



Bulletin of the  
Government Museum, Chennai

Monograph on  
**HOLISTIC APPROACH TO DATING IN  
ANCIENT HISTORY ESPECIALLY  
INDIAN HISTORY**

By

**Dr. R. Kannan**, B.Com., M.B.A., C.A.I.I.B., B.L., M.Soc. Sci. (Birmingham, UK), M.A. (History), Ph.D., I.A.S.

Additional Chief Secretary, Tourism, Culture and Religious Endowments, Government of Tamil Nadu,  
Fort St. George, Chennai - 600 009

and

Commissioner of Museums (Full additional Charge), Government Museum, Chennai - 600 008.

General Section-New Series-Vol. XVI No.3, 2000 (First Edition)

Second Revised Edition - 2015

Published by

The Commissioner of Museums,  
Government Museum, Chennai-600 008.

(May 2000 - First Edition ; March 2015 - Second Edition)

First Edition : 2000

Number of copies : 500

Second Edition : 2015

Number of copies : 300

© Additional Chief Secretary / Commissioner of Museums  
Government Museum,  
Chennai-600 008.

Price: Rs. 450/-

### **Acknowledgements - First Edition**

The author acknowledges the help rendered by the Curators, Thiru K. Lakshminarayanan, Dr. V. Jeyaraj, Thiru J. R. Asokan and Thiru R. Balasubramanian in designing the publication and carrying out proof correction. Thanks are due to Thirumathi V. Sasikala and Thirumathi S. Thara, personal staff of the Commissioner for typing out the matter in time.

### **Second Edition**

Thiru. K.Sekar, Assistant Director, Dr. R. Balasubramanian, Retd. Archaeologist, Thiru Ramesh, Photographer and Tmt. Thara of Government Museum, Chennai rendered valuable assistance.



**Thiru S. Ramakrishnan I.A.S.,**

Special Commissioner and Secretary to Government,  
Tamil Development, Culture and Religious Endowments Department,  
Government of Tamil Nadu, Fort St. George,  
Chennai- 6000 09.

## **FOREWORD**

The problem of Dating in Ancient History especially Indian History has been felt keenly. A solution to the issue has been elusive so far. There has been more controversy generating heat rather than light in getting agreed dates. This is due to the lack of written records and deciphered script. The Indus valley civilisation language has not been decoded with general agreement. This was the case with Ancient Egypt till the Hieroglyphs were decoded with the help of a tri-script stone called the Rosetta stone.

Despite this decoding, further controversy has been recently generated by James Hancock and others when they attempt to relate the age of the civilisation with data from other disciplines such as Astronomy or Hydronomy. The age of the Sphinx is felt to be several thousand years older than currently believed.

In every field of knowledge, the learned amateur by bringing in a fresh look at the subject along with his enthusiasm to learn and grasp the subject has made path breaking contributions to enhancing knowledge in that field. Ramanujan in Mathematics, Col. Mackenzie, the surveyor who rescued the Amaravati sculptures or Bruce Foote who came to be considered as a great Anthropologist after the Adichannallur skull findings were published are some names that spring to the mind. Dr. Kannan has similarly brought in a fresh perspective to the Dating of Ancient Indian and World History from an Indian viewpoint. He has travelled extensively with a historical outlook and visited many ancient sites and museums to gather material for this monograph.

The word “holistic” is very popular in recent times. It started with medicine when several systems like Allopathy and Ayurveda systems of Western and Indian medicines were used to treat diseases like rheumatism etc., which were given palliatives in the Allopathy system with a lot of side effects but were not permanently cured. This made people realise the need for an overall perspective rather than a limited view. Therefore, while

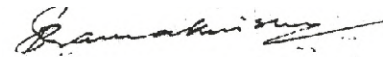
specialisation has its own place, a general or overall view is essential for success in tackling any issue.

The 'Holistic approach to Dating' is essentially born out of this multi-disciplinary approach. Such an approach involves enormous reading in different subjects, consultation and interaction with experts and laborious fieldwork. I find in this work by Dr. Kannan evidence that all the hard labour required has been put in by him. As an amateur astrologer, he has used the hitherto neglected fields of Astrology and Astronomy for dating events or corroborating or contradicting existing dates in Ancient History. This is a unique feature of this work.

I feel that this path breaking work will give a fresh impetus to new approaches to Dating in Ancient History especially Indian History.

I commend this work as a good piece of original research in keeping with the high traditions of the Government Museum, Chennai.

19-5-2000



{S. Ramakrishnan I.A.S. (R)}

**Dr.R. Kannan, I.A.S.,**  
**Additional Chief Secretary**  
**Tourism, Culture and Religious**  
**Endowments Department,**  
**Government of Tamil Nadu/**  
**Commissioner of Museums**  
**(Full additional charge)**



**Government Museum,**  
**Pantheon Road,**  
**Egmore,**  
**Chennai - 600 008.**  
**Tel.: 044 - 28193778**  
**Fax: 044 - 28193035**  
**e.Mail: govtmuse@tn.gov.in**

## **PREFACE**

This monograph was first published in May, 2000 with a Foreword from Thiru S. Ramakrishnan, I.A.S., Special Commissioner and Secretary to Government (now the equivalent is Principal Secretary), Tamil Development, Culture and Religious Endowments Department, Government of Tamil Nadu who was my Deputy Director and teacher at the Lal Bahadur Shastri National Academy of Administration, Mussoorie. He later became the Chief Information Commissioner of Tamil Nadu (Retd). He has written the forewords for many of my books. This is the second revised edition of this monograph.

When the first ever International Conference held by the Government Museum, Chennai in 2001 was in difficulties since the chief guest who was the primus among civil servants did not come (in all fairness the same person praised my work later), Thiru Ramakrishnan came in unannounced and sat on the last row. This gave a morale boost that went a long way in ensuring its success. When there was praise from the President of India, Dr. Abdul Kalam himself for this writer for the work done in the museum on the occasion of the 151st Anniversary, the great man, Thiru Ramakrishnan was nowhere to be seen. He was like what Dr. Abdul Kalam, the President of India has recorded in Wings of Fire of Dr. Brahm Prakash, who was at hand when there were difficulties and receded into the background to allow the subordinate to bask in glory when there was success. We all need role models who inspire.

This monograph mirrors my journey of the past sixteen years in the world of Museums and Archaeology. When I joined the Government Museum, Chennai in 1999 as Commissioner of the Department of Museums, the staff came to invite me to join with an old Jeep on which the Registration Number TSE 834 was written all over it. It had three and a half wheels. When I landed up in the office, there were cobwebs falling all over my head on my seat. It was due to Thiru Ramakrishnan I.A.S. that I did not get demoralized. He stated that happiness is a state of mind and not a state on ground. Another person who encouraged me is Thiru K.T. Narasimhan, the then Superintending Archaeologist, Archaeological Survey of India, Chennai (Madras Circle) and made me learn the technical aspects of the work. I took interest and tried to learn the field though as a school student I had read thanks to my grandfather the late Sri T.S. Padmanabha Iyer, Retired

Superintending Engineer, (Madras) P.W.D mostly in British India and Madras Presidency, all the eleven volumes of the Story of Civilization by Will and Ariel Durant. This magnum opus series was often quoted by the late Sri N.A.Palkhivala, the noted Jurist. Therefore it was easy to make the transition from generalist administrator to specialist Museologist-Archaeologist.

I had heard of Holistic medicine and seen it practiced by Dr. Ratnavelu Subramanian, my grandfather's friend who combined Ayurveda with Allopathy. I myself was treated in this method by him. I therefore thought of applying this method to Dating in history especially prehistory. The result of my researches I tried out as a lecture in the popular monthly lecture series which were organized by me after a lapse of many years in the Museum premises and which were hugely popular. The lecture was delivered with paper transparency slides, the then prevalent technology. The lecture was delivered on 31.01.2000 as "A Holistic Approach to Dating in Ancient History". It was attended by a lot of scholars and historians who appreciated what at that time period was a totally new approach. This has been documented in the Museum's Journal (issue dated October 1999 – March 2000 – published in May 2000) which was brought out based on the model of leading Museums like the Smithsonian, British Museum, Louvre etc. This emboldened me to publish it as a monograph in May 2000 after further research, for which Thiru Ramakrishnan, I.A.S., very kindly wrote the Foreword. This was published in such a hurry that I did not even write a Preface which I realized today when I wanted to write a small second edition preface. I also wrote a part of it as 'Astrological Astronomy as Part of the Holistic Approach to Dating in Ancient History Especially Indian History' in the Museum's Journal (April 2000- September 2000) published in December 2000.

The monograph was glowingly reviewed in The Hindu Book Review dated 05.12.2000 by no less a person than the doyen Archaeologist Prof. K.V. Raman. It was also reviewed in the Astrological magazine, Bangalore published by Dr. B.V. Raman, the Bhishma Pitamaha of XX Century Hindu astrology in 2001. I was also invited to be a Board member of the International Association of Museums of History, Paris, France, one of three from Asia. Other eminent persons also praised this monograph. All the copies were sold out as early as 2004 AD. However, there was no reprint earlier. To cater to the demand for this publication since the Holistic Approach has become mainstream, it was decided to revise and republish it. This second revised edition is the result. It benefits from the sixteen years that I spent in the world of Museums and Archaeology as well as being in charge of temples with breaks officially but not personally, since I used to pursue my interest in the field on a personal basis. During this period, I have been responsible for refurbishing almost all the galleries of the Government Museum, Chennai, setting up district museums, several galleries in the District Museums and Site Museums of the State department of Archaeology, Conservation and Restoration personally of more than 250 monuments and officially several hundreds more, mostly temples and organising the 151st Anniversary celebrations of the Government Museum, Chennai. For this celebration the Bronze Gallery was reorganised and refurbished. This was praised by the then President of India, Dr. A.P.J. Abdul Kalam in the presence of the

Honourable Chief Minister Selvi J Jayalalithaa at whose instance all the work was done and who closely monitored it. A Gallery “Exposition on Industries and Handicrafts of Tamil Nadu” was created on the occasion at the wish of the late President Dr. Kalam. The late Thiru K. Lakshminarayanan, the then Assistant Director of Museums assisted ably.

This second revised edition bears testimony to the fact that several of the prognostications of the first edition have been proved to be true; that several events which were dismissed as legend, imagination etc were actually historic events. To cite a few, the Seven Pagoda Theory of Mahabalipuram (Mamallapuram) became reality thanks ironically to the natural disaster of the Tsunami in 2004 AD. Many temples and sculptures were discovered. Now, the Aryan Invasion theory is largely a peripheral one of a few historians who have not kept abreast of the later developments in this field as was forecast by me. The thesis of civilisations having gone under water with Lemuria and ancient Tamilagam being cited in Tamil literature has been borne out by the Gulf of Cambay and other underwater archaeology explorations. Though Cambay is off Gujarat, the theory would hold good for Dhanushkodi, Kanyakumari, Seven Pagodas off Mamallapuram, ancient Tamilagam etc. Newer methods of Independent Scientific Dating have been included in this edition. In this edition, the chapter on underwater archaeology has been greatly expanded as well as several papers, the result of 16 years of work have been included. This makes this edition an almost comprehensive one, a state of the art work for today’s historian and student. I have been posted in charge of the Department of Museums as its Commissioner in addition to my main charge as Additional Chief Secretary, Tourism, Culture and Religious Endowments (in charge of the Hindu and Jain temples of the state), which has given me an opportunity to serve in this field. Of course, all protected monuments, secular, Buddhist, Muslim, Christian etc come under the fold of the State Archaeology department. I am thankful to the Tamil Nadu Government for this posting.

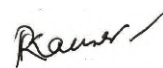
All knowledge is never static. Knowledge keeps on increasing over time as human beings learn newer technologies and keep probing with an open mind.

I am sure that there would be further developments but for now this is my swan song in service as an IAS officer cum Museologist and Archaeologist as I retire from service.

Holistic Approach to Dating has become mainstream and come to stay. This is its Summum Bonum.

I hope that this edition will be of use to scholars, students and lay public.

Chennai  
31.03.2015

  
(Dr.R . Kannan)

To

The memory of late Sri.T.S.Padmanabha Iyer, (Retd) Superintending Engineer (P.W.D) British India & Composite Madras State, my grandfather on his centenary (1901-2001), my late grandmother Mrs. Lakshmi and my uncle late Sri.P.Subramanian. Also to Ms.Lalitha, my mother, Smt. Seetha, my wife, Mr. Sridar Padmanabhan Kannan, my son, Smt. Ananthi, Daughter-in law and Ms. Shrikalaa, my daughter for their encouragement and help.

Dr. R. Kannan, Ph.D., I.A.S.



LIST OF PUBLICATIONS WRITTEN BY THE AUTHOR, DR. R. KANNAN, Ph.D., I.A.S.

- 1) Monograph - A holistic approach to dating in Ancient History especially Indian History (1st edition - 2000; 2nd revised edition 2015)
- 2) Participatory Rural Appraisal in Action (The impact on Rural Women of PRA and Participatory Approaches in a Government Run Rural Development Programme) - 2001
- 3) Documentation on the Cannons in the Government Museum, Chennai – 2000 (First in the world by a museum)
- 4) Iconography of Jain Images in the Government Museum, Chennai along with the late Thiru K.Lakshminarayanan, Retd. Assistant Director, a great scholar who did the research work - 2001
- 5) Proceedings of the Seminar on Our Role in Protecting Cultural Heritage - 2001
- 6) Manual for Disaster Management in Museum – 2001 (first in India)
- 7) Manual for Disaster Management in Museums (Tamil) – 2001
- 8) Manual on the Numismatics Gallery in the Government, Chennai – 2003
- 9) Monograph on the Rock and Cave Art Gallery in the Government Museum, Chennai – 2003
- 10) A Manual on the Holographic Gallery in the Government Museum, Chennai – 2003.
- 11) Documentation of the text of Son-et-lumière on the Rock and Cave Art Gallery in English and Tamil (2 books) - 2003
- 12) Documentation of the text on the Video clips on the touch screen on the Rock and Cave Art Gallery.-2003
- 13) Souvenir on the 151st Anniversary Celebrations – 2003
- 14) Manual on the Bronzes in the Government Museum, Chennai (First Edition-2003; Second Revised Edition - 2015)
- 15) Iconography of Jain Images in the districts of Tamil Nadu ( covering the Museums of the Department of Archaeology and Museums) – Volume II along with the late Thiru K.Lakshminarayanan, Retd. Assistant Director, a great scholar who did the research work - 2002
- 16) Guide to the Exposition on the Progress of Industries and Handicrafts of Tamil Nadu in the Government Museum, Chennai (2004) along with the late Thiru K.Lakshminarayanan, Retd. Assistant Director -2003
- 17) Souvenir to Commemorate the Completion of One Hundred and Fifty One Years, Government Museum, Chennai. (Editor) – 2003
- 18) The Museum's Journal - 9 Volumes. (Chief Editor). I have also written a number of articles on history, archaeology and museology in the Museum's Journal.
- 19) Tarangampadi (Tranquebar) Excavation and Conservation Report 2001-2002.
- 20) Proceedings of the National Seminar on Present Trends in Museology (2004) – General Editor.
- 21) Perambulation Notes of the Commissioner of Agriculture, 2002-2004
- 22) WTO - Seminar Proceedings on Agreement on Agriculture (2003)

- 23) Training Manual on Watershed Management (2003)
- 24) Hi-Tech Training to 1400 Technocrats of Agriculture, Horticulture, Agricultural Marketing Departments – Training Guide 2003-2004
- 25) Centenary of the Cooperative Movement in Tamil Nadu with special reference to the year 2004-05.
- 26) Management of Cooperatives in Tamil Nadu with Special Reference to the years 2005-2006
- 27) Unravelling the mystery behind the diagram in the form of Chakras in Mehrangarh Fort (2008)
- 28) Conservation and Restoration of monuments – the Proceedings of an Administrator turned Archaeologist cum Museologist (2007)
- 29) Translation of Mahalakshmi Suprabhatam from Sanskrit to English (2008)
- 30) Handbook on procurement and tenders for preventive vigilance for MFL and FACT employees - 2008
- 31) Manual of Survey for Electronic Survey using Electronic Total Stations (ETS) and GPS, Volume IV (First Edition- 2010)
- 32) Translation of Srinivasa Suprabhatam from Sanskrit to English (2013)
- 33) Manual of Survey for Electronic Survey using Electronic Total Stations (ETS) and GPS, Volume IV (Revised II Edition- 2012)
- 34) Compilation on Amaravati Sculptures and the Conservation and Reorganisation of the Amaravati Gallery. - 2015
- 35) 'Tiruppudaimarudur Murals - The Documentation of The Murals in the Narumponnathar Temple, Tiruppudaimarudur -2015.
- 36) Contributed an entire module for MBA Social Entrepreneurship for IGNOU - MSE-03 - Social Entrepreneurship – Tools and Approaches - 2013

#### **Brochures**

- 1) Rock and Cave Art Gallery
- 2) Botany Gallery
- 3) Bronze Gallery
- 4) Brochure "Exposition on the progress of Industries and Handicrafts of Tamil Nadu", Government Museum, Chennai
- 5) Government Museum, Chennai – General Brochure
- 6) Paintings in the National Art Gallery and the Contemporary Art Gallery of the Government Museum, Chennai
- 7) Chemical Conservation and Research Laboratory
- 8) Children's Museum

## **Videos**

1. Bronze making
2. The Museum through the ages (from the 1950s till the present)
3. Retrieving from the Archives the movie on the museum produced in 1971, converting it into CD and subtitling it in English.
4. Rock and Cave Art
5. Video on the museum in general (present)
6. History of Industry and Handicrafts in Tamil Nadu.

## **Audio**

1. Retrieving 78 RPM records of the dialects of South Indian Tribals (many extinct) of the Linguistic Survey of India, 1923 and converting it as CDs/book.(2002)

## **Photographs**

Retrieval of glass negatives from the XIX Century AD onwards with the Government Museum, Chennai - digitising and publishing on-line on the Web Site of the Government Museum, Chennai (2015)

## **Articles**

1. Article on the coir industry in the Golden Jubilee Souvenir of the Coir Board
2. Article on Disaster Management in Museums in the 'Proceedings of the Seminar on Disaster Management in Museums, International Council for Museums, 2003', Paris.
3. Several articles in the Annual Journals of the Museums Association of India.
4. Several articles in several issues of the Journal of the Government Museum, Chennai
5. Several articles on Participatory Rural Appraisal in Training Manuals published by the Department of Agriculture and Tamil Nadu Agriculture University.
6. Articles in the National Manuscript Mission Magazine in 2007 on 'Unravelling the Mystery behind the Diagram in the Form of Chakras (Sacred Circles) in Mehrangarh Fort, Jodhpur' and also in the Festschrift Volume of Dr.K.V.Raman, the eminent archaeologist.
7. Several articles such as 'Shermadevi – A historical enquiry into an old Siva temple metamorphosed over the years into a government quarters'; 'Swastika - the Ancient Sacred Symbol of Hinduism – And its Spread throughout the world' in 'Vedsri', a Vedic science magazine, religious tourist articles in 'Saranagatham', published by Yogi Ramsurat Kumar Ashram, Tiruvannamalai.
8. Chapter in the book " From Metcalfe House to Charleville" – Memoirs to commemorate 60 years of the IAS (2010), published by Lal Bahdur Shastri National Academy of Administration, Mussoorie and Jain Publishers.

# **HOLISTIC APPROACH TO DATING IN ANCIENT HISTORY**

## **ESPECIALLY INDIAN HISTORY**

### **ABSTRACT**

*Dating of ancient civilisations and historic events has been done by archaeologists using physical remains like artefacts, monuments and structures. They usually rely on one known date and date other undated events based on the known date. They also corroborate events by relating them to other known and already established dates in other civilisations and cultures. This is Relational Dating. This is done using stylistic features like shape of icons, letters etc called Stylistic Dating. There are also other methods that do not rely exclusively on history and its offshoot archaeology. Modern methods use independent dating methods. They analyse them using modern scientific methods which fix dates independent of other events. It is then the job of the historian to take a holistic approach and arrive at a logical date.*

*Linguists analyse use language structures and words and attempt to fix dates and relationships based on these. Anthropology relies heavily on the excavation mode of the archaeologists to analyse human and animal remains. Modern scientific methods like carbon dating, lasers, geo-magnetic dating, genetic analysis etc are also increasingly being used in recent years. Astrologers and Astronomers use the movement of the stars and planetary phenomena described in the ancient religious and other literature to date events. Ancient Historical Traditions like religious scriptures are also analysed to arrive at dates.*

*Each discipline usually approaches problems like dating in isolation without attempting to triangulate using the findings of the other disciplines. This may be due to the experts have spent long years in their fields of specialisation. They therefore either lack knowledge of other disciplines or believe in the superiority of their own discipline. It may also be merely because it does not strike them that another approach is possible. This monograph therefore, is an attempt to fill this gap by adopting a holistic approach to dating especially in Ancient History where complete information is still lacking and even up to the mediaeval era where there are a lot of disputes most of them driven by ideology, jingoism etc. This approach yields better results than conventional uni-disciplinary analysis due to the feasibility of cross checking, validation or Triangulation to use the language of Participatory Rural Appraisal (PRA), which is the field of the doctorate thesis of this writer. It involves learning from and sharing knowledge with the people and not the conventional Normal Approach of 'I am the expert – I know'.*

*In this monograph, this writer attempts to use all the disciplines listed above in a holistic manner to get a whole view or integrated 'big' picture. This results in certain new conclusions and also some existing theories being overturned. Some theories, which have been marginalised are validated. For example, the Aryan Invasion Theory is marginalised while the Seven Pagoda Theory of Mahabalipuram is validated, though all seven have not been traced. The Holistic approach has been used in medicine when several systems are*

*integrated to cure ailments where there is no cure in a single system. This synergy results in positive results. It is hoped that the adoption of a similar approach to Dating events in history will lead to similar new knowledge. It has already done so since 2000 AD when the first edition was published. This is more appropriate in Ancient History where the historian has not been able to decipher using any language and reconstruction of events is based on informed conjecture. There is no agreed deciphering.*

*This is the second revised edition of the monograph first published in 2000 AD, the first having been fully sold out even around 2004 AD. It is a successor to the path breaking original one. It has also benefitted from the past 16 years of work in the fields of archaeology and museology by the writer. It contains the multi-disciplinary wide canvas experiences of the writer who has worked as Commissioner of Archaeology, Museums and also as Additional Chief Secretary in combined charge of Archaeology, Museums, Art and Culture and Religious Endowments (in charge of the temples of the state) from 1999 AD with breaks till 2015 AD (retirement).*

*Dating of Rock and Cave Art and resolving confusion during Conservation of monuments based on the work done by this writer are such notable additions in this edition. Based on his experience and knowledge, new developments in science and Anthropology on the origin of the human species, exciting underwater explorations like the Gulf of Cambay one, discoveries of monuments due to Tsunami at Mamallapuram, etc are others.*

*Remote Sensing, Anthropology - Physical Anthropology, Cultural Anthropology, Genetics, Archaeology, Underwater i.e.. Marine Archaeology, Historical Records, Sculptures and Architecture, Layers of Monuments and Paintings on each other and Metamorphosis of Monuments leading to confusion, Evolution of Worship in the form of Development and Disappearance of Various Cults, Sayana Forms of Vishnu, the Sapta Matrikas Cult and Cultural Linkages as illustrated by Papers on the Buddhist Links of Tamil Nadu with the Himalayas, South Indian Cultural Links with Sri Lanka, find place. The Paper on Underwater Archaeology is an attempt at in depth analysis in this somewhat neglected field. To illustrate the confusion in dates even of inscriptions in the mediaeval period, a Paper - The Idol of Balakrishna in the Government Museum, Chennai is included.*

*The above are some of the approaches used to uphold the main theme viz, that a Holistic Approach with an open mind using a PRA approach alone can get at the truth and arrive at near accurate dating in history especially ancient history. This approach has been vindicated by the events between 2000 AD and today 2015 AD by the developments in this field. Most of the prognostications of 2000 AD have become accepted reality.*

## **TABLE OF CONTENTS**

<b>SL. NO.</b>	<b>NAME OF CHAPTER</b>	<b>PAGE NO.</b>
1.	FOREWORD	iii - iv
2.	PREFACE, DEDICATION, LIST OF BOOKS WRITTEN BY THE AUTHOR	v - xi
3.	ABSTRACT	xii - xiii
4.	PHOTOGRAPHS – PLATES	I - XII
5.	CHAPTER – I - INTRODUCTION	1 - 4
6.	CHAPTER – II - PROBLEMS OF DATES IN ANCIENT HISTORY	5 - 7
7.	CHAPTER – III - METHODS OF DATING IN HISTORY ESPECIALLY ANCIENT HISTORY	8 - 19
8.	CHAPTER – IV - ROCK AND CAVE ART DATING	20 - 26
9.	CHAPTER- V - DATING BASED ON LINGUISTICS, COMPARATIVE PHILOLOGY, LINGUISTIC PALAEONTOLOGY AND LITERARY SOURCES	27 - 35
10.	CHAPTER- VI - ANTHROPOLOGY - PHYSICAL ANTHROPOLOGY, CULTURAL ANTHROPOLOGY, GENETICS ETC.	36 - 43
11.	CHAPTER – VII - ANCIENT HISTORICAL TRADITION	44 - 52
12.	CHAPTER – VIII - ARCHAEOLOGY	53 - 60
13.	CHAPTER – IX - UNDERWATER OR MARINE ARCHAEOLOGY	61 - 67
14.	CHAPTER – X - REMOTE SENSING	68 - 70
15.	CHAPTER – XI – NUMISMATICS	71
16.	CHAPTER – XII - ASTRONOMY AND ASTROLOGY	72 - 86
17.	CHAPTER – XIII - HISTORICAL RECORDS	87 - 94
18.	CHAPTER – XIV - SCULPTURE AND ARCHITECTURE	95 - 98

19.	CHAPTER – XV - LAYERS OF MONUMENTS AND PAINTINGS ON EACH OTHER, CONFUSION IN PLACES, RELOCATION AND METAMORPHOSIS OF MONUMENTS LEADING TO MULTIPLE CLAIMS	99 - 102
20.	CHAPTER – XVI - EVOLUTION OF WORSHIP	103 - 105
21.	CHAPTER XVII - THE BUDDHIST LINK BETWEEN TAMILNADU AND THE HIMALAYAN REGION	106 - 116
22.	CHAPTER XVIII - SOUTH INDIAN CULTURAL LINKS WITH SRI LANKA	117 - 126
23.	CHAPTER XIX - UNDERWATER ARCHAEOLOGY	127 - 138
24.	CHAPTER XX - SHERMADEVI – A HISTORICAL ENQUIRY INTO AN OLD SIVA TEMPLE METAMORPHOSED OVER THE YEARS INTO A GOVERNMENT QUARTERS	139 - 142
25.	CHAPTER XXI - THE IDOL OF BALAKRISHNA IN THE GOVERNMENT MUSEUM, CHENNAI – A SYMBOL OF THE HALCYON DAYS OF THE VIJAYANAGAR EMPIRE	143 - 146
26.	CHAPTER XXII - SESHA SAYANA – AN IMPORTANT FORM OF VISHNU	147 - 154
27.	CHAPTER XXIII - SAPTA MATRIKAS	155 - 163
28.	CHAPTER XXIV - CONCLUSION	164 - 167
29.	CHAPTER – XXV- BIBLIOGRAPHY	168 - 177





## **CHAPTER - I**

### **INTRODUCTION**

“Research is to see what everybody has seen and to think what nobody has thought” (Albert Szent Gyo Rigi from Srinivasan K.R., 1988, p.1). What we think may be acceptable or otherwise, but we should not shy away from original thought. Nothing dared, nothing gained.

In dating history especially Ancient or Proto - History where there are no written records clearly giving dates; we still remain in the realm of conjecture. History starts when a people use ‘writing’ and ‘written words’ and their language is deciphered. History can then be narrated cogently and chronologically. The story of the civilisation is then available. The ‘archaeologist’ from the artefacts dug up as material evidence of human existence at a site or a series of sites makes out a story by informed guesses or conjectures. As the Fermat conjecture had to be proved in Mathematics, these conjectures have to be proved by more evidence from other branches of knowledge.

Ancient Indian history suffers from the problem of lack of an agreed deciphered language for the Indus script since no two scholars agree on its decipherment and therefore settled dates. This problem existed with ancient Egypt, the Incas and other ancient civilisations. But the Mayan script has been deciphered in 1986. At an exhibition entitled "The Blood of Kings: A New Interpretation of Maya Art" organized by Inter Cultura and the Kimbell Art Museum and curated by Schele and Yale art historian Mary Miller ([https://en.wikipedia.org/wiki/Maya\\_script](https://en.wikipedia.org/wiki/Maya_script), 2015) the decipherment was accepted, except by the skeptics who make a living by criticising others who work. The date of apocalypse on 21st, December, 2012 was deciphered from the Mayan calendar, which did not occur. It marked the end of a time period not a full Yuga. The dates given by archaeologists for India especially keeps varying as new finds keep coming up, pushing the findings regarding the period of our civilisation concerned further back.

Our historians took the Biblical date of 4004 BC, worked out dates by taking it as the base date and condemned anyone who disagreed. This is called Diluvial Dating which was in vogue in the XIX Century AD. It was a 17th Century AD chronology of the history of the world formulated from a literal reading of the Bible by James Ussher, the Archbishop of Armagh (Church of Ireland). He based it on the number of generations from Adam using the Biblical life span of 70 years per generation. This approach is responsible for almost all the dates in ancient Indian history resulting in making India look like a more recent civilisation than it actually is. It also resulted in wrong theories like the Aryan Invasion Theory which is actually disproved now. The Hindu religion alone gives dates and antiquity corresponding to modern physics according to Carl Sagan and other leading physicists, which we shall see in the chapter on Ancient Historical Tradition.

So far in dating, we have accepted only the dates and theories of history some of which are conjectures given mainly by Archaeologists, especially in India. Till recently, historians normally used the following disciplines to date events in history:

- I. Linguistics - Comparative Philology & Linguistic Palaeontology
- II. Anthropology- Physical Anthropology & Cultural anthropology
- III. Ancient Historical Tradition
- IV. Archaeology
- V. Historical Records (including Epigraphy)

This writer even in 2000 (1st edition) felt that dates should be confirmed without subjective bias, which could be alleged against the above five approaches. He added three more :

- VI. Scientific Methods of Independent Dating
- VII. Remote Sensing
- VIII. Astrology and Astronomy

In the XX and XXI century AD, dating has moved from the field of Arts i.e. History to Science. Modern Science aids all these disciplines by its techniques for dating of events especially when correlation with other known events is not available. Even when they are available, these methods are still used to check results. Conclusions of historians are formulated or triangulated using Lasers for analysis of genes, Seismic Profiling, Magnetic Imaging and Sonar. Photogrammetry is used to get views of objects or structures from afar. Carbon-14, Thermo - Luminescence, Potassium-Argon, Amino-Acid, Dendro – Chronology, Skeletal Biology, Pollen Analysis, Geo Magnetic dating etc., are some of the dating methods used when dates have to be fixed independently. Rock and Cave art is the earliest art known to humankind. It relied mainly on conjecture and stylistic dating, since it pre-dates any known events. It also is now being dated using scientific methods of independent dating.

These science based methods are given great emphasis and used in this work at appropriate places to date events and validate established dates in accordance with the holistic approach advocated by this writer. They also have their pitfalls which are also highlighted. The use of Astrology and Astronomy to triangulate dates or use them as a reliable input for dating is a unique feature of this work.

Underwater (Marine) Archaeology has never been a strong point in Indian historical analysis. Yet most of the folklore, epics and even the Rig Veda (the Maruts) deal with sea voyages, sea incursions in the Holocene period and even in the most recent period in 1964 AD in Dhanushkodi. This is greatly emphasised in this monograph. It has thrown

up the most remarkable findings that bear out the epics, antiquity of our civilisation and literature especially Tamil ancient literature as not mere figments of imagination as was dismissed by some English historians and their Indian followers but the whole truth though somewhat distorted in transmission through the ages.

Each discipline involves years of laborious study and has its own methods of analysis. The professionals of each of these disciplines specialise in their own methods. They therefore tend to ignore the methods of other branches of knowledge and come to conclusions in isolation. This is the classical Specialist versus Generalist syndrome. Koontz & O' Donnel (1972, p.55), the management gurus put it succinctly when they say, "A specialist knows more and more of less and less, while a generalist knows less and less about more and more". Ultimately too much specialisation tends to miss the wood for the individual tree.

Another problem with professionals is what Chambers calls 'Normal Learning' i.e. the body of knowledge that has been developed over the years in that discipline. They cannot easily accept new ideas, which question the ideas or theories that they have been taught or accepted over the years. This ignores the reality that other people might know better, though they are not professionals. Participatory Rural Appraisal professionals call this Indigenous Technical Knowledge (Chambers R., 1995, p.33). This results in ignoring our traditional literature, folk tales and the knowledge of fishermen as they are not considered 'professionals'.

We have all heard of the story of the 'Emperor's new clothes'. This illustrates that a fresh appraisal of even existing knowledge might lead to new facts and theories, upsetting what is existing settled knowledge.

Papers on specific studies on a particular monument or event have been included in this second revised edition to illustrate the general principle. We move from the particular to the general based on such studies using an anthropological approach for which Participatory Methods are famous. For example, the study on the Shermadevi Public Works Department quarters which has been established as a converted Siva temple or the murals in the Kanchipuram Devaraja Swamy temple having two layers making for confusion in dating upset existing knowledge. That even epigraphy cannot be completely relied upon is stressed by the chapter on the Idol of the Balakrishna in the Government Museum, Chennai. Change in cults or deities is illustrated by the learned paper of the esteemed colleague of this writer the late Thiru K. Lakshminaryanan, a great scholar on the Saptamatrika cult or the observations on Jyeshtha Devi worship by the writer. The Sayana forms of Vishnu show not only the evolution of doctrines of worship but also the Bhagvata cult has a physical demonstrator in the form of the Heliodorus pillar. This is dealt with at appropriate places. It must be a revelation to many that

Hinduism once accepted even Greeks, Kushans of Gandhara (present Afghanistan) and other Central Asians into its fold before it became rigid and non - converting.

The advanced nature of Indian architecture can be seen from the Hoysala period invisibly suspended pillar through the base of which a paper passes through as in the Mallikarjuna Siva Temple at Dharmapuri. The non rusting iron pillar in Delhi of the Gupta Era demonstrates the advanced nature of Indian metallurgy.

Once India was a source of knowledge and culture to the whole of Asia and the world. This is shown in the pre-historic period by the cultural links with Incas, Mayas and the Sapta Rishi cult. The chapters with papers on the ‘ the Buddhist Link of Tamil Nadu with the Himalayas’ and the chapter on ‘South Indian Cultural Links With Sri Lanka’ reinforce this in the historic period with of course Emperor Asoka and the Buddhist teachers being the cultural ambassadors of India, projecting its soft power in an age when brutal conquest and hard power projection was the norm.

In this 2nd revised edition of the monograph, we see how many of the prognostications of the 1st edition of 2000 AD like the Seven Pagoda theory of Mamallapuram (Mahabalipuram) were proved by subsequent events like the Tsunami of 2004 AD. The hypothesis that the Harappan (Indus) civilization would extend to the Indo-Gangetic plain has been proved by the Bhirrana excavation etc. A lot of new material , the result of 16 years of work in this field by the writer and wide cross – discipline experience have been added. The holistic approach which was novel is now the accepted norm in historical dating. The exposition of the above is presented in detail.

Let us now explore the holistic approach in detail.

## **CHAPTER - II**

### **PROBLEMS OF DATES IN ANCIENT HISTORY**

Ancient Indian history especially suffers from the problem of lack of an agreed deciphered language and therefore settled dates. This problem existed with ancient Egypt, the Incas and other ancient civilisations. The dates given by Archaeologists varies as new finds keep coming up, pushing the findings regarding the period of the civilisation concerned further back. Srinivasan contends that according to cryptographic theory, the Harappan script can be deciphered only if one can reduce it to some known language (Srinivasan K.R., 1988, p.1). The 'script' still remains unknown. Thus the culture still remains in the realm of Proto-History and can enter the realm of History only when their 'writing' or 'record' is deciphered and the message they communicate is intelligible to all sections of scholars.

There is no counterpart to the Rosetta Stone discovered by Bouchard in 1799 AD, which contained the same message in Greek and Egyptian languages with three scripts Hieroglyphs, Egyptian and Demotic in the Indus Valley settlements discovered so far.

Several historians like I. Mahadevan, Ojha, Mathivanan and scientists claim to have deciphered the Indus Valley script. Dr. N. S. Rajaram claims to have deciphered a script even more ancient to the Indus script by computer simulation, which he feels belongs to the world's most ancient civilisation {Rajaram N.S., 2000(1), p.121} (See Photo - Chapter - XIII).

The Vedic-Epic culture or pre - Jain and pre-Buddhist times remains an enigma equally (Srinivasan K.R., 1988, p.2). This confusion regarding dates appears to extend till the time of the Gupta dynasty in North India (Ramachandran V.G., 1998, p.46).

This is because history is viewed through the eyes of foreigners and all the writings made by them are taken as authentic without attempting to sift even subjective or spatial bias. Right from Megasthenes to Sir Mortimer Wheeler the views of foreign writers are given credence while in the case of our own writers, exaggeration is ascribed. Swami Vivekananda stresses reliance on our writers and use of Astrology and Astronomy as the national method of historical research (Sakhyananda, 1998, p. 23).

For example, the British wanted to rule India by their famous 'Divide et Impera' (Divide and Rule) strategy. They formulated theories like the Aryan and the so called Dravidian races in India in pursuance of this strategy. There is no reference to a so called Dravidian race in any ancient book, Indian or foreign. The word Dravidian came into political usage only after 1800 AD (Ramachandran V.G., 1998, p 47). The history that we have been handed down is the result of efforts of writers with diverse motivations. Max Muller and Ferguson (Chapter - V & VI) confuse further introducing the concept of Turanian races in addition to Aryan and Dravidian races. Ferguson describes the Turanians as inferior people.



They invented the theory that the Aryans (wise people) came into India only about 1500 BC. It was, therefore, easy to create a new hypothesis that the Ramayana and the Mahabharata are fictions that were written during the early Christian era. Rama, Krishna, Vedavyasa and Sankara therefore became mythological persons, and not historical personages (Ramachandran V.G., 1998, p. 47 – 48). Adi Sankara, therefore, had to be born in the 7th century AD to validate this thesis, regardless of the dates that can be easily deduced from his horoscope and its cross verification with astronomical data. There is other evidence from Scriptures, Historical Records etc. to triangulate the astrological cum astronomical date.

European scholars in the medieval ages, starting with Filippo Sessetti in 1583 AD and culminating in Sir William Jones in 1786 AD, found that some Sanskrit words had similarities to some of the words in European languages (Talageri Shrikant G., 1998, p. 231). Therefore, the Aryan theory was started. The young German scholar Friedrich Max Muller (1823 AD – 1900 AD) in Oxford, about 1853 AD, introduced into the English language the term Aryan as applied to a large group of languages. He wrote to his wife in 1866 AD, that in translating “the (Rig Veda) is the root of their religion and to show them what the root is, I feel sure, is the only way of uprooting all that has sprung from it during the last three thousand years”. Two years later, he also wrote to the Duke of Argyle, then acting Secretary of State of India, “The ancient religion of India is doomed”. However, toward the end of his life, Max Muller recanted and became a follower of Vedanta. He repudiated all his earlier writing including the dates {Dr. Rajaram N.S., 2000(1), p.118-119}. In Germany, the idea of the ‘Aryan’ race found no more scientific support than in England. However, Hitler used it with disastrous consequences to the world; Karma theory in action for the British.

The systematic efforts to castigate the ancient Indian civilisation can be seen from the efforts of UNESCO to categorise the Rig Veda as an “epic of the destruction of one of the great cultures of the ancient world”(Woolley L., from Talageri Shrikant G., 1998, p. 232).

A visitor in 2002 to the Chennai Museum, Mr. Naman P. Ahuja, a research Scholar of the School of African and Oriental Studies, London (now in Jawaharlal Nehru University, Delhi) stated that the Aryan invasion theory had been abandoned in U.K. Mr. James Hancock, the producer of the Discovery Channel programme ‘The Lost Civilisation’ states that re-appraising the Pyramid of Gizeh and the Sphinx in Egypt by astronomical methods and relating it to the archaeological evidence has pushed back the conventional dating of circa 4500 BC to around 10500 BC. Sir Mortimer Wheeler himself says that he ‘light-heartedly’ stated that Indra and the Aryans were the cause of destruction of Indus Valley cities, but he goes on to state that no single cause can be ascribed (1966, p.73). This shows that continuous reappraisal in the light of new facts and knowledge is needed to be done in India as is being done abroad.

All this points to the need for a reassessment of our past and the dates of earlier British historians and their Indian followers in the light of modern methods of analysis in a dispassionate and objective manner using a holistic approach.

Regarding Archaeological dating, Agrawal D.P. et.al. (1995, p.86) agree with other writers that the West started with the Biblical date of 4004 BC and condemned anyone who disagreed. This is called Diluvial Dating which was in vogue in the XIX Century AD. This approach is responsible for almost all the dates in ancient Indian history resulting in making India look like a much younger civilisation than it actually is. It also resulted in wrong theories like the Aryan Invasion Theory which is actually disproved now. This is the cause for much of the wrong dating of the Western school of historians as seen above and shall be shown below at appropriate places in this work.

Thus all individual techniques have their pluses and minuses. But a holistic approach especially based on scientific independent dating will remove individual aberrations and give a correct picture.

We will go into the methods used in each discipline, reappraise the evidence, evaluate some of the existing theories of ancient history in their light and come to conclusions using a holistic approach. This will give a more cogent version as all the pieces fall into place to produce the ‘big’ picture.

## **CHAPTER - III**

### **METHODS OF DATING IN HISTORY ESPECIALLY ANCIENT HISTORY**

Till recently, Historians used the following four disciplines to date events in history:

- I. Linguistics - Comparative Philology & Linguistic Palaeontology
- II. Anthropology- Physical Anthropology & Cultural anthropology
- III. Ancient Historical Tradition and Historical Records
- IV. Archaeology (Pandya A.V. 1957, Hindi Section, p.5).

This writer has added three more viz. :-

- V. Scientific Methods of Independent Dating
- VI. Remote Sensing
- VII. Astrology and Astronomy

### **SCIENTIFIC METHODS OF INDEPENDENT DATING**

Usually, events are dated by relating them to other known and already established events in History and Archaeology.

Scientific Methods of Independent Dating are more reliable than the older methods which rely on cross comparison of features of artefacts or layers of strata of earth with other already known dates to date events. This method does not rely on others but stands alone in dating events and artefacts independently.

Stratigraphy is used in relative dating. The archaeologist observes the successive layers in the site and then establishes the chronology of different levels of layers relative to each other. In the excavation of a great site like Ur or Troy the relative chronology of the various levels of occupation is first to be established (Encyclopaedia Britannica, 1999). But even in properly observed and recorded stratigraphic levels there is often doubt. Can it be said that all the artefacts and human remains found in the same level are contemporary? Is it possible that there could have been later intrusions that have become difficult to distinguish? This is called contamination.

#### **Dating by ice cores in the Arctic and Antarctic**

An ice core is a core sample that is typically removed from an ice sheet, most commonly from the polar ice caps of Antarctic or Arctic or from high mountains elsewhere. As the ice forms from the incremental build up of annual layers of snow, lower layers are older than upper, and an ice core contains ice formed over a range of years. Ice cores contain an abundance of information about climate. Additions in the snow of each year remain in the ice, such as wind-blown dust, ash, pollen, bubbles of atmospheric gas and radioactive



substances. The variety of climatic proxies is greater than in any other natural recorder of climate, such as tree rings or sediment layers. These include (proxies for) temperature, ocean volume, precipitation, chemistry and gas composition of the lower atmosphere, volcanic eruptions, solar variability, sea-surface productivity, extent of desert and forest fires.

The length of the record depends on the depth of the ice core and varies from a few years up to 800,000 years. This is done with the help of isotopes (Source: [https://en.wikipedia.org/wiki/Ice\\_core](https://en.wikipedia.org/wiki/Ice_core)).

Relational Dating of events is done by relating the event to other known events in the same or other civilisations. Independent dating is done usually when Relational dating is not feasible. Now, however, they have assumed greater importance. The methods of independent dating are Carbon – 14, Thermo - Luminescence, Potassium-Argon, Amino-Acid, Dendro – Chronology, Skeletal Biology and Pollen Analysis etc. These are used at appropriate places in this paper as already stated above. They are explained in brief below.

The analysis of the Fluorine content of bones has been very helpful in cases where there are doubts sown in the mind as above due to contamination. If bones in apparently the same geological or archaeological level have markedly different fluorine content, then it is clear that there must be interference - for example, by a later burial, or by deliberate planting of faked remains, as happened in the case of the Piltdown ‘Man’ hoax in England (Encyclopaedia Britannica, 1999).

Non-human absolute chronology was called Geochronology by Baron Gerard De Geer, its Swedish inventor. This method was based on counting the thin layers of clay left behind by the melting glaciers when the European Ice Age came to an end. This gave a chronology of about 18,000 years. Thus, absolute dates could be established for artefacts from the Late Palaeolithic Period, the whole of the Mesolithic Period, or Middle Stone Age, and much of the Early Neolithic Period (Encyclopaedia Britannica, 1999).

Carbon-14 dating is based on decay of radio-active carbon and measuring the rate of decay to date objects against a pre-determined standard. It has been aligned with Tree rings when radiocarbon dates proved younger than archaeological dates. Now, an internationally acceptable calibration curve, which makes it possible to relate dates for archaeology throughout the world, has made possible a unified chronology. Cultures in South America, Africa and India can now be compared for age. This has pushed back the beliefs about the age of cultures. For example, the chalcolithic cultures are much older than earlier thought (Agrawal D.P. et.al., 1995, p.2). This point is made frequently throughout this work. In India, Carbon-14 dates are published. This method is based on the principle that Carbon-14 decays by 1% every 83 years, which means that in 5730 years it will be half. The outer limit is 40,110 years beyond which it is not possible to date

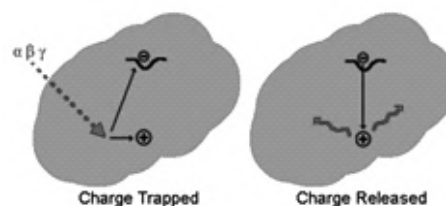
using this method (Agrawal D.P. et.al., 1995, p.2). This method is used in the Dilji- Kot phase of dating the Indus Valley civilisation dating in the Archaeology section below. It is not proposed to go into the technicalities here. **Accelerator Mass Spectrometry** is the latest technique used for C-14 analysis. It has its own limitations. This radioactive decay is vitiated by the nuclear tests and burning of fossil fuels. Production of C-14 is affected by location. E.g. in the lower latitudes, weaker geo-magnetic fields will result in lower C-14 production. Sample contamination is another important factor. In organic matter, there is differential rate of decay of live and dead tissue as in Tree rings. This is calibrated for error. Drainage structures have produced younger than actual dating due to contamination by percolation into ancient strata as in the Kushan period. A similar effect is found in sand dunes or porous soil (Agrawal D.P. et.al., 1995, pp.9-33). Therefore, to swear by C-14 alone is not proper, though it is a very useful technique which has removed the absurdly young age given to our culture in the 19th century AD as we shall see below.

Thermo - Luminescence (TL) is the light emitted in excess of glow when a non-electricity conducting solid is heated. Ionisation i.e. detachment of electrons from their parent atoms occurs. The release of electrons during heating is proportional to the term of storage. This is correlated with an artificial dose for a fresh sample of the same material, which serves as the standard. Age is determined as the ratio of decay of the archaeological dose to the dose rate (Agrawal D.P. et.al., 1995, pp.39-41). The problem in this method is due to the large water content of the surrounding soil. As water absorbs radiation, it becomes a cause for large errors. Errors from external causes such as friction, light exposure etc. also occurs. TL avoids such errors in the case of pottery and is therefore often used when pottery finds are got. This has been done in Dwaraka as is seen below. But even here the potsherd is in sea water. Therefore, the reservation on the dates as deduced from TL dating, expressed by this writer below in the Marine Archaeology section on the age of Dwaraka as deduced from TL dating alone, appears valid.

## LUMINESCENCE

### TL - Thermoluminescence

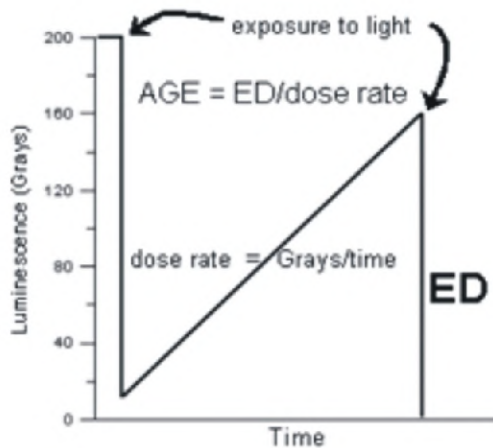
### OSL - Optically Stimulated Luminescence



Like  $^{14}\text{C}$  dating, thermoluminescence is related to radioactive decay.

Thermoluminescence is produced by radioactive decay particles (electrons), trapped in mineral grains. Heating the mineral (or exposure to light) releases electrons, and produces a flash of light, setting the clock to 0 (maybe only partial). Thereafter, luminescence accumulation is proportional to age. Used particularly for >50 ka archeological dates.

Dating Range: 1,000 - 300,000,000 years.



Materials Dated: pottery, hearths, tephra, radiolaria, speleothems, sediments

- measure native TL (OSL)
- measure sensitivity TL/rad (OSL/rad) (radiation absorbed dose)
- determine dose rate at site (rad/yr)

$$\text{age (yr)} = \frac{\text{native TL / sensitivity (TL/rad)} \quad \text{rad}}{\text{site dose rate (rad/yr)} \quad \text{(rad/yr)}}$$

(source : [www.rses.anu.edu.au/environment/eePages/eeDating/QuaternaryGeochronology/](http://www.rses.anu.edu.au/environment/eePages/eeDating/QuaternaryGeochronology/))

### Trapped Charge Dating

(Source: <http://www.uic.edu/labs/ldrl/osl.html> OSL)

Thermo luminescence (TL), optically stimulated luminescence (OSL), and electron spin resonance (ESR) are all trapped charge dating techniques.

**Lead-210 dating** is not dealt with here since it is only useful to study geological material within 100 years (Agrawal D.P. et.al., 1995, p.54).

**Potassium-argon dating** has made it possible to establish the earliest remains of man and his artefacts. In East Africa, dates go back at least 2,000,000 years, and probably further (Encyclopaedia Britannica, 1999). The principle is that of the isotopes of Potassium with mass number 40, 88% decays to stable Calcium with mass number 40 and 11.2% to Argon with mass number 40. This decay is a measure of time passed. Argon will be trapped if the mineral is at a low temperature. It is applied to rocks or minerals. Similarly, **decay of U235, U238 and Thorium 232** are measured for radioactive decay and dating (Agrawal D.P. et.al., 1995, p.68).

**Amino-Acid dating** is used to date organisms after their death based on the ratio of alteration of amino- acids of the Levo structure into Dextro structure (D/L ratio). D/L values are a measure of the age (Agrawal D.P. et.al., 1995, p.75).

**Dendro - Chronology** is the analysis of Tree-rings as each ring represents a year. This can give the age of the tree. Missing rings are reported in coniferous trees like pine due to environmental stress (Agrawal D.P. et.al., 1995, p.78). This method is dealt with below in the Marine Archaeology section while dating Dwaraka by referring to Negi & Tiwari's paper (Negi J.G. & Tiwari R.K., 1988). This writer found sea shell fossils on sand dunes on a hill near Jaisalmer, showing sea incursion in an ancient period. Similarly, even in the Himalayas sea fossils and shells are found. The concept of *Pralaya* (inundation of the world at the end of *Yugas* or world periods) seems founded in history.

Plant fossils give a clue to climatic changes as in Rajasthan where there was a green forest once, followed by saline intrusion due to sea level changes.

**Pollen analysis** is done since pollen is indestructible for millions of years. It is destroyed only by aerobic and alkaline conditions. For many areas, long and short pollen profiles are available. This can be used to measure climatic and vegetation changes. Holocene profiles of Rajasthan shows higher precipitation between 4000 – 6000 BP. Between 6000-13000 BP there is considerable fluctuation between wet to dry and back to wet (Agrawal D.P. et.al., 1995, p.82). The Institute of Paleo - Botany, Lucknow carries on this work of preparing profiles. The changes in climate as deduced from other disciplines below can be triangulated with this data. It will show the accuracy of what has been written in this monograph.

## **ELECTRON-SPIN RESONANCE**

PRINCIPLE: energy trapped in crystal imperfections depends on dose rate and time. Used particularly for tooth enamel.

