Professor R.P. Vyas Memorial Lecture Series - III

Chalcolithic Mewar and its interaction with the Harappans

A Monograph
by
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Mahila P.G. Mahavidyalaya, Jodhpur

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The Historian and His Historiography

Born on August 12, 1922 at Jodhpur, Dr. R.P. Vyas belonged to a traditional Pushkarana family. He took up his early education at Sujangarh and Ratangarh and higher education at Jodhpur. After completion of his education he served the various colleges of Rajasthan, including S.M.K. College, Jodhpur, Government College, Didwana and Government College, Sardashahar, as Lecturer in History. On the establishment of the University at Jodhpur in 1962, he joined its Department of History and continued to serve it till attaining the age of superannuation in 1982. He also headed the Department, though intermittently, for not less than five years.

I. The Historian

Research Supervision :

Ph.D. Degree awarded to students enrolled and worked under his supervision :

(a) Dr. Hans Raj Beniwal–"History of Rathores"

(b) Dr. Mangilal Mayank–"History of Marwar from Rao Shia to Rao Maldeo."

(c) Dr. Prakash Vyas–"Nobility of Mewar".

(d) Dr. Shiv Dutt Dan–"Maharaja Bijai Singh and His Times."

(e) Dr. Vidhya Sharma–"Administration of the State of Alwar."

(f) Dr. Tara Mangal–"Maharaja Kumbha and His Times."

Thesis of these students were published. Dr. Tara Mangal got publication grant from I.C.H.R.

Original Works :

1. Role of Nobility in Marwar (1800-1873 A.D.) published in 1969. It was highly appreciated by the scholarly world (opinions of the renowned scholars were printed on cover page of the book. It is being reprinted by Mehrangarh Museum Trust, Maharaja Man Singh Pustak Prakash Shodh Kendra.
2. Maharaja Raj Singh of Mewar (Published in 1984) Recommended in the Syllabus for Post Graduate study courses

by the University of Rajasthan. It is reprinted which is available in the market.

3. An Integrated History of Rajasthan from 1707 to 1950 in two volumes – An assignment from the Hindi Granth Academy, Jaipur

   (i) Volume I – Adhunik Rajasthan-Ka-Vrata Itihas (1707-1818 A.D.) published in 1986. Its third Edition is available in the market.

   (ii) Volume II – Adhunik Rajasthan-Ka-Vrata Itihas 1818 to 1950 A.D. published in 1995. Second Edition is available in the market. These volumes are recommended for M.A. course in the University of Rajasthan.
4. Rajasthan Ra Itihas Ratan – Inder Raj Singhi (in Rajasthani) published in 1994 by Mehrangarh Museum Trust Maharaja Man Singh Pustak Prakash Shodh Kendra.
5. Rajasthan Ke Lok Nayak – Jai Narain Vyas. Published in 1998 by Rajasthan Sahitya Sansthan, Jodhpur. Second Edition is available in the market.
6. Maharana Pratap – Published in 2000 A.D. by Hindi Granth Academy, Jaipur. Honoured by Pratap Sahitya Award as cash prize of rupees five thousand. It was considered as one of the best book on Maharana Pratap.
7. Rajasthan Me Swantrata Sangrama Ke Amar Purodha-

   (i) Mathura Das Mathur

   (ii) Dwarka Das Purohit

   Published by Rajasthan Swarna Jayanti Samiti, Jaipur
8. After retirement he worked on a project – Trade Routes and Commercial Centres in Rajasthan, approved and financed by the Indian Council of Historical Research.
9. A major project for three years sanctioned and financed by University Grant Commission. By the material collected under these projects research papers were published in journals of national and state level.
10. He added last three chapters in the history of Jaisalmer written by late Dr. Mangi Lal Mayank. It remains incomplete due to his sad demise. He was Prof. Vyas's student.

11. Samaj Ratna Harvilas Sarda Parampara special issue of 125 pages.

Other Contributions :

1. Gazetteer of India, Rajasthan, Jodhpur District Chapter II History – Early History, Medieval Period, Rathores, Modern Period – Political unrest (PP 13-66)
2. Chapter – II Section (a) & (b) for Rajasthan Gazetteer Department, Government of Rajasthan, Jaipur.
3. (i) Edited six volumes of Rajasthan History Congress proceedings.

   (ii) A book entitled British Policy towards Princely States of India.
4. Nine entries were contributed in the Dictionary of National Biography, a project executed by the Institute of Historical Studies, Calcutta. It was published in several volumes.

   Personalities included : G.D. Birla, Damodar Sethi, Mathura Das Mathur, Ram Niwas, Dr. P.K. Sethi, Dr. Kasliwal, Dr. Sita Ram Lalas, Shri Achleshwar Prasad, Dr. Laxmi Mal Singhvi.

   The work was appreciated at the national and international level.
5. Reviewed the books published in the Journal of the Institute of Historical Studies, Calcutta and other journals of repute. A book in two volumes Marwar Ke Raj Parivar Ki Sanskritik Parampara written by Dr. Mahendra Singh Naggar.
6. Radio talks on the culture and history of Rajasthan. For number of years.
7. Wrote forewords for several books.
8. Detailed historical backgrounds of Dingal poem books have been written. These books are (i) Girari Gaurva (ii) Jaita-Kumpa Satsai (iii) Marwar Ke Abhilekh in two volumes and other several books.
9. Presidential Address delivered at the Bikaner Session (1984) of the Rajasthan History Congress (Copy enclosed)
10. Extension Lectures delivered :

    (i) Harvilas Sarda at Sodh Sansthan, Chopasni published in Prampara No. (125 pages).

(ii) Jivaji Rao Sindhia Memorial lecture at Gwalior. It was on Maharana Sangram Singh. Raj Mata Vijaya Raje, along with her two daughters was also present.

(iii) Jagdish Singh Memorial lecture - Rajasthan History Congress held at Jodhpur.

(iv) Extension lecture on Freedom struggle in Rajasthan at Chittore during Chittor session of Rajasthan History Congress.

(v) Presided over the extension lecture delivered by Prof. Satish Chandra, U.G.C. Chairman. It was Nathu Ram Khagdawat Memorial lecture in the year 1984 at Bikaner.

(vi) In 1985 Prof. Divijendra Tripathi delivered Nathuram Khadgawat Memorial lecture. Again he presided over it.

(vii) As visiting professor, he delivered ten lectures to the post graduate students in the History Department of Vikram University, Ujjain.

(viii) Extension lectures in the University of Jodhpur, Now Jai Narain Vyas University.

Congress & Seminars attended :

More than fifty Seminars were attended by him where he presented research papers. A few important Seminars / Congress attended mentioned below:

1. All Indian Congress, Session held at Vallabh Nagar, Allahabad, Patiala, Bhagalpur, Aligarh etc. Papers presented.
2. American History Congress at Allahabad and Bhagalpur – Paper presented.
3. Regional Seminar on Major issues in American Government and Politics in the 20th Century at Mount Abu. Paper presented.
4. Rajasthan History Congress – All sessions were attended by him in every session he read paper as delegate or resource person. In all 24 sessions were held so far he attended all except last two sessions held at Bikaner and Sujangarh (23 & 24).
5. Attended the sessions of the Indian Historical Record Commission at Panji (Goa) 1973, Delhi 1981 and Ahmedabad 1983.
6. Attended sessions of Institute of Historical studies, Calcutta at Jodhpur, Kurukshetra, Kolhapur, Madurai and Nagpur. He

presented papers at all the sessions. This is All India History Organisation parallel to All India History Congress.

7. Seminars organized by the Centre for Rajasthan Studies, University of Rajasthan at Jaipur were attended every year in the eighties. Papers presented.
8. Seminar on "Socio-Economic History of Rajasthan and Madhya Pradesh during Medieval and Modern Period" at the University of Udaipur organized by I.C.H.R., New Delhi (1979) paper presented.
9. Seminar on Gujarat, Rajasthan and Malwa in the 17th] 18th & 19th Centuries "Problems and prospective in social Economic and Political History" at the M.S. University of Baroda, U.G.C. sponsored 1979. Paper presented.
10. Seminar on "Problems of Youth and Youth Welfare" held at Srinagar University, Kashmir 1978.
11. Attended National and International Seminars organized by the History Department of Jai narain Vyas University, Mahila P.G. Mahavidyalaya and Mehrangarh Museum Trust. In these Seminars he was either key speaker or resource person. He also presided over in one Session of each seminar.
12. Organized a Seminar under the auspices of the Deptt. of History, University of Jodhpur. It was sponsored by the U.G.C. worked as a Cordinator. Theme of the Seminar "British Policies Towards the Princely States of Rajasthan and its Neighbours" 1981 Paper presented.
13. Organized a Seminar in the Department of History, J.N. Vyas University, Jodhpur. Sponsored by I.C.H.R. worked as coordinator. Theme of the Seminar History of Rajasthan 700 to 1200 A.D.
14. I.C.H.R. Seminar organized by the Mehrangarh Museum Trust, Jodhpur, presented key paper etc.

Text Books :

1. Itihas Pradeep for under graduate students. Published by M/s Ramesh Book Depot, Jaipur.
2. Bharat Ka Rajneetik Va Sanskritik Itihas, Recommended fof the under-graduate classes of the University of Rajasthan (P.U.C.) - Published by M/s Ramesh Book Depot, Jaipur.

3. Vishwa Ka Itihas Approved for the students of Secondary Examination by the Board of Secondary Education, Rajasthan, Ajmer - Published by Ramesh Book Depot, Jaipur.
4. Bhartiya Itihas Ki Roop Rekha for Secondary students - Published by Ramesh Book Depot, Jaipur

Association with Professional Bodies :

1. Founder Member, Rajasthan History Congress established in 1967.
2. Local Secretary of the First Session of the Rajasthan History Congress, 1967 held at Jodhpur.
3. Organizing Secretary - Eighth Session of the Institute of Historical Studies, Calcutta 1970 at Jodhpur.
4. Joint Secretary 1967-70 and Secretary 1970-76 of Rajasthan History Congress. Member of the Executive Committee 1969-80. Presided over the 14th Session held at Bikaner in 1984. It is a rare distinction that he is offered second time to preside over the 25th Session to the held at the Mahila P.G. Mahavidyalaya, Jodhpur 2009.
5. Member of the Indian History Congress 1966-80.
6. Member of the Institute of Historical Studies (Calcutta) 1970-84. Member of its Executive Committee 1979-85.
7. Member of Advisory Board of 'Parampara' an academic Journal of the History and Culture of Rajasthan, Published by Sodh Sansthan, Chopasni, Jodhpur.
8. Member, Advisory Committee to the government of Rajasthan for writing the History of the Freedom Struggle in Rajasthan.
9. Member, Editorial Board - Book entitled "Reading in Indian History", Department of History, Jodhpur 1976-79.
10. Member - Editorial Board - Maharaja Ganga Singhji Centenary Volume. Also presented a paper.
11. Member, Advisory Board - Gazetteer Deptt. Government of Rajasthan for near about 10 years.
12. Member, Rajasthan Hindi Granth Academy for three years.
13. Member, Board of Studies in History, Jodhpur University, Udaipur University and Rajasthan University, Jaipur.

14. Faculty Member of Jodhpur and Rajasthan University.
15. Member of the Committee of the Group of the Rajasthan Gazetteer Publications Branch, Government of Rajasthan.
16. Member/Convenor remained Board of Studies, Faculty, Academic Council Senate, Library Board, Sports Board etc. in the University of Rajasthan.
17. Member of the advisory Board of Maharaja Mansingh Pustak Prakash Research Centre Mehrangarh. He is actively associated with the academic activities like seminars, lectures, exhibitions etc.

Administrative Experience :

1. Worked as the Head of the History Department, University of Jodhpur for 8 years.
2. Worked as Additional Superintendent / Superintendent of Examinations, Welfare Officer, Advisor to Student's Union 1969-73, NCC Officer (Rank Captain), Warden of a Hostel 1969-73, Chief Proctor 1975-1979 during he stay in the University of Jodhpur.
3. Captain Jaswant College team, Jodhpur State team and Rajputana Team in Volley Ball, which represented in Indian Olympic at Lahore and Bangalore 1962 and 1945 respectively. Remained Secretary and Chairman of Jodhpur District Volley Ball Association for a number of years Local Secretary in the West Zonal Inter University Volley Ball Tournament held at Jodhpur in 1970. A large number of tournaments held at Jodhpur in 1970. A large number of tournaments in volleyball were organized by him. For proficiency in games he was awarded colpar, Star Medals, Cash prize etc.

Social Worker :

1. He was a trustee of Pustikar Education Trust which is managing four institutions S.S.P. Sr. Sec. School, Shri J.N. Vyas Sr. Balika Vidyalaya, Shri J.N. Vyas Public School English Medium and Jai Narain Vyas B.Ed. College, Barmer. Secretary/ Manager of the Management Committee of these four institutions 1987-2001.

The Schools which were at the verge of closing, are considered to be among a few top schools of the city of Jodhpur. Within

short period of 14 years the development works worth near about one crore have been executed.

2. Founder member Jai Narain Vyas Shikshan Sansthan and the Mahila Mahavidyalaya. Mahila Maha-vidyalaya was established in 1987, worked as Honorary Principal for initiated period. The College is one of the best administered institutions of the city of Jodhpur near about 2500 girl students are reading at present. Worked as Vice Chairman of the Governing Body of the College. At present he is the Chairman of the Governing Council. The College is declared as a model College by the state Government and graded as B+ by the UGC Team (NAAC). He is also the Chairman of the Sansthan and the Governing Council of Mahila Teacher's Training College.

List of a Few as specimen Articles Published in Various Proceedings, Journals and magazines of State and National level.

1. Origin and Graduation of Nobility in Marwar (PRHC Session I.P. 36 Jodhpur 1967.
2. Maharaja Man Singh and His Anti British Feelings Proceedings of Indian History Congress 30th Session Bhagalpur 1968.
3. The Role of Thakur Sawai Singh of Pokaran in the Politics of Marwar - Journal of Rajasthan Institute of Historical Research, Jaipur, Part 6, March, 1969.
4. America and the Kollogg Briand Pact - Published in American Government and Politics 1970 P. 256. The paper was presented in a Seminar at Mount Abu.
5. Marwar in 1857 - Jodhpur University Magazine. 1970.
6. The Crisis in Marwar in 1828 - Proceedings of Rajasthan History Congress - P.R.H.C. Ajmer Session 1972, p. 103.
7. The proposed Marwar people's Conference October, 1929 PRHC Session 6, p. 111 Beawar, 1973
8. District Gazetteers - Jodhpur District 1973 Chapter II on history of about 100 typed page 3
9. Anti-British feeling in Rajasthan between 1818-1857 An appraisal of Bardic Literature - Journal of the institute of Historical studies Calcutta, 1973.

10. Banera Papers by Dr. K.S. Gupta - Revised in the Quarterly Journal of the institution of the historical studies, Calcutta.
11. Anti-British Feeling among the People of Rajasthan 1818-1857 A.D. An appraisal of Contemporary Bardic Literature. The Quarterly Review of Historical Studies 1974-75 Vol. XIV No. 4 p. 203.
12. The Walterkrit Rajputana Hitkarni Sabha and its impact PRHC Session 8, p. 103 Ajmer, 1975.
13. The Walterkrit Rajputana Hitkarni Sabha and its impact, All India History Congress 38 Session Aligarh, 1975.
14. Agrarian Movement in Rajasthan by Dr. Ram Pande - Reviewed in the quarterly Review of Historical Studies, Calcutta, Vol. No. XV 1975-76 No. 2, p. 129.
15. Bardic Literature as a source of History - A paper presented at the 11th Session Kolhapur of Institute of Historical Studies, 1975-76 Published.
16. Umarkot a part of the Rathore State of Jodhpur - A case for the Government, PRHC Kota Session 9 p. 113, 1976.
17. Political condition on the Eve of the Accession of Maharana Pratap - p. 87. Battle of Haldighati Centenary celebration, 1976.
18. Jodhpur in a Historical Perspective (Published in Several Souvenirs and Journals)
19. Social life of the Charan Community viz a viz the Rajputs in the Medieval Period - Paper accepted for the 39th Session of the Indian History Congress held at Osmania University, Hyderabad 1978.
20. The Position of Charans in the Social life of the Rajputs and other people PRHC Session 11, p. 84, Jaipur, 1978.
21. Social and Religious Reform Movements in the Nineteenth and twentieth centuries in Western Rajasthan published in a book 'Social and Religious Reform Movement in the 19th and 20th centuries' Edited by Dr. S.P. Sen Institute of Historical Studies, Calcutta, 1979, p. 177.
22. Historical Biography in Indian Literature Edited by Dr. S.P. Sen Institute of Historical Studies 1979 Biographical Sketches in Rajasthani Literature p. 179

23. Sources of the History of Ancient Rajasthan p. 3 Published in sources of the History of India Vol. II Edited by Dr. S.P. Sen Institute of Historical Studies, 1979
24. People's Movement in Rajasthan published in Rajasthan Vidhan Sabha Rajat Jayanti Granth 1952-1977, p. 185, 1979.
25. Pali - An Emporium of Rajputana. The Quarterly Review of Historical Studies, Calcutta Vol No. XVIII, 1978-79 Number 3, p. 184.
26. Bankidas as a Historian - Paper presented at the Seminar entitled History and Historians of Rajasthan held at jaipur (18th and 19th Feb., 1978) Published.
27. Rajasthani and its Contribution in the Rise of Nationalism during 19th century - paper presented at the Conference held at Madurai 1978 (Institute of Historical Studies, Calcutta.
28. Sources of Feudalism in Rajasthan in the 19th century - A paper presented at the seminar held at Jaipur under the auspices of the centre for Rajasthan studies, University of Rajasthan, jaipur 78-79.
29. Feudal structure of Marwar p Historical studies - published by Shodh Sansthan, Chopasni, 1979.
30. Studies in Medieval Rajasthan History by Dr. Manjeet Singh Ahluwalia - A Review Published in the quarterly Review of Historical Studies, Vol. XIX, 1979-80 Nos. 1+2.
31. Rajasthani Literature as a source of History, 1979 Published in Parampara.
32. Rajasthani and its Contribution in the rise of Nationalise during the 19th century p. 25 Shodh Sadhana, 19080 Sitamau.
33. The Role of Maharaja Ganga Singh in the Formation and stabilization of the Chamber of Princes p. 8, Maharaja Ganga Singhji Centenary volume, 1980.
34. A Study of the Social Evils in Rajasthan in the 19th century and the British impact - paper presented at the seminar held under the auspices of Udaipur University, 1980.
35. Changing Political scenes in Marwar during 19th century paper presented at the Seminar held in Baroda under the auspices of M.S. University, Baroda, 1980.

