BOOK REVIEWS

Indian Numismatics: by D. D. Kosambi (Orient Longman Limited, 3/5, Asaf Ali Road, New Delhi 110 002, India) 1981 pp. 159, Price Rs 85.00.

At a time when conventional methods in the study of history were hard to break away from D. D. Kosambi, was the lone researcher, who attempted to introduce a scientific basis for the study of history in general and numismatics in particular. That his works represented a great advance over the then existing researches in numismatics is amply borne out by the present work which brings together his more significant contributions, with an able introduction by Dr. B. D. Chattopadhyaya, stressing the validity of Kosambi's new approaches and their relevance to numismatic studies even today.

The present collection has twelve articles published before the sixties dealing with important hoards* of punch marked coins, statistical study of their weights and above all Kosambi's "Scientific Numismatics". A Professor of Mathematics, with outstanding contribution to statistical and genetical studies, Kosambi's focus has always been on hoards of punch marked coins rather than individual finds, even stratified finds being denied priority over hoards. Based on a mathematical approach his "Scientific Numismatics" would hardly be applicable to any kind of data other than hoards deposited at more precisely determinable points of time. All his writings on Indian numismatics, represent attempts to vindicate the above method by a statistical and genetical study of coins through what he calls "The Homogeneous Random Process" a method which helped in his assessment of the relative positioning of groups of coins within a hoard, with common symbols and common weight standards. Such a study would be impossible as Kosambi had shown, without a careful recording of the weight of each coin in a hoard. Kosambi's emphasis on metrology however is more on variations in weight, for determining the position of coin groups in a hoard. In short, classification based on correct understanding of metrology would help to explain changes due to circulation or absorption of coins, particularly of higher metal currencies.

Kosambi's "Scientific Numismatics" is not the mere use of statistical method as such but was dictated by a set of entirely different assumptions, relating to the use of numismatic evidence. Many of Kosambi's assumptions, are backed up by his sound reasoning as well as meticulous study, of coins through a physical handling of over twelve thousand coins and correlating them with evidence from a mass of literary data.

While making use of previous researches in Numismatics like those of Walsh, Durga Prasad, Chakravarti and others. Kosambi's significant departure was in the method of using weight standards followed in the punch marked series. His emphasis was on the accurate weighing of coins and the variances both at minting and due to wear in the weights of the coins, the effect of circulation upon the weight of metal currency and the relation between weight and punch marks, all of which can be dealt with by the "Homogeneous Random Process". Kosambi at the same time did not fail to lay down the conditions to be met, if these mathematical principles are to be applied successfully. Hence the importance is attached to hoards of coins, sufficient number in each hoard being available. For example the Taxila hoards met all these conditions. In fact Kosambi built up the economic history of this region mainly on the basis of these two hoards, pointing out the favourable balance of trade in Taxila in the Pre Mauryan times.

One of the major assumptions, that he made was that the reverse marks, represented periodic or regular checking marks, an assumption which has proved to be of considerable validity. On the basis of this observation, Kosambi attempted the chronological order of the coins, assigning them to early rulers of Magadha namely the Saisunagas and the Nandas with the help of Pargiter's excellent collation of Puranic texts and the Aryamanjusrimulakalpa.

Kosambi offered some interpretations of the Punch marks more as "neglected possibilities" than as confirmed results as for example, their associations with a ruler's accession or birth or names of Kings ('Sunga' = fig tree) or astronomical or Zodiacal signs etc. Certainly more acceptable is his acceptance of the crescent on arches as the monogram of Chandragupta Maurya and the Shadarachakra as the dynastic emblem of the Mauryas. However he certainly goes off the mark when he assigned the oldest coins of the Paila hoard from Uttar Pradesh to the last of the real ancient Iksvakus". Similarly in assigning the Bodenayakanur hoard from Madurai, Tamil Nadu, to a late Mauryan king of the Peninsula, Kosambi missed the significance of the fish symbol on the reverse, which in all probability, indicates a local issue of a Pandyan ruler.

Of great historical value are many of Kosambi's observations based on his study of these coins as for *e.g.* the dominance of the trader in the Pre-Mauryan

* The hoards discussed are the two Taxila hoards, Paila and East Khandesh, Amaravati (Guntur District) Bodenayakanur (Madurai).

period, the continuity of certain weight standards of Mohenjodaro (3rd millenium B.C.) down to Taxila 6th Century B.C. as clear survivals of an ancient and predominantly trading age and the later emergence of the Kshatriya with royal prerogative of stamping his own marks on his coins. Equally acceptable is his observation that coinage was virtually unknown is South of India before the Mauryas when trade network and communications were opened up, linking practically the whole of India.

In putting together, Kosambi's major contributions to Numismatic studies, the Indian Council of Historical Research has done commendable service to research in Numismatics and History.