- a. measure TD - Total Dose with spectrometer
- b. measure ED - External Dose rate in field
- c.  $\text{age (Te)} = \text{TD/ED}$

<http://hyperphysics.phy-astr.gsu.edu/hbase/molecule/esr.html> ESR  
Luminescence Readings

## **FISSION TRACK DATING**

Fission (radioactive decay) of <sup>238</sup> Uranium atom produces high energy particles which leave straight "tracks" (10 - 20  $\mu\text{m}$ ) in glassy material

## 90 a.m.u &amp; 135 a.m.u particles, 200 MeV



## METHOD

- etch with acid, count the "native" tracks (microscope 200 - 500 X)
- heat sample to remove tracks
- calculate amount of  $^{238}\text{U}$  by irradiating sample with neutron beam to produce artificial fission tracks from  $^{235}\text{U}$
- calculate age from native tracks and decay rate of  $^{238}\text{U}$

$$\text{Age} = \frac{1}{\text{LD}} \ln \left[ 1 + \frac{\text{ps gld} \sigma \text{I} \varphi}{\text{pi lf}} \right]$$

$p_s$  = native track density                       $d$  = total  $^{238}\text{U}$  decay constant  
 $p_i$  = induced track density                       $f$  = spontaneous fission  $^{238}\text{U}$   
 $\phi$  = irradiation (neutrons  $\text{cm}^{-2}$ )    $\sigma$  = cross-section area  
 $I$  = isotopic ratio  $^{235}\text{U}/^{238}\text{U}$        $g$  = geometry factor  
 $LD$  = decay rate for  $^{238}\text{U}$  ( $1.551 \times 10^{-10} \text{ yr}^{-1}$ )



Dating Range: (30,000) 100,000 - 20,000,000 yr

Materials Dated: apatite, mica, sphene, zircon, volcanic glass

Examples :

Pearlette Volcanic Ash, Yellowstone Park, WY

2.02  $\pm$  0.08 Ma Huckleberry Ridge

1.27  $\pm$  0.1 Ma Mesa Falls

0.616  $\pm$  0.008 Ma Lava Creek

Bishop Ash, Long Valley Caldera, CA (near B/M reversal)

0.741  $\pm$  0.014 & 0.738  $\pm$  0.0006 Ma

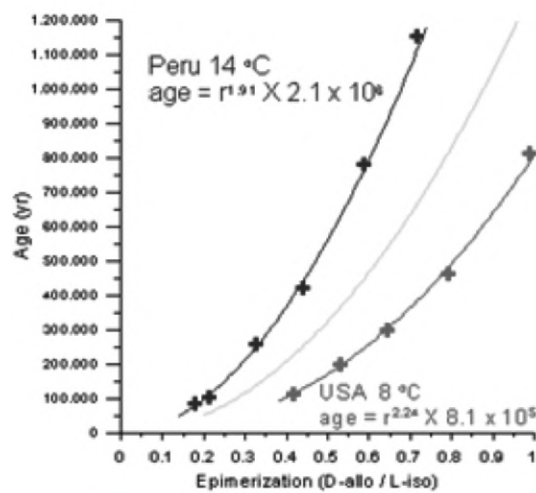
(Source : Fission Track Readings)

## AMINO ACID RACEMIZATION AND EPIMERIZATION

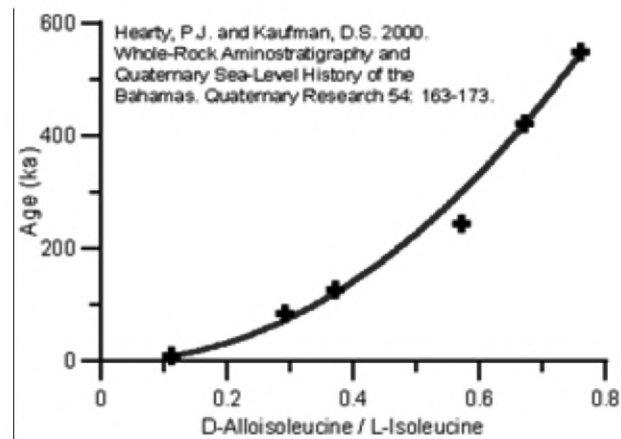
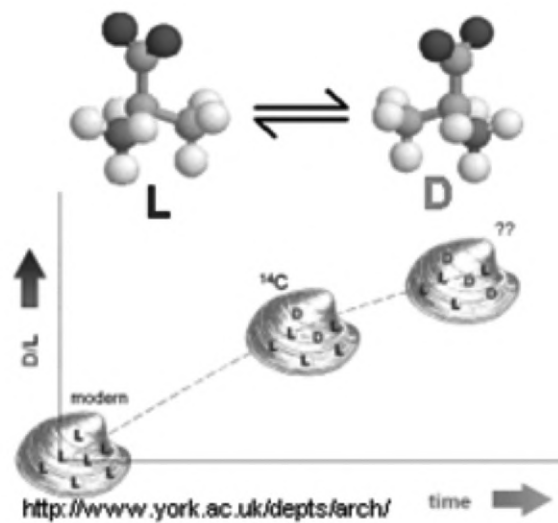
Based on the rate of a chemical process effected both by time and temperature

- \* if age known, can estimate past temperature
- \* if past temperature known, can estimate age



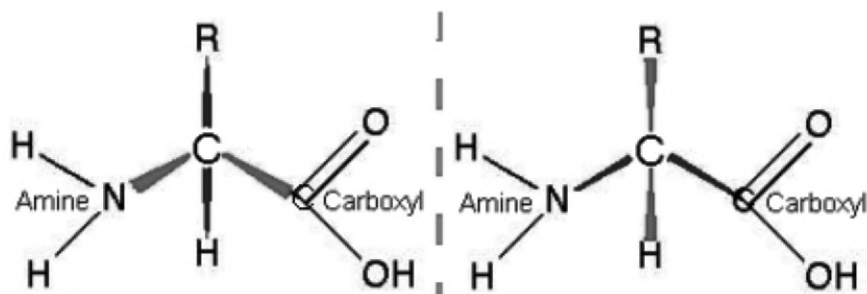


Dating Range: 2000 - 2,000,000 ± 15%



Materials Dated: organic, exchangeability very important

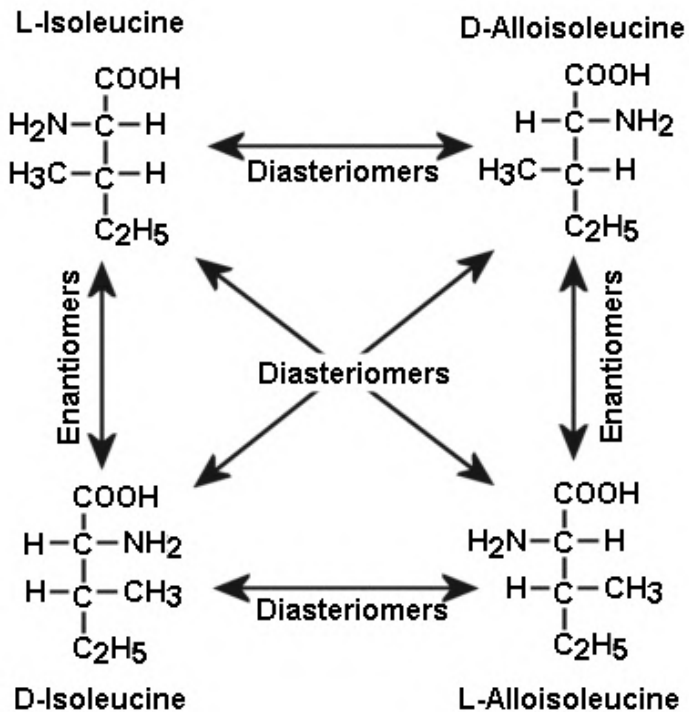
PRINCIPLE:



- \* Amino Acids have 2 possible chemical forms
- \* Only one form (L) produced by living organisms

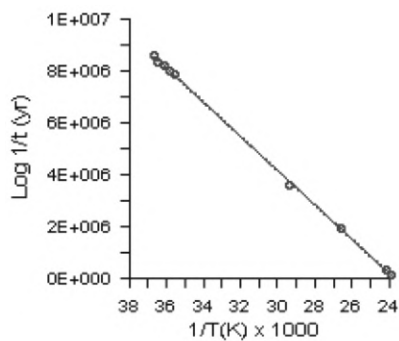
L - levorotatory: rotates polarized light left

D - dextrorotatory to righthand, the 2 forms approach equilibrium



#### METHOD :

- \* determine proportions of forms of amino acids
- \* establish rates of equilibration
  - a. in laboratory at high temperatures
  - b. in field with materials of known age



- \* if past temperature known, establish age
- \* if age known, estimate past temperature

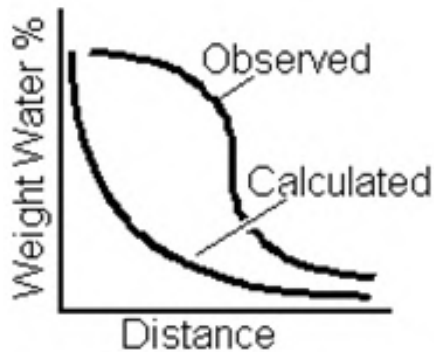
Source : <http://www.york.ac.uk/depts/arch/Research/ArchSci/Bioarch/AAR.html> AA  
Amino Acid Readings



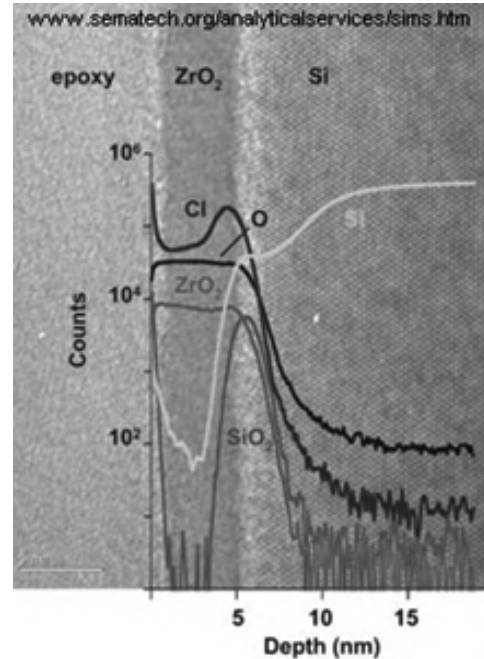
## OBSIDIAN HYDRATION DATING: volcanic glass

### PRINCIPLE :

obsidian + water = hydrated obsidian (weathering)  
greater age = thicker layer of hydrated obsidian



rate is dependent on both temperature and time  
clock set to 0 when fresh surface exposed



### METHOD :

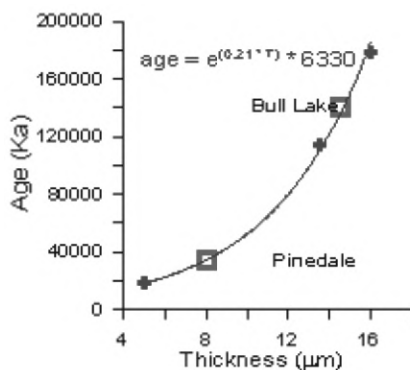
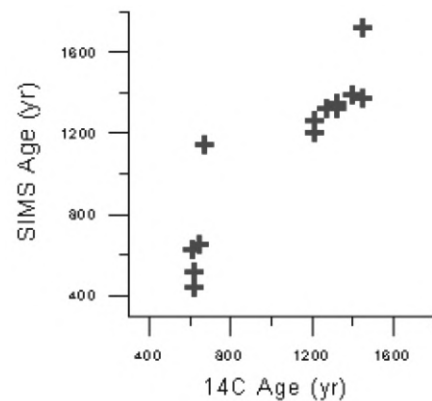
observe thickness of hydrated layer in thin section

- \* optical : has different refractive index
- \* **SIMS Secondary ion mass spectrometry**

establish hydration rate for each type of obsidian  
by examining pieces of known age, or with high  
pressure and temperature in lab.

Dating Range : 100 - 1,000,000 yrs

Materials : Indian artifacts, glacial materials,  
volcanic ash



Example : Ken Pierce et al. (1976) date Rocky  
Mountain glacial chronology

Source: <http://www.ornl.gov/info/reporter/no7/clock.htm>  
SIMS ; Obsidian Hydration Readings

## SURFACE DATING

### Cosmogenic Nuclide Exposure Dating

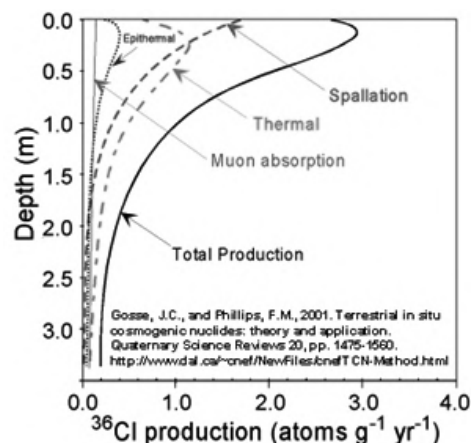
Cosmic Rays : high-energy charged particles from outside solar system

Solar Modulation : (flares produce) solar wind deflects

Geological Modulation : magnetic field, Van Allen Belts, Geography Collision produces spallation products (e.g. neutrons), which combine to form both stable and unstable products.

Collisions take place at earth's surface  $^{147}\text{N}$ ,  $^{105}\text{Be}$ ,  $^{2613}\text{Al}$ ,  $^{3617}\text{Cl}$ ,  $^{3918}\text{Ar}$

eg.  $4160 \pm 310$   $^{3617}\text{Cl}$  atoms  $\text{yr}^{-1}$   $\text{mol}^{-1}$



## GEO MAGNETIC DATING

Palaeo - magnetic dating is based on the measurement of the Earth's magnetic field over time. The magnetisation acquired by rocks or fossils are studied. The approximate duration period that can be studied is 10,000 – 100,000 years (Agrawal D.P. et.al., 1995, p.58). But now up to 2 million years are studied.

The Earth last went through a magnetic reversal some 780,000 years ago. These episodic reversals, in which the South Pole becomes the North Pole and vice versa, take thousands of years and are the result of complex changes in the Earth's outer core. Liquid iron within the core generates the magnetic field that blankets the planet.

After some 400 years of relative stability, Earth's North Magnetic Pole has moved nearly 1,100 kilometers out into the Arctic Ocean during the last century and at its present rate could move from northern Canada to Siberia within the next half-century.

This movement is used to date soil samples in pre-history as was done by Dr. Shanti Pappu and Kumar Akhilesh in Attirambakkam, near Poondi, Chennai in the presence of this writer in 2002 AD (see photos). This writer participated dhوتي clad as he could not wear pants due to recovery from an operation. It was his first outing at the persuasion of the then young archaeologists. The North Magnetic Pole has moved all over the place over the last few thousand years. In general, it moves back and forth between northern Canada and Siberia. But it also can veer sideways. Dr. Stoner of the Oregon State University College of Oceanic and Atmospheric Sciences and others are protagonists of this theory which is widely used for dating in pre-history.

Two types of dating done in France at the request of Shanti Pappu and Kumar Akhilesh, specialists in Tamil Nadu's prehistory, have established that the stone tools found at Attirambakkam could be dated to 1.5 million years. The methods used were

paleomagnetic and cosmogenic nuclide burial dating. For Dr. Pappu and Dr. Akilesh this dating was necessary for study of the rich prehistoric archaeology of northern Tamil Nadu. They have done excavations at Attirambakkam to unravel the prehistoric man's activities at the site, its environmental context and the age of the stone tools found there. This writer has participated in their excavations.

### **Paleomagnetic and Cosmogenic Nucleide burial dating**

Geologists developed the paleomagnetic dating technique to measure the movements of the magnetic north pole over geologic time. In the early to mid 1960s AD, Dr. Robert Dubois introduced this new absolute dating technique to archaeology as archaeomagnetic dating. **Archaeomagnetic dating** measures the magnetic polar wander, since the magnetic pole wanders over time.

This method points toward the location around the geographic north pole where the magnetic north pole was at that moment in its wandering ([http://archserve.id.ucsb.edu/courses/anth/fagan/anth3/Courseware/Chronology/11\\_Paleomag\\_archaeomag.html](http://archserve.id.ucsb.edu/courses/anth/fagan/anth3/Courseware/Chronology/11_Paleomag_archaeomag.html)).

### **Use of modern science in exploration and excavation**

Lasers are used for analysis of genes. Material got from teeth and their infilling and bones of skulls recovered during excavation in Physical Anthropology are analysed using Lasers etc., to determine the commonality of genes from different excavations or finds or even in the same place. **Mitochondrial DNA** analysis is done using Lasers by researchers as we shall see in the section on Anthropology below.

In Archaeology especially Marine Archaeology, Seismic profiling gives an insight into differential terrain such as layers of soil or underwater. This is very useful to discover buried structures or cities. The bottom layers under Dilji-Kot would have been easily found out if this method had been used. Off the coast of Andhra, a sea-side civilisation is expected as shown below in the Archaeology section (Rao T.C.S., 1988, p.73). Sonar by bouncing back sound waves differentially is useful in discovering objects or buried structures under water. **Magnetic Profiling** also plays a complementary role on land or under water in detecting buried material different from its surroundings on land or under water, since they give a different magnetic signature. **Photogrammetry** is used in aerial viewing and to get multi – dimensional views to get a real image of a distant object. This is more useful for land based huge drawings or to zero in on an object slightly obscured on land or in water. Photogrammetry makes use of stereo photography in measuring dimensions and shapes of ground objects in depth, as from successive exposure pairs made during an aerial survey flight. Photogrammetric plotting instruments draw height contour curves of all features for aerial maps. Similar Photogrammetric evaluation of stereo photographs of nearby subjects can also be made. For instance, it is possible to reconstruct accurately the scene of a highway accident (Encyclopaedia Britannica, 1999). This is used in evaluating geometrical design like the shapes of the Inca diagrams in Columbia. They are used to evaluate the underwater structures such as at Dwarka, India or Yonaguni Island in Japan or in Mamallapuram (Mahabalipuram) after the Tsunami of 2004.

## **CHAPTER - IV**

### **ROCK AND CAVE ART DATING**

#### **ROCKART IN INDIA**

In India, at least a few of the rural people have probably known for centuries of the existence of rock art in the rock shelters near their dwelling places. But, the first reports by outsiders occurred around 1880 AD. The reports came from British officials who had some training and great interest in prehistoric archaeology.

Rock Art is classified as Petroglyph and Petrograph. Petroglyphs were produced by pecking/bruising/battering/grooving/engraving (but not chiselling) the rock surface employing a pointed tool mostly hand axe etc. Cupules seen as cup marks or cavities by scooping out the rock surface are a special category of Petroglyphs. Petrographs are outlines scratched by stone tools and colours like red and white ochre filled in. The Pleistocene antiquity of the cupules is self evident. On the basis of geo-morphological study, the cupules are of Middle Palaeolithic or Lower Palaeolithic age. In South India, Petrographs are more than Petroglyphs.

#### **ROCKART IN TAMIL NADU**

Tamil Nadu has over 500 rock art sites. Many new sites have been identified in various places in the districts of the Nilgiris, Coimbatore, Madurai, Villupuram, Vellore. Petroglyphs are found in Perumukkal of Villupuram District. The petroglyph site, Perumukkal near Tindivanam is one of the three petroglyph sites in India ( See Photo). The petroglyph is in a cave near the top of the hill.

In Alambadi rock shelter, x-ray style petrographs depicting human and animal anatomy are seen. In Sethavarai of Villupuram District, animal motifs such as deer, tiger, fish etc. are depicted. In Chandrapuram and Chenrayanpalli of Vellore District animal beings are shown. In Iduhatti, in the Nilgiris District, red ochre painting is seen. In the Ezhuthupparai rock shelter near Vellarikombai of the Nilgiris various depictions of both human forms and animal forms are painted in red ochre and white ochre as well. This is an extremely inaccessible site involving arduous trek through thick forest for about 10 kilometres.

#### **DATING OF THE ROCK ART**

Rock art are dated mostly by their styles (i.e. stylistic dating).

#### **CULTURAL SEQUENCE OF ROCK ART**

The oldest of these Rock Art depictions probably date from the 'Upper Palaeolithic age' (Earliest Old Stone Age) over 100000 years ago and they continued to be made

successively in the 'Middle Palaeolithic Age' (Medieval Old Stone Age) 'Lower Palaeolithic Age'(Latest Old Stone Age), 'Mesolithic Age' (Middle Stone Age), 'Neolithic Age' (New Stone Age), 'Chalcolithic Age' (Copper Age), 'Megalithic Age' (Iron Age), Early Historic Age and Historic Period.

## **STYLISTIC AND CHRONOLOGICAL CLASSIFICATION OF ROCK ART AND CAVE ART**

On the basis of physical condition, manner of execution, filling decoration, superimposition and the subject matter, Rock Art has been classified into various 'styles'. Conversely, Rock Art can be classified on stylistic basis however difficult the task would appear to be at the beginning. Eventually, all known examples of depictions in Rock Art will be interrelated under a comprehensive scheme of stylistic classification. The stylistic variation of Rock Art has a varied range. A full scale of Rock Art exists in a linear style. At one end of the scale, a rough, thick lined, abbreviated style represents the Rock Art depictions, while at the other end the lines are thin: In addition to such linear, abbreviated and splashing styles, a selection of depictions is portrayed in a naturalistic manner. Skeletal forms or Life-line forms in x-ray style is yet another style available in the Rock Art traditions. Further styles include outlines, stick figures, arid square figures and stylised geometric representations. We have integrated Rock Art with Cave Art, which is a later development in a holistic approach.

V.S. Wakankar prepared a style chart that summarizes five periods and twenty styles into which all presently known Rock Art has been tentatively classified. The chart of Wakankar has been modified by this writer to include Cave Art. This is because at the advent of the historical period Rock Art merges into Cave Art though both exist side by side. The chronological order is given below (See Pictures of some styles).

### **PERIOD I - MESOLITHIC OR EARLIER**

- |         |  |
|---------|--|
| Style 1 | Petroglyphs as at <i>Perumukkal</i> - carved or scooped out of rock - craters or cupules.  |
| Style 2 | Very faint red outline; large: 14 inches to 6 feet; no humans; buffaloes and bison; Adamgarh, buffalo; Kharvai, bison; Kanwalla, bison, <i>Vellerikombai</i> , hill or altar.  |
| Style 3 | Very faint red wash or very heavy red outline; vacant centres, or filled with wide vertical or oblique lines; associated with human hunters; Ghor, rhinoceros; Adamgarh, bison and antelope; <i>Alambadi</i> , bird.   |
| Style 4 | Faint red outline with filling following the muscles and viscera; incipient x ray style; non-geometric; a few human hunters or dancers; Bhopal, Hospital hill, deer and hunters; Raisen, deer; Kharvai, bison; <i>Keezhvalai</i> , Crab; <i>Alambadi</i> , Human beings and animals. |



- Style 5 Red or red and white or white outline filled with a great variety of geometric patterns: lines, zigzags, chevrons, triangles, lattices, lozenges, honeycombing, squares and rectangles; many different animals; somewhat realistic; at least 24 locations, but best seen at *Hathi Tol, Raisen*.
- Style 6 Geometric and floral designs; thin red or purple outline; associated with animals of style 3 and humans of style 4 and 5; some patterns like huts; *Brahmi* type symbols; Bhimbetka, Edakal, and *Keezhvalai*.

## **Period II Neolithic / Chalcolithic and early Iron**

- Style 7 Simple line drawings in red; antelope, deer, humped cattle, boar, astronomical phenomena, sun, stars, flowers; superimposed by Period III; Bhimbetka, *Alambadi* and *Iduhatti*.
- Style 8 Thick white ochre as though done with a finger in outline only; many animals crudely drawn and triangular humans; superimposed by Period III paintings; Kharvai, Bhimbetka, *Vellerikombai*.
- Style 9 White or yellowish white or yellow wash without apparent outline; quite realistic and skillfully executed; bulls, horses, camels, humans; Bhimbetka, *Chenrayanpalli*;

## **Period III Early Historic (300 BC - 800 AD)**

- Style 10 Sangam Era symbols in red or white outline, occasionally green or yellow, or white wash; *swastika*, hollow cross, *Trishul* elaborate design; associated with *Brahmi* letters, probably the work of religious recluses from the valley cultures; Bhimbetka, Roup, Narsingharh, Gwalior, *Iduhatti*, *Keezhvalai*.

### **Style 11 *Satavahanas* (100 AD - 300 AD)**

Red or white outline paint - red ochre directly on limestone as found in the *Amaravati Stupa* pieces - faint red outer outline alone is seen now. The rest have been obliterated due to passage of time. This is on the bas - relief sculptures and a casket. There are two or three pieces in the *Amaravati* Gallery of the Government Museum, Chennai and in some pieces in the British Museum where this is found. Wakankar for this period writes about geometrical patterns: horses, donkeys, horse riders and warriors; similar to pottery designs at Newasa and Navda Todi; found only where Neolithic or Chalcolithic pottery is found; Kharvai, Bhimbetka, Pachmarhi and Bor Rani. This holds good from a North Indian perspective.

### **Style 12 Pre- *Pallava* and early *Pallava* (300 AD - 650 AD)**

Coating of lime as a base over which red ochre is coated and may be other minerals and decorative patterns; conflicts, scenes of gods, mythological,

scenes. In *Mahabalipuram*, the *Adivaraha* cave has this type of red ochre paint, but the paint surface has peeled off except in a few areas of the *Adi varaha* at the base near *Adisesha*, who is at the feet of *Varaha*. Only the lime base is seen on the other sculptures in the outer cave. The red ochre and other colours are washed away. There are newer layers of other colours as well since the cave is under worship. The technique used was *fresco secco* according to Indian scholars, while Europeans consider all these as *tempera*.

Style 13 Multicoloured decorative patterns: white, red and yellow wash; Kohbar, Bhaldaria, Sugdaria (North India).

Style 14 Post Gupta - Pallavas (500 AD-650 AD)

White or red or white and red ochre - drawings of domestic scenes, tribal conflicts, carrying, dancing; often realistic and graceful, with emphasis on human action; Pachmarhi, Bhimbetka etc. This holds good for North India. In South India, Style - 12 is the pattern that holds the stage. There is no direct influence of the Guptas in the Tamil country. There was cultural intercourse however. This period belongs to the mighty Pallavas. The paintings in the Kailasanatha Temple at Kancheepuram and the Chattri at Panamalai near Gingee in Villupuram District testify to the mainstreaming of Rock and Cave Art in the late Pallava period. The paintings at Kailasanatha Temple though damaged show clearly that the thesis enunciated regarding the Adivaraha cave is true. The paintings are on sculptures. There is a lime base over which exquisite colour paintings are made with vegetable and/or mineral dyes with red alone visible now.

#### **Period IV Medieval (800 AD - 1300 AD)**

Style 15 Cave paintings with Vegetable and/or mineral dyes - Sittannavasal cave paintings, Chola period paintings in the Big Temple, Thanjavur, paintings in the Jam caves/ cave temples at Tirumalai Hill (Tiruvannamalai District) etc. A layer of Naik period post 16<sup>th</sup> Century AD paintings on lime base has been separated and exhibited in the Big Temple, Thanjavur.

#### **Period V Post 1300 AD - Post Medieval**

Style 16 Paintings in temples and places like the Jain caves at Tirumatalai (Tiruvannamalai District), Vijayanagar and Naik period paintings in temples like the Thyagaraja temple, Tiruvarur, Tiruvarur District, Varadarajaswamy temple, Kancheepuram, Sphutarjuna temple, Tiruppudaimarudur, Sthanumalaya Swamy temple, Suchindram etc. The examples are too numerous for all to be mentioned here. Vegetable and mineral dyes - pictures of gods, courts of kings, fights, mythological scenes etc are depicted. Tirumalai has a continuing tradition of cave paintings and therefore figures in



two time periods. In the Varadarajaswamy Temple on 22.09.2015, this writer helped a team of chemical conservators to separate an early Vijayanagar layer of murals from a later period mural probably Naik period and display them just as at Big Temple, Thanjavur. Small broken parts have been sent for C-14 dating of each of the layers. Similarly, for the five granary silos of the Naik period at Srirangam, when a controversy came whether the exposed brick architecture was originally plastered we have resorted to C-14 Dating of the brick and the lime plaster to determine whether the plaster came later. In the Papanasam granary silos (Thanjavur district), it was exposed brick architecture (Kannan, Dr, R. 2007).

### **DATING THE STYLES :**

#### **Period I Mesolithic or earlier**

There is a distinct possibility that this may turn out to be too conservative. Styles 1 to 4 and the drawings in green pigment may be lower Palaeolithic or earlier.

#### **Period II Neolithic/Chalcolithic, early Iron**

In Period II problems of both absolute and relative dating occur. The end of the period is securely anchored in historic fact and all of the styles of Period II are superimposed by paintings of Period III. But, this does not help in fixing the beginning of Period II. For this, we are largely dependent upon parallels between Rock Shelter paintings and datable decorated pottery. There are striking similarities between styles 5 and 7 shelter paintings and early Chalcolithic pottery. Independent dating is being tried out now. It is assumed that the paintings occurred before the more conventionalised pottery decoration because the wild animals shown in the shelter depictions were closer to the lives of the shelter dwellers than to the pottery makers.

#### **Period III, IV and V - Early historic, medieval and - post medieval**

1. The absolute dating of the styles within these three periods is relatively certain because much of the subject matter can be associated with historical facts.
2. These styles contain subject matter extraneous to the lives of cave shelter dwellers. This is because civilisation takes over. Mainstreaming is almost complete except in hills like the Nilgiris.
3. The tradition of Rock Art is continued by the tribals like Kurumbas of the Nilgiris who rub out the earlier painting and repaint or add new paintings of red or white ochre in sites near their habitations like Iduhatti etc. They do this on their festival days every year. This is a replication of the past

but the motifs show up their recent origin, though some accurate reproductions of the past are also seen.

4. Rock Art coexists with the more highly stylised Cave Art. This is common in Indian civilisation, where everyone gets his own space side by - side with the space of others. This is due to successive waves of people who have settled this ancient land. Each made a separate space for themselves.
5. The above approach integrates the two hitherto separate art forms of Rock and Cave Art. With this holistic approach to Rock and Cave Art, Rock Art gets fused into Cave Art made with vegetable and mineral dyes. It then evolves into the highly artistic temple paintings. The Rock Art stream exists even today among the Kurumba tribals of the Nilgiris as seen above. The two seemingly separate streams integrate into one grand continuum from pre-history till the present. This pioneering holistic approach has been used even earlier in the Monograph on Dating in History especially Ancient History {1st edition - Kannan, Dr., R., 2000 AD and Monograph on the Rock and Cave art Gallery in the Government Museum, Chennai (2003)}.

### **Independent Scientific Dating Techniques.**

Together with independent Scientific dating, Rock Art and Cave Art can be dated more accurately now. Further, various scientific dating methods are also in practice to date rock art more precisely. They are as follows:

- i. Micro-erosion Dating Method (by studying the micro-erosion involved in rock)
- ii. Lichenometry Dating Method (by measuring the lichen overgrowth on rock)
- iii. Cation/Ratio Dating Method (by correlating the various results of Carbon 14 Dating of the microbial growth collected at various layers of rock art)
- iv. Luminescence Radio-active Dating Method (by testing the mineral accretions removed from the rock art)

### **ACCELERATOR MASS SPECTROMETRY TECHNIQUE**

Marvin W. Rowe points out that rock paintings, or pictographs, are among the most difficult archaeological artefacts to date. They lack the high levels of organic material needed to assess a pictograph's age using radiocarbon dating, the standard archaeological technique for more than a half-century.

Rowe describes a new, highly sensitive dating method, called accelerator mass spectrometry, that requires only 0.05 milligrams of carbon (the weight of 50 specks of dust). This is much less than the several grams of carbon needed with radiocarbon dating.

The research included analyzing pictographs from numerous countries over a span of 15 years. It validates the method and allows rock painting to join bones, pottery and other artefacts that tell secrets of ancient societies, Rowe said. "Because of the prior lack of methods for dating rock art, archaeologists had almost completely ignored it before the 1990s," he explained. "But with the ability to obtain reliable radiocarbon dates on pictographs, archaeologists have now begun to incorporate rock art into a broader study that includes other cultural remains."

**Source :**

1. The above is reprinted from materials provided by American Chemical Society.
2. Bulletin of the Government Museum, Chennai (Madras) – Monograph on Rock and Cave Art by Dr.R.Kannan, IAS, Commissioner of Museums and Agriculture, New Series – General Section, Vol. XVIII, No.1, 2003, Published by the Commissioner of Museums and Agriculture, Government Museum, Chennai – 6000 08.

The Rock Art site in Gudiyatam in Vellore District has red ochre painting, which is from a very early period. It shows figures similar to the one we see at Idhutti, which seems to indicate that Keezhvalai, Alambadi, Idhutti and Vellerikombai all show a common civilisation and their symbol also have a link with the Indus Valley civilisation symbols which came later. This shows that there is a Pan Indian Civilisation. The civilisation was a continuous one and not discontinuous as in some Western Countries. **It was not brought by invaders from Asia to the west of the sub continent or Europe as XIX Century historians and their current followers would have us believe.**

## **CHAPTER - V**

### **Dating based on Linguistics, Comparative Philology, Linguistic Palaeontology and Literary Sources**

#### **LINGUISTICS (COMPARATIVE PHILOLOGY - LINGUISTIC PALAEONTOLOGY)**

In Comparative philology, similarities in words are analysed to trace common origins or inter connections. In Linguistic Palaeontology, tracing the linguistic roots of words (Etymological analysis) is done. Both these approaches help to date events by tracing an established event in one culture or civilisation and relating events in other cultures or civilisations to them.

#### **LINGUISTIC PALAEONTOLOGY**

The word 'Arya' in Sanskrit means noble and never, a race. In fact, the authoritative Sanskrit lexicon (c.450 AD), the famous Amarakosha gives the following definition: 'mahakula kulinarya sabhya sajjana sadhavah'. This means 'an Arya is one who hails from a noble family, of gentle behaviour and demeanour, good-natured and of righteous conduct' {Rajaram Dr.N.S., 2000(1), p.119}.

In the Vedas, the Brahmins speak of their ancestors as the Arya and their homeland as Aryavartta, that is, the homeland of the Arya. The term 'ARYA' is applied to mean, men of high attainments in knowledge and wisdom, in culture and civilisation. The word 'AARSHA' also has the same sense as it refers to the line of enlightened, cultured rishis. Both the words are derived from the same Sanskrit root which means 'to go, to attain, to know' (Sakhyananda, 1998, p 24). Hence they are used more or less synonymously in scriptural contexts. In olden days, such men of high attainments in knowledge and culture were mostly in India, the land of Rishis. So, the people of India came to be known as Aryans.

The word Dravida or Dakshina in Sanskrit means South or South of the Vindhya. It is not the opposite of Arya as the British made it out to be. The North Indians are not Aryans. Aryans are the noble ones in society. Anybody South or North Indian could be Aryan. In the Mauryan era, Chanakya is described as a dark skinned South Indian Brahmin may be from Kanchipuram. A tribal boy, son of Mura became Emperor Chandragupta Maurya thanks to Chanakya.

In course of time, the meaning of the word 'Arya' became confined to the higher classes of teachers and rulers (Brahmins and Kshatriyas) who were superior in wisdom and strength. The Vaisyas and Sudras, who formed the bulk of the society, were then considered as "Sishyas" meaning thereby the people under training to become 'aryanised' by the higher classes of teachers and rulers (Sakhyananda, 1998, p 25). However, there are Arya Vaisyas in South India. It must be borne in mind that

Sanskrit was never spoken by the masses, but it was an elitist language of the courts and priests. Hence, Buddhism used Pali and Prakrit.

Apart from these Brahmin and Kshatriya people in India, no Aryan race has ever entered this country from anywhere outside at any time. Nowhere in the vast lore of ancient Sanskrit literature could we find the mention of such an Aryan invasion (Sakhyananda, 1998, p 25). There was never a non-Aryan race of 'Dravidians' existing anywhere at any time in India's history. Sakhyananda feels that 'Dravida' refers to the local name of a particular tribe of Somakula Kshatriyas (Panchajanas) who colonised South India, long before Kaliyugadi (3102 BC). They were Aryans of a high order (Sakhyananda, 1998, p. 25). Ferguson uses the term Turanian to describe South Indians (i.e. Dravidians - inhabitants of the South) as migrants from West Asia via the Lower Indus valley who migrated prior to the Aryans (Ferguson, James, 1873, p.67).

The authority for Dravidian etymologies is almost always the work of Prof. Emeneau and Burrow, namely, 'The Dravidian Etymological Dictionary' (DED for short) which has become the standard work on the subject (Sundar Raj M., 1997, p.101).

Let us now take the Sanskrit root 'ar' of which the general and original meaning is 'plough'. Therefore, Arya could refer to ploughmen in contrast to their sheep raising robber neighbours, the 'Tura' (Pandya A.V., 1957, Hindi Section, p.3).

However, a more logical explanation appears to be forthcoming if we look for connections between Sanskrit and Tamil, the two oldest languages of India. Traditionally, they have been painted as arising from two opposing cultures of North and South India. Even an Aryan penetration into the South is talked about. But movement could be more easily explained by common sense as two ways or even from South to North. The common origin of words is shown below.

We find that there is in Tamil culture (DED 190) a root 'Aru' (also variants Aru and Aru – DED'S \*\* 262 and 347 respectively), which in Tamil gives various cognates: such as 'Aram' and Sanskrit 'Dharma'. It seems to be beyond question that Tamil has provided the concept and the word, to Sanskrit. The etymology of 'Aram' (Sanskrit) is now clearly established (Sundar Raj M., 1998, p. 354).

'Tvastr' has been recognised as being related, etymologically to dachas and task, but beyond that, Etymology takes us no further. But the so called Dravidian languages have something to say. Now 'Tvastr' is a carpenter in the Rig-Veda, who constructs cars for gods, like a carpenter. The vocable 'Tvastr' can, however, find a root directly in DED 2754, where will be found a number of so called Dravidian words, meaning, 'to begin, to start, to commence'; 'tovk' comes nearest to 'Tvastr', but what has an ancient lineage in Tamil is 'Tuvakkam' or beginning. Since 'Tvastr' is the first creator of the world, Dravidian language seems to give the most apt etymology (Sundar Raj M., 1997, p. 49).

In choosing the name Martanda, the Rig Vedic people seem to have preferred Dravidian vocables to Indo-German. The name Martanda, may be split up into two parts namely 'mar' and 'tanda'. DED provides a number of sources for 'mar', in the sense in which the



word is used in the Rig Vedic text. They are: (1) DED 3897, where the Tamil word 'mara' is said to mean to 'forget, neglect, disregard etc.' (2) DED 3960 'maru', meaning 'to become changed, deny, etc', and (3) DED 3961 'marru', meaning 'to conceal, hide etc'. As for 'tanda', we have DED 2578 where Tamil 'tanda' gives 'skip, jump over, leap across etc'. The combination 'martanda' in the so called Dravidian languages gives straightaway without further elaboration 'skipped over'. Can any etymology be more faithful to the myth? (Sundar Raj M, 1997, p. 72).

## **JYESHTAROHINI**

Similarly 'Jyesta Rohini' is not to be derived from Sanskrit meaning 'elder Rohini', but the first word is the so called Dravidian 'Kettai' (meaning 'bad') transformed by the Sanskrit phonological system. In fact, at first in Vedic literature it is simply called Jyesta, and only later 'Rohini' has been added to the name, (vide the Vedic Index). It is perfectly logical to designate an asterism in Scorpio as 'bad' or 'Kettai'.

## **MULA**

Similarly 'Mula' being at the tail end of Scorpio finds a perfect etymology in the Tamil 'Mulam' and 'mula' (DED 4139 and 4140) meaning 'prolapsus ani, posterior' etc and 'cornes' respectively. It may be noted that 'mula' also means a 'root'. (Sundar Raj M., 1997, p.563).

Michael Witzel who argues the linguistic case for an Aryan invasion notes that one very strong linguistic factor is that of hydronymy (river-names). While the rivers of Europe (and for that matter, America) have pre-Indo-European (i.e. "pre-Aryan") names to this day, the rivers of northern India, even in the ancient Rig Vedic Age, had purely Aryan names with no trace of any allegedly pre-Aryan elements in them. Witzel finds this circumstance galling: "This is especially surprising in the area once occupied by the Indus Civilisation where one would have expected the survival of older names, as has been the case in Europe and the Near East" (Witzel Frank, 1994 from Talageri Shrikant G., 1998, p.232).

Prof. Burrow (in his "The Sanskrit Language") demonstrates the existence of many so called Dravidian words in the Rig-Veda. Prof. Meyerhofer also has given many such examples in his monumental work entitled 'Kurzgefasstes etymologisches Wortebuch des Altindischen'. It has to be concluded that the etymological nexus between the so called Dravidian and Rig Vedic language (and obviously culture) existed even at the time of the composition of the text itself (Sundar Raj M., 1997, p. 103).

Pandya draws attention to a dynasty of kings in Mitanni (near Assyria) around 2300 BC, whose names have an Aryan etymology, and Indian deities, such as Indra and Varuna, figure prominently in its pantheon. It is thus clear that in Mitanni a population was dominated by a ruling caste of Indo-Aryans" (Gurney, O.R., 1954, p.128 from Pandya A.V.1957, Hindi Section, p.14). Conflicts between the Devas and the Asuras are the struggles between the Aryan worshippers of Surya and the Semites of Assyria, who became subject to the kings of Mitanni (Havell, E.B., p.4 from Pandya A.V., 1957, Hindi

Section, p.20). He feels that Asuras are Assyrians. A connection with Zend, the speech of the Parsis, is drawn where Arya becomes 'Ariya' (Pandya A.V., 1957, Hindi Section, p.3). He thus draws the conclusion that Aryans migrated from Assyria. The date of 2300 BC should be noted since by that time the Aryans had lived for more than 5000 years in India as we shall see below in other sections Archaeology, Anthropology etc. He concludes that the cradle of the undivided Aryans was in the North, because the words for snow and ice are common to all Aryan languages i.e. present North Indian languages. In the end, however, he concludes that the results yielded by Linguistic Palaeontology are not decisive (Pandya A.V., 1957, Hindi Section, p.22). The reference to Mitanni shows the mindset of the 'Normal' historian. This obsession with Central and West Asia is due to the unquestioning acceptance of the theory that human migration was from the Caspian Sea or Garden of Eden (Valley of Euphrates and Tigris) to the rest of Asia and Europe. This appears to rely more on the Old Testament than reality. The condemning of as 'anti-diluvial' of any other view due to intolerance is the cause of this ostrich like imperviousness to reality. Movement could easily have been towards Central Asia from India, Lemuria or Africa as we shall see in the Anthropology section. The dates in fact prove that there was a migration from India, since the dating of 2300 BC clearly post-dates the Vedic, Indus and Pre-Indus civilisations as Archaeology itself shows, which we shall see in that section below in this monograph. This is proved by later events like the migration of the Kshatriyas from Magadha to Rajasthan especially Marwar, Jaisalmer etc in the medieval period and the migration of Paliwals due to a quarrel with the Jaisalmer ruler in the XIX Century AD to all parts of India which are in the present Uttar Pradesh, Gujarat, Maharashtra and Karnataka.

There has been throughout an almost constant confusion between the languages and the persons who spoke them. In many parts of the world the speaker of a particular language at a given time was not by blood descent the representative of its speakers at an earlier period. Most educated Indians speak English, but they are not of British descent. In the island of Britain itself, many persons of Welsh blood, many persons of Irish Celtic and Scottish Celtic descent speak English. Normans who spoke French started speaking Anglo Saxon (English). The English who had settled in Ireland and learned to speak the Irish language had become more Irish than the Irish themselves (Pandya A.V., 1957, Hindi Section, p.10). Therefore, the conclusions of Linguistic Palaeontology in the absence of other corroborative evidence i.e. Triangulation to use the methodology of Participatory Rural Appraisal are evidence of links but not of origin or causation.

## **COMPARATIVE PHILOLOGY**

Pandya then turns to Comparative Philology to furnish proof of the Middle East origin of the Aryan tongue. He feels that of all the Aryan dialects Sanskrit and Zend can be considered to have changed the least. Hence it would appear that the region now occupied by Sanskrit and Zend must be nearest to the primitive centre of dispersion (Pandya A.V., 1957, Hindi Section, p.19). He, of course, ignores the migration of the



speakers of Zend (Parsis) to India. Persian and not Zend is now spoken in Iran. If he had speculated on the time factor circa 10000-8000 BC (Rig-Veda) vis-à-vis 2300 BC, he would have concluded that the migration was westward from India.

He feels that the Assyrians are the Asuras that the Vedas describe (Pandya A.V., 1957, International Languages Section, p.41). He confuses the English phonetic sounds for the Sanskrit sound. He himself admits that Ashur –uballit I lived around 1370 BC. This is long after the Rig Vedic period. The theory shows that the limitation of the knowledge of the time period circa 1950 AD when he wrote the paper reflects in his theory. This is the point that this paper drives at that Dating with the help of one discipline will give unreliable conclusions.

The Rig-Veda (circa 10000-8000 BC) specifically mentions Sage Agastya as the master of two grammars (Sanskrit and Tamil). It also contains Tamil words Nir as Neera, Pazham as Phala etc., It is reasonable to conclude that the Tamils existed even prior to 6000 BC. This in effect leads us to the conclusion that the Tamil civilisation is certainly at least 8000-10000 years old from now (Ramachandran V.G., 1998, p. 40).

In Tolkappium (circa 8000-6000 BC) we have Sanskrit words and so also Tamil words are found in Vedic literature (Ramachandran V.G., 1998, p.103).

Tamil (Dravida) and Arya are not mutually exclusive but parts of the same whole i.e. Indian civilisation.

V. R. Ramachandra Dikshitar categorically states “.....that the Bharatas, after whom the country is named, were never outside India; that the terms Aryan and Dasyu do not mean racial divergence but a cultural one; that if we are to believe the Aitreya Brahmana, most of the Dasyus were sprung from the sage Visvamitra; that there is not the slightest ground for believing that the Dasyus (who also were Bharatas) ever resided in India at a time more ancient than that of the Aryas, and neither were immigrants from abroad. The Dasyus were only religious antagonists to the Aryans. The theory of separate Aryan invasion is a string of suppositions from top to bottom. The theory-that the Dasyu-Dravidian inhabited the Punjab and the Ganges valley at the time of the so-called Aryan invasion of India, and overcome by the latter, they fled to South India and adopted it as their home-cannot stand” (1947, p.12 from Pandya A.V., 1957, Hindi Section, p.27).

Sanskrit is a refinement of Dasyam or Proto-Tamil. A group of grammarians like Panini, Vararuchi, Patanjali etc. purified and refined the language. By this amazing process of refinement (Samskara), it became popular as Samskruta or purified language (Murthy B.M.N., 1999, p. 1027). Brhaspati brought in new innovations. The new language and forms of worship of ‘brhaspatiyam’ was, it is clear, based on the old ‘dasyam’ and was a development a ‘purification’ as 10.71.1 of the Rig Veda puts it-of the old, and the principal innovations lay, according to the same passage, in words and language itself (Sundar Raj M., 1997, p.347). Some elements of the old language ‘dasyam’ are

preserved in the old Proto-Tamil itself. The word Tamil ‘Sangam’ itself shows that Sanskrit adopted ‘Sangam’ into its vocabulary.

Any language, which grows always, borrows as English is doing now and has done in the past. Only dead languages do not borrow. Therefore, purity beyond a point as in Genetics leads to inbreeding leading to disappearance of the species itself. Sumerians being called ‘Some-Aryans’ of India is a similar play on words to show two-way causation is possible and not one-way alone from Central Asia to India as in conventional theory. It is the mind-set produced by years of conditioning through ‘Normal Learning’ in the language of PRA that makes the mind impervious to alternative ideas.

Rev. Father Heras states ‘The Harappa Culture started in the very dim past (about 5000 BC) from the Cauvery basin and advanced along with the west coast to Kathiawar, Sind and the Punjab and then moved to the near East and Mediterranean under the sponsorship of the redoubtable Tamils’ (Ramachandran V.G., 1998, p. 104). Therefore, even in the 19th century AD there were scholars even foreign ones who did not subscribe to the then fashionable and prevalent theories of the origin of Indian civilisation.

Erdosy notes that the theory of Aryan invasion or immigration is the subject of investigation by two distinct academic disciplines, archaeology and linguistics, and that “the idea has recently been challenged by archaeologists who – along with linguists – are best qualified to evaluate its validity”. It is clear that reliance on Linguistics to prove dates or theories will lead to erroneous conclusions due to contamination with subsequent linguistic mixtures or borrowing of words from other languages. It is difficult to hold *Ceteris as Paribus*. Linguistics can at best point to connections but cannot point to origin or causation except in conjunction with other disciplines. Corroboration or triangulation to use PRA language is essential to arrive at conclusions on dates or causality. This makes us to move on to other disciplines, which we shall consider below, to validate dates, rather than stick to a single discipline.

## **FURTHER LITERARY SOURCES**

We have a lot of Tamil literature which states that there was an ancient Tamil kingdom consisting of 49 territories. The picture that they paint is of a hill range or Ghat which seems to be a continuation of the Western Ghat below Kanyakumari. Two rivers Pahruli and Kumari seemed to have flowed into the sea (Please see the speculative map of that time period below). The mountain range appears to be identified as the Mahameru Mountain. This makes sense as the traditional almanac (Snake Vakya Panchang) refers to this mountain while calculating the amount of rainfall that will occur in India (Kannan, Dr. R, 2000, p.17).

Iraiyanar Agaporul (Bhavanandam Pillai, Rao Bahadur, 1916, pp.1-8) is a work that can be dated as of the 11th or 12th Century AD based on its style. It states that the First Tamil Sangam with its headquarters at South Madurai (under the sea) had the first King as Kaichi Vazhudi and is supposed to have lasted for 4440 years. The participants included

Tripurantaka (Lord Siva) who destroyed three cities, Kubera etc. These are mythological religious figures but it is notable that Ravana was the grandson of Kubera. Aintiram was the grammar book followed.

Panini's Sanskrit grammar Ashtadhyayi is identified by scientists as following Aintiram and containing elements from it. This point about the common origin and Sanskrit being a refinement from Proto-Tamil has already been made by this writer (Kannan, Dr. R., 2000). Aintiram was supposed to have been unveiled at the Tamil Academy presided by King Nilam Tharuvir Pandian ((Ganapati Stapathi, Dr., 2001, pp.56-57). Mayan is claimed to have lived during the First Sangam period (circa 10,000 BC) in the Kumari continent then called Jambudvipa (Sanskrit) Navalantheevu (Tamil) (ibid, p. 41). This was the ancient island shape of India before continental drift made it into its triangular form. William Levacy claims that the paleo shape India conformed to Vastu Shastra and therefore was like the USA of today in shape, leader among nations. The present triangular shape is held to be the cause of its problems thereafter (Levacy, William R., 1999). Mayan is the author of the Sanskrit work on Vastu Shastra, though Dr. Stapathi claims his authorship for Suryasiddhanta as well (Ganapati Stapathi, Dr., 2001, p.123). He claims that Pranava Veda expounded by Mayan was the first Veda, which Veda Vyasa also acknowledged (Ganapati Stapathi, Dr., 2001,p.73). That the Pranava Mantra is the essence of Hinduism is unchallenged by all. This writer had several discussions with Dr. Stapathi and jointly participated in several seminars from 2002 onwards.

While Dr. Stapathi claims the author of Aintiram to be Mayan (2001,p.139) this writer feels that he must be Indran or Indra. The statement of Sir Mortimer Wheeler of Indra as a destroyer of forts, Purandara has already been refuted by this writer (2000, p.27). Dr. Stapathi refers to the Indra Vizha (festival) held in Poompuhar (2001, p.139). This also refutes the Aryan Invasion theory of 19th Century English historians, which shows Tamilians also celebrated Indra, the King of Devas.

The Second Tamil Sangam is supposed to have lasted for 2000 years with Kapatapuram (swallowed by the sea) as its headquarters (Kannan Dr. R, 2000, p.18). Agathiyam was the grammar followed. Sage Agastya is shown as a member of both Sangams, which makes us feel that Agastya was a Peetah title like Sankaracharya and not an individual. Indra is supposed to be a post as well. The Suchindram mythology is that Indra worships Lord Siva in the night even today and there are signs like disturbance to the articles of worship in the sanctum of the Sthanumalaya Swamy temple to indicate this. The exodus of people from below Kanyakumari is described by two Tamil poets (refer Chapter – Underwater Archaeology).

The Third Tamil Sangam which alone is accepted by historians is said to have lasted 1850 years, though historians date it from 3rd Century BC to 2nd Century AD. Nakkiran is stated to be the greatest poet of this Sangam. The literary works of this period are available, while for the earlier periods references and commentaries like Paayiram alone are available. This should not make us shut our minds but have a spirit of enquiry with an open mind. Tolakappiyam was the grammar followed.

## EXCAVATION AT MAANGUDI IN 2002

Uraipaayiram by Idyananattu King Manakudiyan Paal Vanna Devan, an Aganaanuru work (a poetical work of 400 stanzas) refers to the three kinds of Tamil developed in Madurai. In Puranaanuru (a 3rd Century BC work) Thalaiyaalankanathu Cheru alias Neduchezhiyan refers to Maangudi Marudan and that several Tamil poets were in a Sangam under his leadership. In the recent excavation in 2001-2002 AD at Maangudi near Rajapalayam, the State Archaeology Department has found several artefacts relating to this period. One potsherd black and red ware with the inscription in Tamil Brahmi ‘ku ru maa n kaa la a ta n yi yaa nai pe?’ (14 letters – i.e. the plate was donated by Aadhan of Kurumangalam) is a very important find. It can be dated to the 3rd Century BC by palaeography. It can be compared with inscriptions around Madurai like Tirupparunkundram of a similar period. The site has megaliths and microliths in the same pit. This shows that successive layers of civilisation in a continuum that dates from at least 4000 BC by conventional dating. This period covers the Second Sangam period also. This shows that Tamil literature is not full of imagination unrelated to facts. If this is true we may have to give greater credence to literary sources as this writer has stated (Kannan Dr. R., 2000, p.21, 29) and not dismiss it as imagination.

The author of Manimegalai also speaks of Madurai developing Tamil. Absence of such references to the Chola and Chera capitals is noteworthy. The word Sangam can be said to have come into vogue after the advent of Buddhism in the 6th Century BC, since it refers to the Sangha. Before that the ancient Tamil word appears to be poet kazhagam. Some claim that the Jains introduced this word (Meenakshi Dr., 1938, p.227). Absence of references to Jainism in Tolkappiyam leads us to conclude that it is more ancient than Jainism (Ayyangar, Sesha, T.R., 1925, p.109). The Brahmi inscriptions found in the caves of Madurai are dated as circa 3rd Century BC (Venkatasamy, Mylai Seeni, 1970, pp.34-36). They are the work of Jains. Hence, Tolkappiyam clearly has to predate the 3rd Century BC. ‘Tolkappiyam is said to exhibit the influence of Aindra Vykarana, a pre-Panini system of Sanskrit grammar, but it is free from Buddhist influence’. This demonstrates that it is older than even 6th Century BC. Therefore, the claims of its antiquity are not to be dismissed lightly.

In the book on ‘Holistic Dating’ (1st Edition), this writer refers to Plate tectonics while discussing the Lemurian theory (Kannan, Dr. R., 2000, p.15). It is now an accepted fact in Geology that the Indian peninsular plate has moved from the Indian Ocean and is pushing against the Asian continental landmass creating the Himalayan Fold Mountains. Dr. Stapathi also refers to the same theory and makes the point that Tamils from Lemuria fled to the North and settled the whole of India, when the Tamil Academy was swallowed by the sea. The Pandian King, Nilam Thiruvir Pandian got the name by gifting lands to the affected may be in the then forested areas in the present peninsular and North India. This point is also independently made by this writer (Kannan Dr. R., 2000, pp.15-17). How have we thought alike? There must be some truth somewhere waiting to be discovered by marine archaeology.



The ancient city of Kapatapuram (Sanskrit word for Kadavoor, Alaivai in Tamil – i.e. gateway to the waves or sea) is held to refer to Dwaraka in the North (since the meaning is the same). Even today Alwaye near Ernakulam is a small town on the backwater near the Arabian Sea. The Pandian port of Korkai is said to belong to the Third Tamil Sangam. Recent excavation shows the C-14 dating as 785 BC. There may have been some other towns called as Alavai, since verse 266 of the Aganaanuru refers to Tiruchendur as Alaivai. This shows that new towns were named after the old destroyed towns. Madurai itself is called as Alaivai as shown in the Brahmi inscription in Alagarkoil of 3rd Century BC. The name must have been changed to Alavai later. The Thevaram reference of the 7th Century AD is the earliest reference to it. Others hold that there was one city in the South with the name (Stapathy, Ganapati, Dr., 2001, p.126; Kannan Dr. R., 2000, p.18.; Ramachandran V.G., 1998, p.39) which was about the period of the Mahabharata and was probably destroyed in the same Pralaya that destroyed Dwaraka. There is a Vastu-Shastra called Aintiram, which resembles Mayamata's Vastu Shastra (Ganapati Stapathi, Dr., 2001, p.139). Tolkappiam, the most ancient extant Tamil grammar is based on Aintiram as attested by Panamparanar, the author of Paayiram, the commentator of Tolkappiam. He also compliments Tolkappiyar for having studied Aindiram's grammar, which he describes as a Sanskrit work. He does not refer to Panini, whose work is considered to be at least of the 4th Century BC if not earlier.

Kapatapuram is supposed to have been swallowed by the sea after Tolkappiyam as mentioned in Iraiyanar's Agaporul. Silapadikaram mentions Pahruli River and a mountain range swallowed by the sea. There is mention of Kapatapuram in Valmiki's Ramayana and Vyasas's Mahabharata. The Mahabharata has now been dated to 3101 BC both by astrological astronomy and near to that date by S. R. Rao's findings (1998, p.52). Chanakya in Arthasastra (4th Century BC) refers to pearls from 'Pandya Kapatam'. The sea incursion around 504 BC or 306 BC in a Ceylonese work, Deepavamsa is said to have swallowed a lot of land. The incursion responsible for the loss of Kapatapuram might have been the one of 506 BC. That Sri Lanka of today is not the Lanka of Ramayana is clear from Alberuni's Indica which states that it is an island in the Indian Ocean on the Lanka Rekha or line i.e. intersection of 77° E longitude, the longitude of Ujjain and the Equator.

Dr. S. Padmanabhan contends that the Pazhayaru in today's Kanyakumari District is the Pahruli River referred to in ancient Tamil literature (Padmanabhan, Dr. S., 1999, p.23).

## **CHAPTER - VI**

### **ANTHROPOLOGY - PHYSICAL ANTHROPOLOGY, CULTURAL ANTHROPOLOGY, GENETICS ETC.**

Anthropology is the study of the human species. It is important especially in pre-history where written records, agreed dates and theories are absent. It is able to speculate with a great deal of authority on what exactly happened at that remote period of time. Physical anthropology is used to date the story of man from skulls, bones and reconstructions of whole skeletons i.e. the study of the physical features. The difference between the Hominid, Homo Neanderthalis and Homo Sapiens is based on the dimensions of the skull to a large extent. The study of habits, social customs etc comes under the purview of Cultural Anthropology.

All human history is the history of migration. Homo Sapiens survived only because of migration leading to better food gathering. This led to rapid multiplication of the species. Survival of the older people was made possible due to the food surplus. This also gave the leisure to be able to look after them. This made for transmission of the knowledge and wisdom of the older people. This ensured their survival in crises like drought, flood, epidemics etc. Homo Neanderthalis who were static became extinct as they had no food security. This is an example of the use of Cultural Anthropology.

Many attempts have been made to guess precisely how South America, Africa, India, Antarctica and Australia were once joined to form the primitive content known as Gondwana land. There is as yet no general agreement, as to how this should be done. The fit between South America and Africa, as is well known, is excellent. The fit between Australia and Antarctica is good. The arrangement of all five major units, however, is controversial and the original position of Madagascar is unknown (Mackenzie D. P. et.al., 1998, p. 10).

There is general agreement, however, that Lemuria is the cradle of civilisation. Several European scholars feel as follows :

- (a) Prof. Heckal in 'History of Creation' feels that Lemuria (Gondwana land) was the Cradle of human race.
- (b) Prof. Raleigh in his 'History of the World' says 'After the great deluge, Indian human race first appeared'.
- (c) Topinard opines 'South India was the most ancient part of South Asia'.
- (d) Sir Johan Ewans, President of the British Association (1897) states 'Man had his origin and development only in South India'.

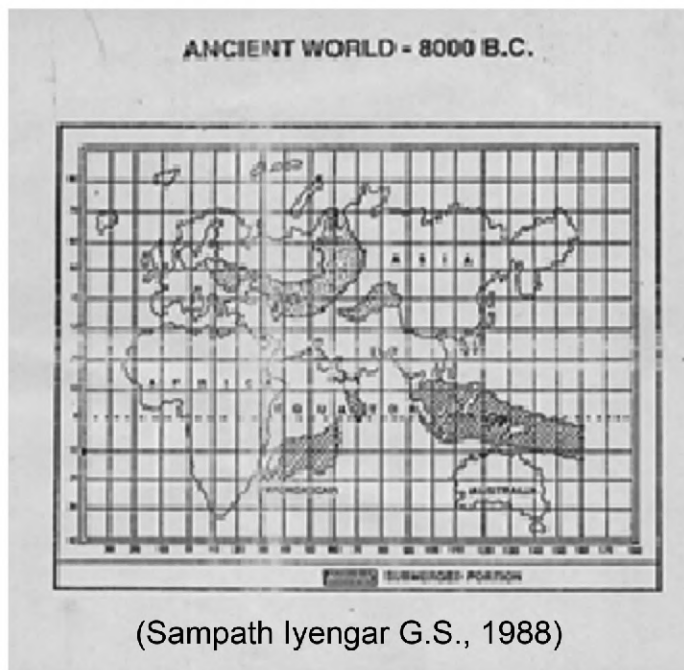
Scott Elliot in his book 'Lost Lemuria' observes 'The most ancient civilisation of man was in South India – an extension of which was the submerged land of Lemuria' (Ramachandran V.G., 1998,p, 104).