36. Public works of Maharana Raj Singh - Three hundredth death anniversary of Maharana Raj Singh Volume, 1980.

37. Rajasthan Gazetteer Chapter II section A sources of History of Rajasthan form Earliest Times to 700 A.D. 1981. Published in Gazetteers.

38. Administrative and Political Developments in the Princely State of Rajasthan Paper presented at the Conference of the Institute of Historical Studies, Calcutta, Published in 1981.

39. British Diplomacy towards Marwar during the reign of Maharaja Man Singh - A paper presented in the Seminar organized by the Department of History, University of Jodhpur under the U.G.C. Special Assistance Programme (Dec. 5.6 & 7, 1981).

40. Trade and Commerce in Sirohi (1820-1920) . A paper presented in a Symposium held at Sirohi at the time of the 13th session of the R.H.C.

41. Karmyogi Dr. Bhimrao Ambedakar - Paper presented in the Seminar organized by Jai Narain Vyas University, Published in the book printed by the University.

42. Maharaja Ajit Singh Ke Palankarta - Jaideo, Published in P.R.H.C.

43. Freedom Struggle in Marwar - An Early phase (1921-1931 A.D.) Published in the Journal.

II. His Historigraphy*

Magnum Opus of R.P. Vyas : Role of Nobility in Marwar (1800-1873 A.D.)

Dr. R.P. Vyas has produced several monographs and numerous research papers, the most important of them being his doctoral dissertation entitled, "Role of Nobility in Marwar (1800-1873 A.D.)" in which an attempt has been made to give a comprehensive picture of the nobles of Marwar as an institution. His work depicts the origin, growth and relations of the nobles vis-à-vis their sovereign in historical perspective. Vyas has rightly remarked that "the history

* The writing is the contribution of Dr. Shankar Goyal, Associate Professor, Dept. of History, J.N.V. University, Jodhpur

of Marwar is the history of its nobility." He had maintained that the nobles were the real architect of the 'House of Marwar'. The ruler was mere Primus Inter Pares. However, the Mughal supremacy over Marwar converted this relationship into that of master and servant. The decline of the Mughal paramountcy emboldened the nobility and they developed a hostile attitude towards their sovereign. Vyas has presented an account of this attitude of the nobles by citing examples of Pokaran Thakur Sawai Singh and others.

According to Vyas, factional rivalries among nobles and officials brought turmoil in Marwar. He has pointed out that during this period of turmoil, the nobles being politically segregated, economically bankrupt and mentally disturbed, preferred to remain by and large in their own jagir or in exile, occasionally appealing against their sovereign to political agent and when there was no favourable response, they restored to a life of freebooters, plunder and were devastating their own country. This point is proved by the prolonged conflict between Maharaja Man Singh and his nobles. During his reign, the Naths further complicated the problem. Rivalry among Nath's fraternity itself made the problem more complex, which ultimately brought the British into the politics of Marwar. Vyas has rightly examined the sobering effect of the Brithis on the administration, law and order situation in the State.

Vyas has studied the age of Maharaja Takht Singh who succeeded Maharaja Man Singh. According to him, he ignored the nobles of Marwar in the management of the State and appointed Gujaratis on all important posts of the State. This created dissatisfaction amongst the nobles of Marwar. Before the British could intervene, there occurred the upheaval of 1857. Certain nobles like those of Auwa, Asop and others rose against the British. The Maharaja faithfully helped the British in suppressing the revolt. Taking advantage of the situation the Maharaja also settled score with dissatisfied nobles. There was peace for sometime but ill will and mistrust between the two continued.

Vyas has also studied the post-mutiny era when the British intervention led to the settlement of pressing needs of administration vis-à-vis nobles amicably. After the death of Maharaja Takht Singh, Maharaja Jaswant Singh II took over. It was during his reign, Vyas observes, that the rule of law replaced the rule of person and many

outstanding issues between the nobles and the Maharaja were settled.

Vyas has written at length on the fights, privileges and honours enjoyed by the nobles along with the duties they had to perform. He has given the various categories of nobles such as Rajawis and Mustaddis. Rajawis were further divided into Sirayats and Ganayats, etc. He has described their order of precedence and certain customs to be followed in the durbar.

He has also described the role played by the nobles in their own jagirs enjoying exclusive administrative, military and executive powers. More interesting is his description of lagbags (cesses) that were levied by the jagirdar upon their ryot. Unlike earlier writers of Marwar such as V.N. Reu, J.S. Gahlot, G.H. Ojha and R.K. Asopa, who wrote from the point of view of rulers, Vyas has tried to be impartial in putting the facts of history in a critical manner without any bias. The subject of this monograph and his methodology and approach inspired other scholars to work on the role of nobility in other states of Rajasthan. For example, Prakash Vyas has worked on the nobility of Mewar (1778-1884 A.D.) under the supervision of R.P. Vyas himself for which he was awarded the degree of Ph.D. Later on, the study of nobility in the erstwhile states of Bikaner and Jaipur was taken up by some scholars in the University of Rajasthan, Jaipur.

Rajasthan ka Brihat Itihasa (in Hindi)

Among other important works are included a two-volume study of modern Rajasthan, namely Rajasthan ka Brihat Itihasa (1707-1818 A.D.) and Adhunik Rajasthan ka Brihat Itihasa (1819-1950 A.D.). As the canvas for this theme is very vast and a historian working on it has to give attention to so many princely states, it was a difficult task indeed, but he has certainly succeeded in presenting a coherent picture of it. During this period, Rajasthan passed through many phases viz. relations with later Mughals, Marathas and Pindaris and lastly with the British. Vyas has presented an authentic and readable history of this period. Besides this, he has written about the peasant, tribal and Prajamandal movements in different princely states which demonstrates his capabilities to build up a picture out of the jungle of vast material.

Other Significant Works

Apart of from these monographs, Vyas has published a few other works on the life and achievements of some of the important personalities of Rajasthan, namely Maharana Raj Singh, Samajratan Har Vilas Sarda, Inderaj Singhvi, Rajasthan ke Lok Nayak Jai Narain Vyas and Maharana Pratap. In the book on Maharana Raj Singh, he not only traces the early history of Mewar bu also describes the Maharana's relations with Aurangzeb and also the his nobility in greater details. Samajratan Har Vilas Sarda delineates many a significant services of Diwan Bahadur to our country as a writer, publicist and social reforment. Indraraj Singhvi gives an accurate and detailed account of the administrative and chivalrous deeds of the more important diwan if Maharaja Man Singh. Rajasthan ke Lok Nayak Jai Narain Vyas is written in such a style that it reads like a novel and is much of history than a compilation of historical facts. It is undoubtedly as a successful politician and social reformer that Shri Jai Narain Vyas will be remembered longest all over Rajasthan. Maharana Pratap gives a glimpse of Rajput glory. The work tries to correct, though at times unsuccessfully, a number of misrepresentation of past and present historians regarding Maharana's relations with Akbar; before and after the battle of Haldighati. R.P. Vyas has also edited a work entitled, British Policy Towards Princely States of India. It is a proceedings of a seminar on the theme. Vyas has also written numerous research papers on modern Rajasthan most of which are characterized by the same approach which is found in his books. It is quite apparent from his writings that he belongs to the school of R.G. Bhandarkar who, following Ranke, advised the historians no to indulge in surmises and inferences and leave the facts to speak for themselves. It is but natural because Vyas was educated in the decades in which Rajasthan history writing was dominated by the School of Bhandarkar.

His Approach to History

However, of late when various other schools of history have begun to make their impact on Indian historians, R.P. Vyas has also been influenced by the newly emerging trends of history writing. In his Presidential Address of the XIVth Session of the Rajasthan History Congress, delivered at Bikaner in 1984 he shows his

familiarity with recent developments in historiography and emphasizes the need of studying social and economic history of Rajasthan. Stating his view on history and on the task of a historian he writes: "History is a search for truth, an approximation rather than a final formation."

For R.P. Vyas, history is, by its very nature, an incomplete discipline, not only because new evidences are always coming to light but also because each generation has fresh interests and puts forward new questions to unravel the past. Here Vyas approvingly quotes Marc Block and E.H. Carr to support the view that history has no meaning in a static society. Following Carr's formulation that 'history is a dialogue, continually going on between the past and the present, with an eye to the future,' Vyas emphasizes that the task of historian is 'to seek truth and nothing but truth, but at the same time he must inform and inspire the present and help the process of shaping a glorious future.'

In his Presidential Address, Vyas also emphasizes that the old approach of writing history of Rajasthan, wherein Kings, Ministers and General figures prominently, should be given up and social, economic, religious and cultural aspects of the history of the region should be emphasized. In his words, "all these aspects ate so inter-related and interwoven that they form the very basis of a social organization." Elaborating the view point that such studies have become essential now-a-days he cites examples of the works of G.N. Sharma, Kalu Ram and Pema Ram which focus exclusively on socio-economic and religious life of Rajasthan of different periods instead of dealing with dynastic accounts. He also mentions S.P. Gupta and Dilbagh Singh for their statistical study of the rural economy and the agrarian society in eastern Rajasthan during the medieval and later medieval periods. Such studies throw light on cultivation, agricultural production, revenue rates, fluctuation of prices, structure and composition of the agriculture class, stratification and differentiation in the village society, the proportion of the land revenue demand on different sections of the agricultural community, the relationship of the peasant vis-à-vis the jagirdar or the ruler, agrarian indebtedness and so on.

Such a complex picture of the history on the peasant society of Rajasthan is indeed the need of the hour. Vyas himself has depicted in one of his articles entitled, 'The Peasants of Marwar

and their Relations with the Ruler or the Jagirdar During 19th Century', the pitiable condition of the peasants of the region. As regards the definition of the term peasant studies together with its vagueness of scope and area have made the task difficult for the scholars to define the term peasant properly with the result that in certain quarters peasantry has been equated with the rural society as a whole. His paper throws light on one important aspect of the study of peasants namely how do they pay land revenue or surrender their surplus showing the relationship of exploited with the exploiting classes. He has given a comprehensive picture of the peasantry of Marwar as a class, throwing light on the nature of the soil, the amount of rainfall, the principal crops, the methods and the implements used for tilling the land, the main agriculturist castes like Jats, Kumbhars, Malis, Bisnois, Kalbis and Gujars etc. Basides this, the classification of the cultivators: Bapidars and Ghair Bapidars, their rights and privileges, the modes of assessment and the revenue paid in cash or kinds, lagbag (cess), indebtedness among the cultivators, the role of Mahajans and Bohras and the reforms introduced by the state. Vyas observes that the style of living of the cultivators as regards dress, food, houses and furniture, has been, more or less, the same for centuries.

Vyas also underlines the significance of the study of trade and commerce of the region. Here he mentions the important contributions in this field made by G.S.L. Devra, G.D. Sharma, H.C. Tikkiwal and B.L. Bhadani, besides his own project on trade, trade routes and commerce of western Rajasthan during the 18th and 19th centuries. His work on the subject was published in the form of research papers in different journals. Here we may mention some of his more significant articles entitled, "Trade Centres of Marwar and Linked Trade Routes During 18th Century A.D." "Commerce in Sirohi (1820-1920)" and "Plai–An Emporium of Rajputana," which present a coherent picture of trade centres and routes joining them. In his last of the above-mentioned articles, he has discussed a few efflorescent marketing centres of Rajasthan in the beginning of the 19th century. He writes, "None of the erstwhile states of Rajputana was without traffic, each had her mart or entrepot, and while Mewar could boast of Bhilwara, Bikaner of Churu and Amber of Malpura, the Rathors of Marwar could be proud of Pali which was not only a

rival of the places mentioned above, but could also rightly claim the title of the emporium of Rajputana. Vyas has given details to prove that as a commercial centre, Pali has been linked with a network of roads connecting it with the big flourishing commercial towns of Gujarat and Uttar Pradesh. Plai lay on the route through which the Malwa opium was exported to China and Western Asia. It was the collecting and distributing centre of the area, a clearing house for the whole of RAjputana. Besides Pali, Nagaur, Jodhpur and Merta were also important centres of trade in Marwar. Rulers of Marwar gave patronage to the traders. Certain facilities, such as exemption from commercial duties, grant of free land for the construction of shops of havelis, protection against the harassment by the government officials, etc. were provided to them.

Vyas is also aware of the fact that the study of the tribals has not been given sufficient attention by the historians of Rajasthan. He also urges for a study of the urban history of Rajasthan which has been practivally ignored by the scholars. Every great city has a history of a complex growth. The complexity in all its features has to be analyzed. A thorough study has to be made of the social, economic, political and cultural forces which have made various communities come to the city and settle there. According to him, various phases of the development of the city with its cultural ethos, have to be examined in a proper historical perspective.

He has also drawn our attention to the fact that much works still to be donw on the historical archaeology of Rajasthan for a study of ancient and medieval histoy. Further, we need a detailed analysis of the socio-economic and political significance of ancient temples as an institution. Also, there is a plenty of scope for archaeological studies in relation to the temple based settlements in different parts of Rajasthan at different times. Then these findings could be corrected with those coming from other sources. The Archaeological evidence may contradict or support the descriptions adduced by the literary sources and compel us to abandon or revise our various pre-conceived notions. Following of these two complimentary sources, i.e. documentary and archaeological, that a balanced account of urban history can be written.

According to Vyas, while writing the history of Rajasthan, the findings arrived at by the historians working on Rajasthan may

be correlated with the findings of the scholars working on other regions. Thus alone shall we be in a position to assess them in a coherent and a compact manner on the national level.

R.P. Vyas is of the view that no historical analysis is without a point of view or a commitment to some particular values, though it is obviously against his belief in the Bhandarkarian myth. According to him, a history book on Rajasthan with what he calls “an integrated and policy-oriented approach within a broad national spectrum” is an urgent requirement.

About the Author

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Address : Department of Archaeology,
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Educational Qualifications :

- B.A. (History) Hons, University of Poona.
- M.A. (first class first) in Ancient Indian History, Culture and Archaeology, University of Poona.
- Ph.D. in Protohistoric Archaeology. (Early Settlements in the Central Tapi Basin), University of Poona.

Designation : Professor of Archaeology and Vice-Chancellor/ Director of the University

Teaching :

1) Post-Graduate teaching since 1982.
2) M.Phil. teaching since 1995
3) Recognized Post-Graduate teacher and Research Guide, Deccan College, Deemed University, University of Poona and Solapur University.
4) Post-Graduate Diploma teaching in the Institute of Archaeology, New Delhi since 1991.

M.A. Dissertation Produced	:	36
P.G. Diploma Dissertation produced	:	7
M.Phil. Dissertation Produced	:	1
Ph.D.s Produced	:	26

Ph.D. Guidance	:	10
Ph.D. Co-Guidance	:	6
Post-Doctoral Research Guidance	:	4
Guidance to Foreign Visiting Scholars	:	13
Research Experience	:	34 years

Research Specialization :

Protohistory of South Asia and Field Archaeology

Directed 34 Research Projects/Archaeological Excavation/ Explorations

Research :

Completed 16 major projects- Generated more than Rs. 2 core funding from National and International Agencies

Research Collaboration with the University of Pennsylvania, Cambridge and Oxford Universities, University of Wisconsin, International Research Center for Japanese Studies, Kyoto, Japan, Research Institute for Humanity and Nature, Kyoto, Japan, Seoul National University College of Medicine, Seoul, S. Korea, Research Centre of Deolmen in Northeast Asia, Korea, etc.

Excavations Directed :

1) Excavations at Padri (A Harappan site in Bhavnagar District, Gujarat)- February to March 1991.
2) Excavations at Padri, December- January 1991-92.
3) Excavations at Padri- December-February 1992-93.
4) Trial Excavation at Navdatoli (A Chalcolithic site in Khargon district, M.P.)- September 1993.
5) Excavation at Padri- November-January 1993-94.
6) Excavation at Balathal (Protohistoric- Early Historic site in Udaipur district of Rajasthan) January- March 1993-94.

7) Excavations at Balathal- November 1994 to February 1995.

8) Excavations at Balathal- November 1995- February 1996.

9) Excavation at Padri- February-March 1996.

10) Excavations at Balathal- November 1996 to February 1997.

11) Excavations at Balathal- November 1997 to February 1998.

12) Excavations at Balathal- November 1998 to February 1999.

13) Excavations at Gilund-A Bronze Age-Early Historic Site in Rajsamand District of Rajasthan- December 1999-March 2000.

14) Excavations at Gilund- December 2000-February 2001.

15) Excavations at Gilund- December 2001-February 2002.

16) Excavations at Bagor- A Mesolithic site in Bhilwada District of Rajasthan-December 2001.

17) Excavations at Iswal, an Early Iron Age site in Udaipur District, Rajasthan-December 2001-February 2002.

18) Rescue Excavation in the city of Pune- September 2003 (Discovered Satavahana culture for the first time, thus taking back the antiquity of the city by 1000 years).

19) Excavations at Gilund- December 2002-February 2003.

20) Excavations at Iswal- December 2002- February 2003.

21) Cambay Archaeological Research Project (Test Pitting at Padri and Sidhanath Temple area) - December 2002-February 2003.

22) Excavations at Mudvi- An Early Historic site in Solapur district of Maharashtra- March 2003.

23) Excavations at Siddhapur- Early Historic-Early Medieval site in Solapur District of Maharashtra, November-December 2003.

24) Excavations at Iswal- December 2003- February 2004.

25) Excavations at Gilund- December 2004-February 2005.

26) Excavations at Iswal- December 2004- February 2005.

27) Excavations at Junnar- An Early Historic site in Maharashtra, December 2005- February 2006.

28) Excavations at Iswal- March 2006. 29) Excavations at Junnar, December 2006-February 2007.

30) Excavations at Nathara ki Pal, a Historical site in Udaipur District, Rajasthan- Feb- March 2007.

31) Excavations at Harappan culture sites of Girawad, Farmana (Rohtak District) and Mitathal (Bhiwani District), Haryana- March to May 2007.

32) Excavations at Nathara ki Pal, a Historical site in Udaipur District, Rajasthan- Feb- March 2008.

33) Excavation at Farmana, Rohtak District, Haryana-February-April 2008.

34) Excavations at Madina, a PGW site in Rohtak District of Haryana-February-April 2008.

35) Excavations at Nathara ki Pal, a Historical site in Udaipur District, Rajasthan- Feb- March 2009.

36) Excavation at Farmana, Rohtak District, Haryana-December 2008-April 2009.

