter on applications of mathematics has a philosophical touch and deals with the applications to reasoning, laws of life, laws of transformation, laws of conservation, cosmic evolution, etc. and reveals the beauty of mathematics. The chapters on the survey of research in mathematics education, methodology of research and the techniques of mathematics teaching well deserve their places in the book. The author has taken pains to illustrate all the twenty three techniques mentioned.

The analysis of 'why' and 'how' in old mathematics leads to the axiomatic structure which coupled with old mathematics forms new mathematics.  $2 + 3 = 5$  and also  $3 + 2 = 5$ . This can be remembered as a rule in old mathematics but in new mathematics it is said that addition is commutative. Is there anything wrong if some students such as those who do not want to go for higher education, are taught only the rules of mathematics so that they acquire the working knowledge of mathematics? How many teachers are available in India (vs. students) who are themselves well

equipped and motivated to teach new mathematics? How many teachers have been trained (in real sense) in the past 10 years or more, by organising summer/winter schools or other training programs? What should be the syllabus and how should it be implemented? What percentage of students who have just passed their B.Sc. mathematics understand the elementary concepts of function, sequence, limit, continuity, etc? These are some of the very vital questions and the reviewer is not raising them for the first time. These have been raised again and again and discussed. What is the net outcome?

After reading the book one gets the impression that the author is sincerely devoted to his project. The book is worth reading by all those who are involved in mathematics education.

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## NEWS AND VIEWS

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Dr. S. K. Jain, Director, Botanical Survey of India, Howrah, has, in a recent communication, referred to a common shortcoming noticed by him in several theses on Floristics which are now being submitted for the Ph.D. degree of Indian Universities. This is related to the treatment of cultivated and exotic plants. Many candidates do not seem to distinguish between exotic weeds and ornamentals which are naturalized in our country and the plants found only in cultivation some of which may also be found as escapes. Some candidates even include such cultivated plants in Keys to genera and species leading to wrong interpretations and distortions in the assessment of the natural floristic composition of the area of study. Quite often, purely cultivated plants are cited as new records for the area. Dr. Jain suggests, therefore, that in such floristic theses/papers, the enumeration of families, genera and species with respective Keys should include only native species and exotics which are thoroughly naturalized. Plants in cultivation and forming a conspicuous element in the flora of the region, like roadside trees, horticultural and agricultural elements and prominent ornamentals should be cited separately at the end of the respective accounts of families, genera, species as the case may be. Such plants should not be taken into account for any analysis of floristic composition or statistics of the plant resources of the area under study and discussion.