## Origin of homo sapiens

*Homo erectus* (meaning "upright man", from the Latin *erigere*, "to put up, set upright") is an extinct species ancestor of *Homo sapiens* (modern humans) that lived throughout most of the Pleistocene geological epoch. Early human migrations and expansions of archaic and modern humans across continents began 2 million years ago with the migration out of Africa by *Homo erectus*. The world's oldest stone tools have been discovered. They were excavated from the shores of Lake Turkana in Kenya, and date to 3.3 million years ago. They are 700,000 years older than any tools found before, even pre-dating the earliest humans in the *Homo* genus. The find, reported in *Nature*, suggests that more ancient species, such as *Australopithecus afarensis* were more sophisticated than thought earlier. Shanti Pappu and Kumar Akhilesh, specialists in Tamil Nadu's prehistory, have established that the stone tools found at Attirampakkam could be dated to 1.5 million years.

## Migration routes of the human race

The Discovery Channel in its programme on the 'Origin of Man' portrays the use of Genetics to analyse *Homo Sapiens* and *Homo Neanderthalis*. It has analysed skeletal



remains in Ogdolena cave in Spain and has come to the conclusion that *Homo Sapiens* originated in Africa and has no connection with the European *Homo Neanderthalis*. In this cave at one layer *Homo Neanderthalis* skeletons and in another part *Homo Sapiens* skeletons are found. This analysis uses Skeletal Biology to show the larger skull size of *Homo Neanderthalis*. The time period is also overlapping, but genetic analysis shows no commonality. Why they did not intermarry is a million - dollar question. *Neanderthalis* as a species died out on the Mediterranean Sea. The volcanic footprints on lava in Ethiopia around 30,000 years ago have been analysed and found to be of *Homo*

*Sapiens*. There are skulls of *Homo Sapiens* in Dakar cave in Israel. This shows that a branch migrated to Europe and Asia. Another branch migrated via South Africa, Madagascar, and Sumatra to Australia. They must have used the land bridge now submerged in Lemuria. They might have also used small boats for limited distances. A branch might have migrated to the Middle East by sea and the West Coast of India by land and sea.



Robert Bruce Foote analysing the Adichanallur collections of skulls and bones postulates that the aborigines of Australia and New Zealand are of the same race as the South Indians (Foote Bruce, 1901). Please also see the chapter on Underwater archaeology.

It is prognosticated that the continent of Lemuria, which was connected with Asia and Africa, began to sink slightly, becoming much smaller in size. About 25,000 - 30000 years ago, important changes took place as a result of which the continent of Atlantis rose and it separated from Europe and Africa. The continent of Lemuria, which was sinking in the western portion, forced the people to migrate to Asia, Australia and the lands of the Pacific. Atlantis was colonised by the Lemurians and they had spread again to North and South America. Therefore, the Nile Valley settlers on the shores of the Red Sea who founded the great Egyptian civilisation could be Lemurians. The Lemurians, who colonised the Nile Valley, developed agriculture, ship-building, commerce, writing and mathematics. They further established the Babylonian and Assyrian Civilisation (Sampath Iyengar, G.S., 1998, p.27 – 28), (See Picture).

Scientists recently in South Africa discovered a skull and bones near Johannesburg in the Rising Star Cave. This was identified as of a previously unidentified species of the early human lineage — *Homo naledi*. The new hominid species was announced on Thursday by an international team of more than 60 scientists led by Lee R. Berger, an American paleoanthropologist who is a professor of human evolution studies at the University of the Witwatersrand in Johannesburg. It has a brain no larger than an average orange. This indicated that the species evolved near or at the root of the *Homo* genus, meaning it must be in excess of 2.5 million to 2.8 million years old. They were among the first of our kind (genus *Homo*) and could have lived in Africa up to three million years ago.

### **A chronology of human evolution**

*Ardipithecus ramidus* (4.4 million years ago) : Fossils were discovered in Ethiopia in the 1990s. Adapted to both tree climbing and upright walking.

*Australopithecus afarensis* (3.9 - 2.9 million years ago) : The famous "Lucy" skeleton belongs to this species of human relative. So far, fossils of this species have only been found in East Africa. They may have walked upright, but they may have spent some time in the trees.

*Homo habilis* (2.8 - 1.5 million years ago) : This human relative had a slightly larger braincase and smaller teeth than the earlier ones.

*Homo naledi* (Of unknown age, but researchers say it could be as old as three million years) : The new discovery has small, modern-looking teeth, human-like feet but more primitive fingers and a small braincase.

Homo erectus (1.9 million years - unknown) : Homo erectus same body as ours, but a smaller brain with a more primitive face.

Homo neanderthalensis (200,000 years - 40,000 years) The Neanderthals were a side-group to modern humans, inhabiting western Eurasia before our species left Africa. They were shorter and more muscular than our species but had slightly larger brains.

Homo sapiens (200,000 years - present) Modern humans evolved in Africa from a predecessor species known as Homo heidelbergensis. A small group of Homo sapiens left Africa 60,000 years ago and settled the rest of the world, replacing the other human species they encountered (with a slight amount of inter-breeding).

(BBC.com; news.- national geographic.com/2015/.../150910-human-evolution-change; www.theguardian.com › Science › Anthropology – 10th Septemebr, 2015).

E. L.Thambimuthu, a scholar of Jaffna, feels that the sea had risen in prehistoric times and separated India from Ceylon. The tradition of the Tamils, the people who were affected by the event must be given credence. Though several dates are bandied about, circa 5400 BC is stressed by him (Sampath Iyengar, G.S., 1998, p.30).

Encyclopaedia Britannica writes that the biochemical systems of Asian and European populations appear to be more similar to each other than those of either group are to African populations; thus, Asians and Europeans may have shared a common ancestry some 40,000 years ago and a common ancestry with African populations almost three times as long ago. Moreover, investigations of human Mitochondrial DNA reveal two facts: that the variation among modern human populations is small compared, for example, with that between apes and monkeys, which points to the recent nature of human origin; and that there is a distinction between African and other human Mitochondrial DNA types, suggesting the substantial antiquity of the African peoples and the relative recent nature of other human populations (Encyclopaedia Britannica, 1999).

This is the Aryan separateness cum superiority theory bolstered by scientific language. This is contradicted by recent studies. Supporting the continental drift theory, a recent study on genetic origins on the DNA of the Chinese suggests that the core Chinese population has genetic similarities to genetic material uncovered in Africa, leading some to infer that the populations of China and much of Asia (including India) might be the result of population dispersal originating from what is now areas in present-day Africa (See Picture). These recent genetic findings add further support to the existence of a very ancient India (Levacy William R.,1999 p.98). The genetic analysis by Los Angeles University shown in National Geographic Channel shows that the genetic differentiation from apes to hominids started 5 million years ago. The genetic analysis shows that beneath the skin the entire human race has the same make up. Analysis of Mitochondrial DNA (the energy DNA) which is traced through females only shows that a single lady is

our ancestor. This is Mahashakti who created the world according to Hinduism. This DNA is not affected by changes during transmission. Is this why the concept of Shakti is related to women in our tradition or Adam and Eve in the Old Testament common to Judaism, Islam and Christianity, the other major religions of the world? The genetic composition of Western European and Indian population is compared in articles in the British Journal Current Biology by T.R. Disotell and T. Kivisild. They observe that the Mitochondrial DNA of the Western European strain is found only in about 5.2% of the Indian population as against 70% of the European population. The proportion is roughly the same in North and South India which gives the lie to the theory that North Indians are somehow more Aryan than South Indians {Rajaram N.S., 2000(2)}. This shows that the Aryans coming about 1500 BC which is the date given by Sir John Marshall and Sir Mortimer Wheeler originally in the late 19th and first half of 20th century is incorrect. The split must have occurred at least 50,000 years ago. Genetics clearly contradicts the theory of recent Aryan influx and also the dates by several thousand years.

### **Aryan, Dravidian And Turanian Races**

The term Turanian is a term from the Indo-Persian language family. Turan denotes Turkestan in Persian. Max Muller used the term to denote the people in India who had migrated and settled before the Aryan migration or invasion as he calls it. Turanian never settled into one meaning but shifted in its meaning. It denotes today Ural – Altic or Turkish or Tartaric people. He referred to the linguistic affinity with all the people of the world before the advent of Sanskrit. This cannot zero in on any one people. He writes ‘the name Turanian’ is used in opposition to the nomadic races of Asia and as opposed to the agricultural or Aryan races. Max Muller in his introduction to the Turanian essay claims Bengali, Hindi, Marathi, Gujarathi etc spoken in the North of India as Aryan. The grammar is Aryan Blood that circulates. In reality, Masuzawa and others reject Max Muller’s arguments based on comparative philology as baseless. No kind of blood circulates through grammar (Masuzawa, Tomoko, 2005).

Even Vogel (Vogel, J.P., 1926, p.2) debunks Ferguson’s theory (Ferguson, James, 1873, reprint 2004) on Turanian races being the original aboriginal serpent worshippers stating that no competent scholar of his generation takes it seriously. But he has not expressly debunked the Aryan-Dravidian theory. This explains why Indian historians who swear by the Aryan Invasion theory do not speak about the Turanian race theory. After all, the white man himself circa 1920 AD has debunked it even though even in the last decades of the 19th Century AD itself it was thrown out.

Ferguson states that a less pure horde of Aryans of the Lunar race reached the Ganges about 13th-14th Century BC. After that there were no incursions for a thousand years. The blood of the Aryans had become mixed and impure. Therefore, the Buddha revived the religion of the aboriginal Turanians, the earliest inhabitants of India. Buddhism is the revival of the superstitions of the Turanians refined and purified by Aryan morality

(Ferguson, James, 1873, reprint 2004, p. 67). This is a purely racist view with no factual basis. He states that the inferior intellectual status of the Turanians stood in the way of creating literature hankering after immortality which is inherent in the human breast. The Aryans never built buildings, while the buildings belong to Turanians or Dravidians or cognate tongues. He states that there were no Buddhist books till a thousand years after the death of the Buddha but buildings everywhere (Ferguson, James, 1873, reprint 2004, p. 86). This is not true. The Pali Canon was redacted in 29 AD and the Gandhāran Buddhist texts are the oldest Buddhist manuscripts yet discovered, dating from about the 1st century AD. The Buddha is from the 6th Century BC. The Asokan edicts of the 3rd century BC also testify to the teachings of the Buddha. Before that they were in oral form, the form in which the Vedas were also preserved with metre and intonation to ensure accuracy.

Ferguson also states that everything in India, Sanchi or Amaravati owes to the North West for its origin. The Buddhists must have derived their knowledge from a Northern Turanian race occupying countries the North and South of the Himalayas. They are now the Buddhists of Tibet. The actual truth well accepted is that Buddhism travelled from India to China. He further states that Saivism rose among the Dravidians who migrated to India by the Lower Indus route (Ferguson, James, 1873, reprint 2004, p. 236). Saivism is as strong in the Himalayas as in the South. The very seat of Siva is the Mount Kailas in the Himalayas. Kashi, Kedarnath, Haridwar, Rishikesh etc all have strong presence of Siva. The very Ganga is from the locks of Siva. The statements are totally false. This shows that anything worthwhile in India had to come from outside. This shows the colonial bias. The British did not succeed in creating a Hindu – Muslim divide in the Madras Presidency. Therefore, they created a schism based on caste to divide Hindus and other religions since in the South caste rather than religion is the basis of social group identity. The Hindu and Christian Nadars intermarried as per this dictum. Therefore, the British set up the priestly and some other castes of Hindus in Madras Presidency as Aryans and invaders, since they started demanding Self-Rule and the rest as Dravidians in accordance with their policy of Divide et Impera, while elsewhere as seen above they show the Dravidians also as an earlier set of migrants or invaders. Hence, there are no pure sons of the soil. The sentences show a pure racist bias without basis on facts. The British had a holistic vision for how to exploit the Indian Empire. Every action, whether railways, telegraphs, roads or education as per the famous Education Note of Macaulay that Indians should be taught to feel second rate, despise everything Indian and made to think like the English converged on the ultimate goal of Imperialism and dovetailed with it. Sadly, a section of Indian historians have proved Macaulay correct to this day, two centuries later.

Ferguson himself states that Aryans and Dravidians migrated to North and South India (Ferguson, James, 1873, reprint 2004, p. 67) based on the skin colour noticed in the XIX Century AD. He failed to note that Chanakya was a dark skinned Brahmin of Kancheepuram, near Chennai, South India, who was probably insulted for his skin



colour in the court of the Nandas and later went on to dominate Indian thought for centuries and found the first major Mauryan empire with a tribal boy, the son of Mura. It is a racist theory of XIX Century AD Europeans which the British found convenient to justify their empire but which badly backfired on them via Hitler in the XX Century AD. The Karma theory of the Hindus appears to be at work.

All the above contradictions conclusively debunk the racist theory that there was an Aryan invasion or Dravidians were earlier invaders or sons of the soil. The Dravidians were only migrants from the lower Indus route according to these theories. There are no pure races anywhere. Our historians who swear by the Aryan Invasion theory must note how they are bent upon holding a racist theory without any basis propounded by British colonialists to justify their conquests and subjugation of an ancient people with a rich culture. All history of the Homo Sapiens Sapiens i.e. the history of the human race as stated earlier is the history of migration. . This enabled them to accumulate food surplus. They looked after their elders with this surplus. They could get their wisdom which enabled them to survive and build on the knowledge to go to higher levels of technology. In contrast, the non migrating species like Homo Neanderthalis died out.

## **Global reach of Indian culture**

### **Correspondence of Halloween and Indian Pitru Paksha for propitiating the dead**

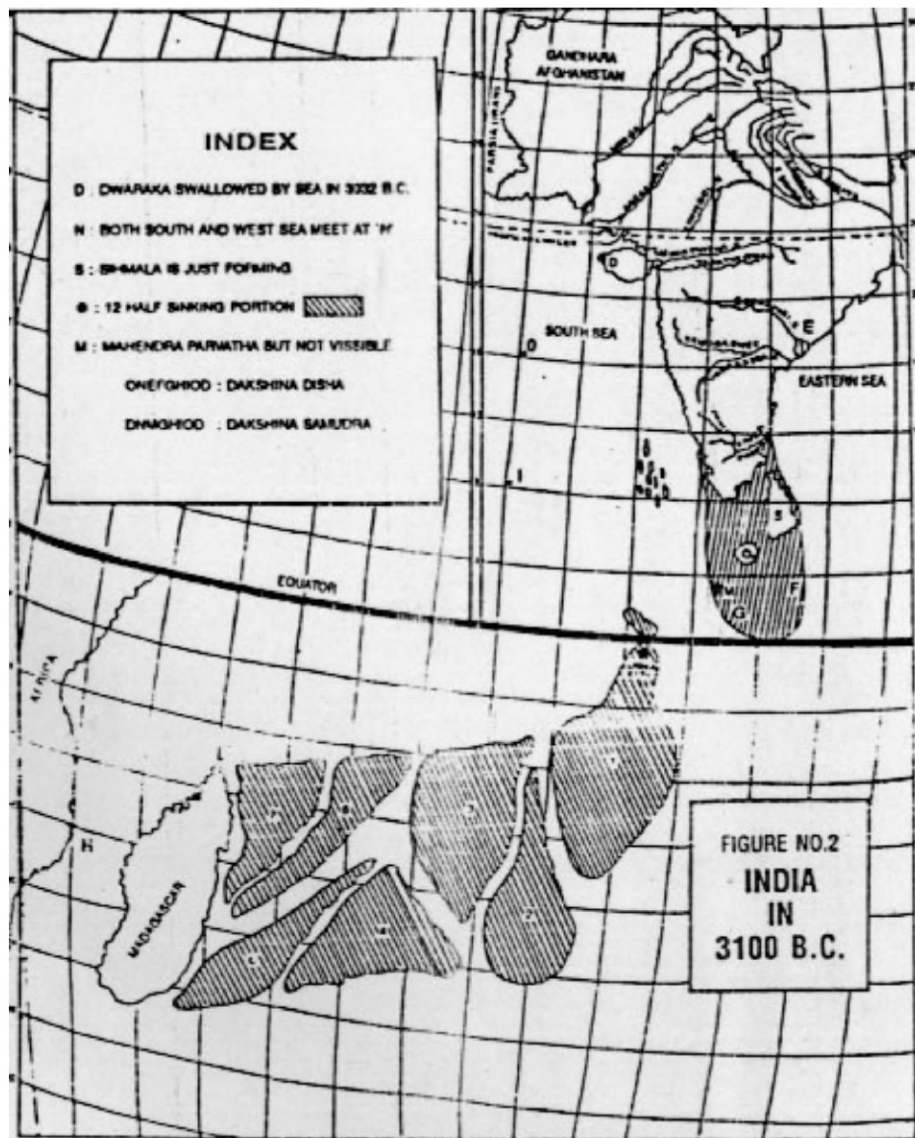
**Halloween** or All Hallows Day is a celebration observed in a number of countries on 31 October, the eve of the Western Christian feast of All Hallows' Day. All Hallows' Eve is a Christian version of a Celtic festival with pagan roots. The souls of the dead were also said to revisit their homes seeking hospitality. Places were set at the dinner table and by the fire to welcome them. The belief that the souls of the dead return home on one night of the year seems to have ancient origins and is found in many cultures throughout the world. In 19th century AD Ireland, candles would be lit and prayers formally offered for the souls of the dead. Households in Austria, England and Ireland had candles burning in every room to guide the souls back to visit their earthly homes. Many Christians turn vegetarian on the Halloween Eve. Hindus propitiate their dead in the festival of Pitru Paksha, during which Hindus pay homage to and perform a ceremony to feed the souls of their ancestors and keep them satisfied. Halloween's Day occurs just after Dussehra usually in September-October. If the ten to 13 days dropped from the month of October in several European countries due to switch over from Julian to Gregorian era are considered the Hindu Pitru Paksha (Sanskrit for period of the dead ancestors) will nearly coincide or fully coincide in some years with the period of Halloween. This shows the global reach once of this ancient culture including turning vegetarian on such days of Sraaddha or death anniversary.

Anthropology plays a key role in authenticating or invalidating findings of theories floated by historians who rely on any one discipline like Archaeology. It should also be used in a multi-disciplinary approach in an integrated or holistic manner if the truth is to be arrived at. Some of the findings of Anthropology are reflected in Ancient Historical

Tradition in a direct form or sometimes in allegorical or mutated form.

## Bibliography

1. Masuzawa, Tomoko (2005) *The Invention of World Religions: Or, How European Universalism*, May 2005, Chicago University Press, Chicago, USA.
2. Jean Philippe Vogel (1926) *Indian Serpent-lore: Or, The Nāgas in Hindu Legend and Art*, AES Reprint 1995.
3. Ferguson, James (1873) *Tree & Serpent Worship or illustrations of Mythology and Art in India* From the Topes at Sanchi and Amaravati, Indian Museum: London, AES Reprint, 2004, New Delhi and Chennai.



India circa 3100 B.C (Sampath Iyengar 9.8.1988)

## **CHAPTER - VII**

### **ANCIENT HISTORICAL TRADITION**

Tamil literature talks of a *Meru* Mountain in Lemuria. Among the most prominent of the mountains was the *Mani Malai* (Meru) where precious stones like rubies were mined. This *Meru* Mountain produced gold and this gave rise to an ancient proverb ‘*Meruvai Cherntha Kakamum Ponnamm*’ (Even the crow in *Meru* is of Gold). The *Meru* Mountain had 49 peaks and by its side flowed the *Peru Aru* on either side of two other rivers, the *Kumari* and *Pahroli* (Sampath Iyengar, G.S., 1998, p.32).

The Snake Vakya Panchangam used by Tamilians refers to rain bearing clouds gathering from *Meru*. This is valid only if it is in the Indian Ocean, since the Caucasus Mountains have nothing to do with our monsoon. Whatever clouds gather there will be prevented by the *Hindukush* range of the *Himalayas* from entering India. Therefore, this theory of Lemuria and interconnection among races., their migration through boats as well as land, finds support from various unconnected sources, finds and their analysts.

It is claimed that Pandyan kings ruled from 30,000 BC to 16,500 BC i.e. for about 13,500 years. It is said that Africans (earlier called Negroes) from Africa invaded this Tamil kingdom and controlled it for 500 years. *Kumaravelu* is claimed as the legendary hero of the Tamil kingdom who defeated the African King, *Surapadman* (Sampath Iyengar, G.S., 1998, p.32). He is also the God *Muruga* of the Tamils and *Deva Senapati* or Commander of Chief of the armies of the *Devas* in the Sanskritised version. The same role in both language traditions shows that Tamil and Sanskrit are two faces of the same coin. These are claims in Tamil literature to be triangulated by sources from other disciplines before they can be accepted.

It is also claimed that the descendants of the Lemurians settled in Mt. Shasta, in California and established a colony. *Larkin*, a scientist who investigated the colony, had concluded that they are the remnants of the Lemurians (Sampath Iyengar, G.S., 1998, p.32). There is an idol of wood resembling Lord *Ayyappa*. It is considered a twin energy centre of *Tiruvannamalai*.

These facts indicate that the continent of Lemuria was the home and origin of a great civilisation. Lemurians migrated west when portions of their land began to submerge. Their migrations led them to Egypt, other Mediterranean countries, India and Mesopotamia where they established great civilisations. One theory holds that after the lapse of several centuries, they entered India. Western scholars like *Max Mueller* were misled into believing them to be of a separate race. Lemuria holds the key to unravelling the mystery of the origin of the so-called Aryans. Another theory holds that they travelled to India and from there to West Asia after establishing the great Vedic Indian civilisation. At any rate there was continuous human migration in several directions so that one fixed date or direction is an absurdity.



It is claimed on evidence that the ancient Cholas discovered South America, long before Columbus did it and that the Inca Sun Worshipers of Peru are the descendants of ‘our Chola ancestor’ (vide Neelakanta Sastri K.A., 1984, and M. Monohan’s, ‘Cholas in America, 1976’ – pp.11-20 from Ramachandran V.G., 1998, p.35). The Incas have their Temple of the Sun God in Cuzco (Peru) which resembles the one in Konarak in Orissa built by the descendants of the Cholas. The Chola Chieftains (Incas) of America styled themselves as ‘Raghukula Manickam’. This shows that they belonged to the Raghuvamsa of Sri Rama whose ancestor Sibi Chakravarthi is also described in ancient Tamil literature as the Chola king Sembian. This takes us to an inference that the ancestors of Dasaratha are also the ancestors of the Tamils.

One other ancestor of Sri Rama, Mussu Kunthan, is believed to be the Musa Kuntha Chola described in ancient Tamil History. Musa Kunthan’s reign was during the Second Tamil Sangam age or earlier. The Matsya and Vishnupurana refer to Sri Rama as belonging to the Tamil Clan of Cholas who in fact belonged to the Surya Kula (solar) dynasty. It is claimed that Sri Rama knew both Tamil and Sanskrit and so could understand easily Hanuman’s Tamil conversation (Ramachandran V.G., 1998, p.36). All this adds strength to our theory that the two-race theory is based on confusion of dates and events being advanced or postponed according to convenience to fit in with that theory.

Alexander Kondratov, the Russian Researcher, in his epoch-making book, “The Riddle of Three Oceans”, has observed as follows: Near the City of Triconamalee, in the warm waters that wash Ceylon, divers have found sunken monuments of various civilisations. It is quite possible that under-water archaeologists may discover the capital of the Proto-Indian Civilisation (Mahalingam Dr. N., 1998, p. 379).

Even when writing around 1950s, Pandya felt that Indra’s destruction of the ‘fortified towns of the Asuras’ has nothing to do with the end of the Harappa Culture (Pandya A.V., 1957, International Languages Section, p.57). He quotes the Director, School of Oriental & African Studies, London University, “When Indo-European tribes first reached India is not known, their oldest records, the Rig Veda throw no light on their arrival or the fate of the early Indus-Valley (Harappa etc.) culture. Nor do they contain memories of the western connections of the tribes. The tribes, who called themselves Aryas, were organised in compact family units under the leadership of warrior-priest-fathers. They kept cattle, cultivated a cereal, probably barley, wove cloth, tanned hides, worked some metals, and lived in villages called ‘cattle pens’. The Rig Veda, which contains no record of their crossing the Indus River, describes them as holding north-western India from the Kabul valley to the Saraswati River—the land of ‘the five rivers’, now usually called the Punjab” (Pandya A.V., 1957, Hindi section, p.33). Actually, now it is found that Sarasawati flowed in Haryana till Allahabad (see below) though a branch might have joined the five rivers that joined the Indus. This was disrupted by the earthquakes and climate changes that occurred at periodic intervals especially around 4500 BC.

The Rig Vedic Rudra of the Arya corresponds to the Lord Siva of the Tamils. The so called Aryan invasion of India in 1500 BC is false. The Aryans were always in India from a period earlier to Rig Veda times (6500 BC) (Ramachandran V.G., 1998, p.37). During 7500 to 7000 BC, the Aryan Culture and the Aryan way of life (nobility concept) was established all over Bharat (Prof. K. R. Srinivasa Raghavan, 'Chronology Of Ancient India' from Ramachandran V.G., 1998, p.38). This writer would take the Rig Vedic period to circa 10000-8000 BC when the Sapta Rishi Era started as per Astronomy.

The near simultaneous collapse of the far-flung Harappan Empire, the Sumerian-Akkadian Empire in Mesopotamia and Dynastic Egypt was due to deteriorating ecology, in particular a 300-year drought that struck across an immense belt from the Aegean to India in 2200-1900 BC. This is also confirmed by Pollen analysis in Rajasthan as seen earlier. This view is also held by Dr. N.S. Rajaram (1999, p.59) based on the work of D. Prithipaul of University of Alberta. Archaeological work in Egypt, Mesopotamia, India and Pakistan by Indian, Belgian, American and French investigators are revealing ecological causes. The Aryan invasion theory, the dates of Indus Valley and Indian civilisation need to be revised in the light of new knowledge and data from other disciplines. There has been continuous settlement from circa 11000 BC in India. Therefore, the Aryan invasion of 1500-1000 BC as was taught to us in the light of the work of the 19th century archaeologists and historians needs to be revised. The conventional view of history of Sir John Marshall and Sir Mortimer Wheeler talks of an Aryan invasion around 1500 BC. Indra, the Aryan God of War is portrayed as the cause of destruction of the Indus cities. This theory which held sway till circa 1970 AD is being increasingly questioned on sound archaeological and other evidence generated from fresh excavations at lower levels and the use of knowledge from other disciplines and sources such as Pollen analysis, C-14 dating etc., seen above. The scriptures and epics such as Ramayana and Mahabharata contain data on dates correlated with astrological and astronomical phenomena, which are corroborated by scientific dating methods. These sources were hitherto discarded by European writers as they were Indigenous Knowledge. Now, Chambers by use of the PRA method has sanctified them. Hence, we too are happy to use them.

B. and R. Allchin feel that some of the South Indian grave types "are reminiscent of those of Central Asia, Iran or the Caucasus, and could well represent traits brought from these areas by Indo—European speaking immigrants"(1968, p.229). The archaeological evidence suggests that cremation might have come to be the dominant way of disposing of the dead in North India already in post-Harappan times, for no burials within the settlements any more than in separate burial grounds have been encountered, with the exception of the 'megalithic' graves of the extreme North West (Allchin B. and R, 1968: p.316). Although cremation must have been the normal practice in the Rig Veda period, there are references, which seem to attest that burial too was practised (Parpola Asko, 1973, p.28 – 29). Heesterman concludes: "The Vratyas are authentic Vedic Aryans..." (Parpola, Asko, 1973, p. 34).

This writer had occasion to see the megaliths in Pudukkottai district on the outskirts of the famous Chittannvasal cave paintings. There were several of them. They resemble Stonehenge and Outer Hebrides circular stone arrangements, which also this writer has visited and studied, in a remarkable manner. There was no sextant available with this writer. But there was a distinct feeling that they pointed at a particular star. Unlike in U.K. no one has done research on this aspect. They are found related to astronomical phenomena, which we shall see below in that section. If the same megalithic culture had pervaded throughout the world, this gives credence to the theory of Hancock that there was indeed a superior maritime culture at that point of time and they had a universal impact on human thought and culture.

The Rig Veda refers to the war among 10 kings. There was continuous sporadic war among the Surya Vamsa Kings and the Chandra Vamsa kings because of their land hunger. Around 7200 BC, the Battle of the 10 Kings described in the Rig Veda was fought (Ramachandran V.G., 1998, p.38).

Prof. K. R. Srinivasa Raghavan claims that the eighteen clans of Yadhavas became the early settlers; the 18 clan settlers who sailed from Dwaraka to colonise the River Pahruli area. The Tamils thus grew in population and formed their own Governments. Their land was originally 'Tamilagam', but after the deluge, they hastened to the Cauvery basin and settled in the area from 'Vengadam to Kumari' (Cape Comorin) (Ramachandran V.G., 1998, p.39).

Dr. B.K. Mukerjee in his treatise on 'Hindu civilisation' (Page. 153) states 'Indian tradition knows of no Aryan invasion from the North-East or from outside India. On the other hand, it speaks of an Aila (Aryan) outflow, the expansion of Drihyus to the north-eastern countries too' (Ramachandran V.G., 1998, p 105).

The Zend Avesta of Parsees is far later in origin than Rig Veda and concentrates on the one Sun God. Parsees are anti Soma-Yagna and anti-Indra. Zend-Avesta also refers to a Dasavathar of different type. All these show that Parsees are Indian Arya rebels (Ramachandran V.G., 1998, p. 105). Ahura (Asura) for Parsees is good while for Aryans it is evil. It is a Protestant faith to Hinduism. They also worship fire like the Hindus.

Therefore, all our ancient scriptures Ramayana, Mahabharata, Vedas, ancient Tamil Sangam literature etc have to be critically examined to find out whether it is really poetic imagination or reality. To dismiss them wholesale as was done in the past is unfortunate. We have a considerable corpus of literature, noted for its profundity, quantity and quality, but 'unwritten' since it was not written for a long time. Hence the Vedas and Vedangas are called in our ancient Tamil Elida-K-Kilavi. It has come to us, yet, to the present day through millennia, in the same form, by word of mouth-transmitted from generation to generation by recitation, according to set norms, caught by the ear of the disciple, committed by him to memory, to be transmitted again by vocal recitation, hence called Vaymoli in ancient Tamil. Since the organ used is the ear and not the eye as in

‘reading’ it becomes Sruti and since it is committed to memory Smriti in Sanskrit. Its purity has been preserved through the centuries by an ingenious and unalterable system of ‘notation’, intonation (svara), pause, meter and the like. Such transmission from mouth to ear and memory was not mere rote. There was reflection on the matter and content and development of further thought by way of commentaries or ‘Bhashyas’.

The protagonists of the conventional view of history are perplexed by the phenomenon of a people who have a highly developed literature that is able to tell us much about the high civilisation and ethos of the early Aryans of India, but whose material remains such as structures, artefacts and the like are too scarce. Here we have a unique case of people who are very ‘Vocal’ and hence ‘audible’ but who have left no written records. This literature, of an outstandingly oral tradition, if taken as ‘record’ will tend more to push the people into the realms of ‘History’ than oblige us to retain them within the realms of ‘Proto-History’.(Srinivasan K.R., 1988, p.3). What they fail to appreciate is that they are looking for a non existent separate race called Aryans. This is like looking for the Emperor’s New Clothes.

Where the Arya-Dasa (and Dasyu) conflict, and the associated question of the relation between Asuras and Devas are studied, it is found that three traditions, differing in language, concepts regarding nature and powers presiding over them, modes of worship, social organisation and laws have been brought together in the Rig Veda, the people concerned in chronological order being Dasyus, Dasas and Aryas. The most traumatic changes have been effected by the Aryans under the tutelage of Brhaspati (Sundar Raj M., 1997, p.425). This conflict is not unlike the conflict prevalent even today in our villages about the first Maryada or honour in temple festivals among members of different castes or even different branches of the same family.

When Silappadikaram talks of an ancient port Poompuhar, there is indeed an ancient port on ground as discovered by excavation. There are anklets found in excavations of a type similar to what the epic describes kept in the museum at the site. An anklet has been donated to the Government Museum, Chennai as found in Kerala, which is of a similar variety. Why should other parts of the epic in which Kumari Kandam or Lemuria is described be alone imagination?



*Pre Indus Potsherds*

## **Vedic Science**

Vedas, Upanishads, and Allied Scriptures are virtual textbooks on science and mathematics that can be directly used to teach the subjects in the classes of schools and colleges asserts Shri P.V.N. Murthy, the founder of “VEDSRI”, magazine, who has done



a lot of research in this field. This writer has been his friend from 1999 onwards and had a close look as to how he developed his theories.

The science of materials embodied in the post vedic treatise ‘Vimana Sastra’ (science relating to producing aero-planes and space crafts) “is credible and not a hoax”, according to a study conducted by the B.M. Birla Science Centre, Hyderabad, Andhra Pradesh State of India. In the book on ‘Unravelling the Mysterious Diagram in the Form of Chakras (sacred Circles) in Mehrangarh Fort, Jodhpur’ written in 2009, this writer has described how the structure of vimanas has been described in Manasara, the ancient archaeological text but not the engines. A hint is given that they were driven by mercury on which research is quietly going on in USA (Kannan, Dr, R, 2009).

The believers of our ancient literature like Vimaana Saasthra and Amsubodhin point out that there are details of complete technical know-how of building different types of aerospace vehicles like ‘Pushpak, Tripura, Sundhara, Rukma Vimaanas’ in these post-Vedic works. Eric Van Daniken states these as lost knowledge.

Dr. B.G. Sidharth, director of the above centre, has said that, four of the many materials whose “detailed prescription for preparation” had been given in the treatise was deciphered and successfully produced in the laboratory conditions at the Birla Institute of Scientific Research, a city-based sister organization of the centre.

Dr. Sidharth said that these materials comprised a few alloys with rare properties and glasses with special effects. Some of the materials were described to be possessing extraordinary properties, largely unknown to modern science and technology.

These materials were described to have been used in a range of sophisticated instruments which formed components of aircraft and spacecraft described in the ‘sastras’. For example, there were a few special alloys which could be sound-proof (‘Badhira Loha’) or highly heat resistant (‘Amsupa Lohas’) and a few glasses with special effects like solar heat collecting and concentrating properties.

Among the four alloys produced in the laboratory were ‘tamogarbha Loha’ an alloy which absorbs light (Murthy, P.V.N., 2008). Other interesting features of these materials were that they could be produced in laboratory conditions with inexpensive input ingredients like herbs, tree-barks, tree-gums and mineral ores thus giving a low cost solution to preparing materials with sophisticated properties.

Some of them like solar heat collecting glass would also have substantial utility in solar energy devices and techniques for low cost solar energy generation as many devices described in the ‘sastras’ were aimed at solar power generation.

In the ‘Ramayana, we have the ‘Pushpaka Vimana’ which clearly establishes the existence of helicopters and aero-planes. What better example (is possible) of a laser-guided missile than the ‘Shakti’ with which Karna killed Ghototkacha in the ‘Mahabarata’? The ancient Indian rishis had written Dhanur Vidya, an advanced treatise

on weaponry. This knowledge has been lost as the oral tradition of the Brahmins got discontinued due to the division of labour becoming rigid, when Brahmins became pacifist and ceased to fight. Drona, Kripacharya were Brahmin warriors, which shows that before Brahmins and the learned came to concentrate on other worldly things and became pacifist, India was the most advanced country in science based warfare. The Sound seeking missile is Shabdha Bedhi of Dasaratha described in Ramayana that brought him grief as he killed a Rishikumara (Son of a Rishi). Heat seeking missiles and weapons of mass destruction like today's nuclear bombs are the Brahmastra and Narayanastra used by Aswattama in the Mahabharata.

Two solids (Chumbakmani and Panchdharloha) and one liquid material (Paragrandhik dhrav) have been produced from the formulae provided in the book 'Vaimanik Prakaranam'. These materials have shown interesting properties which nearly work as described in the documents. It is interesting to observe that these materials have characteristics quite similar to some of the scientifically developed ferrites and photovoltaic materials in a paper submitted to IIT, Bombay in 1983. The CSIR (Council of Scientific and Industrial Research, India) spent Rs.60000/- for the production and validity tests in 1984.

Vedic Mathematics is very advanced. Puri Jagadguru Sankaracharya Swami Sri Bharati Krishna Tirthaji published a book titled "Vedic Mathematics" in the year 1965 on this topic.

Dr. Sidharth said another important research finding had been the Vedic knowledge of the post Copernical sun at the centre model of solar system, and understanding of the great cosmic cycle and the proposed date of 7,300 B.C. for the Rig Veda.

Panini's grammar had been studied in depth and techniques used in the sutras of Panini for generating grammar ('siddhi') had been applied and extended for the purpose of knowledge representation and natural language processing in artificial intelligence, a research area of computer science. The techniques of generative grammar given by Panini's 'sutras' had been extended and applied for language processing of Indian languages.

As an example of the applicability of Panini's grammar for modern Indian language processing, a scheme had been developed which demonstrated the potential of Panini's approach for inter-language translation of Indian languages like Hindi to Telugu, on a simple personal computer equipped with Indian language interface hardware.

Further, an "Encryption technique" had been deciphered from the Sanskrit works ('Rajya Tantra') of Yagnyavalkya which was a treatise of public administration. 'Rajya Tantra' has described an encrypting technique for transmitting secrets or coded messages between royal spies ('Gudha Chari') and the king himself. An efficient eight digit code and key had been "deciphered" from the 'Rajya Tantra' which was capable of encrypting any numeric or textual message and then transmit it. This technique had been

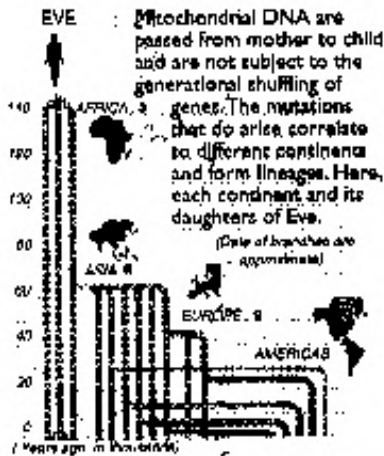


found useful in modern coding techniques separately in coding secret messages which may be vulnerable for tapping through telecommunication networks or computer communication networks.

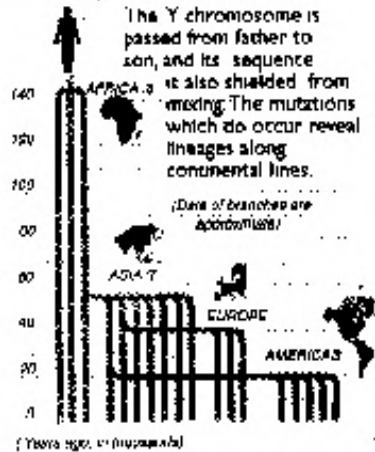
Therefore, our Ancient Historical Tradition like our Puranas are now being examined as sources of history and deserve to be given credence and not dismissed outright as mere figments of imagination.

# The Story of Human Migration (adapted from New York Times - 2000)

## MITOCHONDRIAL LINEAGES



## MITOCHONDRIAL LINEAGES

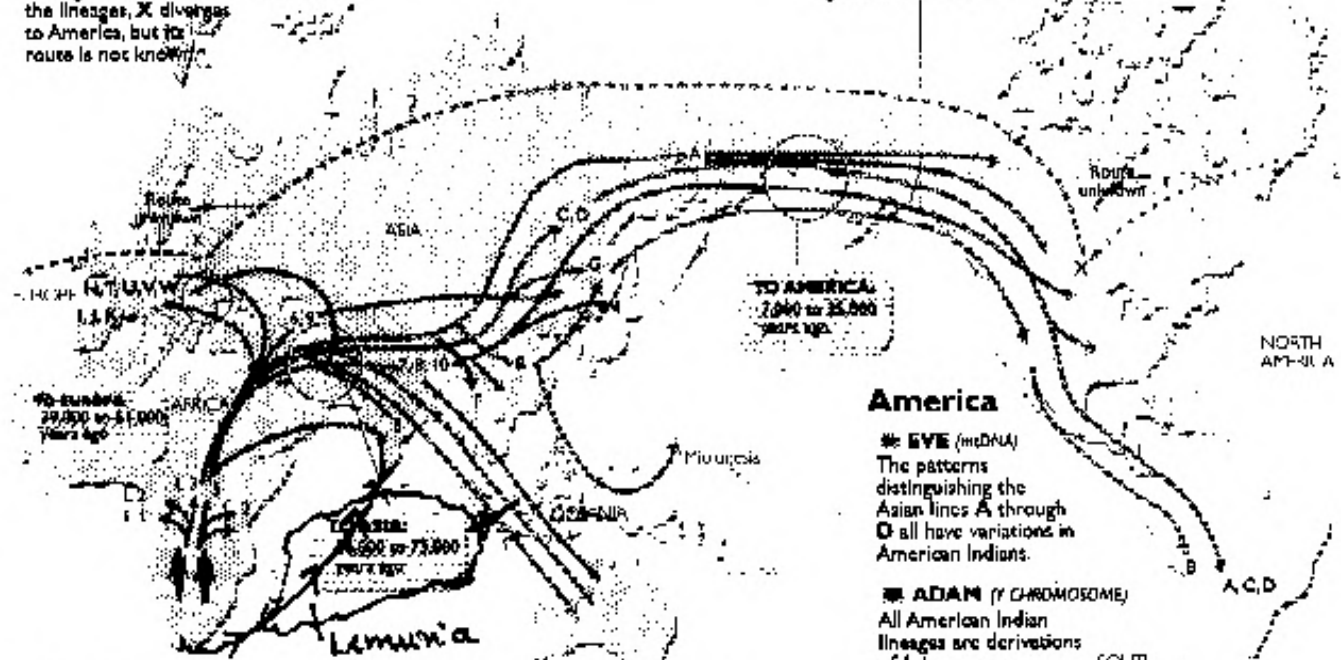


## Europe

**EVE (mtDNA)**  
The nine European lineages are named H through K, and T through X. One of the lineages, X, diverges to America, but its route is not known.

**ADAM (Y CHROMOSOME)**  
All European lineages are variations of African and Asian branches.

Men and women certainly colonized the world together; the differences between the routes shown reflect differences in genetic information.



## Africa

**EVE (mtDNA)**  
The three African branches are named L1 through L3, and L3 separates from all the other branches.

**ADAM (Y CHROMOSOME)**  
The three African branches are named 1, 2 and 3, and 3 separates from all the other branches.

## Asia

**EVE (mtDNA)**  
The six Asian branches are named A through D and F and G.

**ADAM (Y CHROMOSOME)**  
The seven Asian branches are 4 through 10, and these groups branch off into Oceania, Europe and America.

## America

**EVE (mtDNA)**  
The patterns distinguishing the Asian lines A through D all have variations in American Indians.

**ADAM (Y CHROMOSOME)**  
All American Indian lineages are derivations of Asian groups.

## **CHAPTER - VIII**

### **ARCHAEOLOGY**

This is the main discipline relied upon to date events. It usually relies on cross cultural corroboration i.e. Triangulation of events with other known events in other cultures or civilisations. In recent years, it has also started relying on modern scientific techniques to date events independently.

Sir Mortimer Wheeler builds up a picture of a migration that occurred in the middle of the third millennium BC. He feels that ideas, which had been developed in Mesopotamia fertilised certain of the lively but limited chalcolithic communities of the Baluch – Indus border land and produced the seemingly sudden flowering of phase I of Indian civilisation of the Indus valley. By the end of the millennium the Indus Civilisation was dominating the western coastlands from Makran in the north to the Gulf of Cambay and the Narbada–Kim estuaries far to the south, either by spontaneous expansion or under pressures (commercial or other) which cannot be closely defined. Certainly well before the middle of the second millennium (about 1700 BC) internal decay, stimulated perhaps by geo-morphological changes and periodical flooding had set in, and had prepared the way – at least at Mohenjo-daro – for a violent end by raiders of one sort or another. Whether these raiders were the nomadic Aryans whose inroads into the Punjab are reflected in the Vedic hymns is a matter for conjecture, but a certain parallelism between their recorded exploits and the archaeological evidence can be adduced (Wheeler Sir Mortimer, 1966, p.133).

This picture is found to be based on conjecture with outdated facts and the knowledge prevalent at that time, as we have seen above and shall see below. Subjective bias also operated as already seen above in his having to uphold his earlier Aryan invasion theory and dates.

#### **Pre-Indus Cultures :**

The first site is Amri, 100 miles south of Mohenjo-daro in Sind. There, over an area of some 20 acres, are mounds formerly continuous but long divided and eroded by floods from the adjacent Indus. The importance of the site as containing a Harappan (Indus Valley) culture super-imposed upon an earlier, so called ‘Amri’, culture was recognised in 1929 and led to intensive excavation by J. M. Casal in 1959 – 62. Both cultures were Chalcolithic (Wheeler Sir Mortimer, 1966, p.54 – 55).

The better and more characteristic wares are of buff, cream or pink colour, usually with a plain band of reddish brown at the neck and with a geometric design in black or chocolate giving a polychromatic effect to the whole (Wheeler Sir Mortimer, 1966, p.55).

The next site is very interesting for the archaeologist. At Kot Dilji, 25 miles north-east of Mohenjo-daro, exploration by F.A. Khan has revealed a fortified village – or small town with a fortified citadel – beneath an open Indus settlement. The site showed sixteen layers of occupation of which the last three were typical of the Indus civilisation, another was ‘mixed’, and the remainder represented an antecedent culture that has been called specifically ‘Kot Diljian’. Based on a ‘half life’ of 5730 years, the Carbon – 14 dating for a late Kot Diljian stratum (4 A from the top) is understood to be 2100 BC (+ or -) 140 years, and for Layer 14 (the lowest but two) 2600 BC (+ or -) 45 years. The late date for Kot Diljian - 4A immediately prior to full Harappan, if verified by further samples, certainly implies that the Kot Diljian culture continued long after the first arrival of the Harappan or Indus Valley Culture in the vicinity (Wheeler Sir



*Drilling at Mohen-jo-Daro 1965 A.D  
(Wheeler, 1966)*

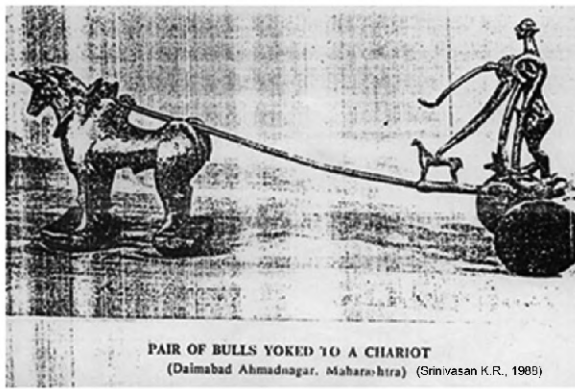
Mortimer, 1966, p.58). At the bottom layers, there is waterlogging. Exploration at lower levels is hampered due to this. The lowest level has still not been reached. Then only we will get the full picture. Wheeler writes that the report that Indus pottery has been found under the ancient metropolis of Kaushambi, much lower down the Yamuna, is not confirmed, but a fringe of Indus or sub – Indus sites must now be expected on the northern plains. He admits that within the past dozen years from the date of his writing the pattern of the Indus Civilisation has been materially enlarged and significantly changed (Wheeler Sir Mortimer, 1966, p.63).

In central India, two scraps of evidence with a possible bearing upon an inter regional linkage between the Saurashtrian ‘Indus’ and Central India may be mentioned. The microlithic blade industries which characterised central India in and before the earlier half of the first millennium BC sometimes include parallel sided blades of a more formidable type, comparable with the chert blades of the Indus valley and Baluchistan. At Maski in Andhra Pradesh, for example, they run to more than 5 inches in length. Apart altogether from the fortuitous availability of material, it is difficult not to suppose that we have here a genuine intrusion from the Northwest, no doubt through Saurashtra. The flat copper axes, which occur on chalcolithic at Jorwe (a hoard of six) East of Bombay and at Navdatoli on the central Narbada, are of an Indus type. Though they are of an unspecialised kind, they are consistent with cultural intercommunication between the lower Indus and the Narbada system by way of the West Coast. The evidence tallies (Wheeler Sir Mortimer, 1966, pp.89-90).

The bio-spheric condition and eco-system indicated by the animals or wild beasts represented in the seals and sealings of the civilisation enables us to picturise. (Srinivasan K.R., 1988, p.5).

The settlements were on open or ‘opened-up’ areas amidst dense evergreen and marsh bordered forests, located on fairly high ground and yet exposed to inundation by the rivers and rivulets swollen by excessive rain or by the melting of the Himalayan snows. The occurrence of such floods has been evidenced by indications met with in the ‘excavations’. For instance Mohen-jo-Daro had seven periods of occupation (Srinivasan K.R., 1988, p.5). This tallies with the findings on Holocene sea level transgressions that Marine archaeology has arrived at below. But the dating is wide off the mark.

The rivers, too, seem to have been shifting beds and courses and a branch of the Saraswati and the Drishadvati, the then tributaries of the Indus, have since dried up (Srinivasan K.R., 1988, p.5). This is borne out by Remote Sensing.



PAIR OF BULLS YOKED TO A CHARIOT  
(Daimabad Ahmadnagar, Maharashtra) (Srinivasan K.R., 1988)

(Srinivasan K. R., 1988)

The enormous quantity of kiln-burnt brick structures presupposes extensive forests in the vicinity of the cities and the other settlements that only could have met the needs of the kilns, the potters, the ‘tandoor’ type kitchen hearths or ovens as also the timber needed for house construction, especially for the terrace roofs (Srinivasan K.R., 1988, p.5).

Depicted in the Indus seals, are the ‘Royal Tiger (*Panthera tigris*) – the large striped tiger familiarly known as the ‘Royal Bengal Tiger’

to the shikaris (and as Vengai or Valvari Vengai to the Tamils, the Indian Elephant (*Elephas maximus indicus*), the one horned Indian Rhino (*Rhinoceros unicornis*) and the wild Indian Bull (Srinivasan K.R., 1988, p.5). We find that except the elephant, the other three beasts have been pushed far east into the Bengal, Nepal and Assam belt in the north-east of our Indian sub-continent. This shows the large climatic changes that have taken place, which is corroborated by Pollen Analysis.

Daimadabad, Ahmadnagar of Maharashtra, a Harappan site has yielded, on excavation, a chariot drawn by a pair of bulls yoked to it, with a standing driver on its open deck. It resembles very much such types called Rekla Vandi drawn by a young bull or colt, such bull or colt-drawn reklas are in common use to-day, particularly in South India and Tamil Nadu.

Bhirrana, Haryana brings out the lie that Indus civilization was confined to the Sindhu river only. It extends to the Indo-Gangetic plain. Therefore, instead of a river flowing only in the North West to South and people from West to East, reverse flow of people could have occurred. {“Excavation of the Harappan Mound at Bhirana - Dr. L.S.Rao” – Indus Civilization and Tamil Language (Proceedings of the International Symposium 15th, 16th Feb 2007, Chennai), Department of Archaeology, 2009}. The excavation of



Harappa and Mohenjo Daro in 1920-21, 1921-22 brought about revolutionary changes in the understanding of Ancient Indian History and Culture and simultaneously pushed it chronologically back to the 3rd millennium B.C. The people using the Hakra Wares were proved to be the predecessors of the Early Harappans.

Against this background, the exposition of an independent horizon of the Hakra Wares culture at Bhirrana, for the first time on the Indian side, is in itself is a significant discovery. Further, this excavation has provided sufficient information regarding the socio-economic life style of the Hakra Wares people (Rao 2006: 33-42). Being the earliest occupants on the left bank of the, now, dried up course of the river, Saraswati, these inhabitants preferred to live in subterranean shallow circular pits cut into the natural soil. These pits are invariably found in clusters and are of different dimensions. They were used for different purposes as indicated by the nature of material remains recovered from them. Dwelling pits are shallow and vary in depth from 34 to 58 cms, whereas the diameter varies from 230 to 340 cms. The walls and floors of these pits are plastered with yellowish alluvium. Such pits appear to be sufficient to accommodate 3 to 4 persons. These dwelling pits do not have post-holes around them, yet there is direct evidence to the existence in the form of burnt clay lumps with reed marks to the existence of humble super structure constructed of wattle and daub. Surrounding these dwelling pits, other auxiliary pits, smaller in diameter ranging from 200-230 cm and 80 to 108 cm in depth served different purposes, such as, for sacrificial / kitchen / industrial activities, and to dump refuse (see Rao, Ibid).

In course of time, these pit dwellers abandoned the use of subterranean dwelling pits and chose to raise huts over ground as is evident from a partly exposed rammed floor of a circular hut with a chulha by its side .

The village, Bhirrana (Lat. 29° 33' N; Long. 75° 33' E) is situated in the Fatehabad district of Haryana state. It lies at a distance of about 220 km to the northwest of New Delhi on the New Delhi-Fazilka National Highway and about 14 km northeast of its District Headquarter, Fatehabad. The Harappan mound at Bhirrana is located in the northern outskirts of the village, overlooking the left bank of the now dried up river, Saraswati. Under the Saraswati Heritage Project of the Archaeological Survey of India and under the direction of Dr. L. S. Rao, the excavation was undertaken from December 2003 to May 2004. (From Puratattva No.34 2003-2004, K.N.Dikshit and K.S.Ramachandran, Editors, Indian Archaeological Society, New Delhi).

### **Chronology**

The Early Harappan pottery repertoire and the close proximity between the sites, makes the Period I of Bhirrana coeval to Kunal IB where the culture is dated to 3016 BC. Terracotta toy wheels make their first appearance during the Early Harappan period at Bhirrana.



Now, the Indus type settlements have been unearthed as far as near Mahagara near Allahabad. This shows that Varanasi (Kashi) being one of the most ancient cities is not a late period claim. Rakhigarhi in Haryana has joined the list of Harappan sites now.

### **Efforts to search for Saraswati in Haryana**

In 2015, efforts are being made by the Government of Haryana to trace the origin of the Saraswati in the Shivaliks in Adi-Badrinath Saraswati Udgam Sthal at the foothills of the Shivaliks from where it flowed down to Allahabad.

([www.thehindu.com/.../excavation...search-of-saraswati/article7050382.ec...](http://www.thehindu.com/.../excavation...search-of-saraswati/article7050382.ec...) Mar 31, 2015)

### **Horses**

The horse is supposed to be an Aryan import into India. However, remains of horses have been found in deposits at Mahagara near Allahabad (dated to around 2265 BC to 1480 BC) found through Carbon -14 dating (Edwin Bryant, 2003). The English are revising their theories.

About 2000 AD, Col. Umesh Prasad and the 23 Infantry Division of the Indian Army have found 27 rock shelters decorated with Stone Age rock paintings in the Kaimur Hills, Bihar during a trek. The paintings showed a mutilated left palm, sun god, a horse with a rider, wheel and cart, men playing flutes etc. Lt.Col. Prasad is reported as saying that in many of the caves mutilated left palm prints with the forefinger and small finger missing were found. The same pattern was found in Southwest France in the Garga Cave also known as the 'Cave of Hands'. The 'Hand' is a pictographic symbol in Epigraphy. The paintings of a horse he felt gave the lie to the theory that the horse was of Grecian origin (UNI, 2000). This finding is triangulated by the verses in Rudram, Yajur Veda, a sacred chant when the Shivalinga is given the Abhishekam or ceremonial sacred bath. It clearly states that Shiva is 'Ashwapathi' or Lord of Horses. The claim that Shiva was a Dravidian God and Dravidians did not have the horse need not be refuted in a more emphatic fashion in the light of the above archaeological and scriptural evidence.

This shows that horses were not brought into India by the Aryans only though like any trade, horse trade from West Asia might have been there in return for other Indian commodities. Horse trade has been documented in the far South with Arabs and Portuguese in Tiruppudaimarudur in Tirunelveli District as late as from the XIV Century AD onwards on murals (Kannan, Dr. R. et al, 2015).

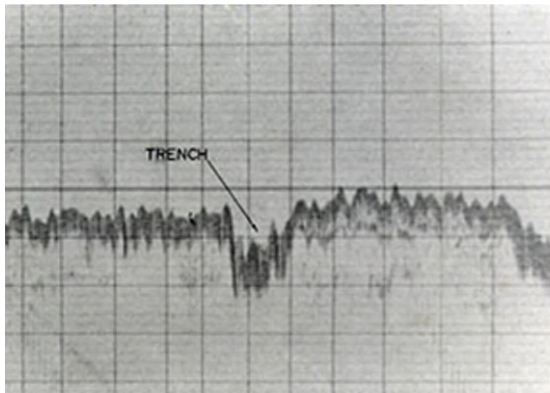
This writer wrote as far back as in 2000 (1st Edition of this book) that it is only lack of exploration and excavation which has made us stick to the XIX Century theory of civilization flowing from West to East and it may be East to West. Subsequent events have proved this.

## Mediaeval Period

Several Rajput clans in Jaisalmer area trace their origin to Bihar. They migrated in the mediaeval period, Similarly, there was mass influx of Paliwals from Jaisalmer to Pali, Mumbai, Uttar Pradesh and as far as Belgaum area in the 19th Century AD.

## Analysis of the bronzes

Analysing by the method of atomic absorption spectrophotometry, it is revealed that the alloy used is 'arsenic bronze'. It is similar to all the bronzes derived from Harappan centres. A metal such as arsenic in the present case, can lead to the tracing of the source of the raw ore, and help in determining whether the source was indigenous, or whether the raw ore or extracted metal is of foreign origin. So far this has not been determined (Srinivasan K.R., 1988, p.9).



***Detected trench by magnetic methods***

The 'inscribed' seals may as well be 'commercial' in nature, considering the fact that the Harappans, as other evidences show, were, among other things engaged in active trade and commerce. They are found in ports in the Persian Gulf. It shows sea trade and not land trade only.