37) Excavation at Farmana, Rohtak District, Haryana-December 2009-March 2010.

38) Excavations at Karsola, Jind District, Haryana- Painted Grey Ware Culture site, December 2010-March 2011.

39) Total Station and GPR Survey at Rakhigarhi, a Harappan site in Haryana, December 2011-March 2012.

Studies Abroad :

Travelled to Sri Lanka, Denmark, France, England, Sultanate of Oman, Malaysia, USA, Netherlands, Japan, Singapore, China, Germany, Poland, Belgium, Taiwan, Philippines, Iran, Russia, Italy, Austria, Hungary, South Korea, Pakistan, Bangladesh and Guatemala in connection with lectures and research.

Museum and Antiquities Studies :

More than 15 International Museums in different parts of the world and studied material ranging from Stone Age to the Late Medieval period.

Honours/Awards, Scholarships, etc. :

19 Various Honours/Awards

Special Lectures Delivered :

India : 127

Abroad : 32

Membership of Learned Societies :

Member of 17 National and International Bodies

Seminar/Conferences attended and papers presented :

National : 46

International : 56

Important Positions of Responsibility held :

72 various positions

Publications :

Books: 7 published and 2 in press

Edited Volumes : 9

Research papers

In National Journals : 91

In International Journals : 52

Popular Articles : 17

Editorial Work : 8

Contributions of Prof. Shinde to Indian Archaeology :

1) Initiated Experimentation in Flint-knapping.
2) Discovered an independent phase of development of domestication and settled life in Mewar region of Rajasthan dated to the 5th – 6th millennia BC.

3) Discovered initial development of urbanization in Mewar region of Rajasthan that was contemporary to the Harappans.
4) Established Society of South Asian Archaeology (SOSAA) – with a view to promoting young archaeologists and take Indian Archaeology Globally.
5) Educated the local people and established groups in Maharashtra, Rajasthan and Haryana to protect Cultural Heritage of the country.
6) Initiated International Collaboration and generated more than Rs. 2 core research funding.

Chalcolithic Mewar and its interaction with the Harappans

Prof. Vasant Shinde

In the beginning of the twentieth century when the systematic research on the Protohistoric cultures was not initiated in the Indian subcontinent (India henceforth), most of the historians had expressed that the settled life in this region of the world began in the Early Historic phase around the 5th or 4th century B.C. The period between the Stone Age and the Early Historic period was considered to be the "Dark Age" in Indian History. However, the discovery of the Harappan Civilisation in the twenties pushed back the antiquity of the settled life in India by two thousand years at one stroke. This was considered to be the greatest archaeological discovery of the twentieth century in India. The development and spread of agriculture and pastoralizm in south Asian are complex phenomena that have taken place over the course of more than 9000 years. Within this period at least three major transformations occurred that can be related to the introduction and adoption of new crops and animals to the subcontinent. The first of these involve Southwest Asian forms (between 7500-5500 B.C., the second African and Asian species (2500-1000 B.C.), and the third plants from Americas (1500 A.D). In addition to the imports, local forms of plants and animals came to be husbanded or continued to be gathered from the wild (Meadow 1996). We are concerned here with the development that took place between 7500-1000 B.C. The Indian subcontinent has all the favourable ecological conditions to give birth to the early farming community. The Southwest Asian agropastoral system with wheat, barley, cattle, sheep and goats had spread through Iran and

Afghanistan to Preceramic Mehrgarh in Baluchistan by about 7000 BC. Early Mehrgarh lithics, loaf-shaped mud bricks, female figurines and burial practices all suggest Southwest Asian origins from somewhere in the Levant or Zagros regions. The origins of village life in South Asia were first documented at Kile Ghul Mohammad in the Quetta valley (Fairservis 1956), then at the site of Mehergarh at the foothill of the Bolan pass on the Kachi Plain on the Indus Valley (Jarrige 1984). Both these sites and numerous other in this region demonstrate cultural development from the seventh millennium B.C. to the emergence of the of the Mature Harappan phase in the middle of the third millennium B.C. In the rest of India the development of village-based culture started in the later part of the Mesolithic phase and continued into Neolithic and Chalcolithic. This development, compared to the northwest is quite late and happened between 3500 to 1000 B.C. In the Ganga valley though the site of Koldihwa has produced quite early date, there is lack of series of C14 dates and hence cannot be used for generalisation. Of the early farming communities that came into existence in different parts of south Asia, the Chalcolithic phases in central India and the Deccan have been systematically studied, thanks to the pioneering work of Deccan College under the leadership of H.D. Sankalia. Unfortunately, the eastern and northeastern parts of India have not been subjected to systematic archaeological research and therefore very little is known from these regions. Because of this biased research strategies, the comprehensive picture of the development of early farming communities has not yet emerged.

The southeastern part of Rajasthan (Mewar region), in fact, is an extension of the Malwa plateau. Though the entire region is fertile because of the presence of Black Cotton soils, it falls in the semi-arid zone, which is characterised by the low and unpredictable rainfall and shrub forest. The main river Banas and all of its tributaries are seasonal in nature.

Based on palynological data from Rajasthan lake deposits (Krishnamurty et al. 1981)., the following climatic sequence for the Holocene period has been reconstructed:

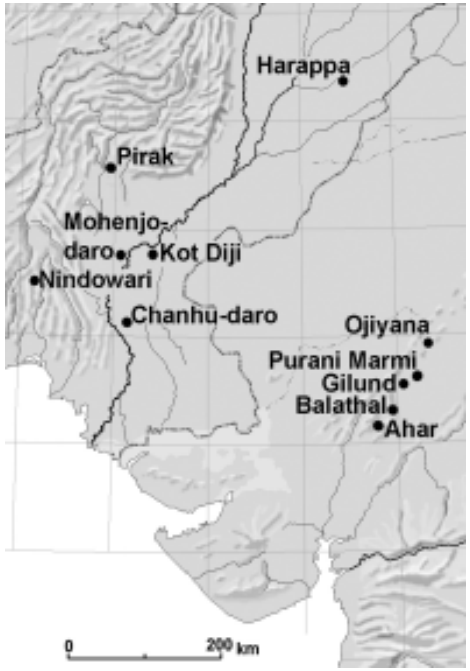
Before	8000	B.C.	Severe aridity
8000	- 7500	B.C.	Relative Wet
7500	- 3000	B.C.	Relative Dry
3000	- 1700	B.C.	Sudden increase in wetness
1700	- 1500	B.C.	Relative Dry
1500	- 1000	B.C.	Relative wet
1000	- 500	B.C.	Arid

This climatic sequence can be applicable to the larger semi-arid region that makes up Western and Central India. It is argued that these climatic fluctuations were responsible, to certain extent, for the origins of early farming communities and for cultural changes. It is believed that abundance of plant and animal food to the Mesolithic hunter-gatherer abound 10,000 years ago possibly led to the explosion in the population. This is evident in the sudden increase in the Mesolithic settlements all over the subcontinent. The congenial climate till about 1700 B.C. enabled them to flourish (Dhavalikar 1988).

Archaeological significance of this region was first realized in the fifties when V.N. Misra (1967) carried out systematic survey and discovered a number of sites of different cultural periods in the Banas-Bedach basin of the Mewar region. A study of distribution of sites in this region clearly demonstrated that the region was indeed very important and attractive for human settlements right from the Stone Age times. The discovery by R.C. Agrawal of the site of Ahar and a vertical excavation under the direction of H.D. Sankalia established almost complete cultural sequence from Chalcolithic period for the Mewar region and enabled identification of characteristic features of the Chalcolithic culture, which was termed

by him as the Ahar culture after the type-site Ahar (Sankalia et al., 1969). At the same time, the Archaeological Survey of India under the direction of B.B. Lal carried out one season excavation at the site of Gilund, then located in the district of Chitorgarh in 1959-60. The evidence from excavations revealed some new features of the Chalcolithic culture including the use of burnt brick for construction and a part of a large public architecture. This was enough to gauge the potentiality of the Chalcolithic phase in this part of the country, which was much more prosperous and different from the Chalcolithic cultures flourished in other part. In mid sixties V.N. Misra (1973) carried out large-scale excavation at the Mesolithic site of Bagor, which revealed a presence of symbiotic relation between the Chalcolithic and the Mesolithic people. Though the archaeological prospectus of this region was brought out by the earlier work, no systematic large-scale work was carried out until the early nineties for unknown reason. The pace of research activities increased dramatically when the problem oriented research was initiated at Balathal in Vallabhnagar Tehsil of Udaipur District in 1993-94 jointly between Deccan College, Post-Graduate and Research Institute, Pune and the Rajasthan Vidyapeeth, Udaipur. This research was mainly aimed at studying various aspects of the Chalcolithic culture of this region. The joint team before undertaking a large-scale work at the site of Balathal, carried out systematic survey in the Banas-Bedach basin and studied some of the sites discovered earlier such as Marmi, that produced hundreds of stylized and naturalistic bull figurines of terracotta belonging to the Chalcolithic period. By the time a large-scale excavation was initiated at the site of Balathal, more than 100 Chalcolithic sites were known in the Mewar region. Excavations carried out at Balathal between 1993 and 2000 pushed back the beginning of the Chalcolithic phase to the late forth millennium BC and revealed three phases of the Chalcolithic- Early, Mature and Late contemporary with the Early, Mature and Late Harappan phases. Besides, some of the other contributions of the

work included discovery of new architectural remains, well-planned fortified settlement, evidence for gradual development and decline of social, religious and economic aspects of the Chalcolithic cultures (Misra et al., 1995, 1997; Shinde, 2000, 2002; Shinde et al., 2004). The excavations at Balathal and also at Ojiyana in Bhilwara district by the Archaeological Survey of India have thrown considerable light on the Chalcolithic-Harappan interaction and trade with the contemporary cultures flourished in the adjoining region (Shinde, 2001; Sinha 1998, 2003; Meena and Tripathi 2001, 2002). Besides, the Early Historic phase excavated at Balathal revealed that this region was strategically important during the Early Historic period and that it played important role in the economic aspects of that period. Excavations at Gilund were in fact an extension of Balathal excavations as some of the problems identified there could be pursued at Gilund, which is much bigger and likely to produce some evidence for the problems envisaged.



The basin of the Banas River, in Mewar, is one of those regions in India that witnessed the earliest emergence and local development of settled community life based on pastoralizm and farming around 5000 BC. The excavation at Bagor (Bhilwara District) and Balathal (Udaipur District) have demonstrated the local origins of settled life, pottery tradition and village life as against the

earlier belief that agriculture and village life spread to Central India and the Deccan via the Harappans (Shinde, 2000 and 2002). Excavations have similarly shown that the Ahar culture developed and flourished with growing trade contacts with the Harappans after 2600 BC. In addition, the vertical excavations at Ahar (Sankalia et al., 1969) (Udaipur District) and the large-scale horizontal excavations at Balathal (Udaipur District) (Misra et al., 1995 and 1997) and Gilund (Rajsamand District) (Shinde and Possehl, 2005; Shinde et al., 2005) have provided a complete cultural sequence of the region and have thrown light on various aspects including the socio-economic organisation, trade transactions and contacts. Culturally these include painted and wheel-made ceramic traditions, a specialised blade/flake industry, restricted use of copper and subsistence based on farming, pastoralism and limited hunting.

Ahar, the type-site of the Ahar Culture was first excavated on a limited scale by the Department of Archaeology Rajasthan 1954-56 and by Deccan College in 1961-62. Located on the Ahar river, a tributary of the Banas, the archaeological deposit locally known as Dhulkot has a deposit of 12.8 m and is divided into two periods; Period I Chalcolithic (2580-1500 BC or later) with three sub-phases and Period II Iron Age (Sankalia et al., 1969). While no sterile layer was found separating the two periods, there is a gap between the two periods chronologically. The three sub-phases of the Chalcolithic Ahar Culture here are divided on the basis of the ceramic assemblage; Phase Ia (2580-2170 BC) is characterized by the presence of Black-and-Red ware especially convex-sided bowls, Buff ware and imitation Buff-slipped ware, Red ware and some Grey ware and the absence of sharply carinated bowls. Phase Ib (2170-2080 BC), the Black-and-Red ware continues while the Buff and imitation Buff slipped ware are completely absent and Grey ware, Red ware and cut and ribbed pottery in Red ware are present in increased profusion with some new ceramic types. Phase Ic (2080-1500 BC) is characterized by the presence of sharply carinated

Black-and-Red bowls, absence of sturdy metallic ceramics and dish-on-stands and the presence of Lustrous Red ware similar to that of Rangpur. Pottery from Ahar as described by Sankalia (1969:18-162) has been the basis for identifying Ahar sites in Rajasthan and Madhya Pradesh, though here one needs to recall Childe (1958:70) and his definition of culture as being "defined but not constituted by pottery". Recent excavations at sites like Balathal and Gilund have yielded similar pottery types as described at Ahar but with some differences.

No complete house plan were excavated but from the available data it seems that they constructed large houses of stone and mud complete with storage jars and cooking facilities including a couple of 'U'-shaped chiliast or hearths (Sankalia et al, 1969). Interestingly, the site yielded only a few microliths mainly blunted back blades, borers, fluted cores, side scrappers made of chert, chalcedony and quartz and the idea that the culture depended on copper tools largely was put forth by the excavator. The site is identified as a copper smelting and tool manufacturing site based on the finds of copper slag and copper implements like celts, blades, knives, rings, bangles and kohl sticks and the inhabitants are believed to have exploited local copper ore sources (Sankalia et al., 1969). In addition, other artefacts include shell bangles, beads of crystal, terracotta and lapis lazuli most of which belong to Phase Ib and Ic and terracotta figurines of animals like bulls, elephants and a horse. The people practiced agriculture and animal husbandry and cultivated rice and probably legumes and millets like other Chalcolithic cultures.

The rural site of Balathal (24º 43´ N and 73º 59´ E) is located, 42 km east of Udaipur in the Banas River basin and is 2 hectares in size (150m N-S & 135m E-W) with a deposit of 7 m divisible into two cultural periods; Chalcolithic (2800-1800BC) and Early Historic (200-300 BC) with a hiatus of 1600 years (Misra et al., 1995, 1997). The proximity of a large freshwater lake and fertile agriculture and pasturelands around the site are believed to have lured the early

farming communities to make Balathal their home.

The excavation at the site yielded the earliest evidence of the origin of the 'Early Chalcolithic' (Phase A) farming community in Western India. This early society of farmers and herders established their settlement on the bedrock, constructed wattle-and daub, mud and stone structures and manufactured typical Chalcolithic pottery such as coarse and thick slipped Red ware; thin Red ware, Black-and-Red ware, Thin Red-slipped ware and Reserve Slip ware. Reserve Slipped ware, was introduced by the early settlers and since the earliest known occurrence of this ware in the subcontinent is at Balathal, it may be inferred that the technique of its production was borrowed by the Harappans when they established close contact with the Chalcolithic farmers of Mewar around 2400 BC while Black-and-Red ware is believed to be a feature of the Ahar Culture. In this phase however, the majority of the pottery is handmade, coarse, thick in section and inadequately fired. Shapes such as wide-mouthed deep carinated bowls, small narrow-mouthed jars and storage jars with beaded rim, the fossil types of the Chalcolithic phase in this region are present right from the beginning (Shinde, 2000).

Gradual development and technological advancement led to the rise of 'Mature Chalcolithic' (2500-2000 BC) at Balathal, and it was the people of this level who established close contacts with the Harappans in Gujarat, resulting in the all round development that is visible in their structures and other material equipment. This phase of Mature Chalcolithic is characterized by three different pottery traditions namely Kayatha in the Chambal Valley, Ahar in the Mewar region and Malwa on the Malwa Plateau. They constructed rectangular or squarish houses, single or double-roomed with elaborate storage and cooking facility. The floors of these structures were made of clay and plastered with cow dung or sometimes lime. The evidence from Balathal indicates that a modicum of planning was introduced and the use of mud-bricks and stones for construction of multi-roomed complexes became predominant (Shinde, 2000) (Fig.

3). In the midst of the settlement is located a very impressive stone structure, roughly rectangular on plan and identified as a Fortified Enclosure. It covered an area of 30m (E-W) by 20m (N-S) and its function is uncertain. Around this central structure house complexes were laid out in a rectangular plan and were in turn enclosed by a strong outer fortification wall.

The Late Chalcolithic Phase of Balathal represents a decline in terms of both material and population and this Phase is presently dated to between 2000-1700 BC contemporary with the emergence of the Late Harappan. The large, spacious structures of the Mature Chalcolithic are replaced by single or double-roomed structures, and classical Chalcolithic pottery becomes coarse and looks carelessly made. This is also true in case of other material equipment. The contact with the Malwa region continued as is evident in the presence of large quantity of the Malwa ware in this phase (Sinha, 2003).

Aims and Objectives of the Excavations at Gilund:

Excavations at the site of Gilund were planned immediately after very extensive and exhaustive work for six years (1993-99) at the site of Balathal in Udaipur district, where the beginning of the Protohistoric period was pushed back to the last quarter of the fourth millennium BC. The following problems were identified at the site of Balathal and the site of Gilund was found ideal to pursue them:

1. To study the Origin and Development of Village life: Prior to the excavations at Balathal in Udaipur District by Deccan College and the Institute of Rajasthan Studies, Udaipur, it was considered on the basis of available data from the sites of Inamgaon, Navdatoli, Kayatha, etc., that the Harappans played an important role in the origin and development of village based agricultural communities, termed as the Chalcolithic, in the Deccan, Central India and the Mewar region of Rajasthan. Excavations at these sites revealed a picture of developed life instead of the evidence of a gradual development of village life. What we see in these regions is the

sudden induction of pottery, copper and ornament manufacture technologies. However, positive evidence in respect to the origin of the village life has emerged from the excavation at Balathal, dated back to the last quarter of the fourth millennium BC. The first settlers began their life very modestly and occupied a much smaller area at sites like Balathal. They lived in circular mud and wattle-daub huts and manufactured coarse handmade pottery. The evidence of the early village life comes from the lowermost 90 cm deposit with indications of gradual development in various technologies. Gradually, the circular huts were replaced by rectangular mud or occasionally mud bricks and the coarse hand made pottery is gradually replaced by fine and wheel made pottery. By 2500 BC, the Chalcolithic culture is fully transformed into prosperous and well-developed society. This important evidence needs to be properly studied and understood. The surface indications at the site of Gilund revealed early material and therefore the process of cultural development and evolution is being studied systematically.

