

An Overview of the Harappan Civilization and the Application of Stable Isotope Analysis in Archaeology

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The Harappan Culture flourished in the Indus and adjoining river valleys during the second half of third millennium BCE. The research carried out for nearly a century in this field has harnessed an enormous amount of data which has been helpful in understanding the formative stages through the maturity and the deurbanisation and the ultimate transformation to rural cultures through the investigations by various scholars.

The contacts that Harappan had with Mesopotamia were ascertained as early as 1924 when Sir John Marshall announced the discovery of Indus Civilisation (Marshall 1924: 538). The publication of a number of Harappan seals and other objects from Harappa and Mohenjodaro paved way to the identification of similar finds from sites in Mesopotamia and Susa, thus establishing a link between these two great civilizations (Sayce 1924: 566; Gadd and Smith 1924: 614-616). Some of the earliest finds that were compared with Harappan antiquities came from Kish and included a typical unicorn seal with Harappan signs, long barrel cylindrical beads of carnelian and etched carnelian beads (Mackay 1925: 697-699). These findings also helped in placing the hitherto unknown Indus Civilisation in a proper chronological horizon.

Ever since the concept of “Indus Civilisation” was understood in 1920s, more and more sites were added to the corpus of Harappan sites and the site count as on today stands at 477 for Early Harappan; 1022 for Mature Harappan and 1281 for Post-urban Harappan cultures (Possehl 1999: 1-33). The excavations at places like Lothal (Rao 1985), Kalibangan (Thapar 1975: 19-32), Harappa (Kenoyer 1991: 331-375; Kenoyer *et al* 2013: 2286-2297), Dholavira (Bisht 1989: 266-72; 1991: 71-82; 1994: 23-31), Rakhigarhi (Rakhigarhi 1997-98: 39-45), Farmana (Shinde *et al* 2008), Sanauli (Sharma *et al* 2007: 166-179) etc., have enabled us to understand the dynamism in the evolution, maturity and ultimate decline of this Civilization. The chronology of Harappan civilization has been revised based on the radiocarbon dates available from several excavated sites and now there is a general agreement for the time period of ca. 2600 – 1900 BCE.

The excavation at Sanauli (Sharma *et al* 2007) brought to light the remains of a large cemetery complex of late Harappan period, the tooth remains from at least 31 burials were conducted to stable isotope analysis (C, Sr, Pb, O) to understand the palaeo-dietary and migratory patterns. While the investigation of O isotopes helps in understanding human mobility and provenience, the C isotopes helps in reconstructing paleodiet and Sr & Pb are used in understanding movement of

ancient population (Kenoyer 2013). The preliminary investigations from Sanauli cemetery have indicated the presence of both 'locals' and 'non-locals' among the population. The results will be substantiated further with the aid of investigation of isotopes from the ancient faunal remains.

References

1. Bisht, R.S. (1989) Harappan Colonisation of the Kachchh: An Ergonomic Study with Reference to Dholavira and Surkotada, in Krishna Deva and Lallanji Gopal (eds.) *History and Art*. pp. 266-72
2. Bisht, R.S. (1991) Dholavira: A New Horizon of the Indus Civilization, *Puratattva*, No. 20, New Delhi, pp. 71-82
3. Bisht, R.S. (1994), Dholavira in J.P. Joshi and R.S. Bisht (eds.), *India and the Indus Civilization*, New Delhi, pp. 23-31.
4. Gadd, C.J. and Smith, S. (1924) The New Links between Indian and Babylonian Civilization, *Illustrated London News*, 4th October, 1924, London. pp. 614-616.
5. Kenoyer, J.M. (1991) The Indus Valley Tradition of Pakistan and Western India, *Journal of World Prehistory*, Vol. 5(4), pp. 331-375.
6. J. Mark Kenoyer, T. Douglas Price, James H. Burton (2013) A new approach to tracking connections between the Indus Valley and Mesopotamia: initial results of strontium isotope analyses from Harappa and Ur, *Journal of Archaeological Science* 40 (2013) 2286-2297.
7. Mackay, E.J.H. (1925) Sumerian Connexions with Ancient India, *Journal of the Royal Asiatic Society of Great Britain and Ireland*, pp. 607-701.
8. Marshall, J. (1924) First Light on a Long Forgotten Civilization, *Illustrated London News*, 20th September, London. pp. 538-42.
9. Nath, A. (1997-98) Rakhigarhi: A Harappan Metropolis in the Sarasvati-Drishadvati Divide, *Puratattva* 28, Indian Archaeological Society, New Delhi.
10. Possehl, G.L. (1994) From Sumer to Meluhha: Contributions to the Archaeology of South and West Asia, in Memory of George F. Dales, Jr. (ed.) J.M. Kenoyer, *Wisconsin Archaeological Report*, Vol. 3., pp. 179-186.
11. Possehl, G.L. (1999), The Transformation of the Indus Civilization, *Man and Environment* XXIV (2), pp. 1-33.
12. Rao, S.R. (1985) *Lothal: A Harappan Port Town*, 1955-62, Vol. II, Memoirs of the Archaeological Survey of India 78, ASI, New Delhi.
13. Rao, S.R. (1985), *Lothal: A Harappan Port Town*, 1955-62, *Memoirs of the Archaeological Survey of India* 78, Vol. II.
14. Sayce, A.H. (1924), Remarkable Discoveries in India, *Illustrated London News*, 27 September, London. p. 566
15. Sharma, D.V., Nauriyal, K.C., Prabhakar, V.N. (2007) Excavations at Sanauli 2005-06: A Harappan Necropolis in the Upper Ganga-Yamuna Doab, in *Puratattva No. 36*, pp. 166-179.
16. Shinde, V. *et al.*, (2008) Exploration in the Ghaggar Basin and Excavations at Girawad, Farmana (Rohtak District) and Mitathal (Bhiwani District), Haryana, India, Osada, T. and A. Uesugi (eds.) *Occasional Paper 3: Linguistics, Archaeology and the Human Past*, Indus Project, Research Institute for Humanity and Nature, Kyoto, Japan.
17. Thapar, B.K. (1975), Kalibangan: A Harappan Metropolis beyond the Indus Valley, *Expedition* 17(2): pp. 19-32.

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