## Seals

The greater concentration of such seals in the metropolitan or urban sites, such as Mohen-jodaro, Harappa, Kalibangan, Lothal, Banawali, etc., than in the rural settlements, their occurrence side by side with graded cubical weight measures or units, uniformly found in all the sites suggests a common or agreed gravimetric standardisation (Srinivasan K.R., 1988, p11). A similar procedure obtained in the early Chola port city of Poompuhar or Kaveripoompattinam in South India in the 2nd century AD. The early Sangam Tamil literature refers to the import and export of diverse commodities and to the packages-podi or chippam, for export 'sealed' with the tiger emblem of the Cholas and lying in the well-guarded ware-houses of the port (Srinivasan K.R., 1988, p.11). This shows the commonality of commercial practices in Ancient India. There was also cultural exchange due to trade.

## Spatial Spread

Bhagavanpur on the river Saraswati in the Kurukshetra District (Haryana) is the northernmost site found so far. At this site the Painted Grey Ware (P.G.W.) culture at its lowest level is found to be interlocked with the last phase of the decadent Harappan (Srinivasan K.R., 1988, p.20). The P.G.W. people lived in much less sophisticated houses of wattle-and-daub, carried on agriculture and domesticated animals, amongst which particular mention may be made of the Horse (Srinivasan K.R., 1988, p.20).

Circumstantial evidence would thus identify the P.G.W. people with the Aryans who came over to this region, perhaps in waves according to Srinivasan. Iron came subsequently into the P.G.W. culture, even as it seems to have done in respect of the megalithic culture of South India, at almost the same time (Srinivasan K.R., 1988, p.20). He queries whether this is the archaeological evidence echoed by the belief of some scholars that 'ayas' or 'loha' of earlier (Rig Vedic) literature denoted copper (Srinivasan K.R., 1988, p.20). Why could it not be that the Rig Vedic people knew the use of Iron. This shows the hold of Normal learning even when he himself agrees that there is interlocking between the Indus and subsequent people. Such is the hold on the mind of Normal learning, which comprises of the Aryan invasion theory and the outdated dating in Ancient History.

The geographical extent as could be deduced from their extent and distribution, stretches from the foot hills of the Himalayas embracing the upper reaches of the Indus (Sindhu) and the Saraswati and the Drishadvati river systems, down the rivers themselves, and up to the lower reaches of the Narmada and the Tapti, and one can say even to the head of the Godavari basin, if we include the recently discovered Daimabad site, on the south (Srinivasan K.R., 1988, p.4). It is felt that using magnetic methods for locating underwater metallic objects, the seismic profiler and side scan sonar surveys could locate civilisation along side Andhra coast that is now submerged (Rao T.C.S., 1988, p.73). If the Cauvery valley is probed, they may yield some sites.

Some archaeologists still stick to the conventional dating despite overwhelming evidence to the contrary. Srinivasan states that the earlier calculations of the date and duration of this culture made on the basis of comparison with already dated West-Asian cultures, primarily taking into consideration similarities as found in the seals, have since been checked up from fresh material collected by employing the modern Carbon - 14 method of dating. The duration of the culture has thus, been fixed as between Circa 2,500 BC and 1,700/1,500 BC. The sites discovered so far include both the metropolitan or urban cities and humbler peasant villages or rural settlements (Srinivasan K.R., 1988, p.4).

Carbon - 14 dating is not fool proof now since atomic testing has increased radioactivity. Genetics can be contaminated by touch. Hence, in Dakar, Israel archaeologists are leaving a part of the cave untouched for future generation using superior technology. Archaeologists formulating theories are limited by the knowledge available at the time of formulation. This is the problem with Sir John Marshall's and Sir Mortimer Wheeler's theories and those of their followers.

The Aryan invasion theory is based on the discovery of skeletons in Mohen-jo-Daro but M.C.Joshi, former Director General of Archaeological Survey of India during a lecture at Chennai Museum in 2001 felt that they are at different layers. Therefore, the event could not have taken place at any one point of time. Hence, this theory is proved false. Sir Mortimer himself admits that 'Years ago, I suggested the Aryans invaders of the North

West of the subcontinent as the ultimate agents of destruction. This cannot be proved and may be quite incorrect, but is not an impossibility' (Wheeler Sir Mortimer, 1966, p.78). But he starts to use Scriptures like the Rig Veda and words like Purandara to show that Indra was a fort destroyer and the forts were Indus cities. This is a totally unacceptable twisting of the word Purandara which according to the dictionary is a name for Indra, Rudra and also means thief or house breaker. The word 'Port' in English means the side of a ship, a harbour or a drink. Therefore, an apt meaning fitting into the context has to be taken and not a meaning that does not fit into the context to suit convenience. This is an attempt to stick to the old theory, since he himself has formulated it.



Skeletons at different levels at Mohen-jo-Daro (Wheeler 1966)



The lowest levels of Mohen-jo-Daro have never been reached due to high water table (Wheeler, 1966)



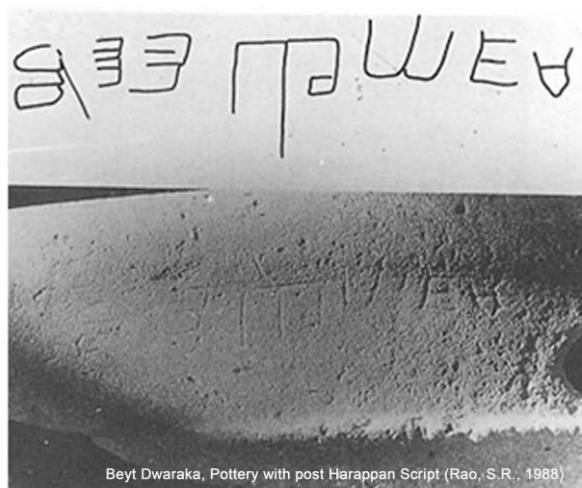
## **CHAPTER - IX**

### **UNDERWATER OR MARINE ARCHAEOLOGY**

This part of archaeology was not given importance by the traditional archaeologists till recently. The first attempts were by Dr.S.R. Rao in circa 1980 AD. Please see the separate Chapter on this topic in this book.

Dr. S. R. Rao has used Thermo Luminescence (TL) dating to show that Dwaraka and Bet Dwaraka existed at 3520 BP (Before Present) in 1988 AD based on analyses of pottery recovered from the sea in the sunken port. The dating was done by Prof. Singhvi (Rao S.R., 1998, p. 52). Parts of a wooden hull of a boat were sent to the Institute of Paleo Botany, Lucknow. A stone anchor was found at Dwaraka about 500 metres inside the sea on the continental shelf (See Picture). If excavation is undertaken further into the sea, the real date will emerge which will corroborate the astrological cum astronomical date of Lord Krishna as about 3200 BC.

The Danish Experts Expedition in 1961 carried out a remarkable exploration in the Kuwait Island of Falaka. In the ruins of these were found numerous steatite seals of the same type as are found in Mohen - jo - Daro and in Ur in Mesopotamia (Ramachandran V.G., 1998, p 105). Lothal was a great port with a dockyard. (See Picture - Dock Yard, Lothal (Rao S.R., 1988). This was disputed as an irrigation tank by the Aryan invasion theory protagonists. But the presence of Foraminifera, a marine organism and gypsum crystals, which occur in hyper saline conditions, has now established that it was indeed a port. It has been cut off from the sea due to shoaling of the Gulf of Cambay as a result of Holocene sea level rise (Nigam R., 1988, p.20). This is corroborated by remote sensing (Rao D.P., 2000).



***Beyt Dwaraka, Pottery with post Harappan script (Rao S.R., 1988)***

Negi and Tiwari have analysed sea level changes in the Hudson Bay, Canada during the past 8000 years, global temperature variations of the past 20000 years decoded from glacial – inter glacial episodes and tree-ring record (Dendro Chronology) of paleo temperatures from an old Japanese cedar for the past 17000 years. Maximum Entropy and Walsh Spectral Analysis of these three independent time series from different parts of the world reveal cycles of 1083 and 634 years in sea level changes which correlates well within error limits to the known planetary cycles of 1133 and 567 years. They feel that this may be not as much due to tidal effects as alteration in the pattern of basic energy

flow from the Sun. Therefore, they feel that a sea level anthropological cycle of 550 years takes place in global history. On that basis, Dwaraka must have experienced six transgressions and regressions of the sea, which accounts for the several layers of settlement encountered during archaeological excavation (Negi J.G. & Tiwari R.K., 1988, p.79- 82). Estimates of the Holocene sea level transgression have an important bearing on most archaeological problems. Nair and Hashimi have found sea level rising at 10 metres per 1000 years about 10000 to 110000 years ago on the western continental margin of India. They base this estimate on coral growth and drowned banks of coral in the Lakshadweep Sea. They conclude that Holocene sea level rise was of the order of a rapid drowning (Nair R.R.& Hashimi N.H., 1988, p.86). Shoreline recession in Bet Dwaraka and Dwaraka area is around 4 metres per annum for the period 1848 to 1977 AD (Pathak et.al, 1988, p.62). This makes the Mahabharata story of submersion highly plausible.

From Andhra, Dr. Gangadharan, the Professor of Marine Archaeology had come to participate in the seminar on the Gulf of Cambay excavation in 2002. He stated during his talk in the Government Museum, Chennai that he has discovered a temple of the Chola period that has gone underwater at the mouth of Visakhapatnam port.

## **GULF OF CAMBAY EXPLORATION**

The recent (2002 AD) Gulf of Cambay exploration where the artefacts like beads, a tree trunk stump dated at 8000 BC were got by independent scientific dating is a case in point. This writer participated in a National Workshop on Marine Archaeology in the Gulf of Cambay at the invitation of Prof. Ravindran, the Director of the National Institute of Oceanographic Training, Chennai. It was held on 1-7-2002. Also see chapter on Underwater Archaeology.

### **Other Explorations**

When we went to recover the anchor in Kovalam village in 2002 AD, we found a lot of big sculptures of the Pallava period. The fishermen also said that more such sculptures were in the sea and could be recovered with a little effort. This shows that the event of sea transgression that swallowed the temples of Mahabalipuram is also real i. e. the Seven Pagoda Theory. According to this theory, two are on shore and five are buried under the sea (Thurston, E, 1913, republished 2005). Dr.K.H.Vora, the scientist from the National Institute of Oceanography, Goa met me after their recent diving effort and described that they had promising finds off Poompuhar and Mahabalipuram. I wanted to issue a press release. But they wanted clearance from Government of India. Mr. James Hancock pre-empted them and being a foreigner got wide coverage. I have described how Mr. Hancock omitted India in his Discovery Channel documentary, while giving out his Seven Sages (Sapta Rishi) Theory (Kannan Dr. R., 2000, p.33). It appears he is now covering India after realising his omission.



The Sapta Rishi Era or Manvatharadi was started on Friday 21st November 8576 BC (Raghavan K.S., 1998 from Kannan Dr. R, 2000). Sraddhadeva Vaivaswata was crowned Manu, the first king of human society of this age (Manwantara-Mahayuga) by the Saptarishis in the year 8576 BC, Magha Sukla Prathama, when the Vernal Equinox was in the first quarter of the Magha Nakshatra, 120° on the Indian standard Ecliptic. Imprints of Indian tradition and culture some of which are six to seven thousand years old are found even now in far off lands like Indo-China, Indonesia Mexico, Central America, Peru (Sakhyananda, 1998, p. 26). The Chaldeans as far back as 7000 BC speak of an Egyptian priest-astrologer named Manetho and that Satyacharya's disciple was also Manita.

## **RESEARCH IN TAMIL NADU**

I have made use of the material given by Dr. Rajamanickam of Tamil University below:

At Valinockam, the vertical sequence of the marine terrace of about 3.5 meters indicates various stages of marine transgression and high sea-levels during the Holocene or late interglacial periods. At least three stages are clearly noticed. (Loveson V.J. & Rajamanickam G.V., 2000, p.87). All these marine terrace landforms indicate that the high stand levels originated from marine transgressions in the past and are associated with neotectonism of a later interglacial period (Loveson V.J. & Rajamanickam G.V., 2000, p.87).

An ancient port called Alagankulam situated 15 km north of Mandapam, flourished during the 9th century AD, in the Pandyas Kingdom. At present, it is 2.5 kms. landwards of the present shoreline. This confirms either a progradation of land or sea-level lowering (Loveson V.J. & Rajamanickam G.V., 2000, p.90).

Korkai was functioning as a big port as well as the capital city of Pandyas during the first century AD. The archaeological findings have revealed that this place is covered by recent deposits and is situated at least 5 km away from the present day coast. This archaeological evidence complements the data of sea-level variation in space and or time (Loveson V.J. & Rajamanickam G.V., 2000, p.90).

Rajamanickam and Loveson (1989) have reported for the first time in the east coast of India, the results of radio carbon dating of samples taken around the Rameswaram Island. This is the first evidence of its kind for the study of the sea level variation along the east coast of India. They ascertained the period of those samples as between 140 BP and 5,440 BP, which agrees well with the findings of Kattupotha and Fujiwara (1988), who identified two stages of high sea level during Holocene (Victor Rajamanickam G, 1991, p.86).

The uppermost terrace in Ariyankundu in the Rameshwaram island gives an age of 5440 ± 60 yrs. B.P., while the next terrace at about 10 cms below the previous sample level indicates an age of 3920 ± 160 yrs. B.P. The coastal terrace found in Rameshwaram

island has shown that the coral growth has been initiated around that period in that island and continue to emerge or withdrawal of sea level might have caused the second terrace around the years of 3920  $\pm$  160 yrs. B.P. in the island. (Rajamanickam, Victor G. and Loveson V.J., 1989, p.392).

Use of aerial photographs of 1972 to draw a Geomorphological Map, use of Topo-sheets of Survey of India to identify landmarks, extensive field work, bathymetry data using hydro graphic charts have also been brought in for interpretation (Loveson V.J. & Rajamanickam V.G., pp.80-88) of emergence of land.

The Coromandel coast has been described as the coast of submergence. However, if one takes a close observations there are many evidences not only historical but also the Geomorphological aspects betraying the possibilities of the emergence. For examples, the ancient light house near Muttam is buried by the sand dunes and placed at present nearby two kilometres away from the shoreline. (Loveson V.J. & Rajamanickam G.V, 1988, pp.80-88).

The following features are shown in the Geo-morphological Map:

- i. Ridges
- ii. Back waters
- iii. Palaeo-channels
- iv. Spits and
- v. Terraces

The recognition of the occurrences of Terraces is linked with Aerial Photographic interpretation. Kanyakumari, Manappad, Tiruchendur, Valinockam and Pamban have terraces (Loveson V.J. & Rajamanickam V.G, 1988, pp.80-88). These marine terraces depict the lowering of sea level along this coast and the height of sea-level stand during the past.

The existence of these coastal features have been attributed to the predominant influence of the on-going progradation or the emergence of coast (Loveson V.J. & Rajamanickam V.G, 1988, pp.80-88). But another conclusion that this also represents sea ingress can also be drawn.

Sea level studies carried out on beach ridges around Vedaranyam and Mandapam show that there was transgression of the sea round 6000 years B.P. (4000 BCE). Coral terraces around Rameshwaram show transgression between 5000 years to 4000 years B.P. (3000 BCE) (Anbarasu K. et. al., 1998, p. pp. 1-2).

For Visakhapatnam, based on resemblance to the North American and Australian coasts, caused by the Holocene Marine transgression, the abrupt variation in the seabed topography may be ascribed to one such marine transgression during the Holocene period (Mohana Rao. K et.al., 1989, p.180). The behaviour of the textural pattern and

associated bathymetric features suggest the presence of relict environments of dune and beach which leads to the conclusion that the beach ridges and channels observed up to 15 meters contour are remnants of the earlier beach submerged during the Holocene transgression (Mohana Rao. K et.al., 1989, p.180).

During the course of the study of the sea level variations along the coast of Southern Tamil Nadu, a distinct spit formation has been traced in the surroundings of Periapattinam village. Admiralty charts from the year 1596 to 1986, the satellite imageries of 1979 and aerial photographs of 1972 were utilised. The ancient drainage pattern of Vaigai river has been surmised from the existing Palaeo-channels which have a perfect linearity with the present Vaigai river pattern. The flourishing ancient port of Periapattinam during 13th-14th century AD on these Palaeo-channels must have been closed down due to the siltation caused by the change of the river courses and emergence of this coast. The fast rate of progradation at that spot has also been aided by the littoral drift (Loveson V.J., & Rajamanickam V.G., 1989, p.1).

The satellite imageries of Periapattinam as well as the aerial, photograph clearly depicts the recent Palaeo-coastline with one detached water tank at the north eastern part of the study area. The nature of the tank and depth variation inside the tank lead one to surmise that the cut-off water tank area must have been in the deeper part, probably sometime in the past. From the bathymetry, it is inferred that the north western part of the above said tank must have been used by ancient people as the port's entry channel. And the south-eastern part of the same channel probably the spit wall of the past must have been the natural breaker wall to give the necessary protection for the vessels (Loveson V.J., & Rajamanickam V.G., 1989, p.4).

The port of Periapattinam has gone into the interior near the pond called Kappalur Urani Tank. Selddon wares, coins, metals etc have been recovered. The oral traditions of the fisher folks, farm labourers on the South Indian east coast can be used to gather information of interest to Marine (underwater) archaeology. The recovery of an anchor from a French vessel dated 1864 was based on information from fisher folk (Rajamanickam, V.G., 1989).

The Department of Archaeology and Museums in 2002 AD recovered an anchor about 200 years old from Kovalam near Chennai based on information from fisher folk. Near Poompuhar, the Curator brought a porcelain potsherd that is datable to the 17th Century AD from the net of a fisherman in 2002 AD. The chapter on Kumari Continent and Underwater Archaeology gives details of the claims made for it being the tip of the lost area Lemuria.

### **How dates have been pushed back by the Tsunami of 2004 AD**

The Seven Pagoda theory was just legend prior to the Tsunami of 2004 AD. The theory states that there were seven temples of which only the Shore Temple and the

Sthalasayana Perumal temple survived. This was dismissed by earlier historians based on their then state of knowledge as a myth. The temples were constructed in memory of a Rishi who got a boon from Lord Vishnu (Thurston, E., 1913, republished 2005). This theory was given credence by this writer in the 1st edition of this book as not to be dismissed. The Brahmins told William Chambers circa 1798 AD that Five Pagodas with copper (gilt) edged tops or finials were seen in the sea by their earlier generation (Asiatic Researches, Vol. I, 1798). J. Goldingham also states the same in his paper (Asiatic Researches, Vol. V, 1796). Captain M.W. Carr has collated them in his book (1869).

The Subrahmanya Temple at Saluvankuppam, Tamil Nadu, is a shrine dedicated to the Hindu deity Murugan. Archaeologists believe that the shrine, unearthed in 2005, consists of two layers: a brick temple constructed during the Sangam period (the 3rd century BC to the 3rd century AD) and a granite Pallava temple dating from the 8th century AD and constructed on top of the brick shrine. The Archaeological Survey of India (ASI) team which conducted the excavation believe that brick temple could be the oldest of its kind to be discovered in Tamil Nadu. The temple was discovered by a team of archaeologists from the ASI based on clues found in a rock inscription left exposed by the 2004 Indian Ocean tsunami. Initially, excavations revealed an 8th-century Pallava-era shrine. Further excavations revealed that the 8th-century shrine had been built on the brick foundation of an earlier shrine. The brick shrine has been dated to the Sangam period. This writer was present and saw the excavated remains with an ancient stone 'Vel', the weapon of Lord Muruga and large Pallava era size bricks.

The Muruga temple faces north, unlike most Hindu temples. Artefacts from two phases, the Sangam phase as well as the Pallava phase, have been found. The temple is Tamil Nadu's oldest shrine to Murugan. It is also believed to be one of only two pre-Pallava temples to be discovered in the state, the other being the Veetrirundha Perumal Temple at Veppathur.

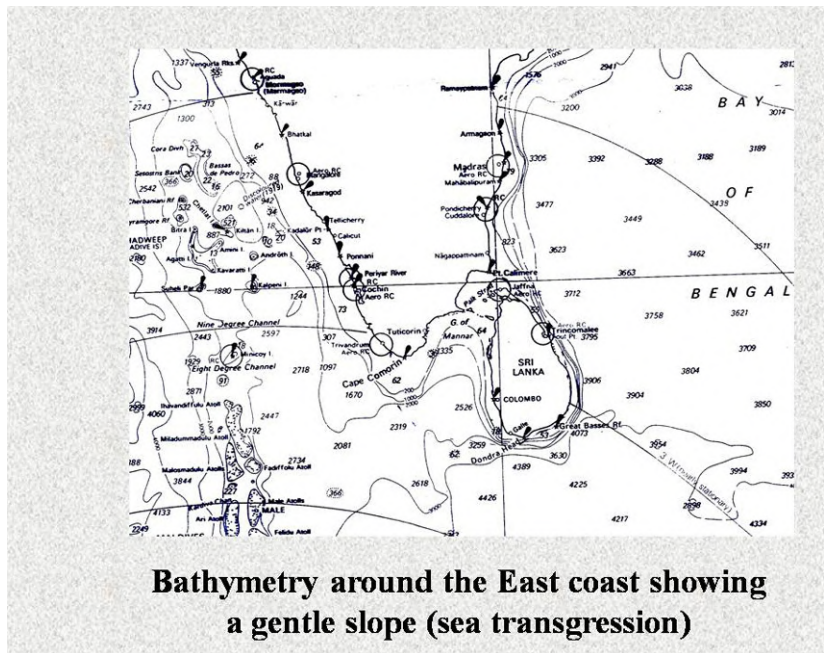
The Murugan temple is built on a cushion of alluvium on which a layer of man-made bricks were laid. This is based on the Mayan and later Manasara work on archaeology that isolation must be done where the soil is poor. This has been adopted in the National Art Gallery Building foundation in the Government Museum, Egmore. On top of this were another four layers of man-made bricks separated by four layers of laterite. There were two types of bricks used: large-sized laterite bricks of the Sangam period and thin, tabular bricks of a later age. The bricks were plastered together with lime. This gives the lie that there was no sankeerna (structural type of temple before the twin Shore Temples). It was thought that only Mahendra Varma Pallava brought in cut - in cave architecture, but the Saluvankuppam structural temple find pre-dates it. This writer visited the site during excavation and in various phases till it was covered back. It should have been exposed and conserved for the public. This was done by Thiru K.T. Narasimhan when he excavated the ancient wharf and conserved it in the 1990s that pushed back dates to the 1st Century AD. This writer was with him when the work was done. Before that



Mammallapuram (Mahabalipuram) was thought to start only with Narasimha Varma Pallava of the 7th Century AD. The inspiration for the caves came from the Guptas who had carved such Hindu deity panels in Vidisha in the 4-5th Century AD. This was followed in Aihole which pattern Mahendra Varma and Narasimha Varma Pallava (Mamalla) followed. It was a university of architecture in that the Five Rathas have Dravida, Vesara and North Indian Nagara architecture.

A submerged temple was also noticed in the sea by the fishermen during the Tsunami.

Rock cut out sculptures of a lion, elephant and Mahishasuramardini as cut-in on the lion are found exposed on the beach by the tsunami near the shore temple behind the rows of shops (see photos). Very few now visit it. This writer has visited all these sites.



Maangudi Black & Red ware Potsherd with Tamil Brahmi letters

## **CHAPTER - X**

### **REMOTE SENSING**

Remote sensing and ground penetrating radar are available now. There are subterranean channels of River Saraswati seen by remote sensing satellite. It connects to Allahabad. The dried up bed of the other branch is seen in Rajasthan and Gujarat (Rao D.P., 2000). The British historians and their followers dismissed the river as mythical till the 1980s. The shifting of the river over time is clearly seen.

Remote Sensing has its value, in deciphering various stages of sea level stand within a certain period in an area (Loveson V.J. et. al., 1990, p.179). Sea level variation is eustatic i.e. global or local. It can be recognised in two ways viz. (i) Vertical displacement as observed from marine terraces and (ii) Horizontal displacement of shoreline changes as ridges. Marine terraces right at the shorelines are very well exposed to field study. But, since the shoreline changes are regional in extent covering larger area, it may not be possible to appreciate the existence of such a feature in the field investigation at the first instance. Remotely sensed imagery records such features, leading to shoreline changes clearly. With the aid of these imagery patterns, one can identify and differentiate the beach ridges with the swales, backwater systems and coastal lake patterns without difficulty. Only with a few samples and limited inspections, it is possible to confirm such a larger structure (Loveson V.J. et. al., 1990, p.179).

Each ridge denotes one ancient sea level stand. About 4 or 5 prominent major beach ridges are recognised all along the Tamil Nadu coast (Loveson V.J. et.al. , 1990, p.180). By comparing this, one can suggest that once Vaigai might have been flowing along Ramanathapuram to Periapattinam coast. This is also confirmed by the bathymetric study around Periapattinam offshore area (Loveson & Rajamanickam, 1989; Loveson V.J. et.al, 1990, p.188).

The fact that the coastal zone between Idinthakarai to Cape Comorin is provided with only one beach ridge arrangement depicts either the uplift of the coastal area or stability of coastal zone (Loveson V.J. et.al., 1990, p.189).

A recent article states how building of a check dam (Johad in local parlance) by Rajendra Singh, a famous social worker, at the source of the dried up river Arvari in Alwar district of Rajasthan has revived the river. It also adds that five rivers flow through Alwar perennially now due to use of this method (Ranganathan Arvind, 2000). If a small intervention like a check dam can have such a dramatic effect, the effect of large changes can only be similar to that described in our Puranas.

The French team which excavated an Indus site Mehrgarh, west of Mohenjo-Daro estimates the city civilisation at circa 8000 BC. This result is according to Carbon-14 dating using sun dried bricks and earthen pots {Mathivanan R., 1995(1), p.4}. Jean



Francois Jarrige in 1974 excavated Mehrgarh. Rafique Mughal, a Pakistani archaeologist also feels that Mehrgarh takes us another 4000 years before Indus Valley civilisation proper and there has been continuous occupation (Rajagopalan R., 1995, p.71).

A renowned Marine Archaeologist S. R. Rao (1992) in his lectures states that the accenting and ligaturing in Indus script were inherited by Brahmi. The religion of Harappa as indicated by the fire and sacrificial altars was very close to that of the Vedic people. There was a cultural integration of fire and animal worshipping people, who are the same. The Indus cities were not invaded by Aryans. Natural calamities were the cause of their abandonment. Both the Vedic people and Harappans worshipped Fire as Agni. He stops just short of saying there was no new race from Central Asia known as Aryans.

Sir Mortimer feels that the southerly extension of the Mauryan Empire from the Ganges at the beginning of the third century BC over a period of several chalcolithic cultures with a strongly microlithic bias swept the fully developed Gangetic Iron Age. It was on a sufficiently small scale to absorb local traditions whilst imposing the (literally) iron discipline of the northern civilisation. This advance stopped in northern Mysore, but it later reached the Southern end of the Peninsula and by the first century AD, was fully established there, with widespread contacts overseas. Starting at about the same time, i.e., the third century BC, it began to spread also down the coastal plains beside the eastern ghats (Ashoka's famous conquest of the Kalingas of Orissa about 264 BC is a key-point), and as far south as at the famous Amaravati on the Krishna river. Here the Northern Black Polished Ware of the Ganges found an ultimate home. The picture is one of gradual spread from north to south. This is logical (Wheeler Sir Mortimer, 1966, p.136).

Even this version on recorded history is challenged by a different dating. It is claimed that Alexander's contemporary was Chandra Gupta of the Andhra Britya Surya Vamsa. The Kings of Pataliputra were good friends of Cyrus the great of Persia who had an elephant regiment and a big battalion of very good Indian warriors. It was the great Pataliputra army of Kurukshetra, poised for a war that made the Greek generals of Alexander refuse to move forward beyond the Sutlej. This ultimately led to the destruction of the Greek Army and made Alexander retreat along the Makran coast and get murdered at the hands of the wild tribes in an unknown place. There is a claim that Chandragupta, founder of the Maurya dynasty should not be equated with the Puranic Emperor Nanda Vamsa Chandragupta circa 1463 BC, who ruled at Pataliputra, more than 1000 years earlier. His grand father Nanda, conquered the whole of Bharat, and performed Aswamedha sacrifices and erected a great number of Jayastambhas (Ramachandran V.G., 1998, p 46).

The Aryan fair skin theory is exploded by Rama and Krishna the so-called Aryan heroes being dark skinned. This may be because God is perceived as a Black Hole (Anti Matter)

in contrast to the White Hole (Matter). The other explanation is that colour is skin deep and the aura is rosy for a God and that is what matters. Kirlian photography shows up auras.

Another example of the hold of the Aryan invasion theory is the description of the megaliths in South India as being of Aryan origin (Parpola Asko, 1973 ,p.1). The vratyas are described in the Vedic literature. Parpola feels the vratyas seem in many respects to hold a key position for our understanding of the Indian Proto history (Parpola Asko, 1973, p.2). Parpola identifies the vratyas as the perpetuators of the traditions of the chalcolithic black and-red ware people. He feels as B. and R. Allchin does that they are pre-Vedic Aryans. This is because they are looking for a separate race to settle in the South.

Allchin feels the Dravidian languages came to India with the pre-Harappan cultures of Afghanistan, Baluchistan and Indus Valley in the fourth millennium BC. Such a linguistic relation of South India with the North-west is held to support the Allchins' theory according to which the Southern Neolithic owes its origin and its language to impulses from the early cultures of north-west India (Allchin B. & R., 1968: p. 168, 325). Certain proof for Harappa contacts with South India is provided by the fuchs site vase found from Mohen-jo-Daro: This mineral is extremely rare and could hardly have come from anywhere else than Mysore (Parpola Asko, 1973, p.10). This is looking at causation as possible only from North to South. This is a one sided view. Causation can be South to North as well.

The earliest inscriptions from Tamil Nadu date from the second century BC. They are written in caves in Tamil language with the Brahmi script, and bear evidence for Buddhist and Jaina faiths, containing also some Prakrit loan words, such as amannan: Prakrit samana: Skt. Sramana 'Jaina monk', or sutan: suta 'son' (Mahadevan 1968 from Parpola Asko, 1973, p.10). This shows the South to North traffic. Attention is drawn to the correspondence between the Balinese Sanskrit text and the Adi Parva of the South Indian version of the Mahabharata to show cultural contact across the sea (Sivaramamurti Dr.C, 1979, p.37).

Horse bones, bells, bridle bits and other horse furniture have been found in some of the megaliths, and suggest that the early megalith builders were equestrian (Parpola Asko, 1973, p.13). This shows that the horse is not such a foreign or unknown animal as claimed as seen earlier also.

The evidence for maritime trade between South India and the Mediterranean region is the anonymous Greek text entitled "The Circumnavigation of the Red Sea", and this is confirmed by the archaeological evidence of the Roman trading colonies on the east coast of South India, in Arikamedu near Pondicherry and elsewhere (Parpola Asko, 1973, p.15). This shows that the land based migration alone talked about is not valid. The Tamils knew about navigation enough to sail the oceans.

## **CHAPTER - XI**

### **NUMISMATICS**

Coins are a valuable source of history. Raja Raja Chola had inscriptions on most of his coins in Nagari and Grantha script in Sanskrit. One coin Uyyakondan is in Tamil however.

The gold coin of Rajendra Chola is in the Government Museum, Chennai. After winning the Gangetic area, the coin with inscription ‘Gangai konda Cholah’ in Nagari script is taken to confirm his victory (Sivaramamurti Dr.C, 1979, p.32; Kannan, Dr. R, 2003). The Indo-Greek coin circa 2nd century BC of Apolodotus with a humped bull and a Kharoshti legend is correlated with the bull in Kalidasa’s Raghuvamsa (Sivaramamurti Dr.C, 1979, p.44). The bull reflects might in Indian culture and literature. These are cited to show that coins, which are taken to authenticate historical events also, corroborate literature and legend. The literature and legends are therefore reflection of historical events.

Archaeology is the mainstay of dating events. But it also gives out conflicting results especially when it is viewed through subjective bias. Stand alone conjectures like Aryan invasion, wrong dates like Indus Valley around 1500 BC or 1000 BC for the Vedas and Epics like Ramayana etc will emerge. Therefore, it has to be corroborated with other disciplines to remove contradictions or wrong conclusions. This will enable deeper probing. This brings us to yet other disciplines, Astronomy and Astrology as tools for dating events.

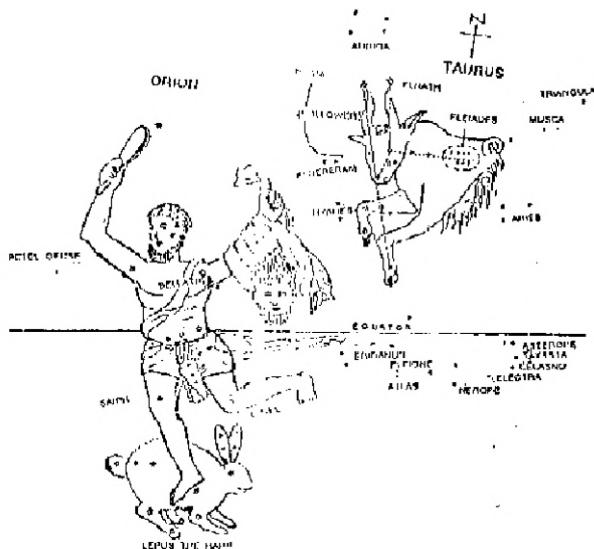
## CHAPTER - XII

### ASTRONOMY AND ASTROLOGY

This writer must confess that he has been reading books on these two topics ranging from the Ephemerides of L.D. Swamikannu Pillai (1911) to several of Dr. B.V. Raman, translations of Varahamihira, Brihat Parasara Hora Sastra etc for 30 years. They provide a very reliable method of dating; at first it was scepticism but later, it was like the Hamsa (swan - nearest English equivalent) separating the truth - 'milk from water'. Astronomical dating has the further advantage of avoiding contamination unlike Carbon-14, TL dating etc since the heavenly bodies are as yet beyond the physical reach of man to be able to manipulate them.

Our Brahmana and Panchama Vedic scriptures contain ever so many astronomical data with regard to events recorded in them. With the aid of these data and astronomical methods of calculations we can work out the dates and events to some extent, without much error. This method of ascertaining dates of events by astronomical principles is known by them as 'Aryan', since it belongs to the line of enlightened, cultured Rishi-teachers of ancient Bharat (Sakhyananda, 1998, p. 22-23).

An astronomical approach to analysing ancient civilisations with the use of Precession and computer modelling of the Zodiac has been used by James Hancock who presented



**Position of constellations in the sky**  
(Hindu, April 2000)

the programme 'The Lost civilisation' on the Discovery Channel in 2000 AD. He has established that the Egyptian Pyramid of Gizeh has an elaborate system of shafts, which point at Orion. He quotes Robert Bauval, a Belgian Engineer, the author of the 'Orion Mystery' and 'Forgotten Knowledge', who speculates that the Pyramids were not mere burial chambers of the Pharaohs but places to study Mathematical Astrology and Astronomy. The shaft at the Pyramid at Gizah pointed at Orion or Osiris, the main God of Egypt. He analyses Angkor Wat in Asia and Chichen Itza, the Mayan pyramids to conclude that they all referred to 10,500 BC. The rate of

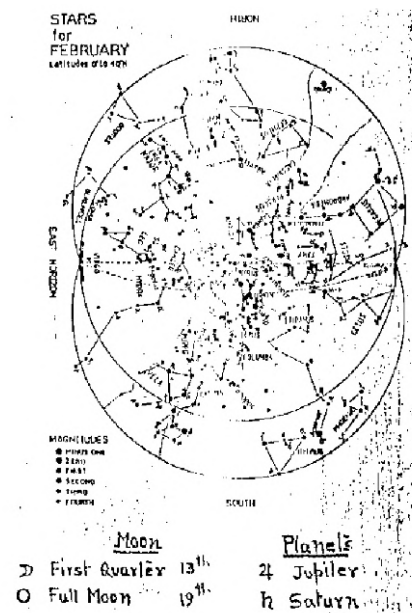
Precession was used to find out the year in which the monuments would have pointed at a star or sun on a particular day – for example the summer solstice day. In Yonaguni Island, Japan there is an under seaport and a six storey building. Prof. Masuki Okimura of Tokyo University feels that it is man made and is nine to ten thousand years old. 9900 years ago it was on the ancient Tropic of Cancer. Similarly in Easter Island, Pacific there are statues

which face the sun and point at certain stars. It is situated on the ancient tropic of Cancer 9900 years ago. He refers to the Seven Sages as the teachers of the world, which is common to the Mexicans, Aztecs, Egyptians and other civilisations. All this points to a highly advanced maritime civilisation that navigated with the help of stars. Angkor Wat is 72 degrees East from Gizah. He feels 54 degrees represents Precession over a period. Our rate is around 50.3 seconds per annum. He does not realise that the Seven Sages are our Sapta Rishis.

Eric Van Daniken in his book 'Chariot of the Gods' feels that the geometric designs of the Incas in Southern Peru could be seen in their entirety only from the air. Therefore, there must have been an advanced civilisation, which could fly. Hancock quotes this. Archaeologically, the sphinx is dated to around 2500 BC. But Robert Choch and John Anthony West of Boston University feel there is evidence of water falling down the Sphinx. At 2500 BC, Egypt was dry. Therefore, Astronomy should be used to supplement dating. They refer to a 300-year cycle of drought and flood to support their theory. Hancock speculates that the Sphinx may be of at least 5000 BC when there was rain in Egypt. Megaliths on the Chalk Hills in Southern Britain are aligned to Taurus as it was at 3000 BC (Precessed). In Stonehenge, the heel stone is aligned to the Sun. Carbon dating in 1997 AD has dated it 10,000 years ago, 5000 years earlier than normally thought. He thus concludes that all these civilisations date back to 10500 BC. In Pollen analysis seen above, there is clear evidence of a cycle of rain and drought.

The Rig-Veda has maritime references and therefore, there is a maritime civilisation before it {Rajaram N.S., 2000(1), p.121}. The Rig-Veda has a Verse 'let us by boat set out to all quarters of the earth'. They had ocean-going vessels with 100 oars and white sails. There are references to shipwrecks also (Pati, Joshi Jagat, 1988, p.100). There are prayers to the Asvini Kumaras to save such an ocean going vessel caught in the midst of a storm. It may be pointed out that in 1.182.5 and other passages of the Rig Veda, the Asvins are said to have made 'ships with wings' to save the son of Tugra from the water-floods (Sundar Raj M., 1997, p. 215).

The Saptha Rishi Era or Manvatharadi was started on Friday 21st November 8576 BC. (Raghavan K.S., 1998, p.66). According to traditional chronological accounts of the Rajatarangini and Vedic Astronomical Calendar, Sraddhadeva Vaivaswata was crowned Manu, the first king of human society of this age (Manwantara-Mahayuga) by the Saptarishis in the year 8576 BC, Magha Sukla



Draco is 180 opposite Orion as seen from the pointing at Angkor Wat (Hindu)



Prathama, when the Vernal Equinox was in the first quarter of the Magha Nakshatra, 120° on the Indian standard Ecliptic. The race of illustrious rulers descended from Manu is known by the name Manu-Kula Kshatriyas, or Arya Kshatriyas. Aryanisation means the process of educating and civilising the world of men by Manava Dharma – the law of righteous life enjoined by Manu. Otherwise how should we account for the imprints of Indian tradition and culture some of which are six to seven thousand years old, found even now in far off lands like Indo-China, Indonesia Mexico, Central America, Peru (Sakhyananda, 1998, p. 26). The Chaldeans as far back as 7000 BC speak of an Egyptian priest-astrologer named Manetho and that Satyacharya's disciple was also Manita.

Therefore, it is clear that the Seven sages that Hancock talks about are the Sapta Rishis described in the Hindu scriptures. He has not studied our ancient civilisation. His dating of 10500 BC may be due to his model of Precession. It has been precisely dated at 8576 BC, the date of crowning of Manu. However, since the Rishis must have been born long before Manu 10500 BC could also be taken as the time when they lived since there are Seven Rishis in a line. They have been described as stars 'Sapta Rishis' in line with the theory that ancient religions based themselves heavily on natural phenomena especially Astronomy as seen in this section. It is also an allegory.

In the days of the Rig Veda the Vernal equinox was in Mrigashira or Orion, and that the Vedic texts, properly interpreted, clearly referred to a Nakshatras series older than the one beginning with the Kritikas at its head, thereby carrying back the antiquity of the Vedic civilisation to the fifth millennium BC (From Vedic Chronology & Vedanga Jyotisha, B. G. Tilak, Poona 1925 p.10 from Pandya A.V., 1957, Hindi section, p.19). Since the 28th star Abhijit went away as pole-star in 10,000 BC only 27 of them are taken into consideration (Raghavan Prof. K.S., 1998, p.133). The Abhijit is depicted on the temple wall roof at Avudayar Koil in Pudukottai district, which this writer saw for himself. Therefore, to dismiss it as a myth is not wise.

The Surya Siddhanta also estimates the diameters of the planets. The estimate for the diameter of Mercury is 3,008 miles, an error of less than 1% from the currently accepted diameter of 3,032 miles. It also estimates the diameter of Saturn as 73,882 miles, which again has an error of less than 1% from the currently accepted diameter of 74,580.

I give below the Old Solar Calendar based on Surya Siddhanta and the New Solar calendar based on Mesha Lagna being the first point of Aries.

### Comparison of Gregorian, Old Solar, New Solar and Lunar Calendars

<i>Season</i>	<i>Gregorian</i>	<i>Old Solar</i>	<i>New Solar</i>	<i>Lunar</i>	<i>Influencing Stars</i>
Spring Vasanta Ruthu	April 14th – June 14th	Madhu & Madhava	Mesha & Rishabha	Chaitra & Vaisakha	Eta Tauri (Krittika) & Arcturus (Swati)
Summer Grishma Ruthu	June 14th – August 14th	Shukra & Suchi	Mithuna & Kataka	Jyaishtha & Ashada	Hydra (Vritta) & Beta Scorpionis (Mula - Namuchi)
Rainy season Varsha Ruthu	August 14th - October 14th	Nabhas & Nabhasya	Simha & Kanya	Shravana & Bhadrapada	Pegasus, Alpha - Andromeda, Delta - Virginis, Eta - Tauri, Spica & Delta - Sagittarii
Autumn Sharad Ruthu	October 14th – December 14th	Isha & Urja	Thula & Vrischika	Ashvina & Kartika	Jupiter & Aries – Ashvini
Hemantic Season Hemanta Ruthu	December 14th - February 14th	Sahas & Sahasya	Dhanus & Makara	Magha & Pausha	Asvina (Aries), Auriga & Orion
Winter Sheetala/ Shishira Ruthu	February 14th – April 14th	Tapas & Tapasya	Kumbha & Meena	Magha & Phalgun	Orion & Beta – Leonis (Purva Phalguni)

Source: Museum of Agriculture, ICAR at Pusa Institute International Campus  
Display at Delhi

Texts Referred by the display :

1. Manusmriti – Commentary by a Kashmiri Medhatithi circa 825-900 AD; Manus states that an agriculturist is a Vaishya.
2. Krishi Parashara - by Maharishi Parashara - wrongly dated as circa 950-1100 AD
3. Arthashastra by Kautilya – 4th Century BC
4. Brihat Samhita – by Varahamihira – 505 – 587 AD – could be dated as circa 44 AD, the time of King Vikramaditya.
5. Amarkosha by Amarasimha – circa 5th Century AD
6. Krishi Sukti by Kasyapa – circa 10th Century AD
7. (Compiled on 22 and 23-3-2005 during Kharif Conference by Dr. R.Kannan IAS when he was Registrar of Cooperative Societies).

Even Tilak talked boldly of 5000 BC, at least four times the then fashionable 1500-1000 BC age of the Indian civilisation. Today, if the same ratio is adopted, archaeologists talk of circa 2700-2600 BC which works out to circa 10500 BC, the date Hancock adopts.

Rejection of the Lemuria theory off hand has made us confuse present Sri Lanka with the real Lanka. There is a clear astronomical description of Lanka of Ramayana. Kanyakumari is on 3° Lat. The distance per degree is 69 ½ miles. As such the distance between Kanyakumari and the equator comes to 556 miles. Hence, Lanka should have been situated from 1° north of equator extending to the south of equator. (Sampath Iyengar G.S., 1998, p. 76). This has nothing to do with the present Sri Lanka. It is on 77° E longitude, which is still, called Lanka Rekha in the Snake Vakya Panchangam. The intersection gives the exact location, which is in mid Indian Ocean now. Ujjain (capital King Vikramaditya - originator of Vikrama Saka era (58 AD) as opposed to Salivahana Saka - 78 AD) is on the Lanka Rekha.

From 3000 BC the Rajputana area and the Gangetic Valley showed signs of rising, while the west coast of South India began to sink. The southern tip of Tamil Nadu suffered from tidal waves. Slowly the great Pandyan king Nilan Tharuthiruvir Pandyan II, led his people further north and it is said that he was the last of the millions of people who crossed the Kumari river northwards and the advancing tide washed his feet. A poet, who saw the rocking and sinking of the land, has described it. Because Rama's Sethu Bridge was in Tamil Nadu, on the West Coast and because it got submerged in 2700 BC, the Pandya Kings of the south built a new Bridge here. The points substantiated in the above discussion convincingly prove that Ravana's Lanka was 7½° south of

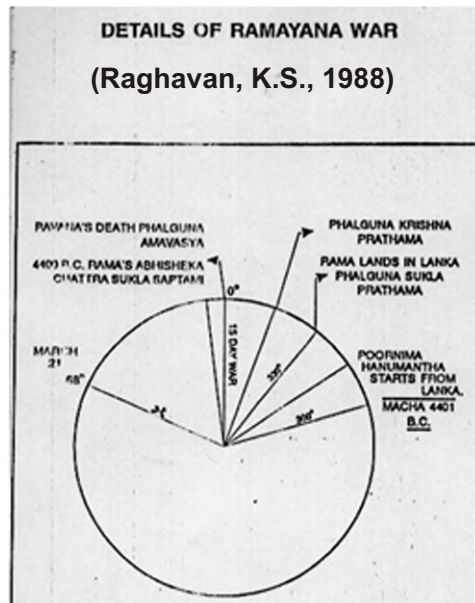
Kanyakumari on the Equator, crossing the longitude 77° east, and ceased to exist long back. (Ramachandran V.G., 1998, p. 80). This sea ingression is corroborated by Marine Archaeologists Negi and Tiwari who use Dendro Chronology and the paper on 'Holocene Sea levels' by Nair and Hashimi, seen above under Marine Archaeology. In Carnace, France a very big megalithic burial site, there is evidence of a flood due to Ice Age 10,000 to 13,000 years ago according to Hancock. The cyclone of 1964 AD obliterated Dhanushkodi, a bustling temple town with a famous temple and the gateway to Ceylon. Those who had not seen Dhanushkodi then, will not now believe that a temple dedicated to Lord Rama and Hanuman existed with a large population and pier and railway station. After, a few centuries it could be easily called a mythical town. Lemuria appears to be such a victim of human amnesia.

A Hanuman idol made of Athi wood (Audambara - *Ficus glomerata*), several thousand years old has been recovered from Dhanushkodi and reinstalled near the Rameswaram temple car park. This writer saw the stones moving and floating at Sethu Bridge in September 2015.

Historians naturally used to debunk claims of descent from Sun and Moon for Rama and Krishna that our epics make. These are to be understood allegorically and not literally. Lokamanya Tilak in his Orion states that there is Vedic evidence in support of the fact that the Vedic people had sufficient knowledge of Nakshatra astrology as far back as in 5000 BC (Pathak K.K., 1998, p. 488). This period was named the Orion period as the Vernal Equinox was in the constellation of Punarvasu ruled by Aditi (Sun), this period (8000 – 5000 BC) was called Aditi or pre-Orion period by Tilak. Incidentally, the pivot of Treta Yuga, Lord Sri Rama, was himself born in Punarvasu Nakshatras ruled by Aditi (the Sun). (Pathak K.K., p.489). Hence, the Ikshvakus were called Surya Vanshis.

In Tilak's Orion period (5000 – 3000 BC), when the Vernal Equinox was in the constellation of Mrigasira or Orion ruled by the Vedic Devata, Soma (the Moon), it will be more proper to ascribe this period to Dwapara Age when Chandravanshi Lord Sri Krishna was born. Dwapara was an age of Chandravanshi rulers (Pathak K.K., 1998, p. 489). This was the era of Chandra Vanshi rulers. Therefore, there is a strong astronomical connection. The Kings are not to be taken literally as descendants of the Sun and Moon. It is only an astronomical allegory to show the period of their rule.

The Ramayana can be accurately dated by analysing the horoscope of Lord Rama and relating it to astronomical phenomena. It is interesting to note that Dr. P.V.Vartak in his book Vastav Ramayan has attempted to calculate specific dates of important events in the Ramayana. Dr. Vartak came to the conclusion that Sri Rama's date of birth was 4th December 7323 BC. According to him, on the day of birth of Sri Rama, Saturn was at 25° Libra, Jupiter at 4° Cancer, Mars between 13° and 18° Capricorn, Rahu at 29 degrees Virgo and the Sun at 2 degrees Aries. Further, he indicates that as Venus is always within 47 degrees from the Sun, it was in an exalted position in Pisces (Dr. Bangalore Sureshwara, 2000, p.77).



The Puranic story about the birth of Brahma, in fact, is an allegorical description of an astronomical epoch that had the Vernal Equinox over Rohini Nakshatra. Further, pursuance of this legend leads us successively to Vishnu and Rudra, the latter the ultimate personification of Time, the destroyer of everything or Hara (Chandra Hari K, 2000, p.125). These concepts have been further developed as follows :

Mandaragiri - Meru-Earth's axis

Vasuki - The Celestial Equator

Devas - They hold the Devayana Path of the Sun from the Vernal Equinox to the Autumnal Equinox (Uttarayana).

Asuras - they own the Pitryana, Autumnal Equinox to the Vernal Equinox and the Southern Hemisphere (Dakshinayana).

Rudra – Meeting point of the two halves of Devas and Asuras at  $240^\circ$  - where the Akasha Ganga cuts the ecliptic.

Amrtam - Antidote against the ageing process i.e. becoming immune to the Precession of the Equinoxes or Sidereal Year or Zodiac.

Chandra Hari feels that the iconography of Siva evolved out of the Tantric conception of the Zodiac at a pre-historic epoch. The legend of Hari Hara Putra shows 18 steps which denote the Fiduciary star at the end, Moola -  $18 \times 13^\circ 20' = 240^\circ$  i.e. Moola. Yoga Vidya also denotes this. Kundalini is raised from Mooladharam to Sirsa Padmam in 18 steps (Chandra Hari K, 2000, p.399).

Over this Sidereal conception, Moola had a fixed longitude of  $240^\circ$  and marked the beginning of Moola division and the Dhanur Rasi at the place where the celestial Ganges crosses the ecliptic. Moola thus became Gangadhara – Rudra and a synonym of Time in Hindu mythology. Over the Cosmic Man  $240^\circ$  became the Mooladharam – seat of Kundalini – and also marked the position of the phallus. The cosmic phallus or Linga became a symbol of Time or Rudra, and this, in turn led to the primitive phallic worship of a total celibate Urdhvalinga– upright Linga. The Autumnal Equinox Epoch at 4137 BC fixes the longitude of Moola as follows :

UT-4136/10/23.01Hrs, 14mts, 35sec.

Tropical Sun= $180^\circ$

Ayanamsa =  $60^\circ 02' 36''$ . Ignoring over the 6000 year interval  $2' 36''$ , the sidereal longitude of the Sun falls over  $240^\circ$ , i.e. Moola (Chandra Hari K, 2000, p.399).



All the classical Siddhantas of Hindu astronomy describe Time – cycle of Yugas – as beginning with lord Brahma, the mythological Creator whose birth took place in Rohini Nakshatra or at an astronomically defined moment. (Chandra Hari K., 2000, p.125).

Based on the iconography of Rudra Siva, the original epoch of Mooladhara Chakra can be discovered as in the remote antiquity of 4137 BC. One of the theories is that the conflict between the Siderealists and Tropicalists were the major source of Hindu Puranas (Chandra Hari K., 2000, p.122).

We can see a reflection of these facts in the Mohen-jo-Daro seal No.M420 that depicts a three-faced Yogi in the Urdhva Linga (penis erectus) posture. This means strict celibacy. The horned head-dress symbolises Aum-the beginning of creation and according to Mundakopinishad Pranava (Aum) is Dhanu – perhaps Dhanur Rasi, the bow of Rudra as Pinakini; he is Pinakapani (Chandra Hari K., 2000, p.125). Therefore, the theory of astronomical allegory gains more proof above. This point is also made by Bauval and Hancock who state that the Egyptian God Osiris is related to the stars. This has been the pattern with ancient civilisations.

Around the mid - 1990s, radio astronomy discovered a huge electromagnetic filament at our Galactic Centre. Scientists measure this cosmic structure as about 150 light years long and two or three light years wide (a light year is the distance light travels in one solar year. The distance is equivalent to about 9,000,000,000,000 km or about 6,000,000,000,000 miles). Gregory Benford, Professor of Plasma Physics and Astrophysics, University of Irvine, California, USA, calls this unique structure in the middle of our Milky Way galaxy – the “Snake” (Levacy William R., 2000, p.127). This may represent Rahu and Ketu, the celestial snakes of Hindu astrology. They played a crucial role in eclipses and in human horoscopes.

For accuracy of dating, it is essential to fix the rate of Precession and the initial point of the Fixed Zodiac. Extraordinary accuracy characterises the fixing of the year and time of the first point of the Indian Zodiac since it determines Precession. This is called Nirayana or Siderial as opposed to Sayana or Tropical, since it measures from the initial fixed point. The movement of the Equinoxes is deducted from the movement of the planets since the measurement is with respect to a fixed star. A star is relatively fixed as compared to the movement of the Equinoxes. This initial point fixes the Kali Era.

One may with his familiarity with the Equinox and its rate of precession given in modern reference books take it for granted that the same is self-evident. But the ancients, without having even imagined the Celestial Equator and the Ecliptic had no reason to be aware of it. The rate of precession 1 degree in longitude in about 72 years is too small to be noticed by naked eye observations for even a lifetime even with a co-ordinate system. But its effect is experienced as a change in declination of stars, i.e. shift in the point on the horizon at which a particular star rises and in the identity of the stars near the horizon, say at twilight in a particular season. However, both these changes, being slower, compared

to the rate of precession, will be appreciable enough to be noticed only in the course of centuries. Detection of such a change, confirmation of the change with further observations, discovery of the causal principle viz., the Precession of Equinox, and finding the quantification is a lengthy and possibly, haphazard process extending over a number of centuries. Observations are made, data collected and transmitted, orally or otherwise, from generation to generation and possibly from place to place. All these activities entail the use of one or more reference points in space other than, the Equinox, which is yet to be formulated. Such a reference point cannot but be Sidereal in nature. In short, development of the Sidereal system is a pre-requisite for the development of a Tropical system. It is not surprising that both the better known systems of ancient astronomy, Indian and Chinese are Sidereal (Surendran, 1998, p. 51).

Precession has movements at the rate of 50.3 seconds per year. At this rate, Precession takes about 26,000 years to make one revolution. (Raghavan Prof. K.S., 1998, p. 138). This value is generally agreed among all astronomers and astrologers. Ayanamsa is the value that is deducted from the Tropical (Sayana) position to derive the position of planets after allowing for Precession as measured from the original point of the Fixed Zodiac. This is the Nirayana position.

There are some differences of opinion on the initial point. Generally, the initial point of Indian Nirayana zodiac from which the epoch is taken to start, is a fixed point on the ecliptic, and is the 1st point of Mesha Rasi and also that of Asvini Nakshatra division. However, it is now generally accepted that this initial point may be assumed to be that one which coincided with the Vernal Equinoctial point of the year 285 AD when the celestial longitudinal position of the star Chitra (alpha Viriginis) on the ecliptic was almost opposite this point. The Sun was on the Vernal Equinoctial point at 285 AD on 20 March at 22h 53m IST, and hence 21 March was the Vernal Equinox day of that year. The celestial longitude of the star Chitra was then 179 degree 59' 52", which is very nearly 180 degrees. According to the Surya Siddhanta of Maya Asura which has become the supreme authority for the Zodiac of the Rasis, 0 degree Mesha was 10 degree to the east of the star Revati. Now to determine the point that is 10 degrees of arc to the east of Revati, the star itself must be identified. It is no longer seen in the sky. Like a Super-Nova it may have burst and disintegrated. But some have chosen to identify it with the star Zeta Piscium. Thus arose another group of disputants. According to them the year of coincidence would be 576 AD (Chatterjee Com. S. K., 1995, p.502). This disintegrated star appears to be Abhijit, the 28th star of the Hindu Zodiac.

Another set of disputants feel that the starting point of the tropical point, that is, Vernal Equinox (March 31st, Vasantha) should be named as Madhu. Just because Revathi was at 180 degree from Spica, Varahamihara took it as the new 'O' starting point for sidereal year. This is wrong in the sense that the zero point shifted backwards or lagged behind by 1.46 degree behind Mesha segment. In other words, the Rasi Chakra itself slipped to the same extent (Ramachandran V.G., 1998, p. 135).

The date of commencement of Kali Yuga is 2427 BC February some say (Vaidya R.K., 1997, p. 297). Com. Chatterjee disputes Prof. R. V.Vaidya's foregoing dating. The extent of commitment to accuracy can be seen from the debate on the minute details of the start of the Nirayana Zodiac. The first day of year Kali Yuga corresponds to January 23, 3101 BC of the Gregorian calendar, or midnight February 17-18, 3102 B.C. of the Julian calendar, when all the five planets (Mercury, Venus, Mars, Jupiter, Saturn and Moon) were in a straight line opposite to Spica, the fiduciary star of Chitra. A research publication gives the algorithm (Daphne, Chia, 2000-2001).