The region of Mewar appears to be a prime zone where we are likely to find early evidence of domestication and early village life. The Mesolithic site of Bagor roughly 40 km north of Gilund is producing evidence of the process of domestication (plant and animal) and the introduction of settled life in this region. Unfortunately, earlier work at the site has not produced the desired results, and there is confusion about the chronology and criticism on identification of faunal remains. Efforts are being made to study cultural transition from Mesolithic to Chalcolithic and cultural process from the beginning of village life to the end of the Chalcolithic phase in the Mewar region.

2. Study of Harappan Chalcolithic interactions: Earlier work in western India has not concentrated on the study of interaction between the Harappans in Gujarat and the northwest part of Rajasthan and the Chalcolithic cultures of Mewar. Recent evidence

from Balathal indicates cultural and trading interactions between the Harappans of Saurashtra and the Chalcolithic people of Mewar; therefore, further work is required to establish the factor that prompted this interaction between these two regions and the intensity, nature and mechanism of the interaction. One of the obvious reasons for the Harappans to establish contact with this region was to obtain certain raw materials like copper, zinc and semi-precious stones like chalcedony, carnelian and agate. Reciprocal relations may have resulted in the borrowing of certain cultural traits. The excavation at the site is also aimed at studying some of these aspects and more importantly the cultural impacts on one other.

3. Study of social aspects: As very impressive architectural remains were found during the excavations at the small farming settlement of Balathal. The site of Gilund, roughly ten times bigger than Balathal and identified as a Regional Centre, may have played an important role in the social economic organizations and therefore is likely to produce different and quite elaborate architectural evidence, which will enable reconstruction of their social aspects. Attempts will be made to study the role of the site in the economic interplay in the regional context. The settlement at Gilund is divided into two prominent segments (termed GLD1 and GLD2) each one probably strongly fortified by mud-brick walls. The eastern mound, small but prominent, resembles the Harappan citadel and the western mound which is quite extensive appears close to the Harappan lower town area. It will be interesting to study the functional aspect of the settlement and a comparative study between Gilund and some of the prominent Chalcolithic sites (Ahar, Balathal, etc.) in this region. A detailed surface survey reveals massive brickwork along the periphery of the mounds. It is quite likely that each mound was properly fortified and the brickwork may represent walls. On the eastern mound, a gap is seen on the western slope near the southern end of the mound. It is not unlikely that this was a gate or an entrance opening to the main habitation (on the western side). It will be

worthwhile to investigate the social aspect and study whether each mound had a separate fortification right from the beginning. In addition, there appears to be at least three different activities on the western mound that is reflected in the form of three prominent bumps there. The one on the northern end of the mound is quite prominent and extensive whereas the one on the southern end is in low relief. In order to test our hypothesis excavations on these localities is planned.

4. Study of economic aspect of the Chalcolithic community: Systematic and scientific attempts will be made to study subsistence and economic organizations of the first farming community of the region. Apart from gathering relevant data from the excavation a systematic site catchment and locational analysis will be undertaken. It is intended to undertake chemical analysis of bones and soil (phosphate and nitrogen content) to determine various activity areas. To study interactions, X-ray diffraction analysis of pottery and metalloids will be conducted. We are also planning to involve scientists to study specialized aspects such as animal bones, plant remains, etc.

5. Study of transition from Chalcolithic to Iron Age: One of the burning issues in Indian archaeology more particularly in western and central India is the problem of the so-called gap or "Dark Age" between Protohistoric and Early Historic periods. Intensive and extensive works in this region have so far failed to produce any information or evidence for the period between 1200 BC and 600 BC. The presence of a sterile layer between the Chalcolithic and Early Historic periods at places like Nevasa and Prakashe in Maharashtra suggests a clear-cut gap between these two periods. Chemical analysis of the sterile clearly indicated that it was formed when the climatic condition was arid. In response to this study, it was proposed that due to arid climatic conditions the early farming communities switched to a pastoral mode of living. This change

necessitated those to move from place to place periodically and therefore, there is lack of evidence of settled life between one thousand and six hundred BC. Surface survey carried out earlier produced the evidence of Grey Ware which appears to belong to Iron Age possibly dated to seven-eight century BC. In the light of this evidence, it will be interesting to see weather there is continuity between the Chalcolithic and Iron Age. Earlier explorations carried out on the eastern mound produced the evidence of fine Grey ware, which appears to belong to early Iron Age possibly dated to 7th or 8th century BC. This evidence points to the continuation from Chalcolithic to Early Historic. If that is the case, Gilund is a fit candidate to study transition from Chalcolithic to Iron Age.

Hunting-Gathering to Agriculture (Mesolithic to Chalcolithic)-Cultural Processes and Protohistoric Cultural Sequence in Mewar

Gilund is the only site in this region where there is a well-stratified Mesolithic deposit beneath the Chalcolithic occupation and the excavations into the Mesolithic occupation have produced the evidence of the beginning of agriculture, settled life and production of ceramic. There appears a transition from Mesolithic to Chalcolithic at the site. One of the aims is to study this transition at the site.

The site of Mehrgarh itself is considered to be a nuclear site for the domestication of plants and animals and its diffusion to the northwest and western parts of India is traced to this site. However, a reference should be made of a recent discovery at Gilund of transition from Mesolithic (hunting-gathering/incipient farming) to the Chalcolithic, which is indicative of the presence of more than one (multiple) zones of the origins of farming communities. It should also be mentioned that similar kind of evidence has also been reported from the site of Lahuradeva in the mid Ganga basin (Tewari, 2003).

The earliest 'Oasis theory' propounded by Childe for the rise of domestication today seems more and more plausible based on the available evidence from the region of our study. Recent studies

carried out by scholars in the Middle east and north east Africa (Hassan, 2002) suggest the rise of domestication as an answer to a spell of droughts between 7500-6000 years BP and its spread is attributed to cultural interaction. A series of developments all over the world including

-development of specialized and mixed economies,

-ability to develop innovations at a relatively fast rate,

-environmental changes or 'climatic kickers',

-rise of cultural nodes or centres of interaction in the climatically sensitive zones (arid or sub-arid regions) referred to as 'ekotropic regions',

-within the ekotropic regions are 'cultural troughs' i.e. localities with regular flow of water and plants or buffer zones where animals and humans converge in the absence of other such nodes of congregation and overcome occasional food scarcities and develop in the mean time innovative strategies to cope with disasters. These regions are also characterized by high plant and animal diversity providing the opportunity for selecting cultigens.

These factors seem to have contributed in the rise of domestication of plants and animals in the region of western India especially southeast Rajasthan which provided all the necessary factors leading to the convergence of plants, animals and humans around a source of water which was also rich in plant and animal diversity providing opportunities for selecting cultigens. The evidence in this respect is best documented at the site of Bagor in the Mewar region of Rajasthan (Shinde et al., 2004).

The Mesolithic site of Bagor (74 23'E & 25 25'N) located on the left bank of River Kothari a tributary of the Banas River lies on a large and a prominent sand dune locally known as Mahasati about 1 km east of the modern village. The site of Bagor also lies in the centre of the Mewar Plains in the shadow of the Aravalli Hills. The plain has an undulating rocky surface about 500 m above sea level

with a gentle slope to the northeast. Much of it is covered by open woodland of khejri (Prosopis spiciger), babul (Acacia arabica), dhak (Butia frondosa) and khajur. It falls in the semi-arid environmental zone located on the fringe of a small chain of mountainous land on the eastern and south-eastern side and an alluvium plain to the north and west of the site. This area is dotted with stabilized and un-stabilised sand dunes and the Mesolithic people had selected these stabilized sand dunes for their settlements. There are a couple of other determining factors, which might also have been considered by the Mesolithic people at Bagor. The site is located on the junction of arable and pastureland providing an ideal location for a community practicing incipient agriculture and pastoral livelihood. It seems that the area provided the Mesolithic population with the wild cultigens of the cultivable grass, which they collected and utilized for their food requirements and slowly observed the seasonal changes and innovated the process of domesticating these wild cultigens and settled in the region as permanent communities with incipient cultivation and herding besides some amount of food collection. The other side of the riverbank has a number of rocky outcrops with a thin cover of coarse red soil ideal for the growth of pasture and even today is one of the important sources of pasture in this region. It is believed that the newly evolving pastoralists and agriculturist Mesolithic community at Bagor had started domesticating sheep-goat and cattle and thus would have required ample pastureland to be located near the habitation area.

Another important attraction for the Mesolithic people might have been the availability of suitable raw material required for manufacturing tools and equipments required in their daily life at the site. Quartz, the primary raw material used for their tools is available on the opposite bank of the river from the ancient site in the form of rocky outcrops that contain chunks and nodules of it. The raw material for the chert tools is not locally present and may have been acquired by the people from a source 70 km to the west near the

place of Nathadwara.

The site is spread over an area of 200 m east-west and 150 m north-south and rises to a height of 6 m above the sea level while the actual cultural deposits are located roughly over an area of 80 m by 80 m. A vertical excavation was undertaken around the intact portion of the mound roughly at the highest point. The stratigraphy that was identified during the 2001-02 excavation more or less matches the stratigraphy of the earlier excavation (Misra, 1973); however, the cultural remains were confined to the upper 70cm deposit. The earlier excavation had revealed the presence of Mesolithic, Chalcolithic and Early Historic sequence (Misra, 1973) while the recent excavations brought to light the remains of only the Mesolithic period, which has been subdivided into two phases- Aceramic and Ceramic (Shinde et al. 2004).

Phase A- Aceramic Mesolithic:

The lower 25 cm of the habitational Layer 3 constitutes the phase of Mesolithic with quartz tools, debitage and bone fragments devoid of ceramics. This phase represents the earliest structure found at the site. It is difficult to discern the shape of the dwelling but considering the stone alignment it appears to be circular in shape. No proper well-made floor levels are associated with the structure, but it is represented by a hard and compact surface intentionally made in that form. One post-hole was noticed near the southwest corner of the stone alignment indicating the presence of a superstructure supported on wooden posts. The inner portion of the structure was rammed hard and smoothened and there appears to be a stone border along the periphery, possibly to prevent rainwater from entering the structure. These people seem to have used small flat stones available in the vicinity to suit their various purposes. The stones may have been used for supporting the posts as a number of stones were found near the post-hole. On the surface of the floor was found a large amount of debitage with some tools and charred

fragments of animal bones, found lying flat on the surface.

Another similar structure contemporary with the earlier was found at the same level though its exact plan cannot be determined but has produced some interesting evidence for manufacturing tools and food processing. The evidence associated with the tool manufacture consists of a considerable large core of quartz with debitage around it at the western end and a small line of stones close to the core. At a distance of 15 cm to its south was found a rubber stone made of fine grain sandstone and to its east at a distance of 25 cm was found another similar heavily used rubber stone, both lying on the floor of the structure and, therefore, could be associated with the activities of the structure. On the surface of the floor were found scattered tools of quartz and relatively well-preserved animal bones. The interior portion of the structure has a relatively high concentration of cultural material as compared to the outer side. The evidence of two structures in the Aceramic Mesolithic phase indicates the primary nature of the site right from the beginning and it is not unlikely that they stayed here for a considerable length of period, but because of lack of relevant evidence these structures cannot be interpreted as permanent structures (Shinde et al., 2004).

Phase B- Ceramic Mesolithic:

The Ceramic Mesolithic phase is confined to layer (2) at the site. The evidence from this phase indicates the continuation of the blade industry and structural activity without any drastic change except the appearance of relatively large number of potsherds. It is, therefore, quite likely that the ceramic production at the site was introduced sometimes in the middle phase of the Mesolithic period. This phase dated by C14 is placed earlier than 4500 BC, and hence its pottery the earliest in this region. It is coarse, red, brittle and both handmade and on the slow turntable, has grass and sand tempering, is ill-fired and in some instances is decorated with deep incised criss-cross patterns. The shapes cannot be identified due to lack of rim sherds in the collection. This is the beginning of the incised decorated

ceramic in this region, which is different from the known Chalcolithic ceramics of the region. The Chalcolithic ceramic decorated with incised patterns appears to have been derived from this. Similar pottery has been reported from the Mesolithic phase in the Belan Valley and these needs to be studied for comparative analysis.

Two structural phases have been identified in the Ceramic Mesolithic phase. The first phase is represented by a patch of well-rammed hard floor, but unlike the previous phase there is no stone alignment on the periphery; however, the nature of the floor is same as the previous structural phase and the average thickness of the floor is 15-20 cm. This structure appears to be a domestic cum manufacturing unit as is clear from the contents. The evidence of manufacture of stone tools consists of a couple of fragments of cores, quartz raw material, debitage and finished tools scattered all over the floor area. The evidence for dwelling consists of relatively high concentration of animal bones. The distribution of pottery fragments is even but with slightly higher concentration on the northern side. The floor of the structure appears to be extending on both southern and northern sides excavated over an area of 2.5 m by 2 m. The last structural phase of this Mesolithic level is represented by only a well-rammed floor level with even distribution of pottery and bones on its surface excavated at the depth of 33 cm below the surface.

The excavation has produced large amount of finished and unfinished tools in both the phases, indicating local production. The tool industry at Bagor and Gilund are truly microlithic in nature and geometric in shape with mass production of micro blades and bladelets and their conversion into various tool forms including rhomboids, lunates, crescents, points, arrowheads, etc.

The presence of food processing equipments suggests to the presence of a number of species of wild and domesticated fauna and some evidence have also been produced during the course of excavation and further investigations are going on to identify the

species of both. A large number of animal bones have been found insitu on the working and living surfaces identified during the excavations and these include cattle, sheep-goat, variety of deer and other wild species.

The Aceramic phase has been dated to 5680 BC and the beginning of ceramic phase is dated to 4490 BC by AMS method. The evidence of flimsy structures, coarse pottery, few food processing equipment and the tools suggests that the Mesolithic people had a semi-sedentary life, where they occupied the site for a considerably lengthy period but probably moved to another place for a certain period in their annual cycle. Results of the analysis of botanical remains collected from the site are awaited

Early Chalcolithic

The early farming communities of the Mewar (Chalcolithic culture) flourished in the ecological unit that is characterised by environmental uniformity that includes fertile black cotton soil and semi-arid climate. Culturally the various Chalcolithic phases found over this large landscape also display certain uniformity. These include painted, wheel-made ceramic traditions, a specialised blade/flake industry, restricted use of copper and subsistence based on farming, stock-raising, pastoral and limited hunting. They constructed either rectangular or round mud houses. In the absence of diagnostic ceramics and chronological control, it becomes near impossible to distinguish the locus of any of these cultures across the entire region.

One of the reasons cited for the origins of agriculture in this region is the presence of fertile Black Cotton Soils. The distribution of the Chalcolithic settlements in this region clearly demonstrates that the major concentration was in the proximity to black cotton soils. Kosambi (1963) had raised doubts about the characteristic features and potentiality of the black cotton soil. He had stated that the black cotton soil found in central India and the Deccan is sticky and hard and can be ploughed effectively only with the help of iron

implements. It seems that Kosambi failed to take note of the observations made by one British Agriculturist Wallace towards the end of ninetieth century. He was fascinated by the highly water/ moisture retentive qualities of the black cotton soil. He had stated that the black cotton soil ploughs itself. Wallace (1888) had observed that the soil develops deep and wide cracks in the summer and swells due to water in the rainy season. Because of the process of contraction in the summer and inflation in the rainy season, the soil becomes quite loose and even wooden Dutch hoes are sufficient to plough it. Considering Wallace's observation, it can safely be presumed that the Chalcolithic people fully exploited this fertile soil, which is spread all over the peninsular India (Shinde, 1987).

As regards the origins of the village life in this region, no sufficient and convincing archaeological evidence has come forth. So far, it was firmly believed that the Harappans in Gujarat played important role in the origin and development of the Chalcolithic phase in Western India, including central India and the Deccan (Shinde 1989). This hypothesis was propounded based on the evidence of sudden induction of advanced technologies of pottery, copper and bead manufacture at a number of sites in these regions. It was thought that the Harappans, who had mastered the skill and were using these technologies, supplied them to the early farmers when they established contacts.

However, the recent archaeological evidence from Balathal in Mewar region of Rajasthan suggests that the village life emerged much before the development of the Mature Harappan phase around 2500 B.C. It is obviously, therefore, clear that the Harappans did not play significant role in the origin of the Chalcolithic culture in central India. The beginning of the settled life in this region now goes back to the early part of the third millennium B.C. as the radiocarbon dates from the site of Balathal would indicate (Shinde, 2000). The Chalcolithic phase in the Mewar was contemporary with the Pre/Early Harappan culture of western Rajasthan and the

Saurashtra.

A considerable thick deposit at the base of the settlement (Cultural Phase A) at Balathal (around 1 metre thick) has produced the evidence of the origin of the village life and a gradual development in the material culture in the ascending order. The evidence in respect to the origin and development of village life comes from a limited area excavated at Balathal. The people, who established settlement on the bedrock, constructed simple mud and wattle-and-daub structures, either circular or rectangular in shape with well made floor and plastered with cow dung and lime. Domestic hearths, circular or two- armed "U" shaped and elaborate storage facility in the form of cylindrical silos (average dial. and depth 1 m) either lined with grass or plastered with lime have been found. The use of food processing equipments such as heavily worn saddle querns, mullers and rubber stones of locally available granite was common from the beginning of the settlement. This evidence is significant and suggests that right from the beginning agriculture played an important role in their subsistence (Shinde, 2000).

The first settlers at Balathal introduced earthen pots and some of the characteristic Chalcolithic wares such as thick and thin Red ware, Black-and-Red ware, etc. produced right from the beginning. However, the technology introduced by them was incipient (handmade) and used inferior quality of raw material and firing technique. Most of the pots are coarse, thick in section, inadequately fired and handmade. Shapes such as wide-mouthed deep carinated bowls, small narrow-mouthed jars and storage jars with beaded rim, the fossil types of the Chalcolithic phase in this region, are present right from the beginning. The pioneering settlers of Mewar also introduced the Reserve-slipped ware, earlier thought to be the handiwork of the Harappans. Since the earliest known occurrence of this ware in India is at Balathal, it may be inferred that the Harappans later borrowed the technique of its production developed here when they established a close contact with the Chalcolithic

farmers of Mewar around 2400 BC. The evidence of the origin of the Chalcolithic ceramic tradition is confined to the central and western parts of the settlement at Balathal.

