Plants and Harappan Subsistence
An Example of Stability and Change from Rojdi

Steven A. Weber

This book represents the first concerted attempt to examine Harappan diet and environment from an archeobotanical perspective. Drawing on analyses of archaeological plant materials from the site of Rojdi, Gujarat (3500 B.C. to 2000 B.C.), Dr. Weber gives us a unique look at subsistence patterns and environmental change within a socioeconomic framework. Plants and Harappan Subsistence is valuable not only for what it tells us about a little-known but critical aspect of life in Indus Valley but also for providing a methodology for the recovery and study of archeobotanical remains from other South Asian sites.


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Plants and Harappan Subsistence

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CHAPTER 1

The principal aim of botany remains to study and understand the life processes of living organisms through the phases of their life cycle. This requires an integration of knowledge and techniques from many different fields, including botany, zoology, biology, geology, chemistry, and physics. The study of botany is divided into several branches, each focusing on different aspects of plant life.

Paleoethnobotany has become an important field of study, particularly in the context of prehistoric cultures. It involves the study of ancient plant remains found in archaeological sites to understand the diet and environment of past societies. This field is crucial for understanding the relationship between humans and their environment in the past.

In this book, the focus is on the region of the Harappan civilization, which is known for its advanced culture and urban planning. The collection of plant remains from this region provides insights into the diet and environment of the Harappans, as well as the agricultural practices of the time.
CHAPTER 1

Introduction

The principal aim of this research project was to interpret the archeobotanical remains at the site of Rojdi, in northwest India, with reference to diet and environment and within a socio-economic framework. By regarding human-plant interactions as essentially responses to both social and natural opportunities and constraints, we can approach a number of specific issues concerning Rojdi, the wider region of Gujarat, and ultimately the Indus Civilization as a whole.

Paleoethnobotanical research in South Asian archeological sites has in general been limited to noting the presence of archeobotanical remains at particular time periods. As a consequence, little is known about how the distribution of plant remains changes through time at a particular site, or through the phases of evolution of Harappan culture as a whole (Vishnumittre and Savithri 1982). No more than 80 sites in all of South Asia dating to earlier than 1000 B.C. have yielded plant remains of some form. Few of these sites contained more than a single taxon or represented more than an accidental find. Although the limited data base has hampered our ability to infer the occurrence and change of plant-use patterns, it has by no means impeded the construction of theories or models which attempt to explain Harappan subsistence. It is important to assess the status of our knowledge periodically, and examine critically the theories that have been developed which use this information. The most useful way in which to do this is to collect new data, most importantly data which includes differing portions of plant material at various levels of occupation within South Asian sites.

The collection of this data must commence at the level of the single site. A single site is an easily defined unit of analysis that is free of the ambiguities that presently plague our definitions of the Harappan Civilization and its various subregions. The single site that is the focus of this book is that of Rojdi, which, while being located in a peripheral region of the Harappan Civilization, namely Gujarat, has artifactual material which associates it with the 'Harappan Cultural Tradition'. Since it was
occupied from the middle of the third millennium B.C. to the beginning of the second millennium B.C., which coincides with a critical period of transition from the Mature Harappan Phase to the Late Harappan Phase, an in-depth analysis of the Rojdi subsistence system should add to our knowledge not only of this site, but also of this region of Gujarat, and perhaps of the Harappan Tradition in general.

A paleoethnobotanical research project at Rojdi was therefore developed, with its primary purposes to document the inhabitants' use of cultivated and wild plants to examine variability and change in that use, to provide information on the habitat, and to attempt to identify and differentiate all human-induced and naturally induced changes occurring in the local environment during all phases of occupation. A secondary purpose was to examine the wider significance of the Rojdi data by comparing the Rojdi archeobotanical record with material collected from other sites, and to attempt to account for the variability in the temporal and spatial distribution of plant remains. Apparent variability in archeobotanical distributions from South Asian sites has already been used in theories dealing with plant origins and movements (e.g., Harlan 1976, Hutchinson 1976, Costantini 1979a), related population and settlement dynamics (e.g., Possehl 1986, Jarrige 1985), the evolution of region-wide subsistence systems (e.g., Allchin 1977, Possehl 1979:539, Ratnagar 1986), influence from areas outside South Asia (e.g., Sarma 1972, Possehl 1986), and differing plant-use strategies among local populations (e.g., Weber 1988, 1989a). However, biases in the sampling and/or methods of analysis have not always been recognized. Critical examination of this data, along with the use of data from Rojdi, should lead to a better understanding of the human-plant interrelationship during Harappan times.

A further, subsidiary aim of this work is to develop new explanations for plant occurrences and their evolution in South Asian prehistory. These new explanatory models must be tested by future work.

The following chapters include attempts to address certain issues and answer some fundamental questions about subsistence and plant use at Rojdi and beyond. These include:

1. **Description and Interpretation of the Rojdi Archeobotanical Record**

What plant taxa can be identified from the occupational (i.e., archeological) deposits of Rojdi, and what were their possible uses? What does their presence suggest about the condition of the local habitat and the types of environmental constraint imposed on the inhabitants? What does the proportional representation of each taxon suggest regarding the settlement, its subsistence strategy, farming practices, cropping seasons, water management system, and human involvement itself? How do plant identifications compare how well do they fit its systems?

2. **Description and Int Record over Time**

What changes in the phases of occupation c for changes occurring in human-induced envoir seen at Rojdi identifia second millennium?

3. **Description and Int botanical Material Rec**

Was Rojdi part of a regi of plant use typical fo common elements are interrelationships betw cultivated ones, and bet are the implications reg and what is the signif indigenous cultigens on What are the possible c routes could they have
identifications compare to those from other sites of comparable age, and how well do they fit into existing theories about Harappan subsistence systems?

2. Description and Interpretation of Change in the Rojdi Archeobotanical Record over Time

What changes in the Rojdi plant record can be identified during the phases of occupation of the site? What are the range of possible causes for changes occurring during the Rojdi occupation? Are dietary shifts or human-induced environmental changes indicated? Are the types of change seen at Rojdi identifiable in other sites around the beginning of the second millennium?

3. Description and Interpretation of the Wider Significance of the Archeobotanical Material Recovered at Rojdi

Was Rojdi part of a regional subsistence system and does it reflect a pattern of plant use typical for Harappans or Søren Harappans? What, if any, common elements are evident in Søren Harappan diet regarding the interrelationships between plants and animals, between wild plants and cultivated ones, and between indigenous and non-indigenous species? What are the implications regarding interaction with other regions and peoples, and what is the significance and impact of both indigenous and non-indigenous cultigens on Rojdi and on the Harappan Civilization as a whole? What are the possible origins of the non-indigenous species and by what routes could they have entered South Asia and Rojdi?