However, the year 285 AD is the year accepted by the Calendar Reform Committee appointed by the Government of India as the initial point. The Indian solar calendar is made to approximate the sidereal or nirayana year. The nirayana year is the time taken for the Sun to return to the same fixed point on the ecliptic which is directly opposite to a bright star called Chitra. The longitude of Chitra from this point is  $180^\circ$ . In order to assign a firm position to this initial point for astronomical purposes, this fixed initial point is taken to be the March equinox point of 285 AD. In other words, the starting point of the nirayana year coincided with the March equinox in the year 285 AD. This occurred on March 20, 285 AD. at around 22 53 hrs, I.S.T. This is generally accepted by most astrologers. Raman Ayanamsa i.e. the system that gives the value to be adopted to be deducted from the Tropical Zodiac takes a different figure and original year. But as they say, the proof is the correct predictive ability of the value adopted. Some orthodox schools of Vedic astrology reject modern astronomy and still base their computations upon traditional texts and treatises, mostly following the Surya Siddhanta or treatises based on it. They use ayanāmsa according to Surya Siddhānta in which ayanāmsa rises from  $0^\circ$  to  $+27^\circ$  during 1800 years, then decreases to  $0^\circ$  and further to  $-27^\circ$ , thereafter rising again, thus oscillating within a range of  $\pm 27^\circ$  instead of cyclically moving in a circle as modern concept of ayanāmsa suggests. Legend has it that Surya Siddhanta was given by the Sun to the Asura Maya at the dawn of the last Satya Yuga, which would be approximately 6600 BC. Maya is said to have propitiated the Sun and asked for the boon of knowing the mysteries of the heavenly bodies. The Sun replied that he could not tutor him in his true form as he is too brilliant but that he would incarnate as a barbarian in the city of Romaka and give him the Surya Siddhanta. Modern scholars consider Romaka to be Rome; however, Surya Siddhanta gives the location of Romaka, along with three other ancient cities: Yamakoti, Lanka and Siddhapuri. These four ancient cities are all stated, by the Surya Siddhanta, to be located upon the equator upon the four quadrants 90 degrees away from each other. This puts Yamakoti at  $00^\circ\text{N}00''$  latitude and  $165^\circ\text{E}46''$  longitude as measured by today's coordinates, though in the time of the creation of the Surya Siddhanta Yamakoti was the prime meridian and would have had longitude of zero. Lanka was placed at  $00^\circ\text{N}00''$  latitude  $75^\circ\text{E}46''$  longitude; Romaka at  $00^\circ\text{N}00''$  latitude and  $14^\circ\text{W}14''$  longitude, and Siddhapuri at  $00^\circ\text{N}00''$  latitude  $104^\circ\text{W}14''$  longitude. (Wilhelm, Ernst, 2012).

In his Brihat Samhita, Varahamihira states that earlier to the present Vernal Equinox in Cancer the Sun's southerly course began from the middle of the constellation Aslesha (23:20 of sidereal Cancer) and the northerly one from the commencement of the constellation Dhanishta (23:20 sidereal Capricorn), for it has been stated so in Surya Siddhanta and other ancient books. At present, the southerly course of the Sun starts from the beginning of Cancer and the other from the initial point of the Rasi Capricorn.

The main criterion indicated for Kali epoch was that the Sun was at the first point of Mesha Rasi when Kali era began, and, therefore, it follows that it should also be at the same point on the ecliptic when 3600th Kali year ended and 3601st Kali year started, at the time when Aryabhatta stated that he had completed 23 years of his life. But the length of the Aryabhatian year is very nearly 365.258681 days while the correct length of the sidereal year is 365.256363 days, that is, Aryabhatian year is longer than the correct length by about 0.002318 day, that is, by 3 mts. 20 sec. Therefore, 3600 Aryabhatian years will be longer by about 8.345 days. (Chatterjee Com. SK(Red.), 1995, page.502). This degree of accuracy is uncanny considering the period at which they were calculated and instruments which were used. There is similar accuracy in South American cultures like Incas, Mayans etc.

It is possible to date the Mahabharata from the wealth of astronomical and astrological data given in it. Com. Chatterjee takes the day of Pitamaha Bhishma's death as Uttarayana day following the Indian solar year covering 2786 – 2785 BC. This has been done on the basis of actual positions of the Sun and the Moon as derived from the tables of Drs. Bretagnon and Jean-Louis Simon's for the Sun. It may be mentioned here that normally all tables give positions of luminaries for periods earlier to 1582 AD in Julian calendar dates because Gregorian calendar dates come into use only from October 1582 AD. But Prof. Vaidya has shown the events against Gregorian calendar dates. (Chatterjee Com. S. K. (Retd.) 1997, p. 616). The Gregorian calendar dropped 10 days in 1582 AD to get accuracy.

B.V. Raman has calculated the exact date of birth of Lord Krishna as 19th July, 3228 BC (Raman B.V., 1981, p.1).

Late Prof. P. C. Sengupta, in a detailed article published in the Journal of Royal Asiatic Society of Bengal, Vol. IV, 1938 had expressed the view that Aryabhatta's mention of the epoch of Kali Era starting in 3102 BC when it was said that there was a congregation of luminaries at the 1st point at that time, and the ascending Node of the Moon then was 180 degrees away, was a figment of imagination of Aryabhatta (Chatterjee Com. S. K.(Retd.), 1997, p. 618).

We should treat separately the Mahabharata or Pauranic Kaliyuga from Calendric Kali Era referred to by Aryabhatta. Perhaps there was no firmly defined epoch for it, or different epochs were in use for the same Era as we have now different initial points for our Nirayana Zodiac. Aryabhatta took the step to standardise the epoch of this ancient



Era by mentioning it was 3600 years of his life. He saw the great advantage of standardising this Era as it could be used to describe the great antiquity of our civilisation by direct reckoning which could not be done by Eras then in use, like Saka, Gupta etc. To-day Kali Era is used all over India and is shown in all Panchangas. (Chatterjee Com. S. K. (Retd.), 1997, p. 618).

Only Dubashis, not the well-versed, were consulted by Mr. Bentley. Being very anxious to disprove the ancient definition of Kaliyugadhi, his mind was absorbed and would not allow him to look at the stars dispassionately (Ramachandran V.G., 1998, p 48). It was fashionable to lampoon our Kaliyuga calendar in the 19th century and it is so even now. This is based on the heady feeling of the conqueror that the conquered Indian and his civilisation must be inferior.

### **Vedic Mathematics again**

In his learned translation of the Jaimini Sutras, Dr. B.Suryanarain Rao points out how in Sanskrit Mathematics, pneumonics of a particular kind are used. Unless these are mastered the translation will be highly inaccurate. In the Katapayadi system, the consonants of the Sanskrit alphabet have been used instead of the numbers 1-9 and zero to express numbers. The vowels denote zero in this method. The letters beginning with ka denote the numbers beginning with 1. The units figure is written first i.e. left. For instance, ra ma is 2 & 5 to be read as 52. All these nuances have been missed in the translations and wrong conclusions have been drawn. One is reminded of Alexander Pope who sang 'Where ignorance is bliss, it is folly to be wise'.

3102 BC as the origin of Kaliyuga and the standardised calendar of the Calendar Reform Committee is generally adopted throughout India.

It must be noted that the epochs of almost all Eras were fixed much later by back calculation, which may not tally with the present day calculation, or now known historical facts. We know that the epoch of the Christian Era was fixed many years later by back calculation, which has now been found to be wrong. It has now been found that Christ was born in 5 BC or so (Chatterjee Com. S. K. (Retd.), 1997, p.618 – 619).

One of the other important aims of Aryabhatta in fixing the epoch of Kali Era 3600 years earlier than his time, was to start the system of counting the elapsed days continuously from this distant epoch, which is known as Kali Ahargana or Kali Day Number system. This ingenious method was introduced by him to overcome the vagaries of different calendric systems prevalent in India. This ingenious system is now used by astronomers all over the world, and was brought into use in Europe as late as 1582 AD (Chatterjee Com. S. K. (Retd.), 1997, p.619).

Sri Sankara Rao Borgaonkar in his article on the Birth date of Adi Sankaracharya in the Astrological Magazine of 1972 December, edited by Dr.B.V.Raman, Bangalore, states: "Thus Lord Buddha must be placed about 1200 to 1300 years before Adi Sankara. Adi



Sankara was born in the year 509 BC”(Ramachandran V.G., 1998, p. 206). Historians usually date Adi Sankara to circa 8th-- 9th century AD. This shows the important contribution that Astrology can make to Dating. Of course, it must be triangulated with data from other disciplines. But to reject it off hand is not being wise. The Sankaracharya of Kanchi Mutt of the 8th Century AD (788 - 820 AD) is by English historians and their Indian followers considered as Adi Sankara. The dating above (509–477 BC) more than a millennium ahead of all others is based on records of the heads of the Shankara Mathas at Dvaraka Pitha and Govardhana Matha and the fifth Peetham at Kanchi. The Kanchi Mutt was the one relatively safe from invasions and disruptions till Malik Kafur in the 13th Century AD and Tippu Sultan in the 18th Century AD. It shows a list of 70 Sankaracharyas (peetadhipatis - pontiffs). The effect on Kanchi was not much as it shifted to Kumbakonam in the 19th Century AD. Even assuming only 35 years for one Sankaracharya, the date would be near 509 BC. The famous Abhinava Sankarendra Saraswati (Sankaracharya - Peetadhipati) of the 8th Century AD who had great powers like the Paramacharya Sri Chandrasekharendra Sarawathi (68th Peetadhipati – 1904 AD to 1994 AD) is counted as the first one by the historians. An external proof is that Adi Sankara won over Buddhists and Meemamsaka school of philosophy of Hinduism but there is no reference to Christianity or Islam. Christianity had been introduced around 50 AD by St. Thomas via the Syrian Christian Church which had a large following in the 8th Century AD in Kerala and several churches in the Kaladi area itself where he was born. The Cheraman Juma Masjid is a mosque in Methala, Kodungallur Taluk, Thrissur district in the Indian state of Kerala built in 629 AD. Since Sankara was from Kerala it can be expected that at least there would be some reference to the Semitic religions. This clearly shows that the dating to 8th Century AD is false. The Sringeri Math record shows that the first Sankaracharya Sureshwara headed it for 800 years. While this is not impossible for Siddha Purushas who control metabolism, the English school historians will not accept it.

The chronological list of Guru Paramapara of the Kanchi Math is as follows :

1. Adi Sankara Bhagavatpada(482 BC-477 BC)
2. Suresvaracharya(477 BC-407 BC)
3. Sarvajnatman(407 BC-364 BC)
4. Sathyabodhendhra Saraswati(364 BC-268 BC)
5. Jnanandendra Saraswati(268 BC-205 BC)
6. Suddhanandendra Saraswati(205 BC-124 BC)
7. Aanandaghanendra Saraswati(124 BC-55 BC)
8. Kaivalyanandayogendra Saraswati(55 BC-28 AD)
9. Krpa Sankarendra Saraswati(28 AD-69 AD)
10. Sureswara Saraswati (69 AD-127 AD)

11. Sivananda Chidghanendra Saraswati(127 AD-172 AD)
12. Chandrasekharendra Saraswati I(172-235)
13. Satchidghanendra Saraswati(235-272)
14. Vidyaghanendra Saraswati(272-317)
15. Gangadharendra Saraswati(317-329)
16. Ujjvala Sankarendra Saraswati(329-367)
17. Sadasivendra Saraswati(367-375)
18. Shankarananda (Yogatilaka Surendra as per Mutt) Saraswati(375-385)
19. Martanda Vidyaghanendra Saraswati(385-398)
20. Muka Sankarendra Saraswati(398-437)
21. Chandrasekharendra Saraswati II(437-447)
22. Bodhendra Saraswati(447-481)
23. Satchisukhendra Saraswati(481-512)
24. Chitsukhendra Saraswati(512-527)
25. Satchidanandaghanendra Saraswati(527-548)
26. Prajnaghanendra Saraswati(548-565)
27. Chidvilasendra Saraswati(565-577)
28. Mahadevendra Saraswati I(577-601)
29. Purnabhodhendra Saraswati(601-618)
30. Bhodhendra Saraswati II(618-655)
31. Brahmanandaghanendra Saraswati(655-668)
32. Chidanandaghanendra Saraswati(668-672)
33. Satchidananda Saraswati(672-692)
34. Chandrasekharendra Saraswati III(692-710)
35. Chitsukhendra Saraswati(710-737)
36. Chitsukhanandendra Saraswati(737-758) - 795 as per Mutt
37. Vidyaghanendra Saraswati III(758-788)
38. Abhinava Sankarendra Saraswati(788-840)
39. Satchidvilaasendra Saraswati(840-873)
40. Mahadevendra Saraswati II(873-915)
41. Gangadharendra Saraswati II(915-950)
42. Brahmanandaghanendra Saraswati(950-978)
43. Anandaghanendra Saraswati(978-1014)

44. Purnabhodhendra Saraswati II(1014-1040)
45. Paramasivendra Saraswati I(1040-1061)
46. Sandranandabhodhendra Saraswati(1061-1098)
47. Chandrasekharendra Saraswati IV(1098-1166)
48. Advaitanandabhodhendra Saraswati(1166-1200)
49. Mahadevendra Saraswati III(1200-1247)
50. Chandrachudendra Saraswati I(1247-1297)
51. Kamachandrendra Saraswati (1297–1358) - not in the Mutt list
52. Vidyateerthendra Saraswati (1358–1385)
53. Sankaranandendra Saraswati (1385–1417)
54. Purnananda Sadasivendra Saraswati (1417–1498)
55. Vyasachala Mahadevendra Saraswati (1498–1507)
56. Chandrachudhendra Saraswati II (1507–1524)
57. Sarvajna Sadasiva Bhodhendra Saraswati (1524–1539)
58. Paramasivendra Saraswati II (1539–1586)
59. Atma Bodhendra Saraswati (1586–1638)
60. Bodhendra Saraswathi (1638–1692)
61. Advaitatma Prakasendra Saraswati (1692–1704)
62. Mahadevendra Saraswati IV (1704–1746)
63. ChandrasekharendraSaraswati V (1746–1783)
64. Mahadevendra Saraswati V (1783–1813)
65. Chandrasekharendra Saraswati VI(1813–1851)
66. Sudarsana Mahadevendra Saraswati (1851–1891)
67. Chandrasekharendra Saraswati VII (1891 - February 7, 1907)
68. Mahadevendra Saraswathi V (February 7, 1907 - February 13, 1907)
69. Jagadguru Chandrashekarendra Saraswati Swamigal (February 13, 1907 - January 3, 1994) - 68<sup>th</sup> as per the Mutt list

The detailed information on the highly minute calculation that goes into Astrology and Astronomy would show how reliable they are and useful to dating. In other disciplines dates are calculated plus or minus a few hundred years which is the range of accuracy. The two have upset quite a few dates as postulated hitherto by historians by a few thousand years as in the case of Stonehenge, Rama, Adi - Sankara etc. Thus Astrology and Astronomy which have been neglected hitherto prove an invaluable means of Dating events scientifically removing all contamination by human beings. They should of course be triangulated with data from other disciplines as has been urged all along.

## **CHAPTER - XIII**

### **HISTORICAL RECORDS**

These are valuable sources but have become mired in controversy regarding what is authentic and acceptable. The most valid source of Indian History in the Western view is the contemporary record by which they mean the scraps of diary notes said to have been written by foreign travellers like Megasthenes, Ptolemy, Pliny, Huen-tsang (Sakhyananda, 1998, p.17).

This is, in a way, virtual negation of the fact that India had a civilisation and history prior to the visits of Megasthenes or Alexander. (Sakhyananda, 1998, p.17). Unfortunately this system has become 'Scientific' and 'up-to-date' for our modern Indian historians (Sakhyananda, 1998, p.18).

The extent of inaccuracy can be gauged from the following version of Pandya which reflects the received wisdom circa 1950 AD. According to him, the year of Buddha's death as calculated from the recorded dates of the various Buddhist councils, is about 483 BC. The earliest works of the Vedic literature have on these grounds been estimated by him to extend from 1500 BC to 1000 BC. "This dating has a further support from the Boghaz-Keui records of the 14th Century BC, mentioning the Vedic deities". The age of the compilation of the Rig Veda is based on the frequent occurrences in it of the Asura people, whom he identified with the Assyrians (Ashur-uballit-I in 1370 BC. ended the Aryan Mitannian dynasty in Assyria or ancient northern Iraq and the last Assyrian king Ashur-uballit II died in 606 BC in Nineveh when it was destroyed). It shows that the Assyrians were in their heyday when the Rig Veda, the oldest of the Vedas, was compiled (Pandya A.V., 1957, Hindi Section, p.42). All this dating has been called into serious question in this work. Many of these cities like Palmyra have been destroyed in 2015 AD by extremists.

### ***Epigraphy***

This discipline shows different stages of writing.

Pictography – pictures;

Ideography – ideas represented by pictures;

Word writing – signs;

and

Phonetic – Syllabic and Alphabetic writing which is the modern method.

Analysing our ancient history, it is felt that the 'vocal' and 'audible' Vedic-Aryan phenomenon contrasted with the Harappan ethos. They have a 'script' of their own and

not a language, a factor which make us call them in a way ‘mute’ yet, since there is no counterpart of the Rosetta Stone (Srinivasan K.R., 1988, p.21).

Even a Greek writer circa 1970 AD goes part of the way to recognise that there are no different races but the same people. He states that the first Aryans in India adopted the Harappan script; but as they, unlike the Greeks, did not also appropriate the economic system developed by the earlier culture, the script having lost its *raison d’etre*, was confined to owner’s marks (seals) and died out (Parpola Asko, 1973, p.21).

Father Heras, Asko Parpola, Y. Knorozov and I. Mahadevan attempt to read Indus script as Proto-Tamil while S. R. Rao, Dr. Jha and N.S. Rajaram try read it as Sanskrit (Mathivanan R, 1995, pp.5-6). But Mathivanan’s thesis that Harappans did not have the horse and therefore were not Aryans is questionable. The cave findings circa 1994 AD by Col. Umesh Prasad and his team in Kaimur Hills of Bihar give the lie to this thesis. It appears correct to say that the Indus script is a commonality to all Indian languages (Mathivanan R, 1995). It is stated that Indira Pala of Jaffna University found a bi-script metal seal and it has features of the Tamil and Prakrit Brahmi script and the old Indus script. It is dated to the Second Tamil Sangam which according to him functioned near present Sri Lanka circa 2300-1700 BC. This dating of course does not agree with the dating from other disciplines in this work and is too late.

Beginning in late 1996, Dr.Rajaram claims direct evidence also became available in the form of Jha’s decipherment of the Indus script, followed by his own readings, leading to his decipherment of what has been called the ‘world’s oldest writing’. This showed that the language of the Indus Valley (Harappan) Civilisation was Vedic Sanskrit indicating that the Vedas came before the Harappans. His decipherment of the ‘world’s oldest writing’ showed that the Rig Veda already existed by 3500 BC {Rajaram Dr.N.S., 2000(1), p.120}.



**World's earliest writing - claim by N.S. Rajaram**

A photo of a sample of what has been called world’s oldest writing by Dr.N.S.Rajaram can be seen. According to him, the date is uncertain but the writing is more primitive than the Harappan. He has deciphered it as ‘ila-vartate vara’. It refers to the sacred land bounded by the Saraswati River described in the Rig Veda {Rajaram Dr.N.S., 2000(1), p.120}. This shows that the Rig Veda came before the Harappan Civilisation of Circa 3100 – 1900 BC when the Harappan script was in use.

Rajaram claims the decipherment (of the sample shown on the BBC programme) was released to the media on May 12,1999 and carried all over the world {Rajaram Dr.N.S., 2000(1), p.121}. A similar method was used to decode Linear B which dealt with the



Mycean language which was prevalent before Greek by Ventris in 1952 AD (Rajagopalan R., 1995, p.33).

Rajaram states that he worked closely with Dr.N. Jha who deciphered the Indus script. The decipherment of more than 2000 Harappan seals by them shows that Vedic literature already existed by circa 3000 BC. The Rig Veda refers to maritime culture, oceans, ships and navigation {Rajaram N.S., 2000(2)}. Rajaram feels that the Vedic origin of the Harappan Civilisation will mean the Vedic Origin of all civilisations. There was no single 'Cradle of Civilisation'. The Rig Veda suggests that it was the culmination of an earlier, largely maritime civilisation and not the beginning of anything {Rajaram Dr.N.S., 2000(1), p.121}.

These strengthen the arguments of the marine archaeologists, astronomers cum astrologers and the scripture votaries that to place Rig-Veda in Iran, Iraq or Afghanistan is misplaced as Pandya and other old school historians have done. A holistic approach sheds light where there was coloured vision or blindness.

The renowned historian, Dr. Iravatham Mahadevan, IAS (Retd) after four decades of in-depth study during his spare time on the "Indus Script" with the aid of computers has prepared a concordance to decipher the Indus Script. He has established that "Indus Civilisation" is "Proto-Dravidian" or "Proto-Tamil" (Mahalingam Dr.N., 1998, p. 380). A copper ring has been obtained from Amaravathi river bed. It is claimed that a proper name in late Harappan script is inscribed on it from left to right. It must have been used for identification (Mahadevan I., 1997, p.77). However, K.R. Srinivasan feels it is written both ways, left to right and right to left (Rajagopalan R., 1995, p.62).

In 1934, Vilmos Hevesy, a Hungarian Engineer turned amateur Epigraphist found 160 similarities of the Indus script with the Easter Island script. This connection was rejected by the 'Normal' Epigraphist (Rajagopalan R., 1995, p.62). The connection with Easter Island confirms Hancock's theory of a great maritime civilisation in the Sapta Rishi Era circa 10,000 BC.

Dr. M. Ramachandran and Dr. R. Madhivanan have read in the inscriptions of Indus Valley seals many Tamil proper names congruent with those in the ancient Tamil literature and some with unusual Tamil proper names found in use even now (Mahalingam Dr.N., 1998, p. 385). Prof. Madhivanan, during my discussions with him, claims to have seen Indus script in a cave near Villupuram, Tamil Nadu. He draws attention to an overhanging rock near Keelvallai village in then South Arcot district, Tamil Nadu with paintings of boats with four sailors below which an inscription in Indus script is found ((Mathivanan R, 1995, pp.12-13). There is also an Indus inscription found in Andhra Pradesh which shows that Indus was an all-India civilisation ((Mathivanan R, 1995, p.14). The Brahmi script originated as 'Tamili' in Tamil Nadu and spread North. Dr. Abdul Huq and P.R. Srinivasan, Ex- Director of Epigraphical Survey of India both

agree with this view (Mathivanan R, 1995, p.16). Sanskrit language adopted Tamil grammar known as 'Aindram' grammar (Mathivanan R, 1995, p.19). This he feels conclusively proves that the Indus people migrated from Tamil Nadu. The Swastika symbol is an Indus symbol meaning 'OM'. This was spread throughout the ancient civilisations of the world. It is found in Great Britain, as 'Hammer of God – Thor' in Scandinavia, in Japan, China, Central and South America etc (Mathivanan R, 1995, p. 32). This brings us to the Sapta Rishi Era thesis of a great world-wide maritime civilisation.

There are references in the Tamil literary work, Periyapuram of Sekkilar to conversion from Jainism to Saivism because of the superiority of Saivaite verses, which did not burn but remained, green palm leaves, when both Saivite and Jain verses were put to the 'Fire' test. This was due to the ten verses original sung at Tirunallaru (Periyapuram Verse 784). This is taken as legend since there is no reference in older literature. These verses were composed by Tirugnanasambandar. The Cholas associated them with Tirunallaru (present Tiruveragam) near Madurai which is ancient (Vijayavenugopal, 2000,p.99). This is corroborated by an inscription of Chola Rajadhiraja I, in a land grant in which the phrase 'pachai pati' occurs which is damaged at the end and is conjectured to refer to the 'Pachai Patikam' of Tirugnanasambandar. There is another Tirunallaru near Karaikal, where a famous temple to propitiate Saturn is located. This shows that literature, legend and history were closely intertwined. It is not proper to reject the legend entirely because the verses and the two Tirunallarus exist.

In the 1950s and 1960s (AD), the Indus Valley civilisation was dated around 1000-1500 BC. With more excavation, this has now been pushed back. If the areas indicated in our Purana are excavated and with luck, the astronomical dating may be corroborated by Archaeology. To rely on Archaeology alone is being dogmatic.

This writer has done some exploration on his own. He saw a rock painting in Vellerikombai rock, near Kotagiri in Nilgiris district, Tamil Nadu. It has been copied on a copper plate. It is rock art in Red Ochre. This is away from the settlement of Kurumba tribals and therefore untouched subsequently. This can be traced to the early Indus period circa 5000 BC. It shows a human figure with a ring around his head is being sacrificed to please an extra-terrestrial type of figure (E.T.- GOD) who with two antennae is coming out of a flame on top of an altar or hill. The flame could be a spaceship with flames due to rocket engines. The tree is the place of worship common in ancient times with a chief/priest watching or performing the sacrifice. The tree could represent the Tree spirit common in Indus seals. This corresponds well with the theory of Hancock who shows rock carvings in Egypt and South America where human beings are sacrificed to win the favour of Gods. This again shows the close connection between civilisations throughout the world. The hand shows the "Abhaya Hasta" or blessing posture so common in our temples. The '+' 'Plus' shows prosperity. It is the forerunner of Tamil Brahmi. Therefore,

the scene depicts the prosperity that can be expected to come out due to the sacrifice. The paintings referred to in Keeezhvalai are in similar red ochre in rock art (Mathivanan R, 1995(2), pp.72-73). The altar could be a Homa- Kunda and God coming out of it in ancient days could actually be an E.T. coming out of a spaceship described in our scriptures. Eric Van Daniken proceeds on similar lines in his book referred to above.

Sattur Sekaran has done a lot of research in the various languages of the world and his findings lend support to the theory that the Indus Script was Dravidian. As a result of his researches he came to the conclusion.

1. All the world languages had a common origin.
2. All the world languages could be traced to Tamil or Proto Tamil roots.
3. All world languages arose from Kumari Kandam.
4. Dravidian origin is present in all world languages(Mahalingam Dr.N., 1998, p. 388)

Dravidians navigated the seas with the help of stars and calculated months and days. The signs of the Zodiac have animals native to South India like Aries – Ram etc (Mathivanan R, 1995, p.31). This shows that Hancock, Rajaram and Mathivanan are talking about the same thing viz. a maritime civilisation spread throughout the world.

As seen in our section on Ancient Historical Tradition, ‘Silappadhikaram’, one of the five celebrated Tamil epics, written in the second century AD by Ilango Adigal, makes frequent references to a vast tract of country called Kumari Nadu (identified as Lemuria by European scholars) extending far beyond the present Kanyakumari, lying submerged in the Indian Ocean. There is no reason to disbelieve the Saint poet when other parts of his epic are related to reality as can be seen at Poompuhar even today. It is said that ancient Madurai (South Madurai) was the seat of the Tamil Sangham or Academy and that Kavataparam or Muthoor was the capital of the Pandyan Kingdom. The Tamil commentators Atiyarkunallar, Nachinarkkiniar and Ilampuranar mention the submersion of the two rivers Kumari and Pahroli in Tamilakam. The country was interspersed with mountains with a bewildering variety of flora and fauna of the bygone age (Sampath Iyengar G.S., 1998, p. 31).

Some writers date the first Tamil Sangam from 6500-4800 BC. and that of the 2nd Sangam 4800-2800 BC., and of the 3rd from 2800-500 BC. The First Tamil Sangam is coextensive with the Sapta Rishi Era of 10000 – 8000 BC. This was also the Rig Veda period. In fact the ancient heritage of the Tamils extended up to 8000 years ago, when our brave forebears colonised lands in far away Mesopotamia, Egypt, South Africa and Parts of Europe in West and further extended their cultural contacts in South East Asian islands and in the east up to China and Japan (Ramachandran V.G., 1998, p. 35).

The controversy between Aryans and Dasyus turns over the right of precedence between

Kings and Brahmans, and whether the holy food, or perhaps prayer, (ila) requires to be sanctified or not first by Brhaspati to whom the hymn as well as the verses are addressed, he being the lord or chief of Brahmans. Saraswati is closely connected with the heavenly waters (Sundar Raj M., 1997, p. 375).

The historical nature of the Rig Veda, which should be considered as Historical Record, can be seen from the description of the Saraswati. “Her unbroken flood comes with a rapid rush and tempestuous roar” (verse 8) (Sundar Raj M., 1997, p.376).Saraswati is ‘another Sindhu’, or 6.52.6 which says that she ‘swells with Sindhu’(Sundar Raj M., 1997, p.377). This river dried up due to major climatic changes.

A careful study of the Vedic literature, of the Rig Veda in particular, establishes beyond a doubt that it describes a maritime society. Nineteenth century Europeans like Max Mueller grossly misinterpreted the Vedas as the work of nomadic barbarians, who never saw the ocean (Rajaram Dr. N.S., 1999, p. 58).

On the contrary, it was from India that the Arya-Kshatriyas and Brahmans moved to distant lands for Aryanisation (Sakhyananda, 1998,p 25).

F.E. Pargiter, the most eminent Western authority on Puranic history (in his book Ancient Indian Historical Tradition reprinted by Motilal Banarsidas, New Delhi, 1962) points out that “Indian tradition knows nothing of any.....Aryan invasion of India from Afghanistan, nor of any gradual advance from thence eastwards” (p.298). Pargiter’s analysis of the traditions of the Puranas shows him that the “Aryans began at Allahabad, conquered and spread out north-west, west and south” (Talageri Shrikant G., 1998, p. 234).

Later, there was an outflow of a section of the Aryans, “the Druhyus, through the North-west into the countries beyond, where they founded various kingdoms” (p. 298). The Aryans, or Indo-Europeans, found, outside India are, therefore, the result of “an outflow of people from India before the fifteenth century BC (from p.300 of F.E.Pargiter by Talageri Shrikant G., 1998, p. 234)

This documented emigration is in exactly the opposite direction to the purely hypothetical migration proposed by the scholars from south Russia to central Asia to north-western India. (Talageri Shrikant G., 1998)

A comparative study of Vedic scientific literature and that of Old-Babylon and Egypt reveals that both the Old-Babylonian (Amorite) empire, and the Egyptian Middle Kingdom (2050 – 1800 BC) derived their mathematics from Vedic India. This has been stated by the American mathematician and historian of science, the late A. Seidenberg. This now gives a scientific basis for the chronology not only of Vedic India, but also Egypt and Mesopotamia {See Vedic Aryans and the Origins of Civilisation by Rajaram and Frawley (Rajaram Dr. N.S., 1999, p. 58)}.

Triangulation between literature, sculpture, painting, architecture, coins and manuscripts (Epigraphy) has been analysed by Dr.C.Sivaramamurti with respect to certain Sanskrit works.

### ***Manuscripts***

The difference between the earlier and later editions of Smith's Early History of India due to the discovery of Kautilya's manuscript 'Arthashastra' is highlighted (Sivaramamurti Dr.C, 1979, p.159). This writer has made a similar point regarding Sir Mortimer Wheeler, which we have seen.

### ***Epics proved by epigraphy***

It is fashionable to state among some historians that Ramayana and Mahabharata are mere legends. Now, a wealth of data and books have emerged documenting how they are history but sometimes exaggerated and sometimes tailored to the origin of the local people. Thus, Ramayana in Tamil is slightly different from Valmiki's original in Sanskrit and Tulsi Ramayan in Hindi. This is due to the different time and spatial origin. Tulsidas wrote in the mediaeval period while Kamban wrote earlier, while Valmiki is of course pre-historic period. They lived vast distances apart. Yet they tell the same story.

Similarly with the Mahabharata with different local emphasis.

### **Subsequent Epigraphic Proof for the War of 3067 BC.**

The astronomical data that Prof. K.Srinivasa Raghavan used for fixing the date of Mahabharata War circa 3067 BC is greatly supported and corroborated by Epigraphic evidence.

1. The Aihole Inscription of Pulikesi II (Mysore) supports this date of the Mahabharata war. Ravikirti's Prasasti or Panegyric in the Aihole inscription is the earliest to mention Kalidasa (Sivaramamurti Dr. C., 1979, p.101). Hence, there is some historical basis to this inscription. Sivaramamurti started his illustrious career in the Government Museum, Chennai (Madras).
2. Hissa Borla Inscription of Devasena (in Akola) fully triangulates the Aihole Inscription fixing the date of Mahabharata War circa 3100 BC.
3. The most clinching evidence is the Janamejaya Copper Plate Gift Inscription circa 3012 BC. Janamejaya is Arjuna's great grandson and he endows a gift of land for the temple of Sri Sita and Sri Rama on the bank of the Tungabhadra river. The Emperor Janamejaya's inscription finds authentic mention in the 'Indian Antiquerry' pp.333 334 and is cited also in Kota Venkatachalam's 'Ancient Hindu History' Part I pages 13 to 15 (Ramachandran V.G., 1998, p.111-112).





*Rishi Dirghatapas teaching his disciples, Sunga, 2nd century B.C., Bharhut,*

## CHAPTER - XIV

### SCULPTURE AND ARCHITECTURE

#### Idols of wood

Indian temples and idols were made of wood in the pre-Christian Era as Alberuni records in his 'Indica' of a famous Sun idol at Multan studded with gems made of wood, covered with red leather and two red rubies for its eyes and wearing a gem-studded gold crown, which was destroyed by Mohammed of Ghazni in 1026 AD. The temple was built by Samba, son of Lord Krishna. This is recorded by sailor Scylax of Caryanda (circa 515 BC) sent by King Darius of Persia. Huen Tsang of the 7th Century AD (641 AD) saw it in its full glory. The idol of Trivikrama of Tirukkoilur in Tamil Nadu is one of the last of the wooden idols in worship. The Athi Varada is of wood in Kancheepuram Varadaraja Swamy Temple. It is submerged in the temple tank and brought out once in 40 years.



**Multi-storied monastery, Satavahana,  
2nd century B.C., Amaravati,  
Chennai Government Museum**

Udupi Sri Krishna and Mahakali are also of wood. Images of deities were made of steatite and terra cotta (Siva seal M 420 & Mother Goddess - Indus Valley), then wood, stucco, and then stone and metal. The Sri Ranganatha of Sri Rangan, Lord Padmanabha of Trivandrum etc are of stucco with a special mixture of plaster made of *salagrama* and traditional herbs (*Kadu Sarkara Yogam*). The earliest stone Linga is at Gudimallam near Renigunta circa 4th Century BC.

Buddha of the 3rd Century AD in the Government Museum, Chennai.

The earliest were temples of wood. They were transformed into stucco and stone on the same pattern - the wooden railing at Sanchi, Amarvati of the stupa etc were made into stone ones. The mandapas on the Kerala pattern in Tamil Nadu show clearly the transformation from wood into stone. e.g. The mandapa of Aghoreswara at Tiruvengadu, the mandapas at Suchindram etc.

The earliest metal icon is of Amaravati



**City gateway, Satavahana,  
2nd century A.D., Amaravati,  
Chennai Government Museum.**

Dr. C. Sivaramamurti is able to relate the Bharhut sculpture in the Indian Museum, Calcutta which this writer also saw with the Taittiriya Upanishad. The Sruti (Oral) tradition of reciting the Vedas and having it repeated by the disciples is depicted here. The script is early Brahmi and statue Sunga 2nd century BC. The label is 'Digha Tapasi sire anusasti'- Rishi Dighatapasi is teaching his disciples (Sivaramamurti Dr.C, 1979, p.2). This shows that this method can be extended to Ancient periods as well. Our scriptures reflect the then prevalent civilisation.

The connection between the Ramayana, which describes multi- storeyed buildings and the Amaravathi sculpture in the Government Museum, Chennai, which shows a multi-storeyed monastery, is also seen (Sivaramamurti Dr.C, 1979, p.123). This writer during his visit to Amaravathi in 2008 found a close correspondence between the location of the Archways (Toranas) and gateways of Ramayana. This shows the Puranas depict not mere imagination but mostly facts. This shows Ramayana has to be taken as Historical Record.

### **Similarities between Mayan and Indian architecture**

Dr. Ganapati Stapathi contends that Dakshinamurthy, one of the forms of Lord Shiva is seated on Mount Kailas. He was on Mahendragiri that existed before the Mahapralaya (sea-deluge). The Mahendragiri near Kanyakumari is named after the old place swallowed by the sea in Lemuria. The new settlement is named after the old one, such as Birmingham etc in USA are named after the old ones in UK by the migrants. The Stapathi also visited the Mayan settlements in South America and claims the structures like pyramids etc are based on Vastu Shastra, that the Mayan of India is the Maya of South America. This is due to the grid pattern being followed by them also. The Mayan links with Indian mythology, sculpture and architecture have also been pointed out by this writer (Kannan, Dr. R., 2001, pp.82-97). This article was well received by Dr. Stephen Inglis, the Director- General of the Canadian Museum of Civilisation, Quebec which he conveyed by e-mail. The reference to the Suchindram temple by Dr. Stapathi (2001, p. 138) near Kanyakumari is a remarkable coincidence. This writer referred to sculptures in the same temple in his article. This was done independently more than two years before he met Dr. Stapathi and got a copy of his book.

There are cultural links with other countries. Two papers one on the 'The Buddhist link between Tamil Nadu and the Himalayan region' (2003) at a national seminar in Leh, Ladakh and another 'South Indian cultural links with Srilanka' (2003) at Colombo. They are presented as chapters in this book.

The advanced Hindu temple architecture can be seen in the Hoysala style where a pillar can pass through the base of pillars which are supporting the roof of a temple. An example is the Dharmapuri Fort Siva temple of Lord Mallikarjuna (see photo).

The Hindu temple both vertically and horizontally symbolises the human body (see



photo).

The Sankaracharya Hill temple in Sri Nagar, Kashmir testifies to Adi Sankara ascending to heaven as the all knowing one (Sarvagna) from there. It is called Sarvagnapeetah. There is a similar claim for Kancheepuram Kamakshi Temple. It shows he could travel by levitation, one of the Ashtama Siddhis (eight kinds of power got by meditation). They are Anima - shrinking the body; Mahima - increasing the size etc; the last one being Easathvam- oneness with God - supreme).

## **Indian architectural principles in USA**

### ***Vastu* in Washington, DC**

Even as early as 6000 - 4000 BC, Mohenjo-daro and Harappa, major cities of the Indus Valley Civilization were built as blocks divided by a grid of straight streets, running north-south and east-west. Each block was subdivided by small lanes. This corresponds to the Vastu system of Mayamata and Manasara (the ancient Indian texts on the concept of planning - enclosing space creating harmonious energy blocks). It manages the flow of cosmic energy (praana) through and around them, which in turn promotes the well-being, peace and prosperity of the inhabitants. The cities and monasteries of Gandhara, present Afghanistan (e.g. Sirkap and Taksha Sila), dating from the 1st millennium BC to the 11th century AD, also had grid-based designs. Islamabad, the present capital of Pakistan since 1959, was also founded on the grid-plan of the nearby ruined city of Sirkap.

Charles L'Enfant the architect who designed Washington DC used the grid plan, grid street plan or gridiron plan. The grid has diagonal avenues like the famous Pennsylvania Avenue. As the city grew, the plan was duplicated to cover most of the remainder of the capital. Mostly, the streets in a grid are numbered (First, Second, etc. like 15th Street NW), lettered, or arranged in alphabetical order.

The Washington Monument was originally intended to be located at the point at which a line running directly south from the center of the White House crossed a line running directly west from the center of the Capitol. Pierre (Peter) Charles L'Enfant's 1791 "Plan of the city intended for the permanent seat of the government of the United States ..." designated this point as the location of the equestrian statue of George Washington. The ground at the intended location proved to be unstable to support the planned obelisk. At that originally intended site, which is 390 feet (119 m) WNW from the current monument, there now stands a small monolith called the Jefferson Pier. This was to be the prime meridian of the USA in lieu of the Greenwich Meridian just as Ujjain was the prime meridian of India up to the British period.

The Manasara talks of a city having a Mandala (enclosure of space - energy) of 64 squares or Manduka grid as the ideal. The most important mandalas are the Manduka Mandala of 64 squares and the Paramasaayika Mandala of 81 squares, the latter is more

for individual homes (Kannan, Dr, R, 2009). Like the ancient Indian rule that no building should be taller than the Gopura or tallest tower of the local Hindu temple, no building is allowed to be taller than the Washington monument.

Thus, Vastu principles of geometric location and planning are adopted though there is no open acknowledgment of the Indian concept of architecture. It might have travelled via Vitruvius, the Roman architect or directly since at that period the Asiatic Society in India was active under Sir William Jones from 1784 AD onwards. It appears that the rise of the USA as a world power continuously may also be due in some measure though not fully to the design of its capital on Vastu principles.



## **CHAPTER - XV**

### **LAYERS OF MONUMENTS AND PAINTINGS ON EACH OTHER, CONFUSION IN PLACES, RELOCATION AND METAMORPHOSIS OF MONUMENTS LEADING TO MULTIPLE CLAIMS**

Mural layers in Big Temple, Thanjavur were separated from 1985 till 2013 AD. Before that it was presumed that the paintings were entirely Naik period. The Chola layer was exposed. In the work executed at the Big temple, Tanjore, the 15th to 17th Century AD Naik period murals were separated to unveil the earlier Chola period wall paintings. The Naik layer is displayed separately in the temple on fibreglass. A similar separation exercise carried out on September 22, 2015 at Sri Devarajaswamy (Varadaraja Swamy) temple in the presence of this writer. Late Naik period murals were separated from early Vijayanagara period murals. In the Parthasarathy Swamy temple, Triplicane murals under a cement layer have been discovered by this writer during Kumbhabhishekam in July, 2015. They have been exposed by a team of museum experts led by Thiru Jagannathan. This writer himself worked on them. The transformation of the Shermadevi (Cheranmahadevi) Siva temple into the government quarters of the PWD engineer is given in a separate chapter. Jain and Hindu pillars with motifs in the Qutub complex, claims of Jain and Hindu layers beneath Babri Masjid, Gyan Vapi mosque, Kashi are other more controversial aspects of this metamorphosis. In the 1978 excavation done under the leadership of Mr. B.B. Lal 27 pillars, out of which 14 have lotus motifs and domes are claimed to have been found. Mr.K.K. Mohammed, Retired ASI expert claims the finding of 14 pillars and domes as true. They were again buried under orders. This shows that dates in ancient and even in mediaeval India are deceptive. The XIX Century historians and their followers refuse to re-learn and stick to discredited to old theories.

#### **Confusion in places**

While many claim that Adi-Sankara ascended to the heavens after answering the questions of 32 scholars on the 32 steps of the Sankaracharya Hill in Srinagar, Kashmir, the Kancheepuram residents claim that he ascended to heavens from the Kamakshi temple premises. There is a shrine dedicated to him in the temple. Kashmir was a great centre of Indian philosophy and learning till the 11th Century AD when after the advent following the turmoil after a Turkish raid, it came under Islam. It became a great centre of Sufi and moderate Islam except for periods when the rulers were zealots. From mid 1980 AD onwards, extremist ideologies and violence came to pass. Even Jesus Christ according to some spent the period of 16 years of his life which is not recorded in Kashmir imbibing Indian philosophy, which accounted for his sharp break from the then prevailing West Asian thought of 'an eye for an eye' with forgiveness.

## **Link between Udayagiri caves and Mammallapuram**

The Udayagiri Caves (23:32:11N 77:46:20E) are an early Hindu site located near Vidisha in the state of Madhya Pradesh, Northern India. They were extensively carved under the command of Chandragupta II, Emperor of the Gupta Empire in the late 4th and 5th century CE. The Mamallapuram caves with cut in and cut out architecture are based on the learning from Udayagiri and Badami closer to the Mahendra Varma Pallava and Narasimha Varma Pallava periods in the 7th Century AD.

## **Mahendra Varma Pallava's (600 – 630 AD) Mandagapattu cave inscription**

This Sanskrit language inscription is in Pallava Grantha script . The four line inscription is as follows:

अतदनिष्टकंदुं [मिलो]-  
हमसुधं [विचित्रचि] त्तेन  
निम्मर्षितन्नये [ण] ब्रह्मो  
श्वरविष्णुल [क्षि] तायनं

atad anishtakam adru mam aloham asudham vichitrachittena nirmapitam nripena  
brahmo (ea)svara Vishnu lakshitaya(ta)nam’.

C.Sivaramamurti interprets it as ‘Etat’ – but the exact transliteration equivalent is ‘atad’.

Translation – This brick-less, timber-less, metal-less and mortar-less temple, Lakshita-yana, which is the mansion for the Gods Brahma, Eashvara and Vishnu was caused to be made by the king Vichitra-chitta. Lakshita yatana means one who takes efforts to achieve his aims. This cave is the fruition of his aim to create a structure by rock cut – in architecture. Some claim that it is one of the titles assumed by Mahendra Varman. Vichitra Chitta can be taken as the curious minded king. Therefore, in southern country he perfects this technique in the Tamil region for the first time. In the Badami region of present Karnataka and in Vidisha of present Madhya Pradesh, this technology is much earlier of the 4th- 5th Century AD.

The Sanskrit litterateur Dandin spent several years in the court of Narasimha Pallava. He wrote the ‘Avanti Sundari Katha’ in which he describes repairs to a cave sculpture in Mamallapuram. This shows the cultural exchange between North and South. He is also claimed to be in the court of King Vikramaditya II and Maharaja Bhoja of Dhar who belonged to a much later period of the 12th Century AD, whose work the ‘Dasa Kumara Charita’ dealt with Dhar and its environs. This shows the confusion in dates even in the historical period where there are so many inscriptions. Literature alone is thus not a reliable source of dates in history.

## **Wrong date even in inscriptions**

Even in an inscription, this writer found wrong dates. Please refer to the chapter on 'The idol of Balakrishna in the Government Museum, Chennai – a symbol of the halcyon days of the Vijayanagar empire' where we have found it is 1514 AD and not 1513 AD as thought earlier (Kannan, Dr, R, 2001).

### **Dismantling and Relocation of monuments**

In the early 1950s as a consequence of World War II, several churches and secular monuments were dismantled and re-erected with a mixture of ancient façade and new technology supplementing the ancient where felt necessary. E.g. Dresden Cathedral etc.

Abu Simbel to be submerged by the Aswan Dam is the most famous example from the 1950s and 1960s. The Stupa in the Nagarjuna valley was relocated to the present location in the island due to the Nagarjuna Sagar Dam.

Sri Lalitha Someswara Swamy Temple was dismantled and relocated at Somasila in Telangana in the 1970s due to the Sri Sailam Dam.

The Piravadaneeswara temple, an ASI protected temple in Kancheepuram in 1990s was dismantled and rebuilt in-situ after strengthening the foundation.

Buddhist artefacts have been relocated in the Nagarjunakonda site museum of the Archaeological Survey of India from the Krishna valley due to its submergence due to Nagarjuna Sagar Dam. However, the vestige of a stupa with five Ayaka pillars can be seen (see photo). These are the trademark of Andhra Stupas (Kannan, Dr, R, Ed. and Balasubramanian, Dr, R, 2015). Amarvati and other artefacts, bronzes and sculptures have been taken to the British Museum and other museums through out the world in Pre-Independence days.

### **Introduction of new architectural members**

In the XIX Century AD, a group of Nattukkottai Chettiars (businessmen) in Burma, Malaya, Indonesia, Singapore etc formed themselves into groups and with the help of highly trained Staphathis renovated most Hindu temples from Srisailam to Kanyakumari; one of the last such renovated temples is the temple at Thittai (Guru Sthalam) near Thanjavur abandoned after 90 per cent of the work was done around 1946. The style is late Naik but a careful examination will show that it is more stylized. E.g. Contemporary idiom like postmen etc are introduced in a Mandapa in Panchanadeeswara Temple, Tiruvaiyaru. The archaeologist has to be careful while dating such monuments since the original idols date from the early Pallava era onwards.

### **Many uses for a monument**

In Tranquebar, excavation was done for conserving the fort wall of Dansborg (see photo). The fort was a Travellers Bungalow when this writer was a young Sub - Collector in the early 1980s. This shows the transformations monuments go through. The

Tirumalai Nayak Mahal was a court in the XIX Century AD in the British period. It had a court room on the first floor built in the 19th Century AD as a later addition which had to be dismantled carefully since its load was creating cracks on the roof domes. This writer conserved it in 2002 AD and again in 2013-2015 AD.

### **Wrong labels on murals**

This writer has found wrong labels in Tamil below the murals in several panels of Tiruppudaimarudur temple Raja Gopuram. This has been pointed out in the book on Tiruppudaimarudur (Kannan, Dr, R et. al. , 2015)

This writer has conserved more than 60 monuments and several hundred ancient temples in several periods, 2001-2004, 2007 and again from 2013-2015 so far.

## **CHAPTER - XVI**

### **EVOLUTION OF WORSHIP**

**Heliodorus Pillar** - The Heliodorus pillar is a stone column that was erected around 113 BCE in central India in Vidisha by Heliodorus, a Greek ambassador of the Indo-Greek king Antialcidas to the court of the Shunga king Bhagabhadra. The Vaishnavas initially encouraged conversions but became rigid later. The site is located only 5 miles from the Buddhist stupa of Sanchi. The pillar was surmounted by a sculpture of Garuda and was apparently dedicated by Heliodorus to the god Vāsudeva in front of the temple of Vāsudeva. Heliodorus is one of the earliest Westerners on record to convert to Vaishnavism whose evidence has survived. Subsequently, Hinduism became a non converting religion.

#### **Sayana forms of Vishnu**

The evolution of the Vishnu cult can be seen in the various Sayana forms or reclining forms of Vishnu either on his serpent bed or otherwise. The chapter on Sayana forms throws interesting light in this regard.

#### **Jyeshtha Devi cult – metamorphosis from auspicious to inauspicious**

Jyeshtha Devi was worshipped once. She is now the Hindu goddess of inauspicious things and misfortune. She is regarded as the elder sister and antithesis of Lakshmi, the goddess of good fortune and beauty. Jyeshtha appears in the Hindu tradition, as early as 300 BCE. She was worshipped everywhere in South India in the 7th-8th century CE, but by the 10th century, she became considered as inauspicious. She is kept in the prakara (perambulatory path) of temples. A famous figure is the one in Tiruvanaikaval temple, where she is shown as the mother of Lord Sani Baghavan (Saturn), one of the nine planets. He is said to punish wrong doers. She is shown with both her son, Saturn and daughter-in-law, Neela Devi. Here, Jyeshtha represents Chaya Devi, the consort of the Sun and mother of Saturn.

#### **Saptamatrikas and Skandamatas**

Saptamatrikas and Skandamatas is another example of evolution of worship. The Sapta-Matrikas were earlier connected with Skanda (Kumara) and in later times, associated with the sect of Shakti (female goddess) worship. During the Kushana period (1st to 3rd century AD), the sculptural images of the matrikas first appear in stone. The chapter in this regard shows how the cult based on the Shakti cult became famous in South India. It is written by the late Thiru K. Lakshminarayan,



the Assistant Director of the Government Museum, Chennai and a close friend and colleague of this writer (2002-2003).

### **Mahayana Buddhism**

The Buddha was not portrayed in physical form till the advent of Mahayana Buddhism (Ed. Kannan, 2015; compiler, Balasubramanian, Dr., R). Yaksha and Yakshis were also added with this form of Buddhism. Jataka Tales narrating like the Hindu puranas the previous births of the Buddha came into vogue. An austere agnostic religion became a deifying religion and spread far and wide carrying the ahimsa (non-violence) doctrine.

### **Jainism**

In its initial austere form, Jainism is also agnostic due to its Protestant character to Hinduism. It evolved more and more like Hinduism which in turn adopted some of the Jain principles like vegetarianism. Partaking of the character of Hinduism is shown in the use of the symbols of Hinduism like the Chakra (wheel), conch etc usually associated with God Vishnu. But giving them different meanings also shows the Protestant nature of Jainism. Ultimately, after the 9th century AD, even the sacred thread of Brahminism is found depicted on the icons.

Bhadrabahu in the 3rd Century BC with some of his disciples returned to Pataliputra. When they saw the monks in Magadha using clothes, they were terribly shocked. It was to them a great violation of the fifth tenet of non-possession. Further the recension of the Jain canons compiled in Pataliputra Council was felt to be unacceptable and they declared them as heretical and proclaimed themselves as Mula Sangha, the true Jains. Thus Jainism was split into two sects, the Digambara, the most conservative and staunch advocates of nudity for Jain ascetics and Svetambara, the ascetics clothed in white.

Svetambara tradition states that Bhadrabahu did not go to the South and was in Nepal during the famine period. According to them, the split occurred in 82 AD when an order of naked monks was founded by Sivakoti, a Jain monk of Rathavirapura in present Mysore region (Shah U.P., 1987, p.6 from Kannan, Dr, R et al. , 2001). This shows the confusion in dates.

### **YAKSHA & YAKSHI (SASANA DEVATAS – Attendant deities)**

The gradual growth of the importance of the Yaksha and Yakshi in Jainism is quite interesting. Though in the very early stages (100 BC – 100 AD) Yaksha figures are found with those of Tirthankaras, the nature of their association with the Mula

Nayaka (Main Tirthankara) is unclear. In the next stage (6 – 9th Century AD), a number of Yakshas and Yakshis gained popularity.

The images of Chakresvari, Yakshi of Adinatha, Garuda the Yaksha of Shantinatha, Yakshi Ambika and Jvalamali (with Tantrik elements) Yakshi of Chandraprabha were developed in this period.

Each religion evolves and develops schisms over time.

## **CHAPTER - XVII**

### **THE BUDDHIST LINK BETWEEN TAMIL NADU AND THE HIMALAYAN REGION**

*Tamil Nadu has an ancient culture. Its centres of learning and culture like Kanchipuram, Tirunelveli and Thanjavur date several centuries before the Christian Era. Many of the great teachers of Buddhism, who hailed from Tamil Nadu, were founders of Buddhist doctrines, taught and spread the religion in Kashmir, Nepal, Tibet and beyond to China and Japan. Nagarjuna, Bodhi Dharma and others who hailed from Kanchipuram are very important personages in Buddhism. There has also been spread of religious doctrine like the concept of Mekala of Tibet and Manimekala one of the Maha Siddhas from Tamil Nadu. In Iconography also, there is a close relation between the depiction of the forms of the Buddha like Avalokitesvara between Himalayan region iconography and Tamil Nadu iconography. In Architecture, the essence of the Stupa form viz, the votive Stupa can be seen in Amaravati. It has been adopted in the Gompas on top and in the inner shrines. The multi-storied structure shown in a panel in Amaravati Stupa is one of the earliest examples of such a type. The Gompas are also multi-storied. The Buddha is now considered as an avatar of Lord Vishnu. This shows the spiritual integration of the Indian sub-continent. In this paper, we explore such links, which Buddhism has forged between the Himalayan regions and Tamil Nadu. This paper was presented at the National Seminar on the Sources of History on Sub Himalayan Region of Himachal and Ladakh organised by the Central Institute of Buddhist Studies, Choglamsar, Leh between 26.06.2003 and 30.06.2003.*

#### **Introduction**

Religions taken in a positive way promote national and international co-operation and contribute to evolving pan regional cultures. Of the ancient Indian religions, Jainism still keeps a pan-Indian Jain culture. Buddhism succeeded in spreading to all parts of Asia taking the essentials with it from India but tailoring it according to the native soil in Tibet, China, Japan etc. Hinduism, though it spread beyond India has not got stabilised with local participation and converts, except with persons of Indian origin. Even today, Buddhism enjoys the status of a pan-Asian religion.

The Himalayan valley of the Kashmir region has been a part of the Indic cultural sphere from the time of the Mauryan Empire (Circa 3rd Century BC). Its geographic position bounded on all sides by high mountains making it a valley and its insularity contributed to the enrichment of a unique culture. However, the Kashmiri art thus developed is mainly dependent on Indian idioms conditioned by influences from Bactro-Gandhara, Iran and Inner Asia. The extension of this Kashmiri art style and cultural ethos beyond Kashmir could be found in the ancient kingdom of Ladakh, now a part of the state of Jammu and Kashmir of even vivisected India. Ladakh, which was a part of Kashmiri

cultural region in the ancient period, came later (after 15th Century AD) under the cultural sway of Tibet.

In the ancient period, Buddhism had its palmy days in Tamil Nadu. Kanchipuram, Nagapattinam, Kaveripoompattinam and Podhigai Hill were the important Buddhist centres in present Tamil Nadu. They were well linked with other Buddhist centres in India and other Asian countries. Their teachings, the iconography and architecture and the Buddhist monks themselves from these centres travelled far and wide. In this paper, we explore these links, which Tamil Nadu has forged with the Himalayan region.

### **The impact on the Himalayan region of the great Buddhist philosophers of Tamil Nadu**

Kanchipuram was identified by Lokesh Chandra as Oddiyana (Udyana - Sanskrit meaning garden) mentioned in a Nepalese manuscript. Tara is the presiding deity of Oddiyana (G.V. Saroja, 1999, p.132). Dharmapala of Kanchi, who became the head of the famous Nalanda University, was another great Tamilian Buddhist whose greatness was spontaneously recognized in the north. The most famous son of Tamil Nadu in the history of Buddhism was Bodhi Dharma, a prince of Kanchipuram who in 520 AD went to China and founded the Chan and Zen school of Buddhism in China and Japan respectively. He is known as Tamo in China and is still being paid divine honours in temples of China. Vajrabodhi of the Pandyan country also went to China and there translated Buddhist works into Chinese.

Tibetan sources state that the great propagandist and philosopher Dinnaga was born in Simhavaktra, a suburb of Kanchipuram. Early in his life, he was well trained in orthodox Brahminical learning before he turned to the Vatsiputra sect of Hinayana and the school of Vasubandhu in succession. Another great divine, Bhaviveka, is also said to have been a native of South India, apparently of the Malayagiri (present Tenkasi-Shencottah) region.