Discovery of a few copper fragments, beads of steatite and semi-precious stones such as carnelian and agate is the testimony to the introduction of copper melting, tool and bead manufacture technologies right from the beginning of the settlement. However, their frequency is very small. The first farmers of this region domesticated animals such as cattle, buffalo, sheep and goats. Unfortunately, it was not possible to recover botanical remains from the lowermost levels at Balathal and therefore it is not possible to make any inference regarding the agricultural activities of those people. It appears that the origin took place at a few sites only and subsequently, after they attained prosperity and their population increased, they spread almost all over the Mewar region and beyond in the Chambal valley in central India.

Mature Chalcolithic

The excavations at Balathal have demonstrated a gradual development and prosperity in the material culture of the Chalcolithic people from 3000 BC and by 2400 BC there was a drastic change in the life-style of the people. The structural remains excavated in the section, clearly demonstrate gradual change in the shape from circular to rectangular, increase in size and density. At least four different floor levels have been identified in the section of stratigraphy between the Early and Mature Chalcolithic levels. This is a good evidence of a gradual change in architectural evidence. The coarse and handmade pottery found in the lower level, gradually transformed into a fine, wheel made and beautiful in the Mature phase. The material prosperity is visible in the quality and quantity of goods made from local as well as imported materials. There is also increase in the imported goods in this phase.

Ceramic Assemblages

Ceramics is the most common artefact found amongst the sedentary agriculturist and pastoralist communities typical of the Chalcolithic period and various studies have been carried out but mostly for typological categorisation in reports and articles. In the recent years archaeologists have begun trying to relate ceramics with social archaeology in order to better understand cultures and their interactions in order to reveal the life of these ancient people who have left us nothing but their broken pottery, structures and tools in the form of a three-dimensional puzzle.

General Description

The Chalcolithic pottery at Gilund is very similar to the Ahar assemblage, with a predominance of Black-and-Red Ware with white painting, Red Ware and Grey Ware though the fabric seen at the site is coarser than the other Ahar sites even in the mature phase. The majority of the pottery at Gilund has not been well fired and has a grey core and it does not generally have the metallic ring that is a feature of the neighbouring Harappan Civilization. Rims were often luted to the body and the lower body portions of larger vessels rusticated. Hand made pottery is absent and the majority is wheel made or occasionally moulded though a few handmade sherds are present in the lower levels. Slip and decorations including paintings are present and were usually done on the rim, neck and shoulder portions of the vessel. The paintings, slip and burnishing were always pre-firing a characteristic feature of the Ahar Culture. Painting is done mostly in white and occasionally in red or black and decoration types include; appliqué, incised, ridged and rope impressions. Shapes and sizes are diverse ranging from miniature to large pots and basins and both deluxe and utilitarian wares are present throughout the assemblage. An interesting observation made at the site is that on the basis of the complete pots recovered at Gilund it can be stated that the Rusticated Ware (Sankalia, et al 1969) reported from the

site of Ahar does not appear to exist here, as rustication is restricted to the lower portions of globular pots with utilitarian purposes.

Ceramics have always been divided into fine and coarse wares based on the degree of purity of clay, surface treatment, nature of firing, vessel forms and decoration. Fine pottery is made of refined well-levigated clay, has a thin and highly burnished slip, and is baked at a very high temperature above 700 degrees. Because of these features, it is sturdy, has a reddish core, produces a metallic sound, looks attractive and therefore constitutes deluxe pottery. The common vessel types include dish, globular pot and bowl with or without a stand, in varying sizes. The presence of such high quality pottery suggests the presence of an elite section within the society. The coarse variety is made of unrefined clay, is poorly fired, has a grey or black core and is mainly decorated with incised and appliqué designs. The vessel forms in this variety mainly comprise large globular pots of various sizes probably used for storage and cooking and also for other purposes by the masses.

The Ahar culture is characterised by three basic pottery types Red Ware, Black-and-Red Ware and Grey Ware and these can be further sub-divided into those with fine fabric like Thin Red Ware, Black-and-Red painted in white, Tan Ware and Reserve-Slipped Ware and coarse fabric types such as the Thick Bright-Slipped Red Ware and Grey Ware, which are also common to the site of Gilund and seems to be manufactured at the site itself. Interestingly a close study of the pottery at Gilund has indicated that Black-and-Red Ware also constituted a major part of the coarse ware as against the earlier belief that it formed the bulk of deluxe pottery or tableware. The various types of wares found at the site of Gilund are discussed below.

Black-and-Red Ware (B&RW): B&RW is appropriately named as the interior and the shoulder portion of the outer surface of the vessel is black while the rest of the exterior surface is red or plum

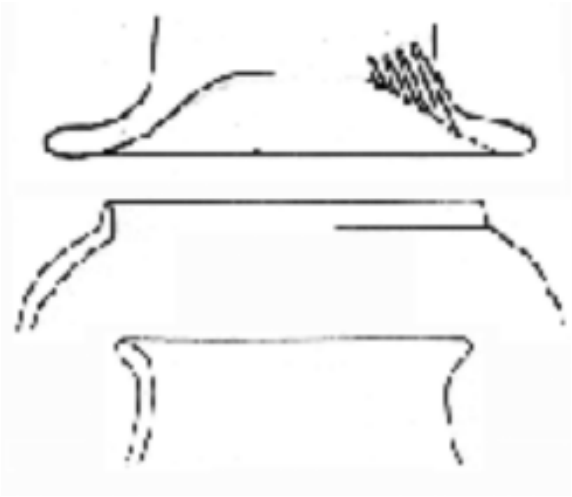
red though occasionally it tends to be brownish red, tan or chocolate and this effect is believed to have been achieved by the application of the inverted firing technique. Both surfaces were treated with a slip and burnished and the decorations are painted in white pigment, either on the interior or exterior of the pot, possibly pre-firing and in some cases the paint tends to peal off leaving only a faded image of the design. The motifs include groups of straight or wavy lines, spirals, dots, hatched diamonds, concentric circles and chevrons filled with dots and circles (Sankalia et al., 1969:88-98). The shapes in this ware mostly comprise wide-mouthed, convex-sided bowls of varying sizes.

Excavations at the site of Gilund has revealed some new features of the B&RW as the site has produced not only small tableware such as bowls and dishes but also many large and medium size pots of coarse and medium coarse fabric and appears to be not only a deluxe ware but also a utilitarian ware which is not so at the site of Balathal or Ahar. The fabric is coarse due to the use of tempering material like tiny grains of stone and sand that makes the pottery gritty and brittle. B&RW at the site of Gilund is representative of typical Ahar Culture B&RW and can be studied under four different varieties: coarse and thick, coarse and thin, fine and thick and fine and thin. The thicker varieties typically belong to large vessels like globular pots with wide or narrow mouth, jar/pots and even basins with grooved rims and thin sections, while the thinner varieties are generally medium to small vessels like bowls such as convex sided deep, shallow bowls, averted rim carinated bowls, featureless convex bowls, globular bowls (seen in the mature phase) basins and small globular pots. As at Ahar where B&RW is even in the washed category, at Gilund two sherds have a wash like treatment instead of the thick slip that helped hide the coarseness of the fabric. The decorative treatment in case of large vessels used for storage was similar to the Coarse Red Ware pottery where the slip and burnishing was restricted to the shoulder and even incised decorations

were used. Very few large and coarse pots seem to be painted in white a feature restricted to smaller vessels only.

The pre-fortification levels at the site have not yet been excavated sufficiently to reveal the ceramic assemblage, but the middle levels at the site indicate that B&RW was both fine and coarse and large and small vessels were made but were fewer in number than the Grey or Red Wares. In this phase the pottery is less coarse especially when compared to the sites late phase where it becomes coarse with a large amount of tempering including large chunks and dust of mica. Interestingly, in the Last phase the fine variety has been found from one particular area only, the large storage structure on GLD-2, and it can be presumed that this area played an important role in the late phase.

Burnished Black Ware. This ware was encountered in the lower levels of Phase B at Gilund and is uncommon though some sherds were found at Ahar (Sankalia et al 1969). This pottery has fine and coarse varieties with little or no tempering, has a deep black colour core as well as surface and is wheel made. The surface is black slipped and highly burnished on its entire exterior surface and rim portions. Some of the sherds had white painted decorations done prior to firing on the shoulder portions. Designs included patterns made up of multiple dots, hatched diamonds and chevrons in white paint that is still present and has not peeled off. As very few sherds have been located, the shapes present are still to be determine but some interesting shapes include an averted rim, straight elongated neck globular small pot (a similar shape has been found in very fine Thin Red Ware), vessels on stands like the bowl on a corrugated elongated stand and other shapes on broad bases. The pottery context is not yet identifiable but it can be presumed to be either a deluxe ware or a ware meant for special occasions such as rituals. A single sherd of this ware has been found in the late phase from the area around the storage structure again pointing towards its significant position.

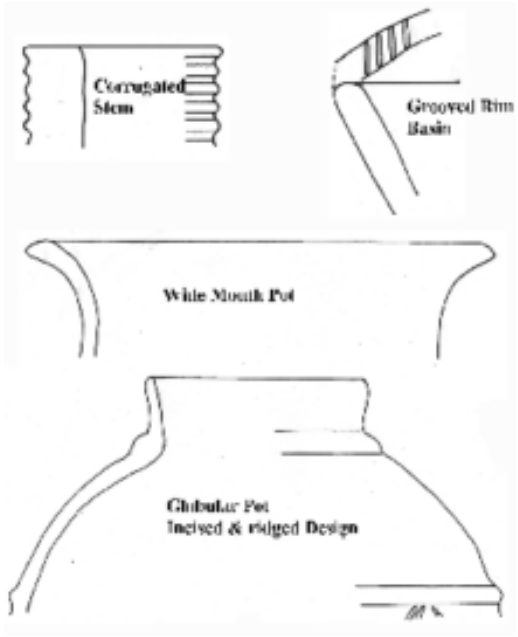


Burnished Black Ware, Gilund

Red Wares. This is the most common ware of the Chalcolithic Ahar Culture and have been categorised into sub-varieties based on the fabric and the surface treatment and is also the most common ware at Gilund. The Red Wares present include Coarse Red, Thin Red, Tan, Chocolate Slipped and Polychrome Wares. The Coarse Red Ware at these sites is similar to Coarse Grey Ware in fabric, surface treatment and shapes and is for utilitarian purposes like storage and cooking. Of the varieties of Red Ware, Coarse Red is very common and Thin Red while not common is substantial in amount throughout. The other three varieties are rare and in some cases may have been imported from other sites.

1) Coarse Red Ware. Coarse Red Ware in the Chalcolithic is typically represented by thick bright-slipped Red Ware that is locally produced, primarily used for storage and cooking and in most cases is similar at most sites except for a few shapes. The wares as described earlier are made of coarse clay, poorly fired, mainly decorated with incised and appliqué designs. The coarse Red ware is predominated by large narrow-mouthed and wide-mouthed globular

jars, small handis, storage jars, basins, other utilitarian shapes and dishes-on-stand treated with a highly burnished bright red slip on the upper part or the rim and shoulder of the exterior surface. The body or middle part of the external surface is decorated with two or more parallel raised bands/ridges and a variety of incised designs like multiple wavy lines, chevrons, herringbone patterns, criss-crosses, loops, triangular incisions punctured and appliqué patterns. At the Ahar sites in Coarse Red ware, the decoration is either on the shoulder or upper part of the vessel with the rim, neck and base left plain.



Coarse Red Ware, Ahar Culture

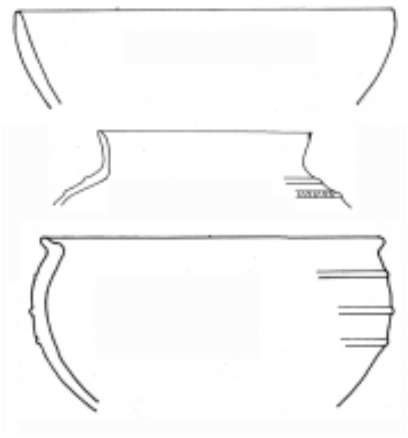
At Gilund as at the other sites, Coarse Red Ware is very common, utilitarian in nature and used for storage and cooking purposes. It is present throughout and is represented by a wide range of pottery sizes from small to large. This pottery is either wheel made or moulded. The fabric is gritty and coarse to medium in grain

size with a lot of tempering material such as granular sand, chopped grass and mica flakes. In the pre-fortification phase of the Early Chalcolithic at Gilund the fabric is coarse and the pottery is wheel made suggesting that it is later than the earliest phase at Balathal (Phase A) and can be ascribed to the late Phase of the Early Chalcolithic. Here the core tends to be blackish as the pottery is often ill fired and the slip varies from orange to dark red and is thickly applied mostly on the exterior surface, which is burnished. The interior is either red with no slip or greyish in colour depending on the firing conditions. The Middle Phase at Gilund sees a well-fired Coarse Red Ware assemblage with a finer fabric and has been described as 'medium Coarse Red Ware' not seen at any other level. By the Late Phase the ware has again become much coarser and tempering includes chunks of mica, stone and chopped grass in large quantities. Like in Coarse Grey Ware, the area above and including the shoulder portions is slipped and may also be decorated and burnished whereas the lower portions are plain or rusticated. Decorations were made in appliqué, incised, ridged or rope impressed styles. Appliqué designs included spirals and circles similar to those found at the site of Ojiyana. Incised designs include among others chequered, combed, hatched diamonds and diagonal or linear lines. Ridged designs were invariably parallel linear lines on the neck and shoulder portions while rope impressed designs were both true impressions or made to look like them by incising ridges. The decorations are finer and deeper with a careful meticulous deliberation in the middle or Mature Phase while in the late phase there appears to be a careless frenzy in their execution. Paintings are rare in this variety and the painted versions of Coarse Red have been identified as the imitations or local versions of Malwa Ware, which is present in the Late Chalcolithic Phase at the site. The majority of pottery shapes in this ware are globular pots with narrow or wide mouths, basins, dishes, lids, pots with handles and very large storage jars.

2) Polychrome Ware. Polychrome Ware as found at Gilund for all practical purposes is a Coarse Red Ware of medium coarse fabric but is classified separately because of its distinctive surface treatment. This surface treatment consists of a combination of white, black and red coloured painted decorations mostly of single or interlaced diamonds. The shapes are difficult to identify as only a few body sherds have been found from the middle and lower levels at the site. A similar ware was found at the site of Ahar (Sankalia et al., 1969), but there too the sherds were limited and shapes unidentifiable.

3) Thin Red Ware. This ware has a thin, highly burnished plum red or occasionally brownish red, tan or chocolate slip on the external surface while the inner surface is without any slip or wash and is generally greyish or tan in colour. The shapes include convex-sided deep bowls of various sizes and occasionally small globular vessels with averted rim, narrow mouth and high neck. They are decorated with a single row of punctured or incised triangles, and occasionally by single or double ridges in low relief on the shoulder. The rim in some cases was made separately and luted to the body. At the site of Gilund, Thin Red Ware has both fine and coarse varieties. The finer variety is uncommon and is present mostly in Phase B, tends to decline by the end of this phase and is completely absent in the Late Chalcolithic Phase. The fabric is very fine with only fine sand as the tempering material and it is both well fired and thin bodied. The interior surface is generally red and neither burnished nor slipped, while the exterior was slipped in a bright red slip with a highly burnished surface decorated with single or double parallel ridges on the shoulder, chequered incised decorations or punctured wedge shapes in a line. Shapes include convex sided deep bowls, wide mouth globular bowls, flasks, small pots, bowls on flared hollow stands, flared rim jars and averted rim elongated straight neck globular pots. A few fragments of nail headed rims were also located. Often the rim portions were separately made on the fast wheel and then luted to the body. Made on a fast wheel, the fine variety was clearly

meant to be a deluxe ware. The coarser variety of this ware had a fabric similar to the thin coarse variety of Black-and-Red Ware with granular kankar used as temper. The pottery is ill-fired with a greyish core and the interior is often grey in colour with no surface treatment and the vessels are thin to medium thick in section. The outer surface is slipped and decorated in a manner similar to the finer variety; however, the outer surface often has grey blotches due to poor firing technique and is decorated with white paintings similar to Black-and-Red Ware in a number of cases. The shapes in the coarse variety consisted of narrow or wide mouth pots and small to large sized globular pots with averted rims. The pottery appears to be a utilitarian ware used for cooking and serving in the Late Chalcolithic phase and is not common in the mature phase.



Thin Red Ware, Ahar Cultur3

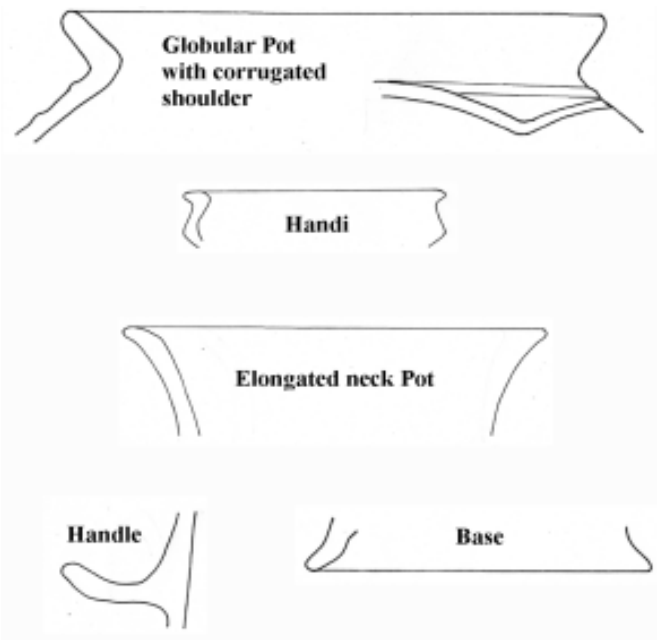
An interesting feature observed in Phase B at Gilund (Mature Chalcolithic), is the presence of a few sherds of the Thin Red ware showing combination of black and red colour on the outer slipped surface. The rim along with some portion of the neck is black while rest of the pot is red very much like the Black-and-Red ware except that the fabric and the technique of getting the twin colour effect seems different as the interior of the pot is red and unslipped unlike the Black-and-Red ware. The pottery is a fine ware typically thin to

medium in section, well fired with a thick slip, highly burnished and without painted decorations though in some cases it has ridged and punctured designs on the shoulder portion. The red colour of this ware ranges from shades of deep red to light orange to tan and chocolate due to variation in the oxidation available during firing and the black colour ranges between black to grey to purple or blue. The shapes include averted rim globular bowls and featureless globular bowls, averted rim, straight elongated neck globular small pot (similar shape has been found in Burnished Black Ware also). This ware completely disappears in the late Chalcolithic phase and has not been reported from any other Chalcolithic site. The technique used for manufacturing this ware could be based on double firing but nothing can be said with surety. In the later sections of the text this ware is identified as Bichrome ware

4) Tan & Chocolate Wares. This ware is of medium thickness, with a thin light orange/tan slip, which in some cases varies to a thick brown or chocolate colour similar to Kayatha Ware. The principal shapes in this ware include the dish, dish-on-stand and bowl-on-stand with considerable variations in size; large convex-sided bowls with thick rims; globular pots with either beaded or flat projecting rims and large basins with ledges on the neck. The prominent ledges may have been used to hold the vessels while the low ledges may have been purely decorative. In respect to fabric and shape this ware is identical to the sturdy Red Ware of the Gujarat Harappans and the Tan Ware of Gujarat though unlike the latter it lacks painted decorations.