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A History of Agriculture in India (Vol. II)—Eighth to Eighteenth Century By: M. S. Randhawa (Indian Council of Agricultural Research, New Delhi) 1982, pp: 358, Rs. 50/-

The first Volume on the same subject covering up to the 12th century A.D. was released not too long ago. The present Volume covers 8th to 18th century. The 36 chapters and the Appendix give a vivid account of the historical developments which took place in Arabia and the infiltrations of Muhammedans, Mongols, Turks, Khaljis, Tughlaks, Afghans and Mughals, who ruled various parts of northern India and Deccan for about one thousand years. The coverage is extensive in respect of regions occupied by the invaders, their cultural and religious background and successes and failures in warfields. Some information is given on agriculture and also details on revenue collections, administrative systems, famines and plentiful harvests in some years. There is information on the interests of rulers to suppress the peasants, and some others to support them through various acts and deeds which is sporadically covered in most of the chapters. Chapters 4, 13, 16, 17, 20, 23 to 29, 31 and 32 give some aspects of farming and related subjects. These are mostly quoted from the historical writings in Arabian, Persian, and Turkish languages. Thus it is a rare collection of information on our Indian Agriculture during the ten-centuries under foreign rule by mostly Muslims and Mongols,except for a brief coverage of the Hindu Empire of Vijayanagar.

Reading through the book one cannot but think that it is more a book on Political History, than History of Agriculture. While very many details including anectodes on the human and political attitudes of the Emperors and Kings are given,very limited information on agriculture as practiced under every one of the rulers is given. Perhaps the historical documents do not contain such details. Another impression one gets is that there are far too many quotations from the writings of others, which occupy the bulk of the pages, *e.g.* Chapters 22 to 32. Also, the various terminologies used in Arabic, Persian, etc. languages to indicate weights, measures and monitory units are not easily discernable in the absence of comparative values in present day 'yardsticks'. The lack of coverage of agriculture in South India except for some 'quotes' from the writings of foreign visitors, on Kerala, during the period leaves a void which is too glaring.

There has been an overlap in the coverage of the history in the two volumes, *viz.* the First Volume covering from the 'Beginning to the 12th Century' and the Second Volume covering from the 8th to 18th Century. I hope that the next volume will cover adequately the History of Agriculture in southern part of India. The ancient writings in Tamil, Telugu, Kannada and Malayalam carry rich information on agriculture as practiced during the ancient and medieval periods which could go at least briefly into the books of the type by the learned and distinguished author is writing.

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Reports of a Workshop on Cropping Systems Research in Asia by Thomas R Hargrove (International Rice Research Institute, Los Banos, Laguna, Phillippines, P.O. Box 933, Manila, Phillippines) 1982, pp: 755 Price: Not Given

This publication consists of the proceedings of a workshop on cropping systems research in Asia held at IRRI, Manila from the 3rd to the 7th March, 1980. About sixty papers written by cropping system researchers and extension workers from different Asian countries and IRRI, have been presented in ten broad sections covering wide spectrum of subjects.

The volume is a source of valuable informations on design, development and testing of suitable cropping systems alongwith appropriate component technology for different land situations and environmental

conditions. It has been argued that the cropping system so developed and recommended for adoption, should not only be viable, productive and profitable, but also socially and ecologically acceptable.

The desirable characteristics of upland crops to be taken either before or after rice have been indicated to be early maturity, photoperiod insensitivity, shade tolerance (for intercropping purposes), vigorous seedling growth and tolerance to drought and waterlogging. Some of the very useful findings that have been brought out are that the crop stand could be improved by dibbling the pre-soaked seeds at double the rate and by light compaction of soil around the seed in the case of soybeans. Deep placement of fertilisers in the moist soil-zone has been recommended for increased root growth, nutrient availability and higher yield of crop in maize. It has been further indicated that the modern short stature varieties are not suitable for weed environment. However, it may be possible to reduce the weed incidence in dry seeded rice by using stale seed bed techniques.

The tillage objectives and tillage effects have been discussed in detail alongwith the suitability of dry seeded rice for different soil types and land situations. The fertiliser management discusses the fate of nitrogen under different field water regimes, factors affecting crop responses to fertilisers, the utility of SCU materials and time and method of fertiliser application in dry seeded rice. It has been indicated that the efficiency of applied nitrogen is lower under intermittent flooding than under constant flooding because of higher amounts of nitrogen losses due to denitrification, volatilization and leaching losses under former practice. Under such situations SCU materials may be effective.

Emphasis has been laid on the need of mechanizing cropping system farming in order to reduce the turn out time between crops as adequate man and bullock power are not available in many areas to complete the job in time.

The section on cropping pattern testing describes in detail various problems and constraints involved, cropping pattern research, testing procedures and performance of cropping systems in various Asian countries. The development of associated component technology like insect control, weed management varietal testing and economics of cropping systems has been discussed in detail. The last section deals with the impact of cropping systems and their adoption by the farming community.

The publication has brought out up-to-date informations of practical value, generated in different Asian countries and would, in a way, serve as a monograph to researchers, teachers, extension workers, policy makers and planners of different countries.

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