Dharma Pala, was the head of the Nalanda University, whose doctrines travelled all over Asia. He was from Kanchi. The Tamil Buddhists of those days had a very close relation with the famous Buddhist centres like Nalanda in Bihar. From Nalanda, the teachers proceeded to Kashmir, Ladakh, Tibet and China. The ports at Mamallapuram, Nagapattinam and Poompuhar were used by the monks from other parts of India to start the journey to Far East Asian countries on the sea route. Thus, there was a close relation between the Buddhist monks of Tamil Nadu and their brethren in other parts of India.

### **Maha Siddhas of Buddhism from Tamil Nadu who spread the religion in the Himalayan region**

Nagarjuna, one of the 84 Maha Siddhas of Tibetan tradition belonged to Kanchi. He lived in the 7th Century AD (G.V. Saroja, 1999, p.130). As per the descriptions of Tibetan legends, Nagarjuna moved from Kanchi to Nalanda, where he studied the five arts and

sciences (Dowman, Keith, 1988, p.73). There he began to practise a meditation propitiating Tara, the savioreess and obtained her blessings. Indrabhuti and his daughter Lakshmingara, two other of the 84 MahaSiddhas also belonged to Kanchi, the Oddiyan. He is described by Kumarajiva, the great translator of several Buddhist books into Chinese, as born in a South Indian Brahmin family circa 405 AD. This mention by Kumarajiva, shows the greatness of Nagarjuna.

Padmasambhava who played a vital role in establishing Mahayana Buddhism in Ladakh, Tibet and even in China and Japan is thought by many scholars to have hailed from Kanchipuram in Tamil Nadu. He was the son of King Indrabhuti, ruler of Udyana. However Dr. A. Aiyappan, Thiru P.R. Srinivasan and Kumari R. Vanaja refer to the city as Udayana (Dr. A.Aiyappan et. al., 1960, p.35). He was a teacher of Tantras at Nalanda, when he was invited by the Tibetan king. He was a great Yogachara teacher. In Tibet, he established Lamaism or Tantric Buddhism and there to this day he is considered to be Buddha himself. He is considered to have lived in the 8th Century AD. Ti-Sron-De-Tsan was king of Tibet in the 8th Century. He invited the Indian theologians, Santarakshita and Padmasambhava who succeeded in establishing the doctrine of Yogachara in Tibet.

### **Relation between Mekala of Tibet and Manimekala of Tamil Nadu**

The history of Ladakh, a part of the Kashmir region, becomes clear around 11th Century AD. It was at that time that the Indian Pandit Dipankara Adisa (982 - 1054 AD) and the Tibetan translator RIN-CHEN BZANG-PO (958-1055 AD) were actively engaged in propagating Buddhism in Tibet and Ladakh. RIN-CHEN-BZANG-PO built 108 Buddhist temples in Ladakh, Spiti, Gu-ge (Susan L. Huntington, 1999, p.378). Indian Buddhist legends and Tantric traditions began to travel from India to Tibet during this period and they enriched the esoteric Buddhist systems in Ladakh and Tibet. At the turn of 12th century Abaya Datta Sri, an Indian Buddhist scholar transmitted the unique collection of the life histories of 84 Maha Siddhas to a Tibetan translator Mondub Sherab (Keith Dowman, 1988, p.11). These legends of Buddhist Maha Siddhas portray the ethos of Indian tantric tradition, the nature of the yogas and meditation of the tantric masters. They were translated into Tibetan language under the title “Chaturasitisiddhapravritti”.

The concept of Siddhas or Siddhacharyas had its root in India. Every part of the sub continent has its own number of Siddhas. In Tamil Nadu, people celebrate 18 Siddhas. But in Tibet, somehow the number 84 occupies a mystical place. The 84 Siddhas were called as Maha Siddhas. Siddhas are practitioners of Tantra, who are successful in attaining the goal of their meditation. The achievement is siddhi. The siddhi is two fold in that it confers both mundane magical power and supreme enlightenment. As per Buddhist tradition, the aim of the siddhas is to attain the Mahamudra or the Buddhahood. (Dowman, Keith, 1988, p. 13).



‘Chaturasisiddhapravrtti’ contains the legendary life history of the 84 Maha Siddhas. The Siddhas passed through life as kings, beggars, gluttons, courtesans and ascetics. In each case, their lives demonstrate that enlightenment is to be obtained in most unexpected circumstances and places. Unlike in the case of Siddhas of Tamil Nadu, there are women Siddhas also in the Tibetan Maha Siddha group. Of the 84 Maha Siddhas, Mekala, Kanakala and Lakshmingara are three women Siddhas. They are sisters and are known as the headless sisters. In their early years, the sisters were infamous because of their impish natures and mischievous tricks. They were always up to something and what one did not think the other did. They were given in marriage by their father to fishermen of the next village. However the marriage was not successful. They soon returned to their father’s house. One day they happened to see the great Guru, Krishnacharya with 700 dakas (minor male Buddhist divinities) and dakinis (minor female Buddhist divinities). Impulsively the sisters fell at his feet, confessed their entire unhappy stories and begged for his instruction. Krishnacharya gave them initiation and instructed them in the Vajra Varahi path (Goddess of Vajrayana, a tantric sect of Buddhism) that unites vision and action. Then he sent them away to practice their sadhana. The sisters meditated for 12 years and attained Siddhi. Now they wanted to see their guru again and seek further instructions. They found him in his hermitage and humbly prostrated themselves before him. The guru could not identify them at once. So the sisters recalled to him the event in which they got initiation from him.

The guru demanded their heads as his Gurudakshina. The sisters decapitated themselves and made their offering to the guru of their severed heads. The pleased Krishnacharya replaced each head on its own shoulders. The sisters got healed without any trace of the scar. They attained Maha Mudra Siddhi or the Bodhisatva state.

From the Sangam Age (3rd Century BC - 2nd Century AD) to 13th Century AD, Buddhism had its sway in Tamil Nadu. The twin Tamil epics, Silappadikaram and Manimegalai (Circa 4th - 5th Century AD) furnish rich information about Jain and Buddhist religions and their influence upon Tamil society of that period.

Mekala, one of the Maha Siddhas of the 84 Tibetan Maha Siddhas and the sister of Kunhala is comparable to the Manimekala a Buddhist deity described in the Tamil Epic Manimekalai. Seethalai Sathanar, a Tamil poet, composed the Tamil epic Manimekalai to extol Buddhist tenets. He has described not less than four female Buddhist deities of the Vajrayana sect, Chintadevi, Champapati, Tivatilakai and Manimekalai Deivam. Manimekalai Deivam is a guardian goddess of the sea. She may be grouped both with the group of Taras, the female Shakthi of Buddhist deities and with the group of Siddhas with supernatural power. The poet describes Manimekalai as “Paruppu nir Bavvam pallar tozha kappol” (She guards the sea, while due to her exalted status, many people worship her). She is a subordinate of Indra and possesses mantric powers. After assuming the form of a beautiful woman, she usually mixes with the people as one of them. She was in the habit of travelling through the high heavens. She taught the

heroine Manimekalai, the three mantras, which enabled her to take any form at will, to travel through air and prevented her from having hunger. She saved the ancestor of Kovalan, the hero of the Tamil epic, Silappadikaram. She also saved Kovalan's daughter, who was named after the deity Manimekalai. Kovalan's daughter was responsible for the construction of a temple for Manimekalai Deivam (Goddess Manimekalai) at Kanchi by the Chola King, Neduverkilli. As per the epic, Manimekalai Deivam possessed the knowledge of the past, present and future. She also exposed to Sudamathi, Madhavi, Manimekalai and Udayakumaran (the other characters of the epic Silappadikaram), their previous births. She brought Manimekalai to Manipallavam and made her to realise her previous birth by worshipping Buddha Peetikai (a pedestal like structure venerated in Buddhism). All these descriptions of Manimekalai Deivam point to her being a powerful Maha Siddha.

We also have two Jataka Tales in which we come across the character Manimekalai. In Sankha Jataka Tale, she is mentioned. Sankha a patron of Buddhist monks undertook a voyage from Banares to Swarnabhoomi (Modern Burma). On his way, his ship was wrecked in the ocean and he struggled for seven days in the sea. On the seventh day, Manimekalai Deivam created a big ship put all the costly things into it along with Sankha and steered it herself back to his destination. In Maha Janaka Jataka Tale, again she saved Maha Janaka, who also undertook a voyage from Mithila Desa to Swarna Bhoomi when his ship was wrecked. Here, Manimekalai Deivam airlifted Maha Janaka from the sea and dropped him in a mango grove at Mithila. The descriptions of the beneficial deeds of Manimekalai Jataka Tales and the story of Mekala together present a continuance in the life of Mekala. While Mekala of Tibetan traditions describes the events of her earlier life, the benevolent services told in Jataka tales convey the events of a later period.

It appears that the Mekala of the 84 Maha Siddhas of Tibetan tradition is the Manimekala Deivam of the Tamil epic, Manimekalai.

### **Iconography of the Buddhist sculptures and Bronzes in the Government Museum, Chennai compared with Himalayan Buddhist Iconography**

Along with the preachers and philosophy, art styles also travelled from South India to North Kashmir, Ladakh and Tibet. Besides, the literary information, we have archaeological and epigraphic evidence for their influence. The Kurkihar (present Bihar) bronze images donated by the Buddhist monks of Kanchi during the period from 9th Century AD to 11th Century AD contain inscriptions, which give the names of the deities like Manjusri and Avalokita Simha. The Government Museum, Madras (Chennai) has a few beautiful bronzes of Avalokiteswara and Simhanatha datable to 10th and 11th Century AD. They have been made in Chola style. The Mahayana Buddhist images from Amaravati, Andhra Pradesh, now in the Government Museum, Chennai belong to Circa 8th Century AD; there are four of the 3rd Century AD.

Brihat Samhita (circa 44 AD or 505-587 AD) by Varamihira and Manasara (500-700AD)

(refer Gravely et. al., 1999,p.4) the definitive work on architecture define the Lakshanas (features) of the forms of the Buddha and other Buddhist deities to be adopted while making their images. This theoretical basis ensured a certain uniformity in Buddhist iconography subject to local influences throughout Asia. This is illustrated below with the help of a few icons.

### **Simhanatha Avalokitesvara**

Height 90 Cms.

Amaravati, 8th -9th Century AD.

The figure is seated in the maharajalila pose on a couchant lion. The face of the lion is turned upwards and its tail brought between the hind legs. The right leg is firmly placed on the back of the lion in a slanting position. The left leg is bent and placed across the sole of the right leg. It is shown facing front in a graceful manner. The left arm holds the stalk of a lotus and is placed on a jar-like figure, which is again supported on a double-lotus. Above the central flower is shown a sword, a cognisance of the deity. The lion, which is the characteristic of the deity is provided with a cloth on its back for the figure to sit on and is decorated with a string of bells at its hind part. On the right of the figure is shown a trident the stem of which is entwined by a serpent. The prongs of the weapon are in the style of similar tridents found in the early Chalukyan sculptures of Badami as well as in some of the early Pallava sculptures, a feature which is also indicative of the age of the figure.

### **Manjughosha**

Height 90 Cms.

Amaravati, 8th -9th Century AD.

The figure is seated on Padma peetah (lotus pedestal) in the sukhasana posture in which the right leg hangs down while the left is bent and placed on the pedestal. To show that the right foot rests on a lotus flower the sculptor adopted the clever method of carving a lotus behind the toes of the right foot. Manjughosha is a variant of Manjusri, who emanated from the Dhyani Buddha, Akshobhya.

This 10th Century Chola stone Buddha sculpture is in a field in a village Thyaganur, Salem District, Tamil Nadu with a simple dress and the 19th Century decorated Buddha-Amitayus of Tibet present the same Dhyana posture. In spite of the difference we see in the dress, the concentration revealed by both are the same. Iconographic features are similar despite the distance in space and time.

### **Jambhala and Vasudhara**

Height with pedestal 10 cm;

Velippalayam, Nagapattinam, 10th Century AD.

Seated on a long oval padma peetah in the lalita pose, Jambhala's right leg hangs down and kicks a bag of riches. He has in the right hand a citron and a mongoose in the left. To the left of Jambhala, is seated on the same peetah, his consort Vasudhara, also in lalita pose. Her left leg, which hangs, administers a kick to a bag of riches. Her right hand holds a cup probably intended for jewels that she is said to shower on devotees and her left an ear of corn.

### **Maitreya**

Nanayakkara Street, Nagapattinam.

Height with pedestal 75 cm

About 10th century AD. Acquired as a treasure trove in 1934 AD.

Maitreya is standing in tribhanga (three bends) on a circular padma peetah. Four arms, upper right with rosary, upper left with a flower stalk from which spring 12 flowers and 2 buds (nagapushpas), the lower right is in varada and the lower left in kataka are seen. The hair is arranged flame-like resembling a jatamakuta with the design of stupa in front; makara kundalas in the ears, necklaces, four stranded yajnopavita, waist-girdle, loin-cloth with simha mukha, armlets, wristlets, rings, padasaras and sirascakra are seen. Comparable with Chola type; hence it is indigenous. The presence of a stupa on the makuta points to the identity of the image as that of Maitreya

### **Avalokitesvara**

Height with pedestal 14.4 cm;

Velippalayam, Nagapattinam, Acquired in 1926 AD. About 10th - 11th Century AD.

Standing on a circular padmasana with three bends in the body. Has four arms, upper right with rosary, upper left with kundika (vase), lower right varada and lower left hand with lotus. A dot on the forehead indicates the urna mark. There is a Jatamakuta on the head with a pyramidal design repeated four times marked on it. There are Makara kundalas in the ears. Three necklaces, yajnopavita, waist-girdle, armlets, wristlets, padasaras, drawers with an elegant girdle and sword-like median loop and sirascakra are the interesting decorative details to be noted. The general anatomy of the figure is perfect suggesting smooth flesh. The type compares with Kurkihar (Bihar) Avalokitesvara. The image represents the "Jatamakuta Lokeshvara" form of Avalokitesvara, which is one of the 108 forms of Avalokitesvara appearing in the Macchandar Mahal, Kathmandu, Nepal. Nearer home the type compares with the Early Chola Sculpture of Nagesvara Temple in Kumbakonam, Tanjore Districts.

### **Padmapani**

Height with pedestal 7.7 cm;

Velippalayam, Acquired in 1926 AD. About 9th Century AD.

Padmapani is seated in the maharajalila pose on an oval padma peetah. The right hand is extended, its elbow resting on the right knee; left rests on the seat and holds the stalk of a blue lotus (neelotpala), which can be seen resting against his left shoulder. The face is worn out, so that features are not clear. Armanda makuta is on the head with pyramidal designs on it as in Javanese makuta. Patra kundalas, designs, channavira, waist-girdle, armlets, wristlets, padasaras, siraschakra and under-garment extending up to the knee and with belt without simha-mukha design on it. The type resembles that of Java and Nalanda. Though Simhanatha is generally represented in this pose, the absence of his vahana, the lion and the trident would warrant its identification as Padmapani.

### **Tara**

Height with pedestal 10.2 cm;

Velippalayam, Nagapattinam.

About 10th Century AD. Acquired as a treasure trove in 1926 AD.

She is standing on a circular padma peetah with three bends in the body. Right hand is in varada; left is holding the stalk of a blue lotus (neelotpala) issuing from the padma peetah and showing itself (the flower part) over the goddess's shoulder. The conical tiara is high as is the case with Nepalese images. Patra-Kundalas are also as in Nepalese images and unlike in South Indian images (Ramachandran, T.N., 1992, p.54). The sacred marital string (tali) or necklace, kuchabandha, two stranded yajnopavita, armlets, wristlets, padasaras and under-garment in wavy and parallel lines and extending up to the feet are seen. The face is defaced. A dot serves as the urna and it will be appropriate to call it tilaka. Probably Early Chola (1000 AD), with its style influenced by contemporary Nalanda, Kurkihar and Nepalese Tara types.

**Buddha** - 15.7 cm bronze;

Velippalayam, Nagapattinam, Tamil Nadu,

11th Century AD.

The image is in Bhoo-sparsa Mudra (the right hand touching the earth). This form is depicted as seated on Padma peetah pedestal. The treatment of the pedestal with two rows of the petals of the flower lotus is a striking design, which has travelled far and wide from Tamil Nadu to Tibet.

### **Sadaksari Lokitesvara**

This 18-19th Century AD Tibetan bronze exhibits the repetition of the ancient pedestal design employed in the Tamil Nadu in the 10th-11th century AD Chola bronzes of Padmapani, Jambhala and Vasudhara and the Buddha in the posture of touching the earth. The sacredness of the lotus flower is emphasised in all these bronzes.



## **Vishnu**

Pallava period, 8th - 9th Century AD.

Buddha is considered as an Avatar of Vishnu by a section of Vaishnavites. This shown in the Vishnu Temple, Aragalur, Salem District in a Dasavatara sculpture of the Vijayanagar period of the 16th Century AD. Here we show a Pallava period Vishnu in the collection of the Chennai Museum (see photo).

## **Comparison between the Stupa structure especially Amaravati and Gompas of the Himalayan region**

We have already stated earlier that Indian architecture proceeded from a textual base. The important texts like Mayamata (the author Mayan reputedly lived in the earliest Tamil Sangam Era), Brihat Samhita, Manasara, Silpa Sastra, Samarangana Sutradhara provided this theoretical base. They covered not only Hindu but also Buddhist and Jain temple architecture and Iconography.

The sculpture panel from the famous Amaravathi stupa site from South India belongs to circa 2nd century BC. This is an important evidence for the religious architecture of the Satavahana period. This is probably the earliest depiction of a multi-storied building. The holy tree is circled by multi-storied buildings. The holy tree represents the Buddha in the Hinayana Period (before the Buddha was depicted in human form). This form of depiction is also found in the Rumtek Gompa bronze with the Buddha symbolised by his Dharma Chakra (see photo). This feature of multi-storied buildings as part of the architecture of a religious structure is continued in the Gompas found in Ladakh and Tibet. This is probably eco friendly as it saves land and prevents felling of trees for clearing the land.

## **Votive Stupa**

Height 20.2 cm.

Nanayakkara Street, Nagapattinam.

About 10th century AD. Acquired as a treasure trove in 1934 AD.

The votive stupa is in the shape of a shrine consisting of two parts. The lower part is an octagonal cella supported on four lions and has three niches besides a doorway provided with a revolving door. The three niches show the figures of the Buddha sitting in the "European pose" (pralampada) with legs crossed and the left hand placed on the lap in dhyana. The cella has a circular asana on its top on which is seated the Dhyani Buddha, Aksobhya. The upper part is the vimana, which is shaped like a stupa. It has four spikes that go into the lower part by means of holes found on the sides of the Dhyani Buddha. When let down, it covers the Dhyani Buddha and when raised reveals him. The votive stupa can be seen in front in the Gompa at Rumtek. It is datable to the Early Chola period.

## **Amaravathi Stupa**

We have a model of the great Amaravathi Stupa conceptualised by Percy Brown in the Government Museum, Chennai. This stupa is said to be the inspiration for South Indian temple architecture and sculpture. This is believed to have housed a relic of the Buddha himself, though there are doubting Thomases. Faith is a matter of belief. The relic from the Bhattiprolu Stupa casket was given to the Mahabodhi Society, Calcutta in 1921 carrying out the orders of the Government of India of 1916 (Aiyappan, A et.al., 1960, Reprint 2000, p.40).

## **Conclusion**

We have seen in this paper how South India especially Tamil Nadu has close links with the Himalayan regions in Buddhist tradition. Several of the greatest thinkers and teachers of Buddhism who helped to spread Buddhism throughout Asia hailed from Kanchipuram and other places in Tamil Nadu. Legends have grown up around them because in those far off days of slow transportation they have visited lands considered remote even in the present jet age. They should have been superhuman personalities to transcend the barriers of space and time. Similarly, mythology has also common features with Tamil Nadu. An example we have seen above is the Mekala and Manimekala tradition of Maha Siddhas. In Iconography and architecture also there are close links, which we have seen above. Many of the architecture texts like Mayamata, Manasara etc were written in Tamil Nadu. They have become the theoretical basis for iconography and architecture in India and other regions of Asia, which follow the Indian tradition. The Buddha is now considered as an avatar of Vishnu. Spatially, the Himalayan regions like Kailas and Kashmir have been separate from Kanyakumari, but spiritually they are one, not only today but for Yugas (aeons) past.

## **Bibliography**

1. Aiyappan, A. & Srinivasan, P.R. (2000) Story of Buddhism with special reference to South India, First edition 1960, Published by Dr. R. Kannan IAS, Commissioner of Museums, Government Museum, Egmore, Chennai-6000 08.
2. Bhattacharyya.N.N.(1999) Tantric Buddhism, Manohar Publishers & Distributors, 2/6, Ansari Road, Daryaganj, New Delhi-110 002.
3. Dowman, Keith (1988) Masters of Enchantment, The lives and legends of Mahasiddhas, Inner Traditions International Ltd., One Park Street, Rochester, Vermont - 05767, USA.
4. Gravelly F.H. and Ramachandran, T.N.(1999) The three main styles of Temple Architecture recognised by Silpa-Sastras, First Edition-1934, Principal Commissioner of Museums, Government Museum, Egmore, Chennai-6000 08.
5. Kannan, Dr.R. & Lakshminarayanan, K. (2001) Iconography of Jain Images in

the Government Museum, Chennai, Commissioner of Museums, Government Museum, Egmore, Chennai - 6000 08.

6. Moorhouse, Judith (1985) *Collecting Oriental Antiquities*, Hamlyn Publishing, Bridgehouse, London Road, Twickenham, Middlesex.
7. Nilakanta Sastry, K.A.(1991) 'Buddhism in South India,' in Mahabodhi Centenary Commemorative Volume - SAMBHASHA- Ministry of Education and Higher Education, Branch of Pirivena Education, "Isurupaya", Battaramulla, Sri Lanka.
8. Ramachandran, T.N.(1992) *The Nagapattinam And Other Buddhist Bronzes In The Madras Museum*, First edition 1954, Commissioner of Museums, Government Museum, Egmore, Chennai-6000 08.
9. Ramachandran, T.N.(2000) *The Buddhist Sculptures from a Stupa near Goli village, Guntur District*, First edition 1929, Principal Commissioner of Museums, Government Museum, Egmore, Chennai-6000 08.
10. Saroja, G.V. (1999) 'History of Tantric Buddhism in Tamil Nadu', in Bhattacharyya, N.N.(1999) *Tantric Buddhism*, Manohar Publishers & Distributors, 2/6, Ansari Road, Daryaganj, New Delhi-110 002.
11. Susan L. Huntington (1999) *Art of Ancient India*, First Edition 1985, Weatherhill Inc. of New York, USA.

Dr.R.Kannan was the Commissioner of Agriculture & Museums, Government of Tamil Nadu, Government Museum, Egmore, Chennai- 600 008. He was also Member of the Board of the Association of International Museums of History, Paris in 2002-2003.

This writer has also edited a book in 2015 "Compilation on Amaravati Sculptures and Conservation and Reorganisation of the Amaravati Gallery in the Government Museum, Chennai and written a book ' Manual on the Bronzes in the Government Museum, Chennai (2003; Revised Reprint) 2015' in which Buddhist bronzes and idols are dealt with extensively.

## **CHAPTER - XVIII**

### **SOUTH INDIAN CULTURAL LINKS WITH SRI LANKA**

This paper was presented at the meeting of the UNESCO sponsored Regional Conference of Museologists to set up a Regional Institute for training in Museology at Sri Lanka held at Colombo in the first week of December, 2003

#### **Introduction**

I had an opportunity to visit Sri Lanka (Ceylon) in the first week of December, 2003 . This was to attend the UNESCO sponsored Regional Conference of Museologists to set up a Regional Institute for training in Museology at Sri Lanka to serve the countries of Asian and Pacific region. I was the representative of Government of India as well as of the Government Museum, Chennai. It gave me an opportunity to experience the common culture of Sri Lanka and India, especially South India and Tamil Nadu in particular.

Sri Lanka's proximity to South India, particularly to Tamil Nadu, explains why Sri Lanka's history is so much bound up with the social, economic and cultural developments in South India. The main religions of Sri Lanka, Buddhism and Hinduism went from India through Tamil Nadu and Amaravati in the present Andhra region.

During the time of Asoka, (274-237 BC), Buddhist missionaries were sent in all directions of the world by the great Emperor and patron of Buddhism. His son Mahendra led one such Buddhist mission of the Theravada School to Sri Lanka. After the establishment of a Buddhist Sangha at Anuradhapura with the active support of Devanampia Tissa, the King of Anuradhapura, many Buddhist Bhikkus from the monasteries at Kancheepuram and Kaveripoompattinam in Tamil Nadu went to Sri Lanka.

#### **Political History**

A famous early ruler of the Sangam period was the Chola King, Karikala. About the beginning of the second century AD, he defeated the Pandya and Chera kings and also subdued the turbulent tribes, Ayar, Aravalar, Kurumbar and Oliyur. He made Kaveripoompattinam his capital, and secured it against floods by constructing the Grand Anicut on the Cauvery and by constructing canals. After the Sangam era, the Kalabhras ruled in Tamil region. King Achuta Vikanta, of the Kalabhra clan lived towards the end of the fifth century, and it was during his reign, the famous Buddhadatta wrote the Abhidhammavata, a handbook of Buddhist metaphysics, and in Pali verse the Vinaya Vinichaya, a compendium of the rules of discipline for Buddhist bhikkus (monks).

One of the Chera kings, Cheran Senguttuvan, who most probably lived in the third

century AD brought Ganges water to South India and invited Gajabahu in Pali (Kayavagu in Tamil literature) of Ceylon to anoint the famous sculpture of Kannagi and through which the Pattini cult spread forth in Ceylon (Sri Lanka).

In the 7th Century AD, Pandya, Chola and Chera kingdoms came under the suzerainty of the Pallavas, who came from the plains of the Deccan farther north. About the middle of the same century, Mahendravarman fought a war with the Chalukyan king, Pulakesin I who was the chief ruler of the Deccan. One of Pulakesin's brothers was appointed ruler of Vengi ( the area from Godavari River in the north to Mount Mahendragiri in the southeast and to just south of the banks of River Krishna in the south of India). The fortunes of the Pallavas, however, changed with the accession of Narasimhavarman (AD - 635- 668), the ablest of the Pallava kings. He defeated Pulakesin II in AD - 742, captured Badami, and made the Pallavas the dominant power in South India and the Deccan. Manavarma of Ceylon fought for him against Pulakesin, and was helped in turn by him to capture Anuradhapura.

In the 9th Century AD, the Pandyas and Cholas seem to have been more or less independent. In the reign of Sena I of Ceylon (AD 831-851), the Pandyas invaded Ceylon, and were supported by the Tamils who were already in the island. Sena II (851-885) retaliated by invading the Pandya kingdom in 860 AD and setting up a pretender on the Pandyan throne, without any interference from the Pallavas. At the end of the ninth century AD, a combined army of the Cholas and the Pandyas, led by the Chola king Aditya defeated the Pallavas and destroyed their power.

Some years later, Chola Parantaka made war against the Pandya once more, and met with success. The defeated Pandyan king came to Ceylon seeking the support of Kasyapa's successor, Dappula V (AD. 923-934). He failed to get any help owing to internal strife in the island. In order to obtain the crown Parantaka invaded Ceylon during the reign of Udaya III (AD 945-953) but had to return without subduing Ceylon, probably owing to the defeat his forces sustained in AD - 942 at the hands of the Rashtrakuta King, Krishna III, who captured Kanchi and Tanjore.

Raja Raja, the Great in 1000 AD, when there was a change of the dynasty in the western Chalukyan kingdom occupied a part of Mysore, and won over to his side the Eastern Chalukyas, by giving his support as well as his daughter to Vimaladitya, one of the claimants to the throne of Vengi. He subdued the Pandya country and Kerala (Chera land) and invaded Ceylon about 1003 AD. At this time the Malabar mercenaries of Mihindu V had rebelled, and Mihindu had fled to Ruhuna, leaving Rajarata in the hands of the Malabar, the Kanarese and the Sinhalese (Simhala) soldiers. Mihindu was defeated and taken prisoner by Rajaraja's son, Rajendra Chola I in 1017 AD and deported to South India, where he died. After that Ceylon was made a province of the Chola Empire, and Polonnaruwa, re-named Jananathapura, was made the capital, probably owing to its strategic position enabling it to withstand invasions from Ruhuna (Rohana was the name given to south Sri Lanka later), where the Sinhalese remained



independent.

Around 17th Century AD, Kandy in the island had an independent kingdom of its own. The rulers usually had matrimonial alliances with the Madurai Nayak royal families. This became a tradition. The chief queen was usually a Madurai Nayak princess. This paved the way for the spread of South Indian culture in a friendly way from Tamil Nadu region to Sri Lanka. This is reflected in the depiction of Hindu Gods and episodes from Hindu mythology on the walls of the Buddhist viharas as murals. Music and dance also similarly travelled to the island.

## **Literature**

The Sinhalese work, the Mahavamsa is the only historical chronicle that has been meticulously preserved and deciphered. There is an earlier chronicle, the Dipavamsa according to Dr. Oldenberg (Parker, Henry, 1998, p.9). It states that King Vijaya established his kingdom in the south of Sri Lanka at Tambapanni, at the mouth of a river. There is a river, Tambraparni even now flowing in Tirunelveli, South Tamil Nadu and joining the sea at Korkai. This shows the close linkage by place names. In fact many events in Indian history have to be corroborated or dated by referring to the Mahavamsa and Deepavamsa. This is because Buddhism in addition to oral chanting of Mantras in a set metre peculiar to it as in the Vedic tradition to maintain purity also laid emphasis on the written document. The Bhikshus (Bhikkus in Pali) devoted their lives to learning as they were bachelors and maintained the history of their monastery and their land as written records.

The earliest Tamil Asokan Brahmi inscription has been found in Ceylon. This has helped to date South Indian history. Prof Indrapala says that this also shows the evolution of Indian script.

The first written matter deciphered was a Sanskrit poem of twenty-four stanzas, and two short sentences in gadya-kavya style, called Sundari-vrttanta, from the slab of Mahinda IV in the Abhayagiri area. The first five stanzas of this poem and two prose passages are inscribed in continuation of the original Sinhalese inscription, in the same type and size of script. The rest is continued on the space left at the bottom of the slab in a smaller script, crowded together on numerous palimpsests.

This document traces the descent of the queen of Mahinda IV (called Kalinga-devi in the Chulavamsa, a chronicle in Pali meaning "Little Chronicle", Ceylonese historical chronicle that details the history of the island of Ceylon (now Sri Lanka) from about the 4th to the 16th century. It is a sequel to the earlier Mahavamsa ("Great Chronicle") from the kings of Java (in the north of the Malay Peninsula), and briefly narrates the circumstances in which she was espoused by the king as his Mahesi (chief queen). A number of prose passages in Sanskrit, inscribed in minute characters, in between and over the lines of the original Sinhalese inscriptions, on this slab as well as on a number of other stones, amplify the information given in the poem. From these documents we

gather the following information about the queen of Mahinda IV, named Sundari. She was the daughter of a Pandya prince named Srimara, son of Varaguna, who had been placed on the throne of Madhura (Madurai) by the Sinhalese king (Sena II). Srimara had left his own country and had gone to Java, where he married the daughter, named Gunavati, of the king of that land, Gunarnnava by name, whose father was named Kaundineya, and grandfather was Siddhayatra. After some time, Srimara lost his life fighting against the Kambojas. Gunarnnava himself took the field and gained a victory over the Kamboja army, taking prisoner the son of the Kamboja king.

### **Script**

The development of Tamil Brahmi as an offshoot of Asokan Brahmi is best studied from a cave in Ceylon which Prof. Indrapala has cited apart from the Bhattiprolu casket in the Chennai Government Museum.

### **SCULPTURAL ART AND ARCHITECTURE**

The chronicles and inscriptions inform the founding of the Stupa to house the relic of Buddha's collarbone and the planting of a cutting of the tree of Bodh Gaya in Anuradhapura. The Sinhalese call the Stupas as dagobas. This is from Dhatu Garbha – i.e. places where the relics of the Buddha are kept in the inner most part of the Stupa. The Hindu temples have Garbha Graha as the inner most place of the temple where the main idol is kept for worship. There has been a constant flow of ideas between Hinduism and Buddhism as the iconography of the Sivalinga at Gudimallam Siva demonstrates. This is the earliest Sivalinga of granite found so far and shows the Amaravati influence (Kannan, Dr. R., 2003).

The Ceylonese Stupas differ from their Indian counterparts in both their gigantic size and shape. The almost hemispherical dome resting on three downward sloping circular drums like superimposed rings and with pointed top give the bell shape to Sinhalese Stupas. Though the Chronicles refer to Buddha images attributed to the reigns of Devanam Piya Tissa (247-207 B.C), Dutthagamini (161-137 B.C.) and Vasabha (AD 65-109), the oldest known figures of Buddha belong to the period later than 3rd century AD. A fragment sculpture panel of the Dream of Mayavati, now housed in the Colombo Museum was found in the Dakshina Stupa at Anuradhapura and it exhibits the features of Andhra style. A statue of Buddha from Maha Illupallama of Anuradhapura is one of the oldest Sinhalese art works. The white marble of this six feet high Buddha figure might have been imported from Andhra region. This sculpture of Anuradhapura school is the direct descendant of the famous South Indian Amaravati School. The Anuradhapura School came to an end after the destruction of Anuradhapura by the Cholas in 993 AD. The earlier Stupas like the Stupa at Anuradhapura were small in size as compared to the later dagobas, which became huge ones like the Jetavanarama Stupa (Paranavitana, 1988). The process of taking art and architecture from South India can be traced to the usual cultural process of adoption, adaptation and then localising the idiom.

The Anuradhapura period falls into two stages. The first stage ends with the Tamil occupation of Sri Lanka (432-459 AD). In this stage, a few standing Buddha sculptures were made in the Amaravati Iconographic tradition. But the second stage which began with the reign of Dhatusena (459-477 AD) is very rich with intense artistic activity. Around the 5th to 8th Century AD, colossal statues of Buddha became very popular in Sri Lanka. The 11.85m. high colossal Standing Buddha rock cut sculpture carved in the rock face of a cliff in Avukana is a fine example for the colossal figures of this period. The right hand of this sculpture makes a gesture of benediction in the manner peculiar to Sinhalese iconography known as *asisa*, a variant form of the *abhaya-mudra*.

It is said Hindu granite clad stone temple architecture started after Amaravati and other Buddhist Stupas. The stucco figure behind the Linga in Tirumazhisai, Vedaranyam etc are vestiges of the brick, mortar and stucco construction of temples before granite clad temples. Mahendravarma Pallava - *vichitra chitta*, Mamallapuram of Narasimha Varma Mamalla are examples of rock cut-in and cut-out architecture.

### **MAHARAMA STUPA OF MAGAMA**

As the early monarchs of Anuradhapura devoted their energies after the introduction of Buddhism by Mahinda to the construction of edifices in the sacred grounds attached to the Maha Vihara, so in the south the kings of Magama have left, on a smaller scale, an interesting series of remains at Tissawarewa.

There are four principal dagobas lying in an irregular east and west line, and also the ruins of two other minor ones, the names of which are not known. Beginning at the east, the names of the larger ones are, Sandagiri, Maharama, Yatthala, and Maenik dagobas; and all four are locally attributed to the Mahanaga period, or the next kings, including Dutthagamani. It is only certain, however, that the Maharama dates from the reign of Mahanaga.

The Maharama was built by Mahanaga, the younger brother of King Devanampiya Tissa, and the inscription in it, copied by Dr. Goldschmidt, leaves no uncertainty as to its bearing its constructor's name in the early Mahanaga period, Mahanaga constructed the vihara bearing his name, which must certainly have been close to the dagoba. This necessarily implies that the residence nearer the river, Manikka Ganga was plainly indispensable. There could be no water at the site, except during and immediately after the rainy seasons. This writer visited the Sandagiri and Tissamaharama Stupas on 8-12-2003. The latter has been restored with steel stay wires in place. The former is about to be restored. Nearby was a temple with a peepal (Bo Tree) with a statue of the Buddha beneath it, which people were perambulating. In the temple, there were idols of Vishnu, Ganesa, Skanda and also the Navagrahas on tapestries that bear a striking resemblance to the Tankas of the Himalayan Buddhist region.

During the period of Chola rule in Ceylon, Kartikeya Cult spread in Ceylon. Subrahmanya of Tamilagam became Kartikeya or Murukkan in Ceylon and he became

the chief guardian deity in Ceylon. The temple at Kattargama is testimony to this fact. It is also considered by the Sinhalese as dedicated to Mahasena (362-389AD), a Sinhala King of great prowess. It is interesting to note that in the 108 names chant (Ashtothara) of Lord Skanda, the name Mahasena figures. So this Sinhalese King is none other than Skanda. The Lemurian theory states that present Sri Lanka and Cape Comorin were all linked in the Second Tamil Sangam Era. Nilam Tharuvir Pandya is supposed to have fled to Madurai when the sea swallowed his land around 5th Century BC as per the Tamil classic Puranaanuru. Thus, it is clear that the Lanka of Ramyana is an island in the Indian Ocean at the intersection of Lanka Rekha, 77° E Longitude and the Equator (Kannan, Dr., R, 2000). This went into the sea at the end of Treta – Yuga may be around 4500 BC, not necessarily the present Sri Lanka. Place names get transposed in history.

The famous temple of Skanda as Tamils and Hindus believe it or what the locals call Mahasena, a local king at Kataragama is nearby as seen above. Local priests worship at an impressive ceremony in the evening at which this writer was present. The priest carries the Kavadi (a wooden bar shaped as an arch with a white cloth tied above it. The pole is bent outwards in this case like a palanquin). The Kavadi is famous in South India. It is carried by people who fulfil a vow to Lord Muruga (Skanda). Hindu priests are also present. One of them is from Maharashtra, a Swamiji is from Haryana with mutts in several places in India and South East Asia and the third is a Ceylon Tamil from Jaffna.

The presence of the Hindu Gods in Tissamaharama and the worship ceremony at Kadaragama shows that Buddhism and Hinduism, Indian and Sri Lankan culture are parts of the same continuum.

### **Polonnaruwa Sculptures**

A royal residence in the 7th Century AD and the seat of Chola power in the 11th Century AD Polonnaruwa became the capital of Vijayabahu I and his successors after the recovery of national independence. At the time of Parakramabahu I (1153-86 AD) Polonnaruwa was considerably enlarged and enriched. The great monuments of Polonnaruwa maintain the tradition of colossal statues at places like Lankatilaka Vihara, Tivanka Pilimage (Buddhist murals of Tivanka Pilimage was built by King Parakramabahu) etc. The Bodhisattva Avalokitesvara stone sculpture placed on the left side of the stairway of Lankatilaka, one of the buildings of the Jetavana Monastery reveals its South Indian origin. This Sinhalese work is a classical creation of a peripheral culture. The colossal figure of the king Parakramabahu I carved in rock at Potgul Vehra is an attempt at the portrayal of individuality. The stern majesty of the figure informs that it was sculpted to exalt the king as a being invested with more than human dignity.

The Ashtadikpalakas of Tamilagam spread to Ceylon and became Dasadikpalakas one each for eight directions and one for Swarga and one for Pathala.

The Hindu (Brahmanical - old terminology) guardians of the four quarters were Indra (E.), Yama (S.), Varuna (W.), and Kubera (N.). These had for their vehicles (vahana), elephants.

In Buddhist art, the actual King-gods are usually represented by their Regents, Dhrtarastra (E.), Virudhaka (S), Virupaksa (W.), and Vaisravana (N.). Figures of these spirits are sculptured at the four entrances of the Bharhut Stupa railing, about 100 B.C. In the Mahavamsa, again, it is mentioned, that the relic chamber of the Runaveli dagoba, built by Dutta Gamani (101-77 BC) was guarded by the four kings (Mahavamsa, Ch. XXX, v.89).

The four are also known in Ceylon as Saman Divya Raja (E.), Skanda (Kataragama Deviyo) (S.), Vishnu, or Vibhishana (W.), and Aiyanar, or sometimes the goddess Pattini (N.).

The full Hindu (Brahmanical) scheme of ten World-Guardians, viz. those of the four cardinal and four intermediate points and of the zenith and nadir, was also in general use, as is clearly shown by the important series of guardian figures excavated from the Topaveva dagoba (10th century). This scheme is likewise recognised in the ritual of the Netra Mangalya ceremony (consecration of an image at the time of painting or setting the eyes). It is also illustrated in the ceiling painting (18th century) of the Kelaniya Vihara. The names of the guardians in this system are as follow: Indra (E.), Agni(SE.), Yama (S.), Nairrta (Nirutti in Hinduism) (SW.), Varuna (W.), Vayu (NW.), Kubera (N.), Siva or Isana (NE.), and Brahma (zenith) and Visnu as Sesha-naga (nadir).

### **The Buddhist Images**

From the 3rd Century BC, Ceylon has remained a treasury of Buddhist tradition and art. It is, indeed, somewhat surprising that the small number of finds from Anuradhapura and Sigiriya should not have been greater. There are amongst them, nevertheless, many of importance, archaeologically and as works of art. The figures of the Buddha, in particular, though they bear some of very great interest, are too few for a satisfactory elucidation of stylistic development.

The existence of a Mahayana cult in Ceylon is abundantly supported by the discovery of many images of Bodhisattvas and Mahayana feminine divinities in Ceylon. It is now obviously more than ever inaccurate to speak of Northern and Southern Buddhism as if these geographical terms connoted diction of Hinayana and Mahayana.

The first discovery of Mahayana relics is recorded in the Sixth Progress Report of the Archaeological Survey of Ceylon (Colombo, 1896), where a number of inscribed plaques and a few bronzes are described and illustrated. Three of the plaques contain the Buddhist Creed (Ye dharma, &c.), and a confession of faith in Nirvana. These might have belonged to either cult. The remaining plaques are exclusively Mahayanist, containing prayers to Sikki Buddha Kanakamuni and Bodhisattvas (Avalokitesvara or Akasagarbha, and Samanthabhadra) and to the goddess Tara (Sakti of Avalokitesvara). The palaeographic evidence gives for the plaques 9th Century AD dates. The place of discovery was a small ruined dagoba belonging to the Vijayarama monastery, where also the Lokapalas and animals were excavated.



Besides the sets of figures of the four gods in their capacity of guardians, images of two other Buddhist-Brahmanical divinities have been found in Ceylon. One of these is a Jambala (Kuvera), whose image occurs very frequently in the Indian Buddhist monasteries, though no other example is yet known from Ceylon. The image closely resembles the 'Simhala dvipe Jambhalah' of miniature 18 in the Cambridge MS. 1643, reproduced by Foucher. Jambhala as god of wealth and prosperity is associated with a mongoose and pots of money, and is himself cheerful and corpulent. The admirable modelling suggests the 8th century AD as the most likely date.

The Saiva bronzes of Polonnaruwa are in all respects very different from the old Buddhist works. They may have been cast in Ceylon, but as a group they belong to the prolific South-Indian school of medieval bronzes represented by the Madras (Tamil region) Natarajas and the Tanjore Siva. The subjects include Siva and Parvati, with Nandi, images of the Saiva saints, the Sun god, and one or two figures of Krishna. They probably mark one of the periods of Tamil occupation of Polonnaruwa, though the possibility is by no means excluded that Siva Devalayas flourished contemporaneously with the Buddhist viharas without conflict.

## **MURAL PAINTINGS**

### **(A) SIGIRIYA PAINTINGS**

The greatest masterpieces of Sinhalese painting are that of the ladies of Sigiriya. They are the earliest remains of pictorial art in Ceylon found in a rock pocket at Sigiri, in the Matale District, and can be authentically dated as belonging to the V Century AD. They are on the summit of this well-nigh unscalable rock, which rises 600 ft. above the level of the surrounding plain. The Sinhalese king, Kassapa I (circa 473-491 AD) fixed his abode there, as the chronicler informs us. He might have thought to be safe on that place from his enemies who were determined to mete out justice to him for having murdered his father to secure the throne for himself. The figure of the lion has given the rock the name by which it has since been known: "Sigiri" means "Lion's Rock". Out of the original five hundred paintings, however, only twenty-one have survived.

Dr. Paranavitana, after a study of the remains on the summit and the pleasure-gardens, which occupy much of the walled-in city surrounding the rock, has elaborated the theory that the plan of Sigiri as a whole had been devised as an earthly representation of the Paradise of Kubera on Mount Kailasa. In fact, the old chronicler explicitly states that Kassapa's city of Sigiri resembled Alakamanda, and that the king dwelt there in the manner of Kubera (the God of Riches). The purpose of the paintings must therefore have been to carry out the scheme in all its details, and they must represent Clouds and Lightning moving about the Peak of Kailasa. There is, in fact, a reference in the historical writings of Ceylon to "Cloud-damsels" and "Lightning-Princesses" as subjects represented in Sinhalese Art.

## **(B) OTHER MURAL PAINTINGS OF SUBSEQUENT PERIODS**

The paintings of Hindagala, Dimbulagala and Polonnaruwa are at least as significant as those of Badami, Sittannavasal, Ellora and Kancheepuram (Conjeevaram) in India. The frescos, which adorn the Buddhist shrines at Dambulla, Degaldoruva and Televatta, are possible offshoots from Indian painting, which flourished at Lepakshi near Vijayanagar in South India in the 16th Century, at Kanchi in the 17th and at Tanjore in the XVII Century AD. They are characterised by a harsh, hieratic quality, a disdain for the soft and the tender and possess the same qualities which give to the XVII Century frescoes of the Matancherry palace in Cochin their air of callous dignity.

I saw in a vihara in Colombo of the Kandy period, a typical Kandy type reclining Buddha. He was in a pose like the Parinirvana Pose. This looks just like the Anantasayana pose of Vishnu except that the celestial snake Adi – Sesha, Lakshmi and other accoutrements are not there and Vishnu is immortal. On the walls, mural paintings of Jataka tales and Hindu mythological tales, Indra on the Airavata, his elephant mount etc is depicted. These murals are common in all the Kandy kingdom period viharas. Efforts are on to preserve them with varying degrees of success. This shows, as seen above, the close cultural linkage between Sri Lanka due to peaceful intercourse. There can be no better link than matrimonial alliances as between the Kandy kings and the Madurai Nayaks.

## **DANCES**

The Pancha Marabu is an 8th Century AD Tamil literature on aesthetics that recognizes the classical statues of the Sri Lankan dance in the South Asian context. While classifying dances in the chapter on Koothu Ilakkanam (grammar of dance), Pancha Marabu (verses 150, 152, 164 and 165) speaks about Thesi (local), Vaduku (northern) and Sinkalam (Sri Lankan) forms of dances. This literature also elucidates on the steps, body movement and gestures of the Sinkalam Dance. Sinkalam (Sinhala) is described as slow in rhythm and steps, which is evident, even today in the Sri Lankan dance tradition.

### **Li-Keli, the stick dance play:**

The striking of sticks is perhaps the simplest form of an instrumental accompaniment in rhythmic dance. Widely prevalent in different parts of India, it is known by different names in different regions. In Kerala, it is Kol Kali, the play of sticks; in Tamil Nadu, it is Kolattam, Stick Dance is among the most popular of the group plays of the schoolgirls. In North India especially in Mumbai, Gujarat and Rajasthan it is referred to as Dandiya Ras. In Sri Lanka it is Li-Keli, the stick-play. Its sacred associations and its spectacular appeal, have given it a place of its own in Perahara and in Buddhist ceremonial procession generally. In Perehara, occasionally we find antique patterns of the play, an index to the variety of forms that the simple stick-play has generated in the course of the ages. It is the Kolattam of Tamil Nadu that is re-christened as Li-Keli of Sri Lanka.

## **Hindu Temples**

There are Hindu temples in Bamplapattiya and other parts of Colombo, the Kadhiresar Temple at Galle which testify to the close cultural links due the Tamil population. Jaffna could not be visited by me due to paucity of time. Most of these temples date from the 19th Century AD British colonial period when the Nattukottai Chettiar community settled in these parts for trade and took with them others as servants including a Tamil Brahmin priest, who performed his services for the small expatriate community.

## **Conclusion**

This writer in a short stay of about five days managed to make a tour of Sri Lanka along the sea on the main coastal road, which shows the natural beauty of this island. It was also nostalgia as his grandfather was the Irrigation Engineer of Galle from 1938-42 in the World War II period. The Koggala air base built for seaplanes to land by his grandfather in 1940s has been converted into a regular air force base in 1978 after a period of disuse.

Like these personal links, a lot of links have been forged which collectively become the cultural links between South India and Sri Lanka. They are in every field of art, script, architecture, religion, beliefs, mythology and way of life. The testimony is everywhere from the Stupas (dagobas), the murals on the caves and viharas, the performing arts, the sculptures and so on. These links date back to time itself. They cannot be prised apart.

## **Bibliography**

1. Mendis, G.C., (1932) The Early History of Ceylon; New Delhi, Asian Educational Services (reprint-1985).
2. Mode, Heinz (Dr., Prof.) (1967), Buddhist Yearly 1967; Halle (Saale) Arbeitsgemeinschaft fur Buddhistische Forschungen in der Deutschen Demokratischen Republik.
3. Parker, Henry (1884) Archaeology of Tissamaharama, Royal Asiatic Society, Ceylon Branch, Reprinted 1998, Academy of Sri Lankan Culture, F/49, Mattegodaagama, Polgasovita, Sri Lanka.
4. Kannan, Dr. R. (2000) A theory of Holistic Dating with respect to Ancient History especially Indian History.
5. Kannan Dr.R. (2003) Manual on the Bronzes in the Government Museum, Chennai.
6. Paranvitana,S (1946) Memoirs of the Archaeological Survey of Ceylon, Vol. V, The stupa in Ceylon, Reprinted 1988.

## **CHAPTER - XIX**

### **UNDERWATER ARCHAEOLOGY**

*In this paper, we look at the comparatively recent origin of marine (underwater) archaeology in India. Archaeology meant excavation on land till about forty years ago. We also see how compared to the North and North West of India, less progress has been made in this field in South India, despite a long coastline and many rivers. We use a holistic approach based on the approach in the monograph 'A holistic Approach to Dating in Ancient History' (2000 AD). We therefore use the 'soft' approach of literature, historical tradition, astrological astronomy to speculate on the areas near the coast where underwater archaeology will yield good results. A Participatory Approach among the different agencies in the field like the Navy, scientists, historians and others in the field in a spirit of sharing alone will yield good results. This is in addition to the traditional 'hard' approach of going by previous finds of artefacts in archaeology. The paper concludes that a multi-disciplinary participatory approach involving different agencies like traditional archaeologists, historians, geologists, remote sensing space satellite scientists, global information and positioning systems personnel, naval divers and oceanographers etc will yield better results than the traditional approach of going by the opinions of a predominantly single set like historians alone etc. From available historical and other sources, past experience in Poompuhar, Visakhapatnam, Dwarka and the Gulf of Cambay (2002 AD) underwater expedition, it appears that there is a very fair chance of discovering at least some elements of the ancient Tamil civilisation (loosely called Lemuria or Kumari continent) that is said to have perished in Holocene sea level changes.*

#### **Introduction**

In recent years, it has been uniformly agreed that the holistic approach to dating involving a multi-disciplinary approach to dating events in the ancient past, first propounded by this writer (Kannan, Dr. R., 2000), is the best approach where there is no agreed historical source like inscriptions or monuments. Even where these are available to correlate them so that the conclusions are less assailable has also been agreed upon. Marine (underwater) archaeology is a comparatively new field where this participatory approach involving specialists from different fields will yield excellent results. It will enable us to discover our past pertaining to those areas, which are in the realm of speculation as yet. Participatory approach is stressed because in this approach, the specialists in each discipline have to be respected and made to feel that they are equal participants so that the end result gives a synergistic output.

A problem with professionals is 'Normal Learning' i.e. the body of knowledge that has been developed over the years in that discipline. They cannot easily accept new ideas, which question the ideas or theories that they have been taught or accepted over the

years. This ignores the reality that other people might know better, though they are not professionals. Participatory Rural Appraisal professionals call this Indigenous Technical Knowledge. This results in ignoring our traditional literature, folk tales and the knowledge of fishermen as they are not considered 'professionals'.

Dwaraka considered to be the westernmost point of India was long considered a myth put forth by the epic the Mahabharata. It was only when Dr. S.R.Rao, the pioneer marine archaeologist in the 1980s, discovered hard evidence that correlated fairly closely to the traditional dates of the Mahabharata that underwater archaeology began to be considered on par with traditional land archaeology. In fact it gave more startling finds than land based excavation. Poompuhar underwater diving around 1982 AD by Prof. K.V.Raman and the State Department of Archaeology confirmed the existence of the port and its destruction by the sea as stated in Tamil literature.

Despite being early beginners, South Indian marine archaeology has not taken off to the extent as in North West India, where periodically great results are announced. The recent Gulf of Cambay exploration where artefacts like beads, a tree trunk stump dated at 8000 BC by independent scientific dating were found is a case in point. This writer participated in the National Workshop on Marine Archaeology in the Gulf of Cambay at the invitation of Prof. Ravindran, the Director of the National Institute of Oceanographic Training, Chennai. It was held on 1-7-2002. Even theories like those of A.V.Pandya of Vallabh Vidyanagar propounded in 1969, like the paleo shape of Sourashtra once given up as discredited, were revived as likely to be true in the light of the Gulf of Cambay findings. In South India also, exploration along river beds and coast lines have been stressed as likely to reveal findings that would validate ancient lore literary and historical that are now dismissed as myth (Kannan, Dr. R., 2000, p. 22). This would include the ancient Tamil civilisation said to have been lost in Holocene sea level transgressions.

In this paper, we look at how this approach will enable us to discover Kumari continent for which till date we have no archaeological confirmation. We use literary and historical sources that throw light on the ancient sea settlements, ports, temples etc. Marine archaeology can help to confirm or remove these speculations. This is the direction we hope to chart for the future.

### **Literary Sources**

This part is already dealt with in the Chapter 'Under Water Archaeology'.

A Tamil poet, Pulavar Nettimaiyar describes in his work, 'Purananooru – No.9' how the Pandya King, Vadivalamba Nindra Pandyan led his people back to Kanyakumari (land) even as the sea was swallowing the land behind him. Another reference is from Silappadikaram, Madurai Kandam, Kaadu Kann Kaadai, line 17 also. Two poets separated by a long period of time describing the same event shows that some event has taken place.



The Third Tamil Sangam, which alone is accepted by historians, is said to have lasted 1850 years, though historians date it from 3rd Century BC to 2nd Century AD. Nakkiran is stated to be the greatest poet of this Sangam. The literary works of this period are available, while for the earlier periods references and commentaries like Paayiram alone are available. This should not make us shut our minds but have a spirit of enquiry with an open mind.

### **Triangulation of literary sources with other sources**

#### **Recent excavation at Maangudi and Perur (2001-2002 - Director of Excavation - Dr. Kannan, IAS)**

Uraipaayiram by Idyananattu King Manakudiyar Paal Vanna Devan, an Aganaanuru (a poetical work of 400 stanzas) refers to the three kinds of Tamil developed in Madurai. In Puranaanuru (a 3rd Century BC work) Thalaiyaalankanathu Cheru alias Neduchezhiyan refers to Maangudi Marudan and that several Tamil poets were in a Sangam under his leadership. In the recent excavation at Maangudi (2001-2002) near Rajapalayam, the State Archaeology Department has found several artefacts relating to this period. One potsherd black and red ware with the inscription in Tamil Brahmi 'ku ru maa n kaa la a ta n yi yaa nai pe?' (14 letters – i.e. the plate was donated by Aadhan of Kurumangalam) is a very important find. It can be dated to the 3rd Century BC by paeleography. It can be compared with inscriptions around Madurai like Tirupparunkundram of a similar period. The site has megaliths and microliths in the same pit. This shows successive layers of civilisation in a continuum that dates from at least 4000 BC by conventional dating. This period covers the Second Sangam period. This shows that Tamil literature is not full of imagination unrelated to facts. If this is true we may have to give greater credence to literary sources as this writer has stated (Kannan Dr.R., 2000, p.21, 29) and not dismiss it as imagination. However, at Perur (2001-2002 excavation) we could get beads from 2nd Century AD and potsherds from 500 AD onwards. A terracotta headgear of a King resembles that found in the Amaravati collection of the Chennai Museum, which is circa 2nd Century BC to 2nd Century AD. This shows that settlement of people first occurred in coastal areas and then they spread into the hinterland, which was forested. This is also stated in Tamil epics.

### **Mayan civilisation and Indian civilisation**

Dr. Ganapati Stapathy contends that Dakshinamurthy, one of the forms of Lord Shiva is seated on Mount Kailas. He was on Mahendragiri hill that existed before the Mahapralaya (sea-deluge). The Mahendragiri hill near Kanyakumari is named after the old place swallowed by the sea in Lemuria. The new settlement is named after the old one, such as Birmingham etc in USA are named after the old ones in UK by the migrants. The Stapathy also visited the Mayan settlements in South America and claims the structures like pyramids etc are based on Vastu Shastra, that the Mayan of India is the Maya of South America. This is due to the grid pattern being followed by them also. The

Mayan links with Indian mythology, sculpture and architecture have also been pointed out by this writer (Kannan, Dr. R., 2001, pp.82-97). This article was well received by Dr. Stephen Inglis, the Director- General of the Canadian Museum of Civilisation, Montreal which he conveyed by e-mail. The reference to the Suchindram temple by Dr. Stapathi (2001, p. 138) near Kanyakumari is a remarkable coincidence. This writer referred to sculptures in the same temple in his article. This was done independently more than two years before he met Dr. Stapathi and got a copy of his book.