Unlike Ahar and Balathal where this ware is found in large quantities, at Gilund Tan Ware is rare and Chocolate Ware has not yet been found. Here the Tan Ware has a fine to medium coarse fabric, is well fired, has a medium thick body section and is undecorated. Initially, only a few body fragments were identified; however, in the last season two complete shapes a beaded rim globular pot and a featureless concave carinated shallow bowl have been found.

Grey Ware. This ware has two varieties a burnished and a plain while the fabric varies from coarse to fine. At most Chalcolithic site Grey Ware forms a part of the coarse utilitarian pottery primarily used for storage and cooking. In the burnished variety the upper part of the exterior is slipped and highly burnished while the plain variety bears a slip but has no burnishing. The lower part of the outer surface of vessels in both varieties are roughened by the application of sand mixed with clay and is often covered with soot, showing that the vessels were used for cooking. The middle portion on the external surface is often decorated with incised, punctured, cut and appliqué designs similar to those of the burnished Red Ware. The most common vessel forms in both the varieties are wide-mouth pots, small handis, lids with or without handles and handmade tawas used for making rotis or unleavened bread.



Coarse Grey Ware, Ahar Culture

At Gilund, Grey Ware has either a coarse fabric, produced on a fast wheel or moulded with well levigated clay mixed with fine sand, grass and sometimes tiny mica particles or a finer fabric like that of the fine Thin Slipped Red Ware common in the Mature Chalcolithic Phase. In the case of the coarse ware while the fabric is not the finest and the pots are mostly for utilitarian purpose such as storage and cooking the pottery is beautifully made as far as the surface treatment and decorative devices are concerned. Sankalia et al. (1969) very justifiably stated, "the Ahar potter, in fact, has demonstrated how a pottery even utilitarian like storage jars can be made beautiful without painting. Also remarkable is his sense, proportion and self-restraint". The coarse grey ware as the nomenclature suggests is medium (Mature Phase only a few sherds) to coarse (Mature and Late phase) in fabric with medium to thick section and blackish or grey in colour due to poor firing conditions and minimum oxidation. In both Coarse Red and Grey Wares large storage and cooking pots were slipped and burnished only up to the shoulder and then decorated by ridging, appliqué, cut and incised designs used singly or in combination on the shoulder where as the body was bare of any slip, burnish or other decoration based on the large sherds and complete pots found during the excavation showing all these features on the same pot. According to Sankalia (Sankalia et al., 1969:88) motifs like impressed circles, concentric arcs, combed designs and sharp ridges with cut decorations are absent on the grey ware at Ahar but at Gilund all these are seen very carefully executed. At Ahar, the decorations are on the unburnished surface (Sankalia et al., 1969:125-28) whereas at Gilund they are on the burnished and unburnished surface. In the case of large globular pots used for cooking, elongated jars and storage vessels which were buried below the surface level, the body and the base was not only thin and left severely plain but was even rusticated by applying a thin coat of fine sand. Similar treatment of the base is noticed on cooking pots, and it is a common practice today in the region to

apply clay and cow-dung on the rusticated surface to preserve the beauty of the pot and make it last longer. Some of the important shapes in this type are; globular pots with averted rims, carinated elongated jars with averted or out-turn rims and large and small basins with thick lugged beaded rims, which served the purpose of handles. Besides these more common types, there are bowl-on-stand with thick stem, dish-on-stand and deep basins with handles and conical lids. An interesting shape, which seems to have a specific purpose, was the small handi with red band on the rim, neck, shoulder and the carination. These handis are few in number and could have been used for religious purposes.

Recent ethnographic work carried out in the region shows that it was the firing technique of oxygen-reduction or creating a smoky condition within the same kiln, which resulted in the grey colour with blotches of red, on the exterior and interior rather than the use of any slip other than red ochre. Even today potters make exactly the same ware using the ancient technique to produce wide mouth globular pots for storing and carrying water. A detailed study done on the decoration techniques at Gilund shows that Grey Ware vessels had superficial decorations only on the slip, which did not penetrate through to the clay and often is seen to disappear with the fall of the slip and this is especially true for combed decorations. This decoration is very common in the Mature Phase at the side and continues into the Late Chalcolithic where it is less meticulous and carelessly made. The superficial combed designs perhaps can be traced back to the Sothi Culture (c. 3000-2500 BC), which may have influenced the Kayatha combed ware (Wakankar 1967) as the time factor is not as far apart as generally assumed and further study may through light on this problem.

An interesting feature at Gilund is the presence of a few thin Grey Ware sherds in the middle levels and possible in the lower levels but this need more research. The fabric of this variety is fine without any gritty tempering, the sherds and the pots are thin to

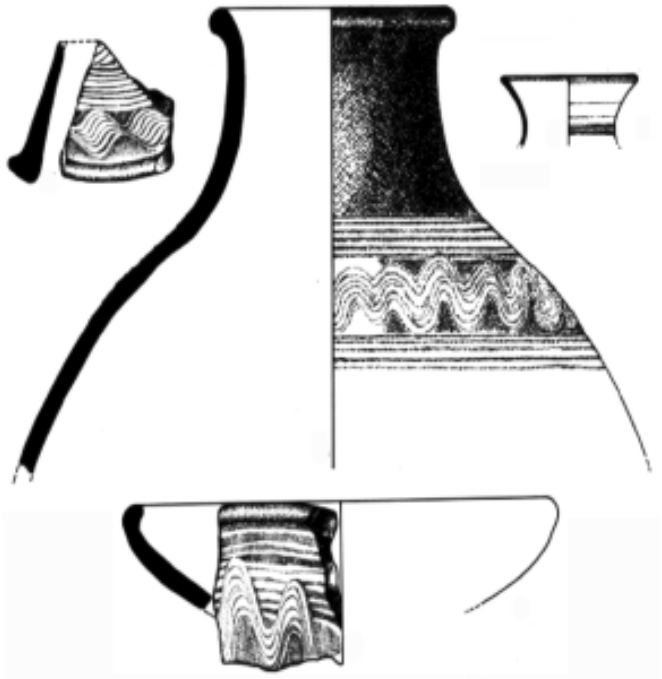
medium in section similar to the Thin Slipped Red Ware where the pots are fully slipped and highly burnished on the exterior. Generally this ware is without any decoration and the clay has fine mica particles which gives the vessels a fine sheen; however, in some cases thin ridges on the shoulder portion were present and two sherds were painted in white with horizontal bands and dots like B&RW. The main vessel types present are the convex carinated pot and the averted rim convex bowl. Nothing much can be said about the origin or context of this pottery except that it could have been used as a deluxe ware and interestingly it is restricted to the eastern face of GLD 2, which also yielded the Thin Slipped Red Ware of the fine variety.

Buff and Cream Slipped Wares. At Gilund, Buff ware as mentioned at the Ahar report is completely absent though we do have two sherds of Harappan Buff Ware with paintings in black, from the middle levels of GLD-1; however, the sherds are tiny and shapes cannot be identified. Also in the Late phase we have three Buff ware sherds with a buff slip and one painted in black resembling the ware from the Malwa region with medium fabric and could have been an import from the area as a result of trade transactions.

Reserve Slip Ware. This ware was first recovered in the Ahar Culture at the lowest levels of Balathal Phase A, and now the lower levels of Gilund are also producing it though in limited quantities. The earliest sherds are of the red on red variety while the typical Harappan variety is grey on cream which was found at Balathal in the mature phase but is absent at Gilund.

The coarse Red Reserve Slip Ware is reddish in colour, produced from fine clay to which, fine sand was added as a tempering material is fired uniformly to a high temperature and therefore the core is brick-red in colour. It was first treated with a red wash over which a thick, dark red slip was applied. When the slip was wet various patterns were executed by scooping out the second slip possibly by a comb-like instrument. The patterns are usually found

in sets or groups. Though we do not have any rim sherds from Gilund though at Balathal a shallow dish with a round, slightly incurved rim, cylindrical hollow stem and stand with flared sides and short, out-turned ring is found in this ware. The decoration, mainly on the inner surface, consists of closely spaced horizontal lines and sets of zigzag lines (Misra et al., 1995). It is believed that the Reserve slip ware was originally made at Ahar culture sites and from their spread to other Harappans. In sharp contrast at Gilund however only two sherds have been found and they are both from the pre-fortification levels and suggest interesting assumptions on the date of the early levels but further excavations are required before any fixed datum for the origin of Ahar culture at Gilund can be made.



Coarse Red Reserve Slip Ware, Ahar Culture

Other Wares. In addition to the typical Ahar pottery available at the sites, we have evidence of foreign ceramic types at all levels.

For example in the Early Phase there is: Pre-Harappan/Sothi type Combed Ware; Chalcolithic wares from Kayatha such as Cream Slipped Ware and Kayatha red on Red Ware and Gujarat Pre-Harappan types from North Gujarat like the Gritty Red Ware. In the Mature Phase there is: Harappan Buff Ware, sturdy Red Ware in shapes like the constricted neck globular pots/jars (Gilund). In the Late Phase at Gilund we have the Malwa Ware in the Late Mature and Late Phases and Southern Neolithic Grey Ware especially the channel spouted bowl, which was copied in the Thin Slipped Red Ware of the coarse variety. The site of Gilund like Navdatoli has produced evidence of cup-on-stand, channel-spouted cups and pedestalled goblets the relationship of which can be traced back to Harappan vessels on stand that seem to have continued into later phases. The site also seems to have made efforts to produce Malwa Ware types locally in the Thin Slipped Red Ware of the coarse variety.

All these various ceramic types from the various Chalcolithic cultures and other artefacts indicate a busy trade network, which surely contributed to the development and evolution of these cultures in various parts of western and southern India. This network could have extended throughout the country but we need definite and conclusive data and a more collaborative type work among scholars to understand these intertwining interactions among cultures that are clearly not isolated and underdeveloped communities.

Architecture

There is a marked change in the size of structures, materials and techniques used in the construction of structures from the beginning of Mature phase. Almost complete layout of a settlement has been uncovered in the course of seven seasons (1994-99) work at Balathal. Based on works carried out at other sites it was

hypothesised that the Chalcolithic people constructed rectangular, squarish or circular mud structures with low mud wall and having wattle and daub construction. Large-scale horizontal excavations carried out at Balathal (Misra et al. 1995 and 1997) in this region, have thrown light on various aspects, including socio-economic organisations, of the Chalcolithic cultures of central India (Sinha 1998).

The architecture of this phase is marked by the extensive use of semi-dressed and undressed stones and mud bricks. Structures of this phase have been extensively exposed and represented by the fortified enclosure, outer fortification and multi-roomed residential complexes at Balathal. They represent economic prosperity and provide evidence of stratified social organisation at the site. These structures are characterised by large and massive walls of stones, mud-bricks and mud. There is evidence of incipient planning of the settlement (see Fig.3). The Fortified Enclosure constructed in the middle level of the settlement is roughly rectangular on plan with its longer axis along the east-west direction. The average thickness of the wall on the top is 4.80 m and gradually broadens to 6.50 m at the base. Inside the structure, at least three very well made floor levels have been exposed suggesting that it was in use for a considerably long period. Since very small portion inside the structure has been exposed, it is difficult to determine its exact function. On the southern side of the settlement, a part of the main street and a number of structures complexes on either side were exposed in the course of excavations. Three structure complexes of stone and mud bricks have been exposed, of which two lie on either side of the main street running in north-south direction. The third complex, close to the southern periphery of the settlement lies in east-west direction and is separated from the Complex No. II by a small lane. The main street is 4.80 m in width, three times wider than the lane (1.60 m). The complex (I) located on the east of the street is the biggest

amongst the three exposed so far. It consists of a number of rooms, eleven of which have been exposed so far. The rooms of varied dimension, rectangular, square or rhomboidal in shape, were meant for purposes such as storage and cooking. The other complex (II), located on the western side of the street, is a hall-like structure, roughly squarish on plan. The most remarkable discovery made in this complex was a closed pottery kiln, rectangular on plan and enclosed by mud or mud-brick walls. Within the kiln were noticed a number of circular clay containers of varied dimensions. One more pottery kiln found at the same place but slightly later in age suggests hereditary succession of the craft. The third complex located near the southern periphery of the mound consists of three structures inside the enclosure wall of mud-bricks over a stone foundation. Traces of outer fortification were survived and exposed on the eastern periphery of the site. The mud-brick wall of the fortification stands on a stone foundation, which broadens towards the base.

This overall development from Early to Mature Chalcolithic is attributed to their establishing close trading contacts with the Harappans of Gujarat around 2500 B.C. as the evidence from Balathal suggests. There is a definite evidence of a close contact between the early farming community of Mewar and the Harappans of Gujarat. The architecture features such as the outer fortification, fortified enclosure in the central part and well laid settlement with multi-roomed complexes on either side of the street and the construction method bear a lot of similarity with the Harappan architecture and technology. The Harappan Citadels were built over mud-brick platforms and their fortification walls broaden towards the base. The Chalcolithic people at Balathal followed the same technique for the construction of fortified enclosure and the outer fortification. These features are completely absent in the earlier phase. The modicum of planning with a street and lane and locating structures on either side of them could have been simply borrowed

from the Harappans as no other contemporary culture in Indian subcontinent had reached to that stage. It will not be far fetched to surmise that because of the contact with the Harappans, the Chalcolithic people of Mewar began to use semi-dressed stone blocks and mud-brick for building purposes and constructed multi-roomed complexes same as that uncovered at the Harappan sites of Kuntasi and Rojdi, both in Rajkot District of Saurashtra (Shinde, 2000).

The amount of artefacts uncovered at Chalcolithic sites in Mewar is quite large and rich in variety. The cultural assemblage is comprised of objects of terracotta, clay, reused pottery, stone (predominantly quartzite) and semi-precious stone, metal, shell, bone, and steatite. Terracotta and clay objects include beads, bangle fragments, containers of various sorts, dabbers, ear studs and spools, figurines, clay sealings, sling balls, jar stoppers, toy pots, votive lamps, and wheels. Antiquities such as hopscotch, game pieces, worked sherds, as well as graffiti on pottery and potter's marks were classified under reused pottery. Stone objects include beads of carnelian and other semi-precious stone, bead polishers, sling balls, vessel fragments, a variety of grinding stones, as well as a vast array of lithics. Metal objects found include bangles, bells, chisels, coins, choppers, agricultural implements, points, arrowheads, nails, and rings. Shell antiquities include bangle fragments, beads, cowries, inlay pieces, and worked shells. A number of worked and polished bones were also uncovered.

Until recently, the consensus among South Asian scholars has always been that the geographical barrier imposed by the Thar Desert and the Aravali mountain range was too great to allow contact between these eastern cultures and the areas to the west. In fact, evidence from excavation has tended to support this view; few artefacts that can be attributed to Harappan and post-Harappan periods have been found to the east of the Aravalis.

Recently, however, the discovery of a large cache of seal impressions with motifs that closely resemble those found in Central Asia and Iran at the site of Gilund in Rajasthan has raised questions about this view of the area to the east of the Aravallis as an isolated backwater. This exceptional find calls for a re-examination of past interpretations of the site, the archaeological complex to which it belongs, and the contacts between cultures in Southern and Central Asia at the end of the third/ beginning of the second millennium B.C.

The discovery of seal impressions at Gilund places the site squarely within an administrative tradition that existed throughout Asia as early as the 5th millennium B.C. The fact that the Gilund seal impressions were discovered in a specially constructed bin in a building that appears to have been used for storage further emphasizes their importance. In many societies where seals were used in administration, broken impressions were kept as a record of a transaction or possibly to prevent the counterfeiting of seals. The presence of what appears to be an elaborate system of administration at Gilund raises important questions about its political organization, its relationship with other Ahar-Banas sites, and its possible interaction with "foreign" lands. Clearly, the political organization at Gilund exceeded that of a simple village economy, and conceivably included ruling elite that controlled the resources that were available to the community.

The Seal Impressions:

The majority of the seal impressions found in Gilund were found in the fourth season (2002-2003) in a bin located a subsidiary room of the structure with the parallel walls (see above for a description of the bin and its surroundings). A second, smaller set of seal impressions was found in a large pit in trench 11, just outside the parallel walls, during the first season of excavation (1999-2000).

The sealings themselves appear to have been used primarily to close storage vessels. Of the sealings with readable backs, most have a double curvature which suggests that they were pressed onto the shoulder of a jar or bowl. Sting or rope impressions are visible on a few of these sealings, while others have visible textile impressions. A second group of sealings with flat backs may have been used to seal boxes or other flat topped containers. The most impressive sealing, however, is a large jar stopper (G.S. 4.060) that was preserved whole and retains the negative impression of the entire mouth of the jar that it sealed.

In general, each sealing was impressed with rectilinear or round stamp seals, often more than once. The large jar stopper, G.S. 4.060, was impressed at least 8 times with a rectangular seal. None of the sealings appear to have been impressed with more than one seal, which may suggest that only one person was responsible for each container.

The sealings were made on clay that ranges in texture from very clean and fine, to coarse with fairly large inclusions. In general, it is not as finely textured and levigated as the clay that is usually used for sealing, especially in contemporary Mesopotamia. Hopefully, future analyses will enable us to determine whether the sealings were made on local or imported clay.

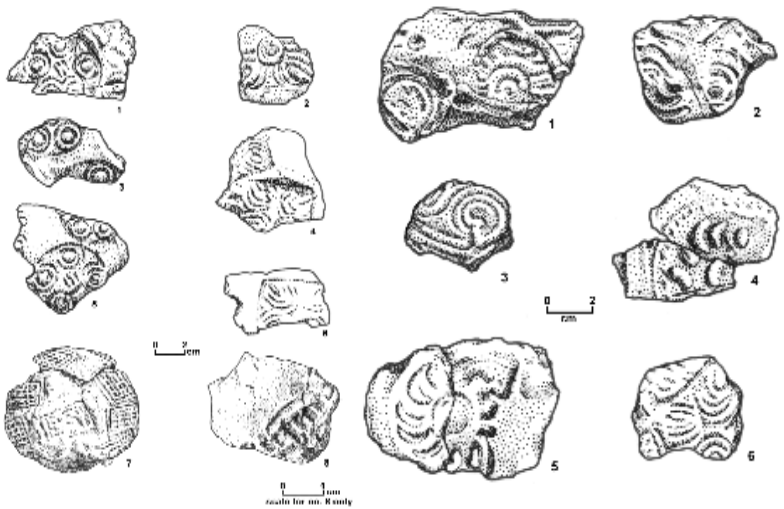
The Seals:

While many of the impression are too badly damaged to allow us to reconstruct the seals that made them, it has been possible to identify and partially reconstruct at least 10 seals that were used on the material found at Gilund. Most of them were stamp seals, both circular and rectilinear in shape. The designs are all geometric and sometimes very complex, but there is no evidence of writing. None has the typical motifs, animal and human figures together with a line

of script that is found on the seals of the Harappan civilization. There are however, parallels with seals and impressions found in post-Urban contexts at sites in the Indus Valley (for example, seals found in the Jukhar levels at Chanhudaro), as well as at other sites throughout Western and Central Asia (from copper/bronze stamp seals found at BMAC sites like Togolok 21 and Gonur Tepe to impressions of seals pressed onto jars found in the cemetery at Shahdad).

The seals that were impressed onto the sealing found at Gilund can be divided into 6 basic types/motifs.

1- Concentric circle- The one seal that is found on the largest number of impressions is a circular seal with five bulls-eyes arranged around a round central element with two raised lines. The best impressions of this seal can be seen on G.S. 4.071, 4.078, 4.079, and 4.081. It is not clear whether the deep impression on G.S. 4.080 is made by the same seal or a second, similar one. A terracotta "ornamental piece" found in the excavations at Ahar (Sankalia 1969:190, n. 9) shows a striking resemblance to the seal that made these impressions. It is circular in shape with a round central element. Six circles appear to have been cut out of the outer border of the piece, leaving a deeply scalloped edge. A raised border that runs along their edges further defines the scalloping and central circles. If this piece were to be pressed onto a lump of wet clay, the resulting impression would be very similar to that of the "concentric circle" seal used on the Gilund sealings. The motif of concentric circles is also found on a number of other partial impressions made by seals other than the one described above. Parallel lines are also common in the Gilund impressions.



2- Flower- At least two separate square seals with a four-petal flower design were used on the sealings from Gilund. The first of these, seen on G.S. 4.089, 4.090 and 4.091, among others, has four petals made by concentric tear-shaped lines and a central, diamond-shaped element created to fill the voids left by the petals. The lines on this seal were fairly delicate. The second flower seal has a round bulls-eye shaped central element and very thick lines. The seal itself, which is seen most clearly in G.S. 4.092 and 4.093, seems to have been larger than the seal used in G.S. 4.089

3- Rectilinear/cross-hatch design: this design is most clearly visible on G.S.4.060. This large jar stopper was impressed multiple times with a rectangular seal about 3.6 x 3.0 cm. in size. The decoration of the seal consists of a cross-hatched rectangle within a simple rectangular frame. Cross-hatch designs are also found on G.S. 4.004 and G.S. 4.020, but it is not possible to tell if they were made by the same seal.

4- Spirals- Double spirals are found on several impressions, including G.S. 4.062 and G.S. 4.063. The impression on G.S.

4.074, although it is faint, consists of two double spirals that mirror each other forming a sort of quadruple spiral. G.S. 4.064 has a single spiral with short lines projecting from the outer ring, creating a pattern similar to that of a seashell. This seal, which may be the same as the one impressed on G.S. 4.070, is also associated with a second pattern that consists of large concentric circles and seems to be a slightly different take on the double spiral motif.

5- Sunburst- At least one seal with a sunburst motif was impressed on the sealings from Gilund. This seal, which was probably round (although the outer edges are not preserved), consists of a circular central element with short curved lines radiating out from it. An outer ring decorated with slanted parallel lines frames this sunburst. Impressions of this seal are found on G.S. 4.067, 4.068 and 4.069.

Teardrop/ Fish- A teardrop or "fish" motif is found on two sets of sealings. The first set was found during the first season in the pit in trench 11. These sealings, 1.005 and 1.006, have an impression of a large, oval or tear-shaped figure with an "eye" made up of concentric circles on one side and possible zigzag patterns defining the upper and lower edges. The second "fish" motif is found on the impression on G.S. 4.061. It also has a teardrop shape that ends in a concentric circle "eye". On this fish, however, curved parallel lines that seem to be continuations of the circles articulate the interior of the teardrop shaped body. In G.S. 4.061 the fish design is part of a larger impression which includes deeply carved parallel elements.

Around 2000 /1900 BC, the mature Chalcolithic and the Harappan Civilization experienced a crisis leading to its gradual decline. Climatic fluctuation is considered one of the factors for the decline. A number of possibilities can be postulated such as drying up of the climate, extensive and repeated flooding combined with

shifting of river channels due to sedimentation and tectonic movements. The deterioration in the climatic conditions resulting in the desiccation of lakes and changes in vegetation in Rajasthan is dated to around 2000 BC. This event has analogues in major parts of Eurasia and thus can be considered in terms of global climate changes. Reconstruction of palaeoclimate in China, Mongolia, Western and Central Europe, reveal similar situation of relative dryness as seen in the Western part of India.

The advent of relative dry phase in Western India around 2000 BC had adverse impact on human cultures. Excavations carried out at Balathal and Gilund in south-eastern part of Rajasthan has shed considerable light on the Late Chalcolithic phase, which was affected by the change in climate. The overall decline in the prosperity and living standard evident in the material culture can possibly be attributed to dry climatic conditions. This has been reflected in their structures, ceramic assemblages and material equipment. The large, spacious and complex structures of the previous phase were replaced by small, carelessly made and haphazardly located mud structures. There is hardly any evidence of the used of mud-bricks in this phase. The evidence from Balathal suggests that there was continuity in the construction method and building material. However, the structures become small in size, either single or double-roomed. The evidence from Gilund indicates construction of small mud structures, either rectangular or squarish in shape. The fine delicately modelled pottery from the mature phase is carelessly made, coarse, ill-fired probably as a necessity without aesthetics. The use of copper seems to have reduced with increasing dependence on stone tools like the early phase as the metal was expensive and not available everywhere but had to be imported from North Rajasthan. Towards the end, the people seem to have adopted a semi-nomad subsistence pattern in a large part of western India, as the presence of circular wattle-and-daub structures would suggest. There is also evidence of movement of the Ahar culture into the Malwa plateau, which provided the people

with water from the perennial rivers like the Chambal and Narmada and fertile land and pasture for their herds. At various sites, there is evidence of assimilation of the Ahar people with the already existing people while at other they established their own identity. However, here too the culture seems to have deteriorated from its proto-Urban status of the mature phase to more rural based towards the end (Sinha, 2003).

Conclusion and Discussion

The Mewar region of Rajasthan is not doubt one of the most fertile regions of the country, adjoining the fertile Chambal basin, the Malwa plateau and North Gujarat region that is rich for pastureland. The Mewar region is surrounded on the west and north by Aravallis, which is rich for minerals and metals. Excavations at sites like Balathal Udaipur District (between 1994-2000), Gilund (between 1999-2005) and to some extent Ojiyana (2001-2003) have contributed immensely to the understanding of cultural processes and long distance contact from 5th to 2nd millennia BC in the Mewar region of Rajasthan. One of the most important contributions of the excavations at Gilund is the discovery of the Mesolithic phase and the cultural transition from hunting-gathering to agriculture in the Mewar region. This is the most significant pioneer research has enable identification of Mewar as another primary zone in the subcontinent for the origins of village life and possibly domestication, the first being in and around Mehrgarh in Baluchistan hills. The favourable climatic conditions, good arable lands, availability of natural resources, trade relations with Harappans and other contemporary Chalcolithic communities in the adjoining region, etc. appear to have been responsible for a sedentary life and cultural development in this region. Excavations at two sites namely Balathal and Gilund have enabled reconstruction of various technologies that were in use between 3700- 1500 BC in the Mewar region of Rajasthan. With the shift to agriculture from hunting-gathering, there was a

change in the structure for the kind of social organization that characterised the earlier egalitarian, band-level hunting-gathering community. Studies carried out on the social-economic aspect by the scholars as Shinde (1991), Dhavalikar et al. (1988), Sinha (1998), etc. have already demonstrated.

The large number of Palaeolithic and Mesolithic sites in southeast Rajasthan testifies to the existence of hunting-gathering communities in the region. The changing environment, population pressure and depleting resources are believed to have forced the Mesolithic hunters to adopt an agrarian lifestyle and settled in a restricted but congenial environment zone that provided better resources. Small settlements with an agro-pastoral economy along with hunting and gathering developed in areas such as Balathal. The beginning was modest, but with increasing prosperity and surplus, various crafts were necessitated and developed including ceramic manufacture, building of permanent structures and copper technology. The need for living space led to the development of new settlements and exchange networks between them (such as between Ahar, Balathal and Gilund) that facilitated the procurement of goods not available locally in exchange for products locally produced. At Balathal and Gilund large silos, storage bin mud platforms and structures identified as possible granaries give us a clear indication of the strong agricultural base in the economy. Dietary bone analysis reveals the predominance of cattle, followed by sheep and goat supplemented by wild animals and fish at the sites. With this shift in subsistence and the development of sedentary settlements, a marked change in social organization occurred as cultural requirements entailed adaptation to economic and ecological environments and needs. Increasing need for co-operation and organization of activities relating to subsistence led to a division of labour, more efficiency and surpluses required administrative mechanisms for storage, allocation and redistribution. Authority also

plays an important role in the administration of pastures, water sources and all other collectively held and produced goods. Surpluses allow more time and the ability to support skilled and specialized crafts not possessed by all members of the society thus enhancing trade and exchange. These socio-economic changes led to the development of a chiefdom type society for restructuring and administering these changes. In addition, there seems to have existed a definite relation between the Harappans of Gujarat and Rajasthan with these Chalcolithic communities. It is argued that the trade with the Harappan was responsible for these communities attaining a status of incipient urbanization in this region (Shinde, 2000; Shinde et al., 2004).

Based on the detailed observation of surrounding ecological conditions and the nature of sites, a hierarchy of settlements has been reconstructed. Settlements varied from small hamlets of 0.8 to 1.6 hectares in area to towns like Ahar and regional centres like Gilund sprawling over an area of over 20 hectares. The site of Gilund appears to have been the regional centre of the Ahar Culture because of its strategic location in the centre of the basin and its size. In addition, many settlements of medium size located in the proximity of fertile arable land have been identified as farming settlements, while settlements like Ahar at the foot of the Aravalli Hills near copper ore deposits probably specialised in copper working.

Extensive and intensive excavations carried out over different parts of the site of Gilund were aimed at some of the basic problems outlined in the section on Aims and Objectives of the Excavations in Chapter 1. Those aims have been, largely, achieved by the excavations, which are as follows:

1. Origins of the Chalcolithic in Mewar

On the basis of data provided by the first systematic excavations carried out at the site of Ahar in the late fifties and

early sixties, it was thought that the beginning of the settled life in this part went back to the last quarter of the third millennium BC and that the people migrated here with the advanced technology from elsewhere. The Harappans were projected as the major source of inspiration for the development of agricultural communities in this part. However, the evidence from the excavations at Balathal convincingly demonstrated that there was an indigenous development of village life, which goes back in this part to the middle of the fourth millennium BC, much before the development of the Harappan Civilization and a gradual development that is reflected in their material culture, particularly in structures and pottery. This gradual cultural process culminated into the flourishing and developed phase around the middle of third millennium BC. The first farmers lived in small both circular or rectangular houses and manufactured coarse pottery. One of the most important features of the pottery is the production of Reserve-Slipped ware. The presence of large amount of this pottery and scientific analysis done clearly suggests its indigenous production. Most of the wares of the Chalcolithic Ahar culture were introduced in the early phase itself. The presence of a few copper tools suggests development of this technique right from the beginning of the settled life. There is a possibility that the Mesolithic people learnt the art of extraction of copper from ore, as the studies carried out by Arunima Kashyap on the Mesolithic tools from Bagor, suggests the possibility of the employment of copper punches for the stone blade production . This technology was definitely carried forward in the Mature Chalcolithic without any change. They also manufactured a variety of food processing equipments such as saddle querns, rubber stones, mullers, etc. The presence of the underground storage silos and food processing equipment in the Early Chalcolithic demonstrates the importance of agriculture in the life of the Chalcolithic people right from the beginning. This is the picture emerging from the lower levels at both Balathal and Gilund.

The site of Gilund has provided additional evidence compared to the site of Balathal. The earliest occupation at Balathal overlies directly the bedrock, whereas at the site of Gilund, there is a Mesolithic settlement, dated to the late sixth and early fifth millennium BC below the Chalcolithic occupation. This is very important, as there is clear indication of the transformation from the Mesolithic to Chalcolithic at the site. This is the first site in India where such evidence has been encountered. These Mesolithic people, as is evident, cleared vegetation and grass on the site and burnt it before establishing a settlement on the ancient sand dune. At the base of the Mesolithic settlement at Gilund, was found a thin burnt layer, which was possibly formed by such a burning. The presence of floors and traces of huts are indicative of their permanent nature of settlement. The discovery of food processing equipment suggests subsistence based on agriculture.

The most systematic and scientific work done on the Bagor material observed gradual change from Aceramic to Ceramic Mesolithic phases at Bagor. The results of the floral material collected are not available yet. But Arunma Kashyap, from Michigan State University, USA pursued research for Ph.D. degree course on the Use Wear and Starch Grain Analysis on the Bagor Mesolithic tools. The following is the quotation from the Ph.D. dissertation produced by Arunima Kashyap (2006). "The use wear analysis of the tools from Bagor has given us important insights into the subsistence and economic activities of the hunter-gatherers and farmers at the site. The study shows that various activities such as hide work (25% of used tools studied from the Aceramic phase), meat and fish processing (12 % of used tools studied from the Aceramic phase), wood work (9 % of used tools studied from the Aceramic phase) plant cutting (15 % of used tools examined from the Aceramic phase) and hunting activities (15% of the total used tools studied) were carried out at the site during the Aceramic

Mesolithic phase. There is a continuity of these activities during the Ceramic Mesolithic Phase at Bagor, the prehistoric people still participated in activities such as hide work (20% of used tools examined from the Ceramic phase), meat and fish processing (9% of used tools studied from the Ceramic phase), hunting (6% of the used tools studied from the phase), wood work (17% of used tools studied from the Ceramic phase) but there is also a substantive increase in the plant cutting activities (36% of used tools studied from the Ceramic phase) carried out at the site during this period, which suggests that there was a significant change in the subsistence activities at the site during the Ceramic phase.

Starch grain studies show that Aceramic inhabitants of Bagor were subsisting on a mixed economy. They exploited root crops like cf. Zingiber (Ginger) and cf. Cyperus, vegetable like cf. Solanaum (Eggplant) and grasses like cf. Sesamum (Sesame), beans/pulses like Macrotyloma (Horse gram) and fruits like cf. Phoenix (Date Palm) and cf. Mangifera (Mango).

By the Ceramic period there is evidence of intensification of plant use. New plants are added to the economy - such as fruits like cf. Tamarindus (Tamarind) (cf. Phoenix (Date Palm) and cf. Mangifera (Mango) beans/pulses such as cf. Vigna species and cf. Cajanus (Pigeon peas) (are added to the list with cf. Macrotyloma (Horse gram). Although more research with both introduced and local millets in India needs to be done before anything can be securely said about the finds of millets at the site, there is also evidence of the introduction of new species probably domesticated in Africa like cf. Eleusine (Finger Millets) and cf. Sorghum (Jowar) at Bagor during the Ceramic phase. Also interesting is the starch grain from cf. Hordeum (Barley) on the grinder studied from the Ceramic phase at Bagor. These are very interesting finds because this would indicate agriculture on the Indian subcontinent may have included several levels of "man-plant relationship," (thus putting into question

the idea that the spread was primarily due to colonization) from acquaintance through excessive exploitation to cultivation of indigenous seed crops (e.g., cf. Sesame cf. Macrotyloma), and root crops (such as cf. cf. Zingiber) which were subsequently transformed by the introduction of higher yielding crops like wheat and barley, introduced from South-West Asia. It can be proposed that improved climatic conditions (around 10,000 years ago) and abundance of plants and animal food in the semi arid region of Western India led to an explosion of Mesolithic hunter-gatherer population (as is evident in the increase in the number of Mesolithic settlements in Rajasthan, Malwa and Gujarat except the Kutch - Misra and Rajguru 1989; Shinde 2004). However changing environment around the middle of the Holocene, population pressure and depleting resources forced these Mesolithic groups to adopt an agrarian life style and settle in congenial environments that had better resources, such as water and plant and animal life that provided opportunities for selecting local cultigens (Shinde et al. 2001)". The subsistence pattern developed in the later part of the Mesolithic phase continued into the early Chalcolithic.

The most significant discovery in the Mesolithic phase is that of ceramic assemblage. This ceramic is the earliest dated close to the 5th millennium BC in this part of the country. Tow wares namely Coarse Red and Grey have been found. Both of them are made from coarse clay and handmade and the former occasionally decorated with simple geometric incised linear pattern. The shapes cannot be reconstructed as the pottery being very brittle has survived in the form of small fragments. Both these wares later continued in the Early Chalcolithic phase with some modification. This is one of the best evidences of the transition from the Mesolithic to Chalcolithic at the site. The other evidence in this respect comes in the form of structures. The evidence from the Mesolithic levels of the floors made of alternate layers of fine sand and silt and rammed hard and circular huts is significant as similar evidence is reported from the

Early Chalcolithic at Balathal, which is yet another important sign of the transformation (Shinde, 2000). There is of course continuation of the lithic stone tool tradition from the Mesolithic to Chalcolithic at the site of Gilund. The above evidence is a clear indication of the Mesolithic transformation from hunting/gathering, incipient agriculture stage to the full settled way of life in this region. This is outside the Mehrgarh, Kile Ghul Mohammad in Baluchistan area, which confirms the presence of second primary zone of development of agriculture and agricultural communities. This is another region that can be identified as the one giving birth to the origins of agriculture and settled way of life in the later half of the fourth millennium BC. The data from the lower level at Gilund and Balathal is very small as excavations in the lower levels were very limited and therefore it is not possible to generalize the conclusions. This is the beginning of the discovery of such evidence and there is a greater need to generate ample data to draw meaningful conclusions.