### **Dwaraka and Kapatpuram**

The ancient city of Kapatapuram (Sanskrit word for Kadavoor, Alaivai in Tamil – i.e. gateway to the waves or sea) is held to refer to Dwaraka in the North (since the meaning is the same). Even today Alwaye near Ernakulam is a small town on the backwater near the Arabian Sea. The Pandian port of Korkai is said to belong to the Third Tamil Sangam. Recent excavation shows the C-14 dating as 785 BC. There may have been some other towns called as Alavai, since verse 266 of the Aganaanuru refers to Tiruchendur as Alaivai. This shows that new towns were named after the old destroyed towns. Madurai itself is called as Alaivai as shown in the Brahmi inscription in Alagarkoil of 3rd Century BC. The name must have been changed to Alavai later. The Thevaram reference of the 7th Century AD is the earliest reference to it. Others hold that there was one city in the South with the name (Stapathy, Ganapati, Dr., 2001, p.126; Kannan Dr. R., 2000, p18. ; Ramachandran V.G., 1998, p.39 ) which was about the period of the Mahabharata and was probably destroyed in the same Pralaya that destroyed Dwaraka. There is a Vastu-Shastra called Aintiram, which resembles Mayamata's Vastu Shastra (Ganapati Stapathi, Dr., 2001,p.139). Tolkappiam, the most ancient extant Tamil grammar is based on Aintiram as attested by Panamparanar, the author of Paayiram, the commentator of Tolkappiam. He also compliments Tolkappiyar for having studied Aindiram's grammar, which he describes as a Sanskrit work. He does not refer to Panini, whose work is considered to be at least of the 4th Century BC if not earlier.

### **Anthropology**

Prof. G. Elliot Smith based on the work of Bruce Foote in the 19th Century showed how the South Indians were related to the aborigines of Australia using the Adichanallur skull finds (Zuckerman, S., 2000, p.1). This used the discipline of Anthropology using skull shapes etc.

### **DNA Analysis**

Using the modern scientific technique of DNA analysis, it is noticed that mitochondrial DNA shows that Eve was not in West Asia but in the Indian Ocean i.e. at present in South Africa, Madagascar belt. This was shown in Discovery Channel also. This also

triangulates in PRA terminology, the theory of Lemuria, as a landmass lost in subsidence. The latest theory is that sea levels were about 300 feet lower than the present levels about 15000 years ago. This is corroborated by finds of plants buried in Antarctica. The Discovery and National Geographic Channels showed computer-simulated images of how the earth looked at that point of time. This they did by analysing the icebergs in the Arctic and Antarctic Oceans.

### **Remote Sensing**

Remote sensing and ground penetrating radar are available now. There are subterranean channels of River Saraswati seen by remote sensing satellite. It connects to Allahabad. The dried up bed of the other branch is seen in Rajasthan and Gujarat (Kannan Dr. R., 2000, p. 29). The British historians and their followers dismissed the river as mythical till the 1970s. The shifting of the river over time is clearly seen.

Remote Sensing has its value, in deciphering various stages of sea level stand within a certain period in an area. (Loveson V.J. et. al., 1990, p.179). Sea level variation is eustatic i.e. global or local. It can be recognised in two ways viz. (i) Vertical displacement as observed from marine terraces and (ii) Horizontal displacement of shoreline changes as ridges. Marine terraces right at the shorelines are very well exposed to field study. But, since the shoreline changes are regional in extent covering a larger area, it may not be possible to appreciate the existence of such feature in the field investigation at the first instance. Remotely sensed imagery records such features, leading to shoreline changes clearly. With the aid of these imagery patterns, one can identify and differentiate the beach ridges with the swales, backwater systems and coastal lake patterns without difficulty. Only with a few samples and limited inspections, it is possible to confirm such a larger structure (Loveson V.J. et. al., 1990, p.179).

Each ridge denotes one ancient sea level stand. About 4 or 5 prominent major beach ridges are recognised all along the Tamil Nadu coast (Loveson V.J. et.al. , 1990, p.180). By comparing this, one can suggest that once Vaigai might have been flowing along Ramanathapuram to Periapatnam coast. This is also confirmed by the bathymetric study around Periapatnam offshore area (Loveson & Rajamanickam, 1989; Loveson V.J. et.al, 1990, p.188).

The fact that the coastal zone between Idinthakarai to Cape Comorin is provided with only one beach ridge arrangement depicts either the uplift of the coastal area or stability of coastal zone (Loveson V.J. et.al., 1990, p.189).

Remote sensing must be used along other analytical methods like carbon dating, sedimentological analysis, ground truth confirmation, etc. It has confirmed the Ramar Sethu bridge of the Ramayana.

### **Marine Archaeology and Dwaraka**

Seismic profiling, Sonar, Magnetic Profiling and Photogrammetry are some of the modern techniques in Marine Archaeology (Refer Kannan Dr. R, 2000, p.8). Global

Positioning Systems based on Global Information Systems give the exact coordinates of a site. This solves the problem of looking for a needle in the haystack as the problem of locating a site in Marine Archaeology is called. Off the coast of Andhra, a sea-side civilisation is expected to be discovered (Rao, T.C.S., 1988, p.73). Dr. S.R. Rao has used Thermo Luminescence (TL) dating to show that Dwaraka and Bet Dwaraka existed at 3520 BP (Before Present) in 1988 AD based on analyses of pottery recovered from the sea in the sunken port (Rao S.R., 1998, p. 52). Parts of a wooden hull of a boat were sent to the Institute of Paleo Botany, Lucknow. A stone anchor was found at Dwaraka about 500 metres inside the sea on the continental shelf. If excavation is undertaken further into the sea, the real date will emerge which will corroborate the astrological cum astronomical date of Lord Krishna as about 3102 BC.

It has been cut off from the sea due to shoaling of the Gulf of Cambay as a result of Holocene sea level rise (Nigam, R., 1988, p.20). This is corroborated by remote sensing.

Based on Dendro Chronology, it is felt that Dwaraka must have experienced six transgressions and regressions of the sea, which accounts for the several layers of settlement encountered during archaeological excavation (Negi J.G. & Tiwari R.K., 1988, p.79- 82). Estimates of the Holocene sea level transgression have an important bearing on most archaeological problems. Nair and Hashimi have found sea level rising at 10 metres per 1000 years about 10000 to 110000 years ago on the western continental margin of India. They base this estimate on coral growth and drowned banks of coral in the Lakshadweep Sea. They conclude that Holocene sea level rise was of the order of a rapid drowning (Nair R.R.& Hashimi N.H., 1988, p.86). Shoreline recession in Bet Dwaraka and Dwaraka area is around 4 metres per annum for the period 1848 to 1977 AD (Pathak et.al, from Kannan Dr. R., 2000, p.29). This makes the Mahabharata story of submersion highly plausible.

### **Rameswaram**

Rajamanickam and Loveson (1989) have reported for the first time in the east coast of India, the results of radio carbon dating of samples taken around the Rameswaram Island. This is the first evidence of its kind for the study of the sea level variation along the east coast of India. They ascertained the period of those samples as between 140 BP and 5,440 BP, which agrees well with the findings of Kattupotha and Fujiwara (1988 from Victor Rajamanickam G, 1991, p.86), who identified two stages of high sea level during Holocene.

The uppermost terrace in Ariyankundu in the Rameshwaram island gives an age of 5440  $\pm$  60 yrs. B.P., while the next terrace at about 10 cms below the previous sample level indicates an age of 3920  $\pm$  160 yrs. B.P. The coastal terrace found in Rameshwaram island has shown that the coral growth has been initiated around that period in that island and continue to emerge or withdrawal of sea level might have caused the second terrace around the years of 3920  $\pm$  160 yrs. B.P. in the island. (Rajamanickam, Victor G. and Loveson V.J., 1989, p.392).

## Coromandel Coast

Use of aerial photographs of 1972 to draw a Geomorphological Map, use of Topo-sheets of Survey of India to identify landmarks, extensive field work, bathymetry data using hydro graphic charts have also been brought in for interpretation (Loveson V.J. & Rajamanickam V.G., pp.80-88) of emergence of land.

The Coromandel coast has been described as the coast of submergence. However, if one takes a close observations there are many evidences not only historical but also the Geomorphological aspects betraying the possibilities of the emergence. For examples, the ancient light house near Muttam is buried by the sand dunes and placed at present nearby two kilometres away from the shoreline. (Loveson V.J. & Rajamanickam G.V, 1988, pp.80-88). There is a similar Imperial Chola period light house off Vedaranyam partially under the sea.

The following features are shown in the Geomorphologic Map :

- I. Ridges
- II. Back waters
- III. Palaeo-channels
- IV. Spits and
- V. Terraces

The recognition of the occurrences of Terraces is kled by Aerial Photographic interpretation. Kanyakumari, Manappad, Tiruchendur, Valinockam and Pamban have terraces (Loveson V.J. & Rajamanickam V.G, 1988, pp.80-88). These marine terraces depict the lowering of sea level along this coast and the height of sea-level stand during the past.

The existences of these coastal features have been attributed to the predominant influence of the on going progradation or the emergence of coast (Loveson V.J. & Rajamanickam V.G, 1988, pp.80-88). But another conclusion that this also represents sea ingress can also be drawn.

Sea level studies carried out on beach ridges around Vedaranyam and Mandapam show that there was transgression of the sea round 6000 years B.P. (4000 BCE). Coral terraces around Rameshwaram show transgression between 5000 years to 4000 years B.P. (3000 BCE) (Anbarasu K. et. al., 1998, p. pp. 1-2).

For Visakhapatnam, based on resemblance to the North American and Australian coasts, caused by the Holocene Marine transgression, the abrupt variation in the seabed topography may be ascribed to one such marine transgression during the Holocene period (Mohana Rao. K et.al., 1989, p.180). The behaviour of the textural pattern and associated bathymetric features suggest the presence of relict environments of dune and beach which leads to the conclusion that the beach ridges and channels observed up to 15 meters contour are remnants of the earlier beach submerged during the Holocene



transgression (Mohana Rao. K et.al., 1989, p.180).

During the course of the study of the sea level variations along the coast of Southern Tamil Nadu, a distinct spit formation has been traced in the surroundings of Periapatnam village. Admiralty charts from the year 1596 to 1986, the satellite imageries of 1979 and aerial photographs of 1972 were utilised. The ancient drainage pattern of Vaigai river has been surmised from the existing Palaeo-channels which have a perfect linearity with the present Vaigai river pattern. The flourishing ancient port of Periapatnam during 13th - 14th century AD on these Palaeo-channels must have been closed down due to the siltation caused by the change of the river courses and emergence of this coast. The fast rate of progradation at that spot has also been aided by the littoral drift (Loveson V.J., & Rajamanickam V.G., 1989, p.1).

The satellite imageries of Periapatnam as well as the aerial, photograph clearly depicts the recent Palaeo-coastline with one detached water tank at the northeastern part of the study area. The nature of the tank and depth variation inside the tank lead one to surmise that the cut-off water tank area must have been in the deeper part, probably sometime in the past. From the bathymetry, it is inferred that the northwestern part of the above said tank must have been used by ancient people as the ports' entry channel. And the south-eastern part of the same channel probably the spit wall of the past must have been the natural breaker wall to give the necessary protection for the vessels.( LovesonV.J., & Rajamanickam V.G., 1989, p.4).

The port of Periapatnam has gone into the interior near the pond called Kappalur Urani Tank. Selddon wares, coins, metals etc have been recovered. The oral traditions of the fisher folks, farm labourers on the South Indian east coast can be used to gather information of interest to Marine (underwater) archaeology. The recovery of an anchor from a French vessel dated 1864 was based on information from fisher folk (Rajamanickam, V.G., 1989).

The Department of Archaeology & Museums recently recovered an anchor about 200 years old from Kovalam near Chennai in 2002 AD based on information from fisher folk. Near Poompuhar, the Curator brought a porcelain potsherd that is datable to the 17th Century AD from the net of a fisherman.

### **Gulf of Cambay exploration**

This was done from 1999 to 2004 AD. It gave out many artefacts and established that there was a flourishing settlement. This was at a seminar in 2002 attended by this writer seen above. Several artefacts were dated by Carbon-14 etc including a piece of wood which gave dates of about 8000 BC.

### **Conclusion**

We can clearly see that a holistic approach with participatory information sharing and

decision-making by the many agencies in the field will yield the best results. Rear Admiral Vasan of the Indian Navy, who was in charge of Naval Hydrography, in the course of his discussions after reading my book on Holistic Dating expressed his readiness to survey and dive off the Tamil Nadu coast for finding remnants of our ancient civilisation (Lemuria). He wanted agreed coordinates, since diving in a large area is like looking for a needle in a haystack. As seen above, GPS can solve the problem. He also agreed to take on board the ship archaeologists who could dive if willing or at least guide and interpret the sonar and other data gathered by the instruments on board the ship. During discussions with me, Dr. S. Padmanabhan of the Kanyakumari Historical Research Foundation reported that a Mandapa under the sea off Kanyakumari was reported by fishermen, since shoals of fish are there.

Dr. V. Rajamanickam has done a lot of work in this area. I had discussions with him also. He has given the map (see below) identifying the bathymetry of the area which is most promising for discovering the lost Tamil civilisation called Lemurian. The map gives a broad picture of a gentle slope of just 33 metres below Kanyakumari till Tuticorin on the sea coast. Historians also feel the area below Korkai would have been the route taken by the ancient Tamils from Kapatapuram to the present mainland. By further probe on sites like these, we must identify the most promising area. I would be most willing to communicate an agreed consensus of about 6 promising sites to the government of India for marine archaeology. We must bear in mind the experience that the Gulf of Cambay was also dismissed as a figment of imagination till the recent finds. Therefore, in history, those who have daringly stood and ventured have alone come up with new theories. 'Nothing dared, Nothing gained' (Kannan Dr. R., 2000, p.1). Let us discover our lost Tamil area under the sea popularly called 'Kumari Continent'.

The writer was the Commissioner of Archaeology & Museums, Government of Tamil Nadu, Government Museum, Egmore, Chennai- 6000 08 in 2002.

## **Bibliography**

1. Alberuni (1878) *Indica* translated by Edward C. Sachau edited with notes 2 Volumes, London: Kegan Paul, Trench Turner & Co Ltd, 68-74, Broadway House, Carter Lane, E.C, 1914, Edition.
2. Anbarasu K. et.al. (1998) 'Quaternary Sea Level Changes along the East Coast of India' in *Indian Journal of Geomorphology*, Vol.3, No.1, (Jan-June, 1998).
3. Ayyangar, Sesha T.R. (1937) *Dravidian India*.
4. Bhavanandam Pillai, S., Rao Bahadur (1916) *Iraiyanar Agaporul*, Commentary by Nakkeerar, Chennai.
5. Kannan Dr. R.(2001) 'Some cultural parallels found in Mayan and Hindu cultures', Article in the Museum's Journal (April 2001 - September 2001),

Government Museum, Chennai, Chennai: Commissioner of Museums, Egmore, Chennai-6000 08.

6. Levacy, William R.(1999) 'Paleo Vastu' in the Astrological Magazine, Jan., 1999, Vol.88, No1, Bangalore: Raman Publications, 5600 20.
7. Loveson V.J. & Rajamanickam V.G. (1988) 'Evidences for the Phenomena of emergence along Southern Tamil Nadu Coast through Remote Sensing Methods' Tamil Civilisation, Vol. 5(4), pp.80-88.
8. Loveson V.J. & Rajamanickam V.G. (2000) 'Evidence of Quaternary sea level changes and shoreline displacement on the South-eastern Coromandel Coast of India', Proceedings of the International Quat. Seminar on INQUA Shoreline Indian Ocean Sub-Commission, pp.85-93).
9. Loveson V.J. et.al. (1990) 'Remote Sensing Application in the Study of Sea Level variation along the Tamil Nadu Coast', Loveson V.J. et. al. & Victor Rajamanickam G., and K. Anbarasu (Authors), India: Proceedings of Sea Level Variation.
10. Loveson V.J., & Rajamanickam V.G. (1989) 'Progradation as evidenced around a submerged ancient Port Periapattinam, Tamil Nadu, India', Paper presented in the First National Conference of the Indian Institute of Geomorphologists, Journal of Ecology, Landscape and Existence.
11. Meenakshi Dr. C. (1936) Administration and Social life under the Pallavas, Madras: University of Madras.
12. Mohana Rao. K et.al. (1989) Holocene marine transgression as interpreted from bathymetry and said grain size parameters off Gopalpur, Mohana Rao. K et.al. Rajamanickam. G.V. and Rao, T.C.S., Proceedings of the Indian Academy of Sciences (Earth Planet Sciences), Vol.98, July 1989, pp.173-181.
13. Nair R.R. & Hashimi N.H. (1988) 'Absence of terraces on a submerged carbonate bank and its implication to Holocene sea level transgression on the western continental margin of India' in Marine Archaeology of the Indian Ocean countries - Proceedings of the First Indian Ocean Conference on Marine Archaeology of Indian Ocean countries, October, 1987, (Ed.) Rao, S.R., National Institute of Oceanography, Dona Paula, Goa - 403 004.
14. Negi, J.G. & Tiwari, R.K. (1988) 'Climate and sea level variation cycles during last 8000 years and their relationship with global human history' in Keynote address in Marine Archaeology of the Indian Ocean countries - Proceedings of the First Indian Ocean Conference on Marine Archaeology of Indian Ocean countries, October, 1987, (Ed.) Rao, S.R., National Institute of Oceanography, Dona Paula, Goa - 403 004.

15. Nigam, R. (1988) ' Was the large rectangular structure at Lothal (Harappan settlement) a ' Dockyard' or an 'irrigation tank?' in Marine Archaeology of the Indian Ocean countries - Proceedings of the First Indian Ocean Conference on Marine Archaeology of Indian Ocean countries, October, 1987, (Ed.) Rao, S.R., National Institute of Oceanography, Dona Paula, Goa - 403 004.
16. Padmanabhan Dr. S.(1999) Kumariyin Pudhainda Varalaru, a paper in the Seminar conducted by the State Department of Archaeology, government of Tamil Nadu from 20-10-199 to 22-10-1999 at Chennai.
17. Pandya A.V.(1957) 'Aryon Ka Bharath Aagaman', Hindi Section, Vallabh Vidyanagar Research Bulletin, Bi-Annual, Vol.1, Issue1,1957 Vallabh Vidyanagar(Old Bombay State): Charutar Vidyamandal.
18. Pathak, M.C. et. al. (1988) ' Disastrous effects of transgressing sea over coastal area - a case study of Dwaraka and Beyt Dwaraka' in Marine Archaeology of the Indian Ocean countries - Proceedings of the First Indian Ocean Conference on Marine Archaeology of Indian Ocean countries, October, 1987, (Ed.) Rao, S.R., National Institute of Oceanography, Dona Paula, Goa - 403 004.
19. Raghavan, K.S. (1998) 'The Sapta Rishi Era', Chapter -XV in Ancient India, ed. Dr.N.Mahalingam, Madras: International Association for the investigation of Ancient Civilisation, 101, Anna Salai, Chennai- 6000 32.
20. Rajamanickam V.G. (1989) 'Marine Archaeological Research in Tamil Nadu', Paper presented in the Workshop on Potential for Marine archaeological Research in Andhra Pradesh, Andhra University, Waltair on 23-10-1989.
21. Rajamanickam Victor, G. and Loveson V.J. (1989) 'Results of Radiocarbon dating from Some Beach Terraces around Rameshwaram Island, Tamil Nadu' in National Seminar on Sea Level Variation and its impact on the coastal environment, (Ed.) Rajamanickam Victor G, Thanjavur: Tamil University Press.
22. Rajamanickam Victor, G.(1991) 'Sea Level Variations' in Coastal zone Management in Tamil Nadu State, India (Eds.) R.Natarjan et.al., pp.83-92, Madras: Ocean Data Centre, Anna University.
23. Rajamanickam, Victor G. et.al. ( 1989) 'Inference of Coastal submergence from the Study of Beach Rock off Visakhapatnam' in Proceedings of the National Seminar on Sea Level Variation, (Authors)
24. Rajamanickam, Victor G. et.al. G.K. Mohana Rao and T.C.S. Rao, (Ed.) Rajamanickam Victor G, Thanjavur: Tamil University Press.
25. Rajamanickam, Victor G., 1989, Paper presented at the Workshop on Marine

Archaeological research in Andhra Pradesh, Andhra University, Waltair, 23-10 1989)

26. Ramachandran V.G. (1998) 'Ancient Heritage of Tamils', Ancient India, ed. Dr.N.Mahalingam, Madras: International Association for the investigation of Ancient Civilisation, 101, Anna Salai, Chennai- 6000 32.
27. Rao, S.R.(1988) Marine Archaeology of the Indian Ocean countries - Proceedings of the First Indian Ocean Conference on Marine Archaeology of Indian Ocean countries, October, 1987, (Ed.) Rao, S.R., National Institute of Oceanography, Dona Paula, Goa - 403 004.
28. Rao T.C.S. (1988) 'Geo-physical techniques to locate pre-historic sites and artefacts on the continental shelf' in Marine Archaeology of the Indian Ocean countries - Proceedings of the First Indian Ocean Conference on Marine Archaeology of Indian Ocean countries, October, 1987, (Ed.) Rao, S.R., National Institute of Oceanography, Dona Paula, Goa - 403 004.
29. Sakhyananda (1998) 'National Method Of Historical Research' in Ancient India Ed. Dr. N.Mahalingam, Revised Edition, Madras: International Society for the Investigation of Ancient Civilisation, 101, Anna Salai, Guindy, Chennai- 600032.
30. Sampath Iyengar G.S.(1998) 'Forerunners of Civilisation' in Ancient India Ed. Dr. N.Mahalingam, Revised Edition, Madras: International Society for the Investigation of Ancient Civilisation, 101, Anna Salai, Guindy, Chennai- 6000 32.
31. Shetty, Ashok Vardhan (2003) Excavations at Mangudi (2001-2002) Editor: Shetty, Published by State Department of Archaeology, Government of Tamil Nadu, Chennai.
32. Shetty, Ashok Vardhan (2003) Excavations at Perur (2001-2002) Editor: Shetty, Published by State Department of Archaeology, Government of Tamil Nadu, Chennai.
33. Stapathy Ganapati Dr. V.(2001) Building Architecture of Stapathya Veda, Chennai: Dakshinaa Publishing House, Plot No.S-46, First Avenue, Vettuvankeni, Injambkkam village, Chennai-6000 41.
34. Venkatasamy, Mylai Seenii (1970) Samanamum Tamizhum, Chennai: Tirunelveli Saiva Siddhanta Nool Pathippu Kazhagam, Chennai-600018.
35. Zuckerman S. (2000) Bulletin of the Madras Government Museum, The Adichanallur Skulls, New Series - General Section, Vol.II, Pt.I, First Edition 1930, Chennai: Commissioner of Museums, Egmore, Chennai-6000 08.



## **CHAPTER - XX**

### **SHERMADEVI – A historical enquiry into an old Siva temple metamorphosed over the years into a government quarters**

During one of my visits on 4th March, 2004 to Tirunelveli, I happened to pass through Shermadevi (now spelt Cheranmahadevi) on a study tour as Secretary, Agriculture cum Agriculture Production Commissioner and Commissioner of Museums. Late Shri Lakshminarayanan, the then Assistant Director of the Department of Museums, Shri Balasubramanian, Curator, Archaeology Section and Shri Ramesh, the photographer accompanied me. The British had spelt the town as Shermadevi. I heard from my mother about Shermadevi and some of her sweet memories of the time she spent there as a little girl with her parents in the PWD Assistant Engineer's quarters (now upgraded as (Assistant Executive Engineer). My grandfather was then an Assistant Engineer, Madras Presidency Public Works Department (P.W.D.). He was posted to Shermadevi from 1936 to 1937. The family stayed in this building. Out of curiosity I visited the spot with my mother. The building looked as old as it was about sixty to seventy years before. It has not been renovated much. On seeing the old quarters my mother narrated the experience she and her parents had during their stay in that house. Often they found cobras visiting their house. She recalled cycling around the tamarind tree many times (see photo of tamarind tree in background - front of the entrance to the residence from road). In this connection, one must recall the piece "Cobras of Shermadevi" by S.K.Chettur, ICS who was the Sub-Collector near about the same period.

When I looked in the vicinity of house I found a temple tank at the entrance gate. A Vishnu temple is on the other bank of the tank. Then I stepped into the tank by way of the steps. It is a stepped tank on the Vijayanagar model and can be dated to the Vijayanagar period, if not earlier. I am venturing to mention – that it may be the Chola period because of the nearby associated structure (the ground floor members of the building), which has the stylistic features like granite pillars and corbels of the early Chola period. I shall dwell upon this later. Sri Lakshminarayanan concurred with me.

I noticed a granite stone panel with interesting bas-relief sculptures depicting the episode of Gajendra Moksha. The crocodile, the elephant and Lord Vishnu are seen. Lord Vishnu is blessing the elephant. In the next carving, there is a Sivalinga with a worshipper who is Goddess Parvati. This sculpture panel helped me to identify that the tank is meant for both the Vaishnavite and Saivite temples. The Saivite Vaishnavite schism that developed in the Tamil region during the reign of Kulottunga Chola I or II as one accepts the chronology of Gopinatha Rao or T.N. Subramaniam is not strong in the Venad country if not totally absent.

The bas-relief carved panels on the temple tank adjacent to the building appear to have been those removed from the old temple and stacked on the walls of the steps. The story of Gajendra and Siva in Linga form being worshipped by Goddess Parvati are shown

(see photos). This panel does not belong to the tank. It appears to have been removed from the nearby building and placed there. My surmise is based on the fact that it is the only fully carved panel on the walls of the steps leading to the tank, unlike in other cases, like Chinnayankulam (Stepped Tank) at Chinnayanpettai near Thandampattu (Tiruvannamalai District) – Refer (Kannan, Dr.R, 2007, ‘Manual on Conservation and Restoration - Proceedings of an Administrator turned Conservation Archaeologist cum Museologist’ Published by the Government Museum, Chennai).

The Gajendra Moksha episode itself is said to have occurred nearby in Athazhanallur, the Gajendra Varada Temple next to Tiruppudaimarudur Siva temple – the third in the list of Arjuna temples (sphutarjunam in the South – Mallikarjunam at Srisailem in the north; Madhyarjunam – Tiruvudaimarudur in the middle). This is the spot where the Tamraparni River becomes North – South flowing instead of the usual West – East flowing. The deity Narasimha Swamy is said to be the ancient Kula Devata of our family before they migrated around 1800 AD to Nagercoil. The deity was worshipped on a pillar in a Mandapa in the middle of the river. But some years ago, the Mandapa was damaged due to floods. It is now worshipped higher up on the re-built mandapa during Kumabhabishekam. The main deity is Gajendra Varadaraja Swamy, who gives the boon to Gajendra, the elephant. The major renovation of the Siva Temple was done due to the efforts of Justice Ratnavel Pandian with funding by the Madhava Prasad Birla Dharmasthapana Trust on 5.04.1995 and that of the Gajendra Varadaraja temple with the munificence of late Smt. Priamvada Birla on 8.01.1994. These were Pandya temples renovated and extended by the Venad Kings from the time of Rama Varma etc. In the olden days as per Travancore tradition, the pujas were conducted by Nambudiri Brahmins of Kerala (then Venad Kingdom). Now, Vaishnavites conduct the poojas.

The Purana story states that there was a beautiful mountain named Trikuta. There were thick forests on the mountain. In the forests there lived the king of the elephants named Gajendra. He ruled over all the other elephants in the herd. One day Gajendra was playing with his herd. Some say he was playing in a lake. The story told here is that the water body was the River Tamraparni. Suddenly, a crocodile that lived in the river caught Gajendra by his leg. Gajendra, in spite of being an elephant could not break free. He then, called out for help. All his friends, the other elephants gathered around him and tried to help, but in vain. They gave up. Gajendra lost a lot of blood and he became very weak. He finally realized that only God could help him and called out to Lord Narayana. The elephant started to pray to Lord Vishnu. Lord Vishnu heard Gajendra’s trumpeted cries for help and appeared on his vehicle, Garuda. He sent the Sudarshana Chakra whirling down. The Chakra killed the crocodile and set Gajendra free. Gajendra offered Lord Narayana a Lotus and thanked him for saving his life. Strange as it may seem, the crocodile then became a gandharva, a flying celestial. His name was Huhu. He had been cursed by a sage that he would become a crocodile. The rishi (sage) had told him that he would be freed from the curse by Lord Vishnu. That had now happened. In fact.

the elephant had earlier also been a king named Indradyumna. He had been cursed by a sage that he would be born as an elephant. Indradyumna too was freed from his curse.

In many places in Tamil Nadu we have the twin temples of Siva and Vishnu with a single tank. In Chidambaram, we have a temple for Vishnu in the very famous Chidambaram Nataraja shrine. In Kodumudi, Bhavani Triveni Sangam (Mukkoodal) and many other places we have twin temples both for Vishnu and Siva. This made me to realise that there should be a Siva temple along with the existing Vishnu temple in Sherma Devi. With this hunch I had a look the PWD Assistant Executive Engineer's quarters building. The few pillars of the ground floor of the building seemed to me to not blend with the brick and mortar portion of the structure, the walls. I also noticed some carved stone blocks embedded with the wall. I also noticed some bas-relief carvings on the granite stone as projections. They are described in South Indian temple architecture as Kodungai (corbels) at certain places. All this made me to conclude that the PWD Assistant Executive Engineer's residence building was originally the Siva temple. At a certain period of time, the temple was converted into a residential building.

The temple roof and walls have been converted to a small car shed type enclosure. It may be the Garabha Griha of the old Siva temple. Since it is a small temple, it is unlikely to have had all the usual elements like Ardha Mandapa and Mukha Mandapa as in slightly bigger temples. The old temple roof now forms the floor of the first floor of the quarters. This was so even in my grandfather's time as attested by my mother. No one dared to live downstairs for fear of cobras which were abundant. A cobra was seen even on the first floor. My grandfather was transferred to Papansam Dam for dam construction within five months. The cobras never harmed any one but claimed the temple for Lord Siva, whose body they adorn. The Siva-Parvati bas-relief carving on the panel on the walls of the steps of the tank nearby attests to this being a Siva temple. My grandfather though a pious Hindu did not realise he was living in a converted remodelled Siva temple. I could do so the moment I set eyes on the building due to my knowledge of archaeology.

At some troubled time, in the post 1857 period, what might have been an abandoned ruined temple was converted into the residential quarters of the PWD Engineer. During 17th and 18th centuries AD, the Marathas, Muslims and the European companies fought many wars all over the then Carnatic now Tamil Nadu region for domination. To further their imperial interests, they used old buildings and temples for their garrisons and ammunition stores. Even the famous Srirangam temple was used by the Muslim Generals to station their army. The railway bridge on the Coleroon river connecting the then Tanjore district (present Nagapattinam district) with the then South Arcot district (present Cuddalore district) was built with the huge granite stones that formed the entrance to the Brihadeeswara temple at Gangaikondacholapuram. The remaining stones were in a heap even when I was a Sub-Collector. They were removed and the majestic entrance (Maha Dwara) to the temple rebuilt with the remaining old stones in 2004 due to the efforts of Shri K.T. Narasimhan then Superintending Archaeologist of the Archaeological Survey of India (Madras Circle). Like that at some disturbed point

of time the conversion of the temple into a residence might have happened in Shermadevi as there is no Siva temple along with the Vishnu temple. We have to surmise the building now used as the residence of PWD Assistant Executive Engineer was the old Siva temple.

Recent research into PWD records have shown that it was the residence of the Sub-Collector, Shermadevi sometime in the 19th Century AD after which it became the PWD quarters.

The Saivaite Temple is of the Chola period or their local feudatories as stated above as the Cholas were staunch Saivites. The Vishnu temple is of the later Vijayanagar period. It is also pertinent to point out that the Vijayanagar rulers were great Vaishnavites.

### **Architectural elements that support this finding**

The roof of the ground floor is made of granite members. The plinth beam is also of granite. It is dressed in the form of a roof of the kind used in Dravidian temple architecture in the early Chola period. Now a water pipe is made to rest on it. During my grandfather's time, piped water supply and latrines were not there. Sanitation was by means of the thunder box ( a primitive out door lavatory), introduced by the British.

The pillars have simple bas-relief carvings as can be seen from the accompanying photos. There is no carving on the corbels. These are of the simple type related to the early Chola period. In the later periods, elaborate carvings of figures can be seen. Therefore, the stylistic features with reference to pillars and corbels bear this out as the earliest Chola period. Dubreil's book on South Indian temple architecture bears this out. (Jouveau-Dubreuil, *Archaeologie du sud de l'Inde* (Paris, 1924)).

There is a figure carved in bas-relief on one of the granite members which now form part of the building. The figure has folded palms in the prayer pose. This must be the king or chieftain who constructed or renovated this temple. This type of sculpture is very common in Tamil Nadu. Even in the Brihadeeswara temple in Thanjavur (Raja Raja Chola's statue) and numerous Nayak period temples like Madavar Valagam Siva temple in Srivilliputhur, Meenakshi Temple in Madurai (Tirmalai Nayak and his brother Muthu Virappa), we find the statue of the king who built the temple in prayer pose. The chieftain who built or renovated this Siva temple has to be identified.

A pleasant trip down memory lane based on the stories told by my mother and grandparents turned out to be a corroboration based on historical archaeological evidence. That is why, it is stated that our Puranas are based on some historical event though highly embellished; they contain some germ of truth and ought not to be dismissed out of hand as is done by our Euro-Centric historians.

(\*Dr.R. Kannan, B.Com, M.B.A., CAIIB, B.L., M. Soc. Sci (UK), M.A. (History), Ph.D., IAS was Commissioner of Museums and Archaeology of the Government of Tamil Nadu for many years in addition to several other departments like Agriculture etc. He has written nearly 40 books and many more articles.)



## **CHAPTER - XXI**

### **THE IDOL OF BALAKRISHNA IN THE GOVERNMENT MUSEUM, CHENNAI - A SYMBOL OF THE HALCYON DAYS OF THE VIJAYANAGAR EMPIRE**

#### **Introduction**

Like human beings have a horoscope of rise, plateaux and fall, it appears that empires, places and even temples and the idols installed in them have periods of glory and obscurity. We are familiar with the rise and fall of great empires like the Roman Empire, the Mughal Empire and so on. South India has also seen the rise and fall of great empires like the Pallava, Chola, Chalukya, Satavahana and Vijaynagar Empires. The story of an idol of Krishna in the collection of the Government Museum, Chennai is very interesting as the rise and fall of the Vijaynagar Empire is intertwined with it. The idol is a Balakrishna, since it depicts Krishna as a boy.

The idol has been put on display in the sculpture gallery in the entrance building. In this building, since chronological display prevalent circa 1930 AD has been adopted, it has been placed in its appropriate time slot. There was no indication to show that there is anything special about it. When this writer visited Hampi (formerly Vijaynagar, the capital of the famous Vijaynagar Empire) in 2001 AD to study its sculptures and architecture, he was astounded to hear when going round the Krishna Temple that the main idol of Krishna is in the Government Museum, Chennai. The temple is now in ruins after Hampi was sacked in 1565 AD after the Battle of Tallikota (Rakshasi-Tangadi to be more accurate) when the Vijaynagar army was defeated. It appears to have been brought to the museum in the early years of the 20th Century AD according to the earliest Accession Register available.

#### **History of the idol**

This idol was taken by King Krishna Deva Raya from Udayagiri (Nellore District) and installed in the Krishna Temple built at Hampi (Vijaynagar) to commemorate the victorious campaign of King Krishna Deva Raya against the Gajapati King of (Ganjam) Orissa, King Prataparudra. It was worshipped by Krishna Deva Raya, since it symbolised his triumphant war campaign. He built a special mandapa for it in the Krishna Temple built by him at Vijaynagar (Hampi) (Directorate of Archaeology and Museums, Government of Karnataka, 1995, p.41). The temple itself was built for this purpose according to Gravely et. al (Gravely et. al., 1939, p.24). There is reference to an inscription dated 1513 AD (Devakunjari D., 1998, p.48 from Annual Report on South Indian Epigraphy, 1889, Nos.25 & 26) in the temple that during his Orissa campaign, Krishna Deva Raya brought an image of Balakrishna from a temple in Udayagiri. He installed it in a mandapa (pillared hall) in this temple. This temple appears to have been the first construction of the 16th Century AD in Hampi (Verghese, Anila, 2000, p.80).



The west face of the gopura (temple entrance tower) of the Krishna Temple has a bas relief scene of warriors with shields and elephants and horses. This probability is a reference to the Orissa campaign. We saw the carving during our visit. The idol of Balakrishna must have seen days of great glory as the mascot of the triumphs of King Krishna Deva Raya. It has been mutilated by having both its hands removed. The temple itself has been partially restored by the Archaeological Survey of India.

### **Year of installation**

Reference to the Annual Report on South Indian Epigraphy of 1889 at the Archaeological Survey of India Epigraphy Section Library reveals that the year 1513 AD has not been mentioned in the deciphered record. The year is mentioned in the District Gazetteer, Bellary published by W.Francis in 1904.

The Nellore Gazetteer (up to 1938 — Volume A published in 1942) states that Udayagiri (ancient name Kondayapalem) is a hill fort situated 60 miles from Nellore Town. The Krishna Temple is situated on the south of the village and belongs to the Pallava type. The image of Krishna was removed by Krishna Deva Raya to Vijaynagar after the capture of the fort in 1514 AD after a siege of one year. From this it is clear that the campaign against the Orissa King Prataparudra began in 1513 AD, but the year of capture was 1514 AD. Hence the statue could have been installed only after 1513 AD. It has been recorded by Gravelly, and Sivaramamurti (1999) as having been installed in 1515 AD at Hampi (Plate IX).

The inscription (nos.25 & 26 of 1889 AD) in the Krishna temple is in Kannada and Sanskrit. In the Sanskrit version the year is referred to as 'Rasa-Agni-Veda-Vidhu' (Chronogram usually used in Persian, but used here in Sanskrit), which is to be deciphered as 1436 Salivahana Saka era. 'Rasa' is to be read 'Shadrasa' used for denoting 6 (though some people consider it as 9 Rasas usually in performing arts, but in literature it is only 6 Rasas). Agni is 3 (types of Agni); Vedas denotes 4; and Vidwan is 1 (they are unique). Reversing as in the Katapayadi notation, we get 1436. Adding the usual 78 years one gets, 1514 AD as the year of the inscription. The day is referred to as 'Kartheya divasa' which is to be interpreted in the chronogram form as the 6th day of the week i.e. Friday. The Kannada version gives the year as 1435 Saka in numerals in the old form of letters i.e. each letter represents a numeral (Katapayadi system) and 'Bhava' in the South Indian cycle of 60 years. The month is Phalguna and the day is Sukra i.e. Friday. Referring to Swamikannu Pillai's Ephemeris and Indian Chronology, after making tedious calculations, we find that the date is 16-2-1515 AD (Svamikannu Pillai L.D., 1911) (Svamikannu Pillai L.D, 1922, p.232). The day triangulates with Friday as given in the Sanskrit portion of the inscription. The year of the Sanskrit version also tallies. Therefore, the year of installation must be taken as 1515 AD as a result of the present research. Astronomical calculations do indeed shed new light.

## Iconography of the idol

The idol of Krishna is noted in the Accession Register of the Archaeology Section as No.2603. It is copied from the old General Accession Register (entered as No.66 of 1916): “Image of Krishna seated with the left leg on the seat and the right hanging down. His left leg is resting on his left thigh. Unfortunately both the hands of the image are broken and missing except the fingers of the left hand. The hair of the Krishna is arranged in a knot over his head and the Kundalas (large ear rings) are shaped like small Sankhas (conch); The height is recorded as 93 cm and breadth — 48.5 cm (the height is 95 cm; length is 50 cm and width is 39 cm when measured by us on 4-7-2001); From the Krishna temple at Vijaynagar, Hampi ruins, Bellary District; Vijaynagar Raj”.

During observation now, it is noticed that the knot is broken at the top of the hair-do. The knot would probably have accommodated the peacock feather traditionally found in the iconography of Krishna. In the left hand palm, the little finger alone remains on the idol. The rest has been removed by vandals. The figure has curly hair. There are shoulder tassels. A Tali chain with tiger claws (Pulinagam) (Jayadev C.J., 1979, p.19) is also seen. Jayadev feels that such Talis are ornaments worn by boys since the Tamil Sangam era (circa 2nd century BC and before). One more chain with a pendant is also seen. Udarabhandha (chain ornament around the stomach) Channavira (chain ornament around the chest) are seen. The Krishna wears a Katibandha (chain ornament around the waist) with kinkinis (small bells suspended from the chain). The navel is prominent. The nose is disfigured slightly. The face wears a smiling expression. The eyes are big (lotus like), which conforms more to Pallava/Kalinga iconography. The shape of the Vaishnavite (worshippers of God Vishnu) U shaped mark on the forehead of the Krishna (Urdhvapundaram) reminds one more of the Orissa culture of Chaitanya Mahaprabhu. The right feet rest on a lotus pedestal (padma peetah) at an angle of 60°. Padasaras (a type of anklets with chain) and Tandal (Tamil-- ankle ornament worn by warriors) are found on the figure.

The idol is made of a single stone. A close examination shows that the left leg does not rest on the left thigh as described in the Accession Register. In the sculpture, the right leg is seen resting on the lotus pedestal. The left-hand palm is resting on the thigh. The fingers of the left hand except the little finger are available, while they are recorded as missing in the Accession Register.

## Conclusion

Confusion in dates and the cause of events like the date of the installation of the idol or whether the temple or only a mandapa was built to install it is endemic to Indian history. Triangulation with astronomical data often helps to remove them.

A sobering thought occurs that oblivion overtakes not only proud kings and their statues, but of even the idols of the Gods worshipped by them or associated with them. This is

indeed a sobering thought. One is reminded of Ozymandias, the famous sonnet of P.B.Shelley, which states :

I met a traveller from an antique land  
Who said: Two vast and trunkless legs of stone  
Stand in the desert. Near them, on the sand  
And on the pedestal these words appear:  
“My name is Ozymandias, king of kings:  
Look on my works, and ye mighty, despair!”  
Nothing beside remains....  
The lone and level sands stretch far away’.

### **Bibliography**

1. Annual Report on South Indian Epigraphy (1889) Nos.25 & 26.
2. Devakunjari D.(1970) ‘Hampi’, New Delhi: The Archaeological Survey of India, 4th Edition 1998.
3. Directorate of Archaeology and Museums (1995)’Hampi, The Fabled Capital of the Vijayanagara Empire Mysore 570 001: Government of Karnataka.
4. District Gazetteer, Nellore (1938) Volume A, Madras Record Office (Now Commissioner of Archives, Chennai) Government of Madras: Madras.
5. Francis W.(1904) District Gazetteer, Bellary, Madras Record Office (Now Commissioner of Archives, Chennai) Government of Madras: Madras.
6. Gravely F.H et. al.(1939) An introduction to South Indian temple Architecture and Culture, Original Edition 1939, Republished, Chennai - 6000 08: Principal Commissioner of Museums.
7. Gravely F .H. & Sivaramamurti C. (1999) Illustrations of Indian Sculpture (mostly Southern), Original Edition 1939, Republished, Chennai - 600 008. Principal Commissioner of Museums.
8. Jayadev C.J.(1979) Bulletin of the Madras Government Museum, New Series General Section - Vol.XIII, No.2 The Tali in relation to South Indian Initiation rites’, Chennai - 6000 08:Director of Museums.
9. Swamikannu Pillai L.D.(1911) Indian Chronology, Reprint 1982, New Delhi: Asian Educational Services, 1100 16.
10. Swamikannu Pillai L.D.(1922) Indian Ephemeris AD 700 to AD 1799, Vol.V. AD 1400-AD 1599, Reprint 1982, Agam Prakashan, 34, Community Centre, Ashok Vihar Phase- 1. Delhi -110052.
11. Verghese Anila (2000) Archaeology, Art and Religion perspectives on Vijayanagar, Oxford University Press, New Delhi.

## **CHAPTER - XXII**

### **SESHA SAYANA – AN IMPORTANT FORM OF VISHNU**

The Narayana aspect of Vishnu in Vaishnavism is depicted in the three postures of standing, sitting and reclining. The Alvars often sing in praise of these three forms of Thirumal as Ninra, Irunda and Kidanda kolam. The Vaikhanasa agama divides the images of Vishnu into four varieties, yoga, bhoga, veera and abhicharika. Of these, the first three are quite common whereas the fourth one is very rare in South India (Champakalakshmi, 1981, p.67). Of the three forms, the Kidantha Kolam (the reclining form of Vishnu) is called by various names such as Anantha (Endless) Sayana (Sleeping), Sesha (Remainder) Sayana, Padmanabha and Ranganatha. Padmanabha means the one with the lotus-navel. Ranganatha is the lord of ranga, the assembly hall. In the depiction of Seshasayi, the central figure Narayana is surrounded by all other deities as if in an assembly hall. For this reason he is called as Ranganatha.

The reclining (Sayana) form of Vishnu symbolises the highest or para aspect of Vishnu and so Narayana as '*Para*' always has either this form or that of Vadapatrasayi (Champakalakshmi, 1981, p.69). The Sesa Sayanam (reclining on the snake Sesha) form is mentioned in Thiruvaimozhi, the Tamil devotional songs composed by the Alvars as 'aayeramvay Nagathanaiyan' (Mapuk;tha; ehfj;jizad;).

Pēyālvār, while referring to this form, mentions Madhu and Kaitabha falling dead at the sight of Vishnu, due to the poisonous flames emitted by the serpent. The bhogasayana of Vishnu is beautifully described by Tirumangai Alvar. The god is sleeping on the serpent bed formed by Ananta, his feet being gently massaged by the two consorts Sridevi and Bhudevi. The idea of the sleeping Vishnu on Ananta in yoganidra (appearing to sleep while in deep meditation and seeing the whole universe and what is happening there) and the whole scene in which one of the two consorts massages the feet of the God and Brahma, the creator, himself being born of Vishnu, are the subject of a series of verses in the Periya Tirumadal of the same saint.

#### **Deogarh Seshasayana (5th Century AD)**

The Seshasayana (Bhoga form) relief sculpture of Vishnu in the Deogarh temple, Uttar Pradesh is the earliest work of this theme that has blossomed in to a fine Gupta masterpiece. In this early 5th Century AD Seshasayana panel, the four-armed Vishnu seems to rest comfortably on the coiled body of the serpent Sesha (Remainder), who is also called Ananta (Endless), and whose hood arches behind Vishnu's head like a Canopy. The god's consort Lakshmi massages his right leg, epitomizing the bhakti teaching in which the devotee seeks refuge at the feet of Narayana. Further, Lakshmi

(Goddess of Fortune) is considered to be the mediator between the devotee and the lord. Garuda stands just to the viewer's right of Lakshmi, wearing his snake ornaments. In the centre, above, Brahma can be identified by his antelope-skin garment, his three faces (the fourth is implied) and his sitting atop a lotus after having just emerged from Vishnu's navel. He is flanked by the airborne figures of Indra and Kartikeya to his right, respectively mounted on their vahanas (mounts), the elephant and peacock, and to his left, Siva, with his consort Parvati on his vahana Nandi and another unidentified figure. Below, a separate slab bears deeply carved representations of five males and one female. These are Madhu and Kaitabha at the left with the four personified attributes i.e. weapons or *ayudha purushas* of Vishnu at the right. Madhu and Kaitabha were two demons who sprang from Vishnu's ear while he was asleep, and were about to kill Brahma (who was emerging from Vishnu's navel) when Vishnu destroyed them. In this relief, the four personifications of Vishnu's weapons (*ayudhapurusas*) are juxtaposed with the two demons as if to show Vishnu's might against them, although the elegant positioning and grace of the figures hardly suggests an impending battle. From the right, the personified weapons are Kaumodaki or Gadhadevi, (the female, recognised by the mace merging from the top of her head), Chakrapurusha (recognised by his chakra (wheel) hair ornament), Dhanurpurusha (who positions his right arm as if it were a bow), and Khadgapurusha (who prepares to draw his sword).

### **Mahabalipuram (Mamallapuram) Sculptures (7th Century AD)**

In Mahabalipuram there are three Sayana images of Vishnu. Of them, one reclining Narayana figure is carved between the two shore temples of Siva facing east and west. This temple was constructed by Narasimhavarman when he went to war with the powerful Chalukya King, Pulakesin II whom he defeated at Manimangalam. This sculpture scheme follows the abhicharika type, intended to bring about the defeat of the enemy. In abhicharika sayana form, Narayana is shown lying in deep slumber with scanty clothing and thin limbs, his head to the north. He has two arms; there are no attendant deities. The *uttama* version of the abhicharika type shows the Sesha with two hoods and two body coils. With a single hood and body coil the form is *madhyama*; while the *adhama* version omits Sesha entirely, placing the recumbent Vishnu on bare ground. (Soundararajan K.V., 1981, p.135). The *Vimanarchitakalpa*, a Sanskrit work states that the Abhicharika form is meant for the destruction of the enemy of a king, who is in distress and about to confront a more powerful enemy. The form of Vishnu does not have *ayudhas* i.e. attributes. He should be shown with two arms. In Tamil Nadu, the other reclining forms of Vishnu also have two arms only. The face should depict old age. There should be no roof over the shrine. In the case of Mahabalipuram, the roof has been constructed in a later period probably by Dantivarman. The diety should be near a large



water body, the sea or a lake. There should be no habitation in the direction of the head side of the deity. The eyes should look in the direction of the enemy. The King should first worship a Suguna (good attributes) or mild form of the deity before worshipping the abhicharika form. There is evidence to show that there was a Bali peetah and well for washing the feet to the north of Vishnu. In the southern direction, there is a Mahavaraha shrine, the *Suguna* form, which the King must have worshipped before the abhicharika form. K.T.Narasimhan states that after giving the offering or Bali to the deity, he must have washed his feet and left. This shrine is the earliest piece of evidence to show that Agama texts were followed before the 7th Century AD in the Tamil region.

The Shore temple with the Sivalinga belongs to the period of Narasimhavarman II (700 - 728 AD). This type of depiction of Vishnu reclining on the ground is called as Sthala sayana in contrast to Jalasayana in which the lord is shown reclining on the coils of Sesha. K.T.Narasimhan, Retired Superintending Archaeologist, ASI opines that the abhicharika form should not be created and worshipped as a stand alone. First, a Satwa form of the same deity has to be created and worshipped. In this case, the Maha- Varaha in the Adi- Varaha cave was created by King Narasimha Varma Pallava and then the abhicharika form on the sea shore, since the image has to face the sea in the direction of the enemy as per sastras.

It seems that it was executed in the last years of Mahendra I, after his humiliating reverses at the hands of the Western Chalukyan armies; at a time when the Pallava kingdom was so shrunken that Mahabalipuram might almost have had to serve as the king's last resort.

“Bhima's ratha” in Mahabalipuram is a two-storied, oblong building with a barrel-vaulted roof (sala;) The main image within, is unfinished. But it seems that the blank space is intended to depict the figure of the reclining Vishnu, Seshasayana for which such an elongated structure is appropriate. ( Susan L. Huntington, 1999, p.308).

The Seshasayana (Bhogasayana form) panel in the Mahishasuramardani cave temple is vividly done. The scene portrays Lord Mahavishnu at the time of creation. According to the story, Brahma is seated on a lotus with two leaves issuing from the navel of Vishnu (now shown in the panel). He is creating the world. The three gunas (types of qualities) Satwa, Rajas and Tamas – the first godly and the latter two symbolising human frailties also get created. Rajas and Tamas (symbolized as the demons, Madhu and Kaitabha) emanate from the ears of Mahavishnu (Zimmer, 2001, pp.12-13). They are the two large standing figures looking menacingly at Vishnu in this panel. They are standing at his feet. When they were about to devour Brahma, they were slain by Mahavishnu. Another version is that by shaking the lotus stem on which Brahma sits they made the Vedas to fall down into the sea, from which the Vedas were rescued by Lord Mahavishnu in his form of Hayagriva (therianthropomorphic form of a human body with a horse's head). In this panel, Goddess Bhu Devi is at his feet worshipping him - since it is creation

time. According to Iconographic canons it is told that Goddess Sri Devi should be shown at the head of Vishnu, while Goddess Bhu Devi should always be shown at the foot.

The story is narrated in Devi Mahatmyam, version of the Markandeya Purana according to one school of thought and Vishnu Purana according to another. The two figures at the side of the coils of Adisesha are the Rishis, Markandeya and Bhṛigu according to earlier writers. However, this writer had a close look. (See inset close up view photograph). The head gear of one is like that of a royal personage and that of the other is a jata, characteristic of a Rishi. Therefore, the duo appear to be Varuna, the Deva (celestial) responsible for water and Rishi Markandeya. Varuna has been identified by the waves flowing at his waist, the pearls and Shankha (conch) in his garland. These are associated with the sea and therefore water.

The two flying figures symbolize the Conch-Panchajanya (Demon Panchajanya subdued) the male figure and the mace (gada) personified as Kaumodaki (feminine figure) (Soundar Rajan, K.V., 1983, pp.136-137). Some feel that the episode involves Yoganidra (Vishnu in a trance like state but with full awareness of what is going on) and Yogamaya, (this is the power of God in the creation personified as a deity – i.e. the world is an illusion, which appears real to all living beings) who are symbolized as the two small flying figures overhead of Vishnu.

### **Udayagiri Caves, Vidisha near Bhopal (4th –5th Century AD)**

During my recent visit to Bhopal in March, 2003, I visited the Udayagiri caves at Vidisha, near Sanchi (60 Kilometres from Bhopal). I came across caves and cave temples of the Gupta Era. There are exquisite carved bas-reliefs as well. The cave temples have idols of Parshvanatha (identified by the seven headed snake canopy) and other Jain Tirthankaras. The bas-reliefs have Hindu themes. These are dated to circa 4th-5th Century AD. These bas-reliefs appear like the Mahabalipuram cave carvings. The rock temples are like the temples at Mahabalipuram but there are structural temples also. In one panel, there is a Seshasayee bas-relief panel as in Mahabalipuram. Lord Vishnu reclines on his serpent bed (Adi Sesha) in Yoga Sayana. The coils of the serpent are portrayed as being massive. The milky ocean is portrayed as waves carved on the rock, which stretches right up to the place where the viewer stands in the pathway to the panel. Brahma emerges from his navel. Brahma is seated on a lotus. At the feet of Lord Vishnu at the sides of the coils of Adi Sesha, Bhu Devi is portrayed with her hands folded in prayer (anjali mudra). Above Vishnu's head, some figures are portrayed. They can be identified as Devas, and Sage Markandeya. Yogamaya and Yoganidra are portrayed as two small figures. The weapons (ayudha purushas) are also personified and depicted. At his feet above the coils of Adi- Sesha, Madhu and Kaitabha are seen. Poet Dandin of the court of King Chandragupta II Vikramaditya (there is confusion of periods) and King Bhoja of a later time period is supposed to have visited King Narasimha Varma Pallava at Kancheepuram. He is stated to have seen the caves at Mahabalipuram then under

carving and admired the skill of the artisans in restoring the broken arm of the Sea side Abhicharika form of Vishnu. This visit is dealt with in *Avanti Sundara Katha*, a Sanskrit literary work of the period. Hiuen T'sang, the Chinese traveller also has recorded his visit to Mahabalipuram. This panel, since it ante-dates by common consensus the circa 7th-8th Century AD Pallava carvings at Mahabalipuram, shows the flow of ideas and may be sculptors from Central India and the Gupta Empire to the next mighty empire viz. the Pallava Empire. There are also important differences in the portrayal of the facial and other features. These conform to the Gupta idiom. The personages depicted in the panel are also not fully the same. The Rishis are not depicted below the coils of Adi- Sesa as at Mahabalipuram. This shows the process of adoption and adaptation of ideas to the local situation and also the different time period, which is commonly observed in history.

### **At Singavaram (7th Century AD)**

The Pallava cave temple at Singavaram near Gingee (South Arcot District) assigned to the period of Mahendravarman I (early seventh century) on stylistic grounds, contains a huge figure of Seshasayana (Yoga form). This is chronologically the earliest datable representation of this form. The earlier Sayana murtis in Mahabalipuram are depicted without Brahma seated on the lotus rising from the navel of the lord. This colossal image is found lying on a serpent couch with a five-hooded canopy above. The hoods of the serpent are represented like a vyala (lion) heads. The head of the Vishnu figure with a high kirita is slightly raised. He looks at the sky in contemplation as it were. The right hand extends towards the head in a parallel position, while the left hand is bent at the elbow and is in the kataka pose, like the figure from Mamallapuram. A lotus flower issues from the navel of Vishnu and the seated figure of the four-faced Brahma is found on it. The rest of the carvings include the figures of Garuda and the demons, Madhu and Kaitabha. Bhudevi is found seated at the foot of the god. This figure is in Yogasayana. The folk story is that Raja Desingh, the local king of Gingee sought permission from Mahavishnu, his titular deity to go into battle on a Friday, which was refused. He still persisted and to show his annoyance Lord Vishnu turned his head from his devotee. The king died in the battle with the Nawab of Arcot.

### **Namakkal Cave Sculpture (8th Century AD)**

The Seshasayana (Bhoga form) image in Namakkal may be assigned to the eighth century AD. The cave temple has been excavated by an Adigaiman chieftain as indicated by the presence of an inscription calling the temple 'Atiyendra Vishnugriham'. More important, however, is the inscription found on the beam over the pillar of the sanctum. It gives the names on sculptures of the attendant deities and demigods such as Markandeya, Varuna, Brahma, Isa, Daksa, Sasi, Surya, Tumburu, Narada and others almost in the same order as they figure around the main recumbent figure of

Seshasayana. It is noteworthy that here the temple is called the 'sayya-griha' of Vishnu. This inscription has also been dated to the eighth century AD, on the basis of its palaeography.