2. Development from Early to Mature Chalcolithic:

The developed phase shows many signs of prosperity and growth, resulting in the population growth and territorial expansion. The entire Banas-Bedach basin now came under occupation as a result of prosperity and population growth. Besides, they extended their settlements into the parts of Chambal basin and Malwa plateau. They occupied different ecological zones such the Chambal valley and Malwa plateau, which may have ensured assured supply of food to the growing population. Based on the series of dates obtained from Balathal, this developed phase of the Chalcolithic can be dated between 2500-2000 BC.

The excavations at Gilund and also at Balathal have demonstrated a gradual development and prosperity in the material culture of the Chalcolithic people from 2900 BC. and by 2500 B.C. there was a drastic change in the life-style of the people. Very extensive evidence of the structural remains of the Mature phase

has been excavated both at Gilund and Balathal. Some of the noticeable changes observed in the structural activities of this phase include- 1. use of mud-bricks and burnt bricks on large scale for construction, 2. introduction of modicum of planning, 3. establishment of craft manufacturing and storage facilities within the settlements, 4. emergence of public architecture, and 5. establishment of a long distance trade and contacts.

All the structures excavated in the Mature Chalcolithic either are made of mud-bricks or burnt bricks. The use of burnt brick was attested in the structures exposed on the southern part of the GLD-2, which has the evidence of craft manufacture. It was observed that only the structures identified as manufacturing units on this part of the mound were made of burnt bricks. All other structures including domestic and public were otherwise made of burnt bricks. There is identical picture at Balathal. However, the stone being easily available around the site of Balathal, it was the principal building material throughout the Chalcolithic period there. In case of Gilund, the building stone is not available in large quantity. They used bricks on large scale as there is very fine quality clay available in the proximity of the site, which was exploited by the Chalcolithic people. Even today, one can notice flourishing brick-making industry around. This factor was brought to our notice by the work of Dasgupta on the site catchment that is included in Chapter 2 of this report.

Though the houses excavated at Gilund are large in number, they were not excavated horizontally at one place and therefore there is not much information available on the planning of their structures. However, the structures are large in size and they are very well made. In addition, a number of large complexes came into existence. They may have adopted modicum of planning at Gilund, as was the case at Balathal, which was clear there because of extensive area excavation. The large-scale horizontal excavations at Balathal have unearthed a planned settlement consisting of a main

street, lanes and structures arranged on their both sides. This evidence is an indication of the development of urbanization in the Mewar region that was contemporary to the Harappans.

One conspicuous feature noticed at Gilund was the presence of large number of storage pits, small and big, very well made and either plastered with lime or lined with grass. Also there is a large, possibly a public granary/storage made of parallel mud-brick walls. This evidence indicates that the site of Gilund was a major grain producing Chalcolithic village and the subsistence of the inhabitants was based on agriculture. Being located in the centre of the Banas basin and large in size, it can be even identified as a Regional Centre. Even today, Gilund is a prosperous agricultural village in the area and the main occupation of the people in the village is farming. Extensive and intensive farming is possible because of the presence of very fertile arable land around and the availability of assured supply of water. The discovery of a number of farmsteads around in the catchment area of the site of Gilund further underlines importance of agricultural activities during the Chalcolithic and even Early Historic periods. There is an assured supply of water in this area. If accepted the views of Gurdeep Singh and D.P. Agrawal, that the climate between 3000 and 2000 BC was wetter than today, it can be presumed that the river Banas then was carrying more water than today. May be it was a perennial river then. Besides, there are a couple of lakes in the vicinity of the ancient site, which may have existed right from the Chalcolithic times. The river and lakes both may have provided source of water for domestic use as well as for irrigating their fields.

The presence of a large number of artefacts in the Mature Chalcolithic level is an indication of the prosperity and flourishing manufacturing activity at the site. The discovery of finished and unfinished objects, tools that were employed in the manufacturing activities, workshop, etc. confirms further the presence of craft

manufacture. There is no direct evidence of the manufacture of the pottery at the site, but considering the quantity of the pottery found in the excavation and the size of the settlement, it can safely be presumed that the major pottery was manufactured at the site. The discovery of dabbers used mainly in shaping pots and some vitrified potsherds, the sure indicators of the firing of the pottery locally, are testimony to the manufacturing of pottery within the site. In the same phase at the site of Balathal was discovered a rectangular close kiln for firing fine wares (Shinde, 2000). It is expected that similar kilns may have existed at the site of Gilund too.

The various ceramic assemblages found at the site in the Mature Chalcolithic levels were almost entirely wheel made and very well fired. This demonstrates advancement in the technology over the previous phase. A large number of terracotta bull figurines found at Gilund, may or may not have been manufactured at the site. The site of Marmi, 20 km to the northeast of Gilund, where hundreds of terracotta bull figurines have been found on the surface, has been identified as bull figuring manufacture place (Misra et al., 1993). Considering its proximity to Gilund there is a scope to presume that the bull figurines at Gilund may have come from Marmi. The presence of copper objects in the Chalcolithic phase is not great, but they are found throughout the Chalcolithic phase. They occur considerably in large number in the Mature phase, showing prosperity, but they do not indicate any change in the technology. There are enough indications and traces of evidence to suggest that the entire copper tool assemblages were locally manufactured by cold-hammer technology. The important sites like Ahar, Balathal and Gilund have evidence of the copper tool production in the form of furnaces. The evidence found at Gilund is much larger compared with other two sites. On the southern end of the GLD-2 were excavated remains of large copper furnace with large amount of copper slag. The furnace, large oval in shape, is located in a structure. Most of the

structures excavated on this part of the GLD-2 appear to have been associated with the manufacturing activities.

There are a number of reasons for the development of the Chalcolithic phase in the Mewar region. Of course, the climate may have played an important role as is indicated by some scholars (Singh 1971). However, on the basis of the evidence from sites of Gilund and Balathal, one of the important factors responsible for their development was their trade contacts with the Harappans. The Harappans and Chalcolithic people developed contacts with each other around 2500 BC, resulting in reciprocal cultural impact and exchange.

The Harappans possibly adopted the technique and tradition of the Reserve Slipped ware from the Chalcolithic community of Mewar. This particular pottery was introduced and manufactured first by the Chalcolithic community of Mewar sometime towards the end of forth millennium BC. Presence of a few Reserve Slipped ware sherds at a few Harappan sites were thought to have come from the west mainly because of the contacts. However, the possible source of this tradition can now be traced to the Early Chalcolithic period in the Mewar region. It is not unlikely that the Harappans were supplied food grains and copper (most probably finished tools as similar tools have been reported from the Chalcolithic levels here) by the Chalcolithic people of Mewar. As far as copper source is concerned, it is argued that the source of raw material is available in the Aravalli mountain ranges, which are close to the Chalcolithic settlements. Objects found in the Harappan as well as Chalcolithic levels were made by cold hammering technique. Numerous objects such as razor blades, knives, chisels, arrowheads, etc. recovered from this phase are typologically similar to those found in the Harappan levels. The contact with the Harappans enabled the Chalcolithic people to import shell and shell objects, marine gastropods, fish, semi-precious stones or objects made thereof, etc.

from the Harappan region, particularly Saurashtra. The trade route may have run through the North Gujarat, where a number of Harappan sites along with typical Ahar Black-and Red ware pottery, have been reported. This evidence indicates movement in this region of the Chalcolithic Mewar and Harappan tradition. The massive use of mud-bricks for construction and the sudden induction of the header and stretcher method of construction in the Mature Chalcolithic level are attributed to the Harappan impact. Only the Harappan people were aware of the use of bricks and the construction method from whom the Chalcolithic people borrowed after establishing contacts. The discovery at Balathal of a sudden emergence, without any precedence, of a well planned settlement with multi-roomed building complexes on either side of a street, exactly similar to those uncovered at the Harappan sites of Kuntasi, Rojdi, etc in Saurashtra, most probably reflects the Harappan impact. It was observed at Balathal that the walls of the outer fortification and the fortified enclosure were broad at the base and slightly tapered upwards, similar to the method followed by the Harappans at their cities and towns. The Tan ware found in this phase at Gilund and Balathal resembles the Harappan Red ware in terms of technique of manufacture, fabric, firing and vessel forms. Its absence in the Early levels and sudden appearance in the Mature level, leads to form this hypothesis.

The other reason for the change in life-style and the attainment of prosperity in the Mature Chalcolithic phase is possibly due to the presence of a chiefdom social organisation. The studies carried out by various scholars (Shinde, 1991; Dhavalikar et al., 1988; Sinha, 1998) clearly demonstrated the emergence of a chiefdom society around 2500 B.C. over a larger area of Mewar, central India and around 2000 BC the Deccan region. The evidence from Inamgaon, Daimabad (in the Deccan), Navdatoli, Nagda, Eran in central India and Gilund, Balathal and Ahar in Mewar clearly demonstrates the

presence of a chiefdom society in the Chalcolithic period. The evidence for some of the characteristic features of a chiefdom society has been found at these sites. Presence of a site hierarchy is considered an indicator of a chiefdom society. Though, there is a lack of systematic research on the Chalcolithic site hierarchy, two most recent works on the site catchment analysis carried out by Debashree Dasgupta (2005) around the site of Gilund and Dibyopama (2006) around the site of Balathal do indicate the presence of different categories of sites. Both these scholars have identified a number of satellite settlements of different categories like farmsteads, herding units, camps for exploitation of the local source of raw material, etc. The second most important evidence for the presence of a chiefdom society comes in the form of a public buildings. Excavations at Gilund and Balathal have brought to light evidence of strong fortification walls. In case of Gilund, each mound had a separate strong mud and mud-brick fortification wall. In case of Balathal the traces of outer fortification wall were recovered from the eastern periphery of the settlement (Shinde, 2000). The Balathal fortification wall made of mud-bricks had a strong stone foundation. The fortification walls at both these sites were strong and quite broad on top (7 m at both these sites). The structure made of parallel mud-brick walls at Gilund has been identified as a public granary/ storage house (Shinde and Possehl, 2005). At Balathal was excavated a strong public structure made of stone and mud and termed as fortified enclosure with a dimension of 30 m (E-W) by 20 m (N-S) located in the centre of the settlement, the exact function of which is not yet clear (Shinde, 2000). Such public architecture will not appear unless the society is governed by a chief. The presence of a strong hinterland trade and intra-regional contacts with the Harappans and other contemporary Chalcolithic cultures during the Mature Chalcolithic phase is also an indicator of the presence of a chief. Craft specialization is considered an important criterion of a chiefdom society and there is ample evidence in this respect, both in

Gilund and Balathal. The excavated evidence at Gilund clearly indicates that the southern part of the GLD- 2 was occupied by the craftsmen, who located their workshops there. A large complex made of burnt bricks with furnaces, possibly kilns and large-scale burning has been identified as a craft manufacturing workshop/area. At Balathal, two pottery-firing kilns were excavated on the western side of the main street. Both the kilns, rectangular on plan and closed by low mud walls, were found one above the other. This is very significant evidence indicating even hereditary succession of craft activity during the Chalcolithic period. Ample evidence in respect to the presence of a chiefdom society comes from many Chalcolithic sites in the Deccan and Central India. The Chalcolithic site of Inamgaon in the Deccan region has not only provided the evidence for the characteristic features of the chiefdom society, but also the house of a chief and his burial has been identified (Dhavalikar et al., 1988).

One of the significant contributions of the excavations at Gilund is the discovery of clay sealings in an underground silo between two walls (NS6 and NS7) of the structure made of parallel walls of mud-bricks and identified as storage (Shinde and Possehl, 2005). This silo is slightly later than the main structure. The structure is dated to around 2400 BC, whereas this silo and the clay sealings found in it could be dated around 2300 BC (see Seal Impressions section by Marta Ameri in Chapter 4 in this report). Some of the motifs such as floral, geometric and a sun impressed on the clay sealings bearing resemblance with the motifs found either painted on pottery or on seals in the Iranian sites of Tepe Hissar and Tepe Silk and numerous of the Bactria-Margiana Archaeological Complex (BMAC) that flourished in parts of Afghanistan and Central Asia. In spite of these similarities the dates for such motifs differ from region to region. The evidence from Iran is dated to around 3500 BC, the one from Gilund is around 2300 BC and the BMAC complex is dated to around 1800-1700 BC. Obviously therefore the contact

theory is out of question. However, there could be a movement of this symbol from Iran to the Harappans. From Harappan, one route of influence came to the Mewar region and the other went to the BMAC region.

The sudden prosperity in around 2500 B.C. in the Mewar region could have triggered population explosion. The entire Banas/ Bedach basin was densely occupied as the discovery of more than 110 settlements so far indicates. Besides, the Chalcolithic people of Mewar (Ahar culture) extended their settlements in Central India, up to Navdatoli in the Malwa plateau. The presence of a chief in the society, the division of labour, strong hinterland trade and emergence of a craft specialization prompted fast and steady progress of the Chalcolithic community in Mewar. These factors led the Chalcolithic phase in the Mewar region to the threshold of urination.

3. Decline and Late Chalcolithic

The decline of the Chalcolithic culture was as dramatic and enigmatic as was its emergence. It is reflected in almost all aspects of their material culture. The number of settlements decreased drastically during this phase. There appears to be a shift of the location from Banas/Bedach to Chambal and Malwa plateau. The size of the Late Chalcolithic at Gilund shrank dramatically and was found present only on the parts of GLD- 1 and the northern part of GLD- 2. The excavations at Gilund revealed that they survived in a decadent form until may be up to 1500 BC. The decline is visible in all aspects, including structures and pottery. The use of mud-bricks and burnt bricks gradually stopped and instead most of the houses were made of either wattle-and-daub or mud. The sporadic use of mud-bricks was only noticed in the beginning of the Late Chalcolithic phase. The large-spacious well-planned structures of the Mature Chalcolithic give way to small, single-roomed rectangular or squarish structures in the Late Chalcolithic phase. They are carelessly made and haphazardly located. There is qualitative change in the fine

ceramic assemblages. They become coarse and appear to have carelessly made. The clay was mixed with tempering material like sand, grass and rice husk and it is uneven and slightly ill fired. The Black-and-Red, the main diagnostic ware of the Ahar/Banas Chalcolithic culture of this region, is now rarely painted. However, most of the pottery forms and technique of manufacture continued from the Mature to Late phase without any change. Increased percentage of the Malwa Ware pottery and almost absence of the Harappan pottery in this phase are clear indications of their proximity and contact with the Malwa plateau and the Malwa culture and discontinuity in trade and contact with the Harappans in Saurashtra. The complete discontinuity of trade with the Harappans may have severely influenced their economic condition and that may have led to their decline. It could just be one of the factors. The quantity of the copper objects found in this phase is far less compared to the Mature phase, however, they continued to use the same cold hammering technique for manufacturing them. This is a reflection of their declining economic condition. The presence of a storage facility in the form of underground silos and platforms for supporting storage bins and large number of food processing equipment suggests continuity in the subsistence patterns without any drastic change. We cannot make any definite conclusions in this respect because of the results of the faunal and floral remains are not yet available. The study in this respect is underway and it will be published in details subsequently.

Of the many reasons, the climate appears to be the major villain in the decline of the Chalcolithic culture of Mewar. The reconstruction of the Holocene climatic sequence in the Indian subcontinent, particularly in the Thar Desert area of Rajasthan demonstrated lowering of annual rainfall around 2000 BC that may have caused major decline of the most flourishing cultures of the Subcontinent, including the Harappan Civilization. Scholars like

Bryson and Swain (1981), Singh et al. (1990), Agrawal (1992) have emphasised the role of climate and environment in development and decline of the early cultures, especially the Early Farming communities. Studies in respect to the reconstruction of climatic sequence carried out in various parts of the world suggest it was not only the Indian subcontinent that was affected, but also the whole globe. In other words, it was a major Global Climatic Change Phenomenon around 4000 BP or 2000 BC. Yasuda (2001) believes that it is not only the Harappan but also all the civilizations of the Eurasia declined around 4000 BP because of dry climate.

Studies of regional late Holocene vegetation history have shown that the most drastic changes in the vegetation pattern and cover, an important indicator of climate change, appeared around 2000 BC in different parts of the world. In north-eastern China in the Changbai Mountain region, the most noticeable event of the Late Holocene forest development around 2000 BC was expansion of Pinus koraientsis (Sun et al., 1990). Vegetation reconstruction at Kurugai site (northern Sichuan, China) in the eastern part of Qinghai-Tibetan Plateau revealed retreat of forest and spread of open areas at about 2000 BC (Gotanda, 1998). Around the same time in warm temperate forest zone located at lower elevation in the southern Sichuan, sclerophyllous drought adapted taxa expanded, suggesting weakening of the East Asian Monsoon activity with decrease in spring and summer precipitation (Jarvis, 1993). The oxygen isotopes analysis from the lake sediments in the Qinghai-Tibetan Plateau and North Xinjiang provinces recorded maximum aridity between 4500-3500 cal. yrs BP (Wei and Gasse, 1999). In parts of Europe, particularly in the Great Poland Plain the Carpinus betulus indicating dry climatic conditions, began its spread around 4100 BP and since 3500 BP has been dominating species in the forest and the lowering of the lake levels began at the same time there (Makohonineko, 1998). The results of pollen analysis from the Ghab valley and El-

Rouj basin in Syria show that the climate became dry after around 2000 BC. This dry climate caused a drought and reduced the production of olives, wheat, and barley. People in northwest Syria abandoned their habitation sites completely in the Late Bronze Age because of drought (Yasuda, 2002).

In the Indian Subcontinent, a few studies on climate reconstruction carried out also suggest similar trend of aridity around 2000 BC. A work on the core from the oxygen minimum zone off Karachi in Pakistan at water depth of 700 m has produced a unique record of monsoon climatic variability covering the last 5000 years (von Rad et al., 1999). They further noticed that the period from 3900 BP is marked by verve thickness minimal and low terbite activity, which they interpret as indicators of low precipitation and decreased river run-off. Thus, the results obtained by various independent researches in different parts of the globe do indicate deterioration of climate, which must have had adverse impact on the human cultures all over the globe.

The deteriorating climatic condition had adverse consequences. Once mighty and important river of Banas may have become seasonal, resulting in reducing the agricultural activities of the people. It is therefore we see considerable decrease in population in the Late Chalcolithic. After loosing their agriculture base in the Banas, the Chalcolithic people scattered and migrated more to the region where sufficient agriculture land, water and pastureland are available.

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