### **Tirumayyam Sayana Murti (early 8th CenturyAD)**

The Bhoga Sayana form of Narayana is treated very elaborately in the cave temple in Tirumayyam in Pudukkottai district, Tamil Nadu. The central figure of the reclining Vishnu is shown in the usual manner lying flat on the serpent couch with a canopy of the five serpent hoods above the head. The five hoods of the serpent Adisesha cover the god's head as a canopy and are half drawn backward. Vishnu has two hands one stretched behind him as if consoling Adisesha and the other is kept in akimbo posture. The local legend associated with the depiction of consoling Adisesha is that when the demons Madha and Kaitabha approached his Lord in an aggressive attitude, Adisesha in his sudden wrath spat poison but was immediately stung with remorse of about his hasty action without so much as asking his Lord's permission. But Vishnu comforted him with an assurance of his approval of the act (Venkatrama Ayyar, K.R.1940, p.1211). The poisonous fumes emitted by Adisesha are well depicted in the sculpture panel. This is in accordance with the Vaikhanasa Agama description of Bhogasayana variety of Seshasayana sculptures. This depiction suits the description of Peyalvar also. The Saint-poet states the demons Madhu and Kaitabha fell dead due to the poisonous flame emitted by Adisesha. It is in the carving of the subsidiary figures that the artist has shown great ingenuity. They are found dispersed all around the deity, below, on the two sides and above on the wall, most of them being Bas-reliefs. From left they represent Markandeya (kneeling), Bhrigu and Garuda standing with folded arms. At the shoulder level of Garuda are shown Daksha and associates worshiping the Lord. Above on the left extreme end, next to Surya are the Ayudha purushas. The other figures on the wall above may be recognised as Narada with the makara yaazh (veena), Tumburu with the stringed instrument, flying vidyadharas, the Saptarishis and Chandra with Rohini. Just below the group of rishis and Chandra are the two grotesque forms of Madhu and Kaitabha, one of them turning away as if trying to escape the flames, emanating from the Adisesha with one of his hands going behind obviously in pain. Among the carvings on the wall above are shown flames which appear to move in the direction of the two asuras, standing at the foot of the god.

The seated figure at the foot of the reclining Vishnu is Bhu Devi. The Tirumayyam image of Anantasayi with the elaborate group of attendants, etc., is perhaps the most remarkable of all the sayana images of Vishnu belonging to this period (seventh-ninth centuries AD). Most of the details are also found on the wall behind the Vishnu figure in the Sarangapani temple at Kumbakonam. Yet, the Tirumayyam reliefs are unique not only as representing the uttama class of sayana form, but also on account of the exquisite style of their carvings and the physiognomy of certain figures carved in the panel. The figures of three sages in the group of seven sages have long beard and hanging



moustache very much in Chinese style. Fez like cap depicted as a head ornament for the seated figure of Daksha is another interesting feature. But these two features reveal the relationship existed among the Tamils, Chinese and Arabs during 8-9th century AD. On stylistic grounds, sculptural works of this panel may be assigned to the Muttaraiyar School of art that developed in the regions of modern Pudukkottai and Trichy Districts during 7-8th century AD. The Sangam literature and other Tamil literature of subsequent periods are replete with the reference Greek, Roman's, Chinese and Arabian merchants. The Greeks and Romans are called as Yavanas. The people from China were referred as Cheenas while those who came from Arabia region were known as Sonakas. Sanaka is one of the famous rishis who has access to Lord Vishnu himself in Vaikunta. It is interesting that the Arabs were called by a similar name. This validates the theory that the Siddhas of India especially Tamil Nadu had spread though out the world and taught all the people in ancient times. Manetho of Egypt is Manitha (Kannan, Dr., R, 2000, p.35 ). Astronomy, Astrology and Medicine (Siddha system of medicine became Unani in the Middle East).

The visit of Hiuen T'sang, the Chinese Buddhist pilgrim to the Pallava Kingdom occurred circa the early 7th Century AD (620 – 622 AD). It is said he visited Mahabalipuram at the instance of the Pallava king, Mahendravarman I (regnal years – 590 - 630AD ). It is quite likely that he may have visited Tirumayyam and this is recorded in the facial features of the bas relief sculptures of the Rishis. It is stated that Indian culture and even the Hindu religion held sway over lands till Egypt and Greece in the pre-Islamic period as seen above. Therefore the Arab merchants would very well have come to worship at Tirumayyam and an important one among them who may have made some contribution been depicted by the Stapati (master sculptor who knows the ancient science of art and architecture). This panel does not appear to have been studied from this angle before.

Trade and religion played a vital role to bring these people from different parts of the world together. Tirumayyam sculptures stand as a great piece of evidence for this. The world is a smaller and more interconnected place than we give it credit for, especially when we consider the achievements of our early historic and pre-historic Puranic personalities who also figure in Tamil literature. They have really traversed the world.

## **Bibliography**

1. Champakalakshmi.R. (1981) Orient Longman Ltd, New Delhi - 110 002, 1981.
2. Gopinatha Rao (1937) Elements of Indo Iconography.
3. Kannan R. Dr.(2000) Bulletin of the Government Museum, Chennai,- Monograph on a Holistic Approach to Dating In Ancient History especially Indian History, Published by Commissioner of Museums, Egmore, Chennai-



600008.

4. Kannan R. Dr.(2003) Bulletin of the Government Museum, Chennai,- Monograph on Rock Art and Cave Art, Published by Commissioner of Museums, Egmore, Chennai - 600008.
5. Soundararajan, K.V.,(1981) Glimpses of Indian Culture - Architecture, Art and Religion, Sundeep Prakasan, Delhi.
6. Susan L. Huntington (1999), The Art of Ancient India, Third Edition, Wetherhill, New York.
7. Venkatarama Ayyar K.R.(2002) Manual of the Pudukkottai State Vol.II Part II. Reprint published by the Commissioner of Museums, Egmore, Chennai - 600008.
8. Zimmer (2001) from Kannan (2003) Bulletin of the Government Museum, Chennai, 'Monograph on Rock Art and Cave Art', Chennai: Commissioner of Museums, Government Museum, Chennai.

## **CHAPTER - XXIII**

### **SAPTA MATRIKAS**

Late Thiru K. Lakshminarayanan,  
Assistant Director of Museums,  
Government Museum,  
Chennai - 600 008.

A band of feminine divinities known as matrikas (mothers) is one of the most significant groups of Hindu goddesses. The earliest references to them date to the first Century AD (David Kinsley, 1998, p.151). The first clear descriptions of matrikas as groups of goddesses appear in the first Century AD versions of the Mahabharata. In Vanaparva, a group of goddesses are mentioned as mothers of the world. They are sent by Indra to kill the infant Karthikeya. When these goddesses approach the child Kartikeya, milk oozed from their breasts and they asked the child god to adopt them as his mothers. The epic refers to them as a group of goddesses and does not specify how many goddesses have been sent by Indra to kill the child god. However, the epic describes two of these goddesses. One is said to have been born of anger. She carries a spike in her hand. The other is described as bad tempered. She has red complexion and is the daughter of Sea. She lives on blood. In the Varaha Purana, Mahesvari is described as symbol of anger (Gopinatha Rao.T.A, 1985, Vol.1, Part II). The other one with red complexion and bad temper could be compared with Alakshmi who rose from the sea at the time of churning the milk ocean by the Devas and Asuras to get *Amrita (ambrosia)*.

In the Mahabharata, three more episodes related to mother goddesses and Kartikeya have been narrated. When Indra strikes the baby Kartikeya with his thunderbolt, a host of ferocious and terrifying goddesses emerged from the body of Kartikeya (David Kinsley year p.151). In another episode, the wives of six sages who have been unjustly accused as Kartikeya's real mothers and who have been divorced by their husbands appeal to Kartikeya to adopt them as his mothers. In Salya Parva of the epic, mother goddesses are described as members of the army of Kartikeya, the Supreme commandant of the divine army.

The groups of mother goddesses portrayed in the Mahabharata represent inimical spirits who are particularly attracted to small children. They inspire their foes with terror and live in places like tree, crossroads, springs, caves, mountains and burning grounds. They speak a variety of languages and some of them are dark. These statements about mother goddesses make us to infer their heteromorphic origins and a kind of similarity between them and the Yakshis of North India in the beginning of the Christian era. The Anangu of early Tamil Sangam literatures also share this similarity.

## **Birth Stories of Sapta-matrikas**

In the Post-Epic, Puranic period, the number and names of the matrikas become increasingly standardised as groups of sixteen, eight and seven. The puranic mythologies portray the matrikas as combating the asuras, under the leadership of their divine masters or mistresses, to safeguard the devas or the stability of the cosmos. Different puranas have different versions for the origin of matrikas or the mother goddesses.

As per Matsya Purana, Sapta-matrikas or the seven mothers are created by Siva to fight the demon Andhaka, who has the boon to duplicate himself from each drop of blood that spills from him when he is wounded. The mothers are told to drink up Andhaka's blood and thus defeat him. Although the traditional Sapta Matrikas are mentioned in Matsya Purana, under the head of the list of goddesses, about 190 names of goddesses are given along with the comment that there are many more.

According to the legend in the Isaanaa Sivagurudeva Paddhati, Siva created the goddess Yogeswari from the flames issuing out of his mouth to drink the falling blood of Andhaka. Brahma, Vishnu, Mahesvara, Kumara, Varaha, Indra and Yama also sent their Saktis to follow Yogeshvari. (Nagaraja Rao.M.S., 1967, p.46). While Matsya Purana, Vishudhamothara Purana and Isaanaa Sivagurudeva Paddhati describe Siva's fight with the demon as the cause for the creation of Sapta Matrikas, the Varaha Purana gives a different account for the creation of matrikas. The Devi, the Supreme goddess is doing penance on Mount Mandara. At a certain moment, she loses her concentration. From her distracted mind, matrikas emanated. The Varaha Purana relates these matrikas to vices or uncontrolled natures. Further this Purana mentions Ashta Matrikas (eight mothers) instead of the usual Sapta Matrikas or seven mothers. All the eight mothers are equated with eight bad emotions: Yogisvari personifies lust, Mahesvari for anger, Vaishnavi for greed, Kaumari for attachment, Brahmani for pride, Aindari for jealousy, Chamundi for depravity and Varahi for envy (Gopinatha Rao,T.A. 1985, p.381).

As per Suprabhedagama, the Sapta- Matrikas have been created by Brahma for the purpose of killing Nirrita. But in Devi Mahatmya, it has been told that the matrikas are created by various gods. When the demon armies of Shumba and Nishumba approach the Devi for the encounter, the male gods create Shaktis, female counterparts of themselves, to help the Devi on the battlefield. Brahma creates Brahmani who holds a rosary and water pot. Siva created Mahesvari. She is seated on the bull, holds a trident and is adorned with crescent moon. Kaumari created from Kumara or Kartikeya has her Vahana peacock and holds a spear. Vaishnavi created from Vishnu has Garuda as her Vahana and holds conch and discus. Varahi created from Varaha an incarnation of Vishnu has the theri-anthropomorphic form of a woman with the head of a sow. Like-wise Narasimhi created from the Narsimha form of Vishnu has the body of a woman with the head of a lioness. Indrani created from Indra has elephant as her vahana and holds

thunderbolt. Chamunda or Kali and Sivaduti (the goddess emanated from the Devi) are the other two goddesses mentioned in the Devi Mahatmyam.

In the Vamana Purana, a slightly different account for the emergence of the Sapta Matrikas is given. In an encounter between the Devas and Asuras, the Devas killed the two Asura leaders Chanda and Munda. To retaliate against this challenge another great Asura leader Raktabhija rushed to the battlefield with an immense army. Seeing this huge Asura army, Kausiki, Mahesvari and Kali gave a full cry with roaring sound. Then from the mouth of Mahesvari came out Brahmani seated on a swan and carrying a rosary and Kamandala. From her eyes, Mahesvari with three eyes came out seated on a bull and holding a trident. From the loins came out Kaumari seated on Peacock and holding the Shakti. Vaishnavi came out from her hands seated on Garuda and holding the attributes of Vishnu. From her posterior came out Varahi seated on the Naga and holding a great pestle. From her heart came the fearsome Narasimhi. From her foot came out Chamunda (Vettam Mani 1998, p.69).

### **Saptamatrikas and Skandamatas**

A number of sculptures portraying mother and child have been found at various sites in Rajasthan and northern Gujarat. One such greenish blue schist sculpture from Tanesara-Mahadeva, 50 km from Udaipur, Rajasthan is now in the Los Angeles County Museum of Art, Los Angeles, USA. In identifying this type of post-Gupta period (6th century AD) sculptures, two different schools of thought exist (Susan L. Huntington 1999, p.231). One group of scholars identifies this type of sculpture as a matrika of a group of Saptamatrikas while the other group tends to see it as one of the six-Karthikai women, the Skandamatas. As per puranic descriptions both the Seven matrikas and six Karthikai women, at one point of time served Kartikeya, as his foster-mothers. The Saptamatrikas sent by Indra to kill Kartikeya, on seeing the latter, forgot their mission and began to nurture the child Kartikeya. The six Karthikai women who had also been sent to nourish baby Kartikeya served as foster- mothers. In the absence of proper cognisance and attributes, the number of the mothers depicted as a group may help us to distinguish the seven Saptamatrikas from six Karthikai women or Skandamatas. It is very difficult to identify a single sculpture of the figure of mother and child without any cognisance and attribute.

The relation of the Saptamatrikas with the child is depicted in their sculptural panels found in the Deccan region. The main southern face of the Mahamandapa of Ramesvara Cave (Cave No.2 1) in Ellora has a Saptamatrikas panel which shows them all in seated posture with children on their lap. Vinadhara and Ganesa flank them. In Ravan-ki-khai (Ellora Cave No.14) Saptamatrikas are depicted in ardhaparyankasana posture. Each one of them has a child either held by hand or the child standing or resting or standing on the lap. Nilakantha Shrine (Ellora cave No.22) has a separate shrine for Saptamatrikas. They are shown with children in their hands, except in the case of Brahmani. Siva is

shown as Vinadhara. Next to him the matrikas are in the order of Brahmani Mahesvari, Kaumari, Vaishnavi, Varahi, Indrani and Chamunda. Chamunda is followed by Ganesa and Kâla.

### **Saptamatrika group**

As per South Indian Agamas the seven mothers are: 1. Mahesvari, 2. Vaishnavi, 3. Brahmani, 4. Kaumari, 5. Varahi, 6. Indrani and 7. Chamunda. All these mothers should have two pairs of hands. Two hands should be in abhaya and varada mudras while the other hands should hold weapons of their male counterparts.

Mahesvari has bull as her vahana. The emblem of her banner also is the figure of bull. Vaishnavi has Garuda as her Vahana as well as the emblem of her banner. For Brahmani swan is the vahana as well emblem of her banner. Elephant is the vahana as well as banner emblem for both Varahi and Indrani (Gopinatha Rao.T.A. 1985, p.3 85 & 388). Chamunda has eagle as her vahana and as the emblem of her banner. In the Nolamba region in Karnataka, Varahi is shown with buffalo as her Vahana. The white marble Varahi sculpture (Ht.102.8 cm) from Vadaval Saptamatrikas group, now in the Department of Museology M.S. University of Baroda is a very fine specimen of its kind with child, lady attendant and buffalo. As per the version of Silpasangraha, Varahi was born of Yama, the god of death. (Krishnasastri H.,1916, Reprint 1995, p.194). Lalitopakhyana and Varahi kalpa mention three other forms of Varahi. They are Dandanatha Varahi, Svapna Varahi and Shuddha Varahi. Dandanatha Varahi is described as seated on the golden lotus. She has eight hands and a staff by her side. Svapna Vârahi has four hands and the gleaming tusks of a sow. Shuddha Varahi also has four hands and tusks. In the Takli Dhakesvar Mahadeva cave there is a Saptamatrika panel. In that panel Varahi is shown with boar as her cognizance. Chamunda has jackal as her vahana. As per Vishnudharmottara her seat is the dead body of a human being. The Purva Karanagama describes the owl and eagle as her vahana and banner emblem respectively. (Gopinatha Rao.T.A. 1985, p.386). In Devi Mahatmya Chamunda is not mentioned as a member of the Saptamatrika group. Instead Narasimhi with the face of lioness is stated as a member in the Saptamatrika group. (Thomas B.Coburn, 1988, p.31 5) The fourth cave of Kunnathur caves near Madurai on Madurai-Sivaganga Road has Saptamatrika sculptures with Narasimhi.

According to Mayamata, Saptamatrikas are to be flanked by Virabhadra and Vinayaka on either side. (Krishnasastri H.1995,p.194). The great popularity of Ganesa as the remover of obstacles might have been a cause for including him in the evolving Saptamatrikas Cult. In the Isaana -Sivagurupaddhati, Ganesa is invoked to protect young children from the demon goddesses by removing all obstacles to a successful propitiation of the Saptamatrikas. In the Saptamatrika group panel, Ganesa is placed next to the last goddess at the left (Alice Getty, 1936,p.1 I). This scheme of placing the figure of Ganesa at the extreme left of the Saptamatrika originated in Chalukyan temples



from which the cults of Ganesa and Saptamatrikas came to Tamil Nadu. The best preserved Chalukyan specimen of the Saptamatrikas group is at Lakkandi in the temple of Kasi Visvesvara. There all the figures of the group are with four hands holding their respective attributes. Their mounts are depicted under their seats. The Rat, the mount of Ganesa is shown under his throne. On the extreme right of the Saptamatrikas a form of Siva is depicted. This scheme of the depiction of Saptamatrikas with a form of Siva and Ganesa at the right and left extreme has been followed in the temples in Tamil Nadu. In the Deccan caves, Nataraja form of Siva is depicted as dancing with Saptamatrikas. In the Ravulaphadi cave at Aihole, a standing group of Saptamatrikas are shown with dancing Siva. Here the Matrikas are sculpted without their Vahanas.

## **Saptamatrikas and Skandamatas**

### **Ashtamatrikas**

The Tampur, an Ashta Matrika panel sculpture housed in the Art and Archaeology Museum of Karnataka University, Dharwar is one of the best specimens for its kind. In that panel the eight matrikas are carved in bold relief on a beam of diorite measuring 2m x 42cms x 10cms. The eight mothers sculpted in this panel are Brahmi, Mahesvari, Kaumari, Vaishnavi, Varahi, Indrani, Chamunda and Yogesvari. All these mothers are depicted in seated lalitasana posture. Behind each mother is a torana decoration with heavy ornaments. The mothers are shown with four hands in which they carry the weapons of their male counterparts, Vinadhara Siva and Ganesa flank the matrikas. The Vinadhara Siva figure is carved at the right end of the panel and the Ganesa figure at the left end. Both the figures are shown in the seated lalitasana posture. The figures of Brahmani and Kaumari are shown with three faces. All the ten deities keep their right foot on their respective vahanas carved in relief in the bottom. Except the figure of Ganesa which is damaged below the neck part, all those of other deities are fairly in good state. On stylistic grounds, this sculpture panel may be assigned to the Hoysala period (i.e. 12th century AD). Another Ashtamatrika panel reported by M.S. Nagaraja Rao is quite interesting for the flanking deities carved therein. This sculpture panel is carved in the smaller cave, adjoining the main cave at Elephanta. In that panel all the Ashtamatrika figures are shown in standing pose and flanked by Ganesa, Kartikeya and Veerabhadra (Nagaraja Rao.M.S.1967, p.46). The depiction of Ganesa and Kartikeya along with the Saptamatrikas in this panel is quite interesting. The presence of Kartikeya in this Ashtamatrika group denotes the continuation of the tradition evolved from the epic Mahabharata while the inclusion of Ganesa marks the introduction of a new element.

In the beginning the figures of matrikas are without any distinctive symbols and attributes. They are depicted, either in standing or sitting postures as ordinary female figures. They usually exhibit abhaya mudra by their right hands while the left hands either hold vessels or are placed on their waist. They are flanked by two Ayudha purushas, carrying long spear in the left hands and showing their right hands in abhaya

mudra. At the time of Kushana period new changes have been introduced. The mother aspect of the matrikas was emphasised. The figures of the mother-goddesses were made with babies, either seated in their lap or on their knees or standing nearby. This iconographic feature of the Saptamatrikas continued in Deccan region well up to 7- 8th century AD as shown in the Saptamatrika group of sculptures in Ellora and Aihole. The two Ayudha Purushas continued to remain on either side of the matrikas.

During the Gupta period, the distinct attributes and the vahanas of the different matrikas began to appear. The Ayudha purushas were replaced by the figures of Ganesha and Virabhadra. By the early medieval period, developed forms of the matrikas were found in sculptural representation. In some instances, the number of the matrikas of a matrikas group differ from the usual numbers seven and becomes eight. Like this the male deities flanking the matrikas also differ in certain places.

Of the figures of Kartikeya, Ganesa and certain forms of Siva like Virabhadra, Dakshinamurti and Vinadhara Dakshinamurti, any two are shown as flanking the Sapta Matrika. In the South India, particularly in Tamil Nadu, Ganesa and a form of Siva in seated posture are shown along with the Sapta Matrikas. Most of the puranas give the following seven names of Sapta Matrikas: 1. Brahmani, 2. Mahesvari, 3. Vaishnavi, 4. Kaumari, 5. Indrani, 6. Varahi, 7. Chamunda. But in Devi Mahatmyam instead of Chamundi, Narasimhi is given.

### **Sapta Matrikas - Parivara Divinities of Siva Temple**

Parivara shrines of the Parivara devatas is one of the conspicuous adjuncts of a Hindu temple complex that evolved during the early imperial Chola period in Tamil Nadu. Generally, the Parivara devatas are eight in number though the number is by no means rigid. The word Parivara literally means an attendant. As such the Parivara devatas are attendant divinities waiting up on the main deity of the temple. The concept of Parivara devatas and their earmarked position in the temple circuits was crystallised in the early 9th Century AD (Mahalingam T.V., Dr. 1970, p.60).

Sapta Matrikas are declared as one of the eight conventional parivara divinities of a Siva temple. The other seven are Ganesa, Subramanya, Surya, Chandra, Chandikesvara, Jyestha and Nandi. The Kailasanatha temple at Kanchipuram is the first known temple in Tamil Nadu in which we could find shrines for Parivara deities. The Sapta Matrikas too have their shrine in that temple. However, in the early Chola period, a fixed scheme in the disposition of Parivara divinities evolved. (Mahalingam T.V.Dr.,1970,p.64) The Sundaresvara temple at Tirukkattalai near Pudukkottai town in Pudukkottai district is a fine specimen to study the scheme of Parivaralaya. This temple was built during the third regnal year of Aditya - I (871-907 A.D.). The Parivaralayas are attached to the Prakara wall and they are oriented towards the main shrine. The Sapta Matrikas have their shrine on the South. The disposition of other Parivara divinities is as follows: Ganesa on the

South—West, Subramanya on the West, Jyestha on the northwest, Chandra on the North, Chandikesvara on the north - east and Surya on the Southeast.

### **Sapta Matrikas Shrines in Tamil Nadu**

The worship of Sapta Matrikas and the existence of separate shrines for them were prevalent during the Chola period (Balasubramanyam S.R.1971, p.147). An independent Sapta Matrika temple of early Chola period (9-10th Century AD) even now exists near Chennai. The Selliyyamman temple at Velacheri has been built a thousand years ago as a separate Sapta Matrikas temple (Mahalingam T.V. Dr. 1970). Now the garbhagriha alone stands as the remaining part of that original early Chola temple structure. The sculptures installed in the sanctum sanctorum are Ganesa, Chamunda, Indrani, Varahi, Vaishnavi, Brahmani, Kaumari and Virabhadra.

The Sundaresvarar temple at Nangavaram has four shrines. Of them one is for Sapta Matrikas, which is rectangular in shape. It has a wagon-roof. The Virattanesvarar temple, Kilur also has a sub-shrine for Sapta Matrikas. (Balasubramanyam S.R. 1971).

### **The Saptamatrikas in Jainism**

The Navamunis cave (Cave No.7) in Khandagiri hill, in Puri district, Orissa has seven high relief carvings of Jain Tirthankaras. They are: 1. Adinatha 2. Ajithanatha 3. Sambhavanatha 4. Abinandhana 5. Vasupujya 6. Parsvanatha 7. Neminatha.

Other than these figures, a smaller figure of Chandraprabha and one more Parsvanatha are also carved in the cave. All the seven Tirthankara figures mentioned earlier are depicted in seated Dhyana posture with muk kudai (triple parasol) and chauri bearers. Below the figures of Tirthankaras are seven Devi figures carved in medium relief. They are shown in seated posture. They have been identified by scholars as the Sasanadevis of the Tirthankaras carved (Debala Mitra 1992) and are named as Chakresvari, Rohini, Prajnapti, Vajrasrinkhala, and Amra or Yakshi Ambika. But the depiction of the figure of Ganesa in seated Maharajalila posture along with these seven Devis as the first figure of the group is noteworthy. Ganesa holds in his four hands a bowl of sweet balls, axe, rosary and a radish. The attributes and mounts of the seven Devis disclose the assimilation of Hindu deities, particularly the Sapta Matrikas in the Jain Pantheon. (Debala Mitra 1992).

### **Jain Tirthankaras and their Yakshis**

1. Chakreswari - Rishabhanatha; 2. Rohini - Ajitanatha; 3. Prajnapti - Sambhara; 4. Vajrasrinkhala - Abhinanda; 5. Gandhari - Vasupujya; 6. Padmavati - Parsvanatha; 7. Ambika - Neminatha.

## **Sapta Matrika Group**

As per South Indian Agamas the seven mothers are: 1. Mahesvari 2. Vaishnavi, 3. Brahmani, 4. Kaumari, 5. Varahi, 6. Indrani, 7. Chamundi. All these mothers should have two of their hands held in Varada and abhaya posture while the other hands should hold weapons of their male counterparts.

Mahesvari has bull as her vahana. The emblem of her banner also bears the figure of the bull. Vaishnavi has Garuda as her vahana as well as the emblem of her banner. For Brahmani swan is the vahana and the emblem of her banner. Peacock is the vahana of Kaumari. This is also the emblem of her banner. Elephant is the vahana as well as emblem for both Varahi and Indrani. (Gopinatha Rao.T.A., p.388). Chamunda has eagle as her vahana and—as the emblem of her banner. In the Nolamba area in Karnataka, she has the buffalo as her Vahana. Chamundi has the jackal also as her vahana and sits on a corpse.

The Sapta Matrika set is complete only when the group is inclusive of Ganesa and Siva in one of his various forms such as Virabhadra, Yoga Dakshinamurti, Vinadhara Dakshinamurti and Nataraja. In the Deccan and North India, Siva in his Nataraja form is depicted along with Sapta Matrikas.

## **From Karnataka to Tamil Nadu**

The earliest legend about the origin of the Chalukyas of Badami is found in a Badami inscription of 578 AD. This inscription states that the Chalukyas were Haritiputras of Manavya gotra and were meditating at the feet of the sacred Swami (Kartikkeya) and had been nourished by the seven mothers who are the mothers of the seven worlds. The Hyderabad grant of Pulakesin II (612 AD) also describes the Chalukyas as had been nourished by the seven mothers. The epigraphical statements attest the popularity of Sapta Matrika cult in Deccan during the early Medieval Period, 6-7th Century A.D. The Chalukya iconographic concepts entered first the Pandya country and not the almost contiguous Tondaimandalam of the Pallavas. The cults of Ganesa reached the Southern parts of the Tamil country from the Chalukya area through Ganga sphere of Kongu region (Salem and Coimbatore) (Mahalinga T.V. Dr. 1978.p. 10).

## **Bibliography**

1. Alice Getty, (1936) Ganesa : A monograph on the Elephant Faced God, Oxford, 1936.
2. Balasubramanyam S.R.(1971) Early Chola Temples, Orient Longman Ltd, Bornbay-3,1971.
3. David Kinsley, (1989) Hindu Goddesses, Reprint 1998, Motilal Banarsidas, Delhi-110 007.

4. Debala Mitra (1992) Udayagiri and Kandhagiri, Published by the Director General, A.S.I., New Delhi-1952.
5. Gopinatha Rao.T.A. (1914) Elements of Hindu Iconography, Reprint 1985, Vol.1, Part 11, Motilal Banarsidas, Delhi-110 007.
6. Krishnasastri H., (1916) South Indian Images of Gods and Goddesses, Reprint 1995, Asian Educational Service, New Delhi - 110 051.
7. Mahalingam T.V. Dr. (1970) Studies in the South Indian Temple Complex, Kannada Research Institute, Karnataka University, Dharwar-3.
8. Nagaraja Rao.M.S., (1967).
9. Susan L. Huntington (1999) The Art of ancient India, Weatherhill, Inc of Newyork.
10. Thomas B.Coburn, (1988) Devi Mahatmym, The Crystallization of the Goddess Tradition, Reprint 1988, Motilal Banarsidas, Delhi - 110 008.
11. Vettam Mani (1998) Puranic Encyclopaedia, Motilal Banarsidas, Delhi.

**Editors Note :**

Brahmi, Vaishnavi, Maheswari, Indrani, Kaumari, Varahi, Chamunda (Narasimhi) and Yogeswari are some of the variants. They are portrayed as Sapta or Ashtamatrikas in Karnataka region and in the Elephanta Caves. The eighth Mata in the Elephanta Caves is identified as Yogeswari by some and the Shakti of Kubera by Sri K.V. Soundara Rajan based on the attributes of Kubera carried by her.



## **CHAPTER - XXIV**

### **CONCLUSION**

This second revised edition of the monograph first published in 2000 AD is due to the first having been fully sold out even around 2004 AD. It is a successor to the path breaking original one. It contains some of the distilled essence of the past 16 years of work in the fields of archaeology and museology of the writer. The writer conserved more than 250 monuments officially mainly temples during the period as a conservation archaeologist. He also reorganised and refurbished the display galleries almost entirely of the Government Museum, Chennai, several district and site museums and started several district museums in Virudhunagar, Ramanthapuram, Karur etc. It thus contains the multi-disciplinary wide canvas experiences of the writer who has worked in the fields of Archaeology, Museums, Art and Culture and the temples of the state from 1999 AD with breaks till 2015 AD (retirement).

This monograph is now revised in the light of further developments. It has attempted to stress the need for a holistic approach using a multi-disciplinary approach to dating in history especially ancient history. This fits India more than other countries because it has the most ancient civilisation in the world. Its hoary past, the greatness of its civilization have been attempted to be belittled; sadly, this is being attempted even now by some. However, truth eventually triumphs. The various theories mooted in the monograph in the 2000 AD edition have been borne out by subsequent events like the Bhirrana exploration and others uncovering even the early phase of Harappan civilisation in the Indo - Gangetic Yamuna plain, the Seven Pagoda theory of Mamallapuram (Mahabalipuram) being proved true due to a cataclysmic Tsunami in 2004 AD and so on.

If the Government of India is persuaded by the Tamil Nadu Government to have an oceanic expedition in the area, west and north of modern Ceylon (Sri Lanka) up to Africa and till the South coast of Tamil Nadu near Rameshwaram and Kanyakumari as has been done near Dwaraka where a submerged ancient port has validated the Mahabharata, Gulf of Cambay and the Lemurian cum ancient Tamil civilisation may be uncovered. With modern facilities such as satellite survey etc., the submerged land may be located, its features examined, ruins of our ancient civilisation rediscovered etc.

The holistic approach uses Archaeology (including Marine - Underwater Archaeology), Comparative Philology and Linguistic Palaeontology (Linguistics), Anthropology - Physical Anthropology & Cultural Anthropology, Genetics, Ancient Historical Tradition (like Epics), Astrology, Astronomy and Historical Records (including Epigraphy) Scientific Methods of Independent Dating, Remote Sensing etc simultaneously. This has made us to see Ancient History especially Indian History in a totally new light. Several new techniques like Geo-Magnetic dating etc have emerged since the first edition was written.

We have the ‘big’ picture as a result of our detailed analysis of each discipline with cross connections and we can draw several conclusions.

The results of our holistic approach shows the unreliability of Linguistics for dating. It shows that Lemuria was the cradle of civilisation, if at all there was one, though Africa now claims it since the former is under water. Tamil and Sanskrit are not mutually exclusive or enemies as is made out by the English historians and their followers but inter-related. Sanskrit is possibly a refinement of Proto-Tamil.

There appears to have been a huge landmass Lemuria that has since submerged into the sea as a result of sea level changes. This is a concept of the ancient Tamils and its role as a cradle of civilisation is established by a combination of Anthropology, Genetics and Tamil literature.

Migration is not only by land but also by sea. It occurs not at one point of time or in one direction but at several time periods and directions. Migration is not only through land upwards through Egypt and North Africa but by land through the then existing land mass of Lemuria and by sea to Asia, America, Oceania (Australia) and Europe. This is ignored in the Received Wisdom, which is slowly beginning to change under the onslaught of modern research and disciplines such as Anthropology, Astronomy cum Astrology, newer scientific methods and new finds in Archaeology etc. Migration is not only from West Asia to India but in the reverse direction from the Gangetic region to Rajasthan, Sind etc and beyond.

The entire human race Homo Sapiens has evolved from Africa. Human culture got refined in Lemuria and at other centres of the ancient world like Indus Valley, South India, Egypt, Latin America, Middle East etc. There was exchange of ideas with other cultures through trade, migration or teachers. The age of these ancient civilisations is circa 10000 BC and even earlier and not circa 4000 BC as was commonly believed.

The ancient cultures have so many common features like astronomical basis of their Gods etc., that they can be called different parts of one great civilisation. This is shown in the pre-historic and historic periods by the cultural links with Incas, Mayas and the Sapta Rishi cult. The chapters with papers on the ‘the Buddhist Link of Tamil Nadu with the Himalayas’ and the chapter on ‘South Indian Cultural Links With Sri Lanka’ reinforce this. India was a leader of soft power of ideals and ideas on spiritualism and culture.

Triangulation of archaeology with Historical records etc has shown the hollowness of widely held racist theories like the Aryan invasion theory, Turanians being separate and inferior etc. The cause of the decline of Indus type civilisation is not due to one cause but a multiplicity of causes and its origin is circa 8000 to 10,000 BC and the dates like 1500 BC for origin are not true. There is a counter theory of a push to the West from the East – Indo - Gangetic plain to West and Central Asia for migration. It is not that India was a

sparsely populated land waiting to be settled in 1500 BC the period of the so called Aryan invasion. Migration has occurred in the Peninsular portion from Lemuria and from the north. Proto- Tamil (Dasyam) was a likely source of Sanskrit. The dates of the Rig Veda have been pushed back at least to circa 10,000 BC. Events like the birth of Lord Krishna, Kaliyuga etc., have been validated. The horse is found to be an animal used in Ancient India and not a recent import circa 1000 BC as was thought earlier.

A maritime civilisation that spread throughout the world is established. Even the date of the Sphinx and Stonehenge is called into question. The Sapta Rishis were the teachers of the whole world. This civilisation had spread even into South America. This is during the age of the Rig Veda circa 10000 BC. Indian culture is reflected in Mayan, Incan and other Latin American cultures prior to the Spanish conquest.

Astronomy and Astrology together with Marine Archaeology has validated that Rama and Krishna were historical personalities. The Mahabharata and Ramayana are not a figment of imagination but recorded history.

India knew about Precession and Astronomy so much that even today with the latest technology and computer simulation our Precession values hold good. Even in recorded history the date of birth of Adi - Sankara is pushed back to circa 6th century BC from 8th century AD. This is based on Astrological cum Astronomical analysis and contemporary or earlier data. Many symbolisms in our epics and Vedas are related to astronomical phenomena like the Mooladhara Chakra and Rudra (Siva). These help in precise dating. The Black Hole Theory of matter and anti-matter was known to our seers. They are described as Astronomical allegories in our Puranas.

The date of commencement of Kaliyuga is found to be accurate as astronomically calculated and verified even with the sophisticated astronomical instruments of today. A similar precision is found in the calculation of the duration of the year by Aryabhatta. Our concept of time is almost accurate as per modern physics.

Historical dating using Sculpture, Inscriptions, Coins etc should include our Epics like Mahabharata and literary epics like Silappadhikaram which contain a lot of historical data. Analysis shows that the picture they portray is reflected in Historical Records as we have seen earlier. The deciphering of Indus script thought not undisputed makes it clear that it is the forerunner of all Indian script – Brahmi. This script and culture was spread throughout India.

There is clear Triangulation among the different disciplines which probe into History. If aggregated by integration, they give the same ‘big’ picture. Therefore, a holistic approach to Dating is the only reliable and prejudice and hunch proof method of Dating in Ancient History in the absence of settled historical records.

It must be admitted that a wide diffusion of a common knowledge must have existed from Alexandria to Ujjain, from Greece to Mohen-jo-Daro. What is important is the knowledge, that culture gave us, and not who actually gave it.

To that culture belonged the discovery of the Uniformity of Nature, expressed in the sonorous cadences of the Brihat Aranyaka Upanishad, '*Esha Atmasama Plusina Samo Masakena, Samo Nagenā, Samo Ebhi (s) Tribhir Lokaih, Samo Sarvena*' – The soul is the same in the ant, the mosquito, the elephant, the three worlds and through out the Universe.

This itself shows a holistic approach. I am reminded of the Elephant and Seven Blind Men of Hindosthan of Rudyard Kipling. One felt the trunk and said it was like a snake, another the tail and said it was like a rope, the third the ear and said it was like a fan, a fourth felt the stomach and said it was like a wall and so on. But none said it was an elephant. This writer feels that a holistic approach will help to recognise the animal for what it really is viz. An elephant.

The holistic approach has become mainstream in the 16 years between 1999, when it was first propounded and 2015 AD. This approach has been vindicated by the events between 2000 AD and today - 2015 AD by the developments in this field. The prognostications of 2000 AD have become accepted reality. It is the accepted norm for dating whether in Pre-History or history. It will reinforce the already established antiquity and greatness of Indian civilisation, which in turn will be a contribution to the world with its spirituality and lofty thoughts and ideals.

***'Satyameva Jayate' – Truth always and alone triumphs***

## **CHAPTER - XXV**

### **BIBLIOGRAPHY**

1. Agrawal D.P. et.al. (1995) Dating the Human Past, ISPQS Monograph Series No.1.by D.P Agrawal and M.G.Yadav, Pune: Indian Society for Prehistoric and Quarternary Studies, Deccan College, 411 006.
2. Allchin B. & R.(1968) The Birth of Indian Civilisation, Penguin Books, New Delhi.
3. Anbarasu K. et.al. (1998) 'Quaternary Sea Level Changes along the East Coast of India' in Indian Journal of Geomorphology, Vol.3, No.1, (Jan-June, 1998).
4. Ayyangar, Sesha T.R.(1925) Ancient Dravidians, MJP Publishers reprint (June 14, 2013).
5. Bhavanandam Pillai, S., Rao Bahadur (1916) Iraiyanar Agaporul, Commentary by Nakkeerar, Chennai.
6. Brihat Samhita (with English Translation) Varaha Mihira Translators: Panditbhushan V. Subrahmanya Shastri, B.A. and Vidwan M. Ramkrishna Bhat Printed by: V.B. Soobbiah and Sons, M.B.D. Electronic Printing Works, Bangalore Year of Printing: 1946.
7. Carr, Capt, M.W. (1869) The Seven Pagodas on the Coromandel Coast – Descriptive and Historical Papers - Edited by Capt. Carr – Frist Edition 1869; AES \_ Repritrn – 1984; New Delhi : Asian Educational Services.
8. Chambers R (1993) Participatory Rural Appraisal, Sussex: Institute of Development Studies.
9. Chandra Hari K. (2000) 'Pre-historic Indian Astronomy' in The Astrological Magazine, Vol.89, No.1, January 2000, Bangalore: Raman Publications, 5600 20.
10. Chandra Hari K. (2000) 'Pre-historic Indian Astronomy' in The Astrological Magazine, Vol.89, No.4, April 2000, Bangalore: Raman Publications, 5600 20.
11. Chatterjee Com. S.K. (Retd.) (1997) 'Bharatha Battle, Kaliyuga, And Kali Era' in The Astrological Magazine, Vol. 86, No.7 July 1997, Bangalore: Raman Publications, 5600 20.
12. Chatterjee Com. S.K. (Retd.)(1995) 'Epoch of Kali Era II' in The Astrological Magazine, Vol.84, No.6, June 1995, Bangalore: Raman Publications, 5600 20.
13. Dr. Bangalore Sureshwara (2000) 'Reflections on Ramayana – XIX' in The Astrological Magazine, Vol.89, January 2000, Bangalore: Raman Publications, 5600 20.



14. Edwin, Bryant (2003) Carbon 14 Dating, Published by Oxford University Press. 2003.
15. Encyclopaedia Britannica (1999) CD Edition, London, U.K.
16. Erdosy George (1995) The Indo- Aryans of Ancient South Asia – Languages, Material Culture and Ethnicity, Ed. George Erdosy Berlin & New York: Walter de Gruyter.
17. Eric Von Daniken (1969) Chariots of the Gods? (Souvenir Press Ltd, 1969)
18. Foote Bruce (1901) Catalogue of the Pre-historic Antiquities, Madras: Government Museum.
19. Gurney O.R.(1954) The Hittites, Pelicans, from Pandya A.V.(1957), Hindi Section, p.14.
20. Hancock James (2000) 'The Lost Civilisation' A Discovery Profile Series programme shown in the Discovery Channel on 23-1-2000 at 1600 Hours.
21. Havell E.B. 'Aryan Rule in India', p.4, London: Harrap, from Pandya A.V., 1957, Hindi Section, p.20
22. [http://archserve.id.ucsb.edu/courses/anth/fagan/anth3/Courseware/Chronology/11\\_Paleomag\\_Archaeomag.html](http://archserve.id.ucsb.edu/courses/anth/fagan/anth3/Courseware/Chronology/11_Paleomag_Archaeomag.html)- Murthy, P.V.N. (2008) - Veadhsri, Vedic Science Magazine, Volume 1.Issue 1. January 2008.
23. K.K.Pathak (1988) 'Astrology in the Vedas – III' in The Astrological Magazine, May 1998, Vol.87, No.5, Bangalore: Raman Publications, 5600 20.
24. Kannan Dr. R.(2000) A holistic approach to dating in ancient history especially Indian history', May, 2000, Published by: Commissioner of Museums, Government Museum, Chennai, Chennai, Egmore, Chennai-6000 08.
25. Kannan Dr. R.(2001) 'An Artistic Reminder' in The Hindu on line edition on Thursday, September 13, 2001 dealing with the idol of Balakrishna in the Government Museum, Chennai.
26. Kannan Dr. R.(2001) 'Some cultural parallels found in Mayan and Hindu cultures', Article in the Museum's Journal (April 2001 - September 2001), Journal of the Government Museum, Chennai; Government Museum, Chennai, Chennai: Commissioner of Museums, Egmore, Chennai-6000 08.
27. Kannan Dr. R. (2001) 'The idol of Balakrishna in the Government Museum, Chennai – a symbol of the halcyon days of the Vijayanagar Empire', Article in the Museum's Journal (April 2001 - September 2001), Journal of the Government Museum, Chennai; Government Museum, Chennai, Chennai: Commissioner of Museums, Egmore, Chennai-6000 08.

28. Kannan, Dr, R. et al (2001) Iconography of the Jain Images in the Government Museum, Chennai (Madras) by Dr. R. Kannan and Thiru K. Lakshminarayanan, Published by: The Commissioner of Museums, Government Museum, Egmore, Chennai-6000 08.
29. Kannan, Dr. R. (2003), Monograph on Rock Art and Cave Art - Published by: The Commissioner of Agriculture and Museums, Government Museum, Egmore, Chennai-600008.
30. Kannan, Dr. R.(2003), Manual on the Numismatic Gallery in the Government Museum, Chennai, Published by: The Commissioner of Museums, Government Museum, Egmore, Chennai-6000 08.
31. Kannan, Dr, R, (2007) Manual on the Conservation and Restoration of monuments – the Proceedings of an Administrator turned Archaeologist cum Museologist, Published by: The Commissioner of Museums, Government Museum, Egmore, Chennai-6000 08.
32. Kannan, Dr. R. (2007), 'Conservation of the Sculptures of the Amaravati gallery' in Manual on conservation and Restoration of Monuments – Published by: Special Commissioner and Commissioner of Museums, Government Museum, Egmore, Chennai- 600008.
33. Kannan, Dr, R. (2009) Unravelling the Mysterious Diagram in the Form of Chakras (sacred Circles) in Mehrangarh Fort, Jodhpur, Maharaja Man Singh Pustak Prakash Research Centre, 2009, Jodhpur, India.
34. Kannan,Dr. R. (2015) Tirupputaimarudur Murals and Wood Carvings, Published by: The Additional Chief Secretary and Commissioner of Museums, Department of Museums, Government Museum, Chennai 600 008.
35. Kannan,Dr. R. (2015) Compilation on Amaravati Sculptures and the Conservation and Reorganisation of the Amaravati Gallery, Compiler : Dr. R. Balasubramanian, Curator; Editor – Dr. R. Kannan; Published by: The Additional Chief Secretary and Commissioner of Museums, Department of Museums, Government Museum, Chennai 600 008.
36. Koontz & O'Donnel (1972) Principles of Management: An Analysis of Managerial Functions, 5th Edition (International Students Edition), Tokyo: Mcgraw-Hill Kogakusha Ltd., Japan.
37. Lakshminarayanan, K. (2002-3) 'Saptamatrikas', Museum's Journal, Journal of the Government Museum, Chennai , October, 2002-September, 2003, Published by Dr. R. Kannan, IAS, The Commissioner of Museums, Government Museum, Egmore, Chennai-6000 08.
38. Levacy William R. (1999) 'Paleo Vastu' in The Astrological Magazine, Jan.1999, Vol.88, No. 1, Bangalore: Raman Publications, 5600 20.

39. Levacy William R. (2000) 'Truth – convergence of Science and the Vedas' in The Astrological Magazine, Vol.89, January 2000, Bangalore: Raman Publications, 560020.
40. Loveson V.J. & Rajamanickam V.G. (1988) 'Evidences for the Phenomena of emergence along Southern Tamil Nadu Coast through Remote Sensing Methods' Tamil Civilisation, Vol. 5(4), pp.80-88.
41. Loveson V.J. & Rajamanickam V.G. (2000) 'Evidence of Quaternary sea level changes and shoreline displacement on the South-eastern Coromandel Coast of India', Proceedings of the International Quaternary Seminar on INQUA Shoreline Indian Ocean Sub-Commission, pp.85-93).
42. Loveson V.J. et.al. (1990) 'Remote Sensing Application in the Study of Sea Level variation along the Tamil Nadu Coast', Loveson V.J. et. al. & Victor Rajamanickam G., and K. Anbarasu (Authors), India: Proceedings of Sea Level Variation.
43. Loveson V.J., & Rajamanickam V.G. (1989) 'Progradation as evidenced around a submerged ancient Port Periapattinam, Tamil Nadu, India', Paper presented in the First National Conference of the Indian Institute of Geomorphologists, Journal of Ecology, Landscape and Existence.
44. Mackenzie D. P. et.al. (1998) 'The Evolution Of The Indian Ocean' in Ancient India Ed. Dr. N. Mahalingam, Revised Edition, Madras: International Society for the Investigation of Ancient Civilisation, 101, Anna Salai, Guindy, Chennai-6000 32.
45. Mahadevan I. (1997) The Indus script, Texts, Concordances and Tables, New Delhi: Memoirs of the Archaeological Survey of India.
46. Mahalingam Dr. N. (1998) 'The Indus script' in Ancient India, Ed. Dr. N. Mahalingam, Revised Edition, Madras: International Society for the Investigation of Ancient Civilisation, 101, Anna Salai, Guindy, Chennai-6000 32.
47. Mathivanan R. {1995(1)} Indus Script Dravidian, Madras: Tamil Channor Peravai, 26, S.P. Road, Adyar, Madras-6000 20.
48. Mathivanan R. {1995(2)} Indus script among Dravidian speakers, Madras: International Society for the Investigation of Ancient Civilisation, 101, Anna Salai, Guindy, Chennai-6000 32.
49. Meenakshi Dr. (1938) Administration and Social life under the Pallavas, University of Madras.
50. Mohana Rao. K et.al. (1989) Holocene marine transgression as interpreted from bathymetry and said grain size parameters off Gopalpur, Mohana Rao. K et.al. Rajamanickam. G.V. and Rao, T.C.S., Proceedings of the Indian Academy of Sciences (Earth Planet Sciences), Vol.98, July 1989, pp.173-181.

51. Monohan. M. (1976) 'Cholas in America' – pp.11-20 from Ramachandran V.G., 1998, in Ancient India Ed. Dr. N.Mahalingam, Revised Edition, Madras: International Society for the Investigation of Ancient Civilisation, 101, Anna Salai, Guindy, Chennai-6000 32.
52. Murthy B.M.N. (1999) 'Sanskrit and National Integration', in The Astrological Magazine, Dec.1999 Vol.88, No.12, Bangalore: Raman Publications, 5600 20.
53. Nair R.R. & Hashimi N.H. (1988) 'Absence of terraces on a submerged Carbonate Bank and its implication to Holocene Sea Level Transgression on the Western Continental Margin of India' in Marine Archaeology of Indian Ocean Countries, Proceedings of the First Indian Conference, Oct., 1987, (Ed.) Rao S.R., Goa-403 004, National Institute of Oceanography.
54. Neelakanta Sastri K.A. (1984) History of South India; Madras: Oxford University Press.
55. Negi J.G. & Tiwari R.K. (1988) 'Climate and sea level variation cycles during last 8000 years and their relationship with Global human history', Keynote address in Marine Archaeology of Indian Ocean Countries, Proceedings of the First Indian Conference, Oct., 1987, (Ed.) Rao S.R., Goa-403 004, National Institute of Oceanography.
56. Nigam R. (1988) 'Was the Large Rectangular Structure at Lothal (Harappan Settlement) a 'Dockyard' or an 'Irrigation Tank'? in Marine Archaeology of Indian Ocean Countries, Proceedings of the First Indian Conference, Oct.,1987, (Ed.) Rao S.R., Goa-403 004, National Institute of Oceanography.
57. Padmanabhan Dr. S. (1999) 'Kumariyin Pudhainda Varalaru', a paper in the Seminar conducted by the State Department of Archaeology, Government of Tamil Nadu from 20-10-1999 to 22-10-1999 at Chennai.
58. Pandya A.V.(1957) 'Aryon Ka Bharath Aagaman', Hindi Section, Vallabh Vidyanagar Research Bulletin, Bi-Annual, Vol.1, Issue-1, 1957 Vallabh Vidyanagar (Old Bombay State): Charutar Vidyamandal.
59. Pandya A.V.(1957) 'Some Ancient Cities of Iraq in Early Indian Literature', The International Languages Section, Vallabh Vidyanagar Research Bulletin, Bi-Annual, Vol.1, Issue-1, 1957 Vallabh Vidyanagar (Old Bombay State): Charutar Vidyamandal.
60. Parpola Asko(1973) South Indian Megaliths, Madras: Tamil Nadu State Department of Archaeology.
61. Pathak M.C., Kotnala K.L. et.al. (1988) 'Disastrous Effects of Transgressing Sea over Coastal Area- A Case Study of Dwaraka and Beyt Dwarka' in Marine

Archaeology of Indian Ocean Countries, Proceedings of the First Indian Conference, Oct.,1987, (Ed.) Rao S.R., Goa-403 004, National Institute of Oceanography.

62. Pati Joshi Jagat (1988) 'Archaeological Perspectives of Marine Activities in Ancient India', Keynote address in Marine Archaeology of Indian Ocean Countries, Proceedings of the First Indian Conference, Oct.,1987, (Ed.) Rao S.R., Goa-403 004, National Institute of Oceanography.
63. Puratattva No.34 2003-2004, K.N.Dikshit and K.S.Ramachandran, Editors, Indian Archaeological Society, New Delhi
64. Raghavan K.S.(1998) The Sapta Rishi Era, Chapter XV in Ancient India Ed. Dr. N.Mahalingam, Revised Edition, Madras: International Society for the Investigation of Ancient Civilisation, 101, Anna Salai, Guindy, Chennai-6000 32.
65. Rajagopalan R. (1995) The Secrets of Indus valley, New Delhi: Children's Book Trust.
66. Rajamanickam V.G. (1989) 'Marine Archaeological Research in Tamil Nadu', Paper presented in the Workshop on Potential for Marine archaeological Research in Andhra Pradesh, Andhra University, Waltair on 23-10-1989.
67. Rajamanickam Victor, G. and Loveson V.J. (1989) 'Results of Radiocarbon dating from Some Beach Terraces around Rameshwaram Island, Tamil Nadu' in National Seminar on Sea Level Variation and its impact on the coastal environment, (Ed.)Rajamanickam Victor G, Thanjavur: Tamil University Press.
68. Rajamanickam Victor, G.(1991) 'Sea Level Variations' in Coastal zone Management in Tamil Nadu State, India (Eds.) R.Natarjan et.al., pp.83-92, Madras: Ocean Data Centre, Anna University.
69. Rajamanickam, Victor G. et.al. ( 1989) 'Inference of Coastal submergence from the Study of Beach Rock off Visakhapatnam' in Proceedings of the National Seminar on Sea Level Variation, (Authors) Rajamanickam, Victor G. et.al. G.K. Mohana Rao and T.C.S. Rao, (Ed.)Rajamanickam Victor G, Thanjavur: Tamil University Press.
70. Rajamanickam, Victor G., 1989, Paper presented at the Workshop on Marine Archaeological research in Andhra Pradesh, Andhra University, Waltair, 23-10-1989)
71. Rajaram and Frawley (1999) 'Vedic Aryans and the Origins of Civilisation' from 'Distorting Indian History and Achievements – I' in The Astrological Magazine, Vol.88 No.1, January 1999, Bangalore: Raman Publications, 5600 20.



72. Rajaram Dr. N.S.(1999) 'Distorting Indian History and Achievements – I' in The Astrological Magazine, Vol.88 No.1, January 1999, Bangalore: Raman Publications, 5600 20.
73. Rajaram N.S (Dr.) {2000(1)} 'India Vs Indology' in The Astrological Magazine, Vol.89, No.1, January, 2000, Bangalore: Raman Publications, 5600 20.
74. Rajaram N.S (Dr.) {2000(2)} 'Invasion Theory Fails' in Letters to the Editor in The Hindu, March 2000, Chennai: G. Kasturi & Sons, Anna Salai, Chennai-6000 02.
75. Rajaram N.S. Dr. (1999) From Saraswati River to the Indus Script, Published by Mitra Madhyama, 410, Upstairs, 17th Cross, 6th Main, BEML Layout, I Stage, Basaweshwaranagara, Bangalore 560 079. Pp.170.
76. Ramachandra Dikshitar V.R. (1947) 'Origin and Spread of The Tamils, Adyar', from Original articles by Prof. Sundar Rama Aiyar published in the 'Hindu Message', Trichinopoly, 1924 from Pandya A.V., 1957 in 'Aryon Ka Bharath Aagaman', Hindi Section, Vallabh Vidyanagar Research Bulletin, Bi-Annual, Vol.1, Issue-1, 1957 Vallabh Vidyanagar (Old Bombay State): Charutar Vidyamandal.
77. Ramachandran V.G.(1998) 'Ancient Heritage of Tamils', Ancient India Ed. Dr. N.Mahalingam, Revised Edition, Madras: International Society for the Investigation of Ancient Civilisation, 101, Anna Salai, Guindy, Chennai-6000 32.
78. Raman Dr. B. V.(1981) Notable Horoscopes, 5th Edition, Bangalore: IBH Prakashana, Gandhinagar, Bangalore – 56000 09.
79. Ranganathan Arvind (2000) 'The beginning is the end' in The Hindu, Signpost, April 1, 2000, p. V., Chennai: G. Kasturi & Sons, Anna Salai, Chennai-6000 02.
80. Rao D.P.(2000) from Article by M. Malleswara Rao, 'Satellites scanning sites to detect faulty zones' in The Hindu, Newspaper, 2nd March 2000, Chennai: Kasturi & Sons.
81. Rao S.R.(1988) 'Contribution of Indus Cultures to the progress of man' in Civil Services Chronicle, Lecture Series on Indian History & Culture, at National Museum New Delhi on 29-12-1992.
82. Rao S.R.(1988) Marine Archaeology of Indian Ocean Countries – Proceedings of the First Indian Ocean Conference on Marine Archaeology of Indian Ocean Countries – October, 1987 (Ed.) Rao S.R., Goa-403 004, National Institute of Oceanography, Dona Paula, Goa-403 004.
83. Rao T.C.S.(1988) 'Geo Physical techniques to Locate Pre-historic Sites and Artefacts on the Continental Shelf' in Marine Archaeology of Indian Ocean Countries, Proceedings of the First Indian Conference, Oct., 1987, (Ed.) Rao S.R., Goa-403 004, National Institute of Oceanography.

84. Rao, L.S. (2004)(Unearthing Harappan Settlement at Bhirrana (2003-04), Article from Puratattva, No.34, (2003-2004), Indian Archaeological Society, New Delhi.
85. Rao, L.S. (2006) (The Harappan Spoked Wheels Rattled Down the Streets of Bhirrana, Dist. Fatehabad, Haryana. Article from Puratattva, No.36, (2005-2006), Indian Archaeological Society, New Delhi.
86. Rao, L.S. (2009) "Excavation of the Harappan Mound at Bhirana - Indus Civilization and Tamil Language, Proceedings of the International Symposium 15th, 16th Feb 2007, Chennai, Department of Archaeology, 2009.
87. Sakhyananda (1998) 'National Method Of Historical Research' in Ancient India Ed. Dr. N. Mahalingam, Revised Edition, Madras: International Society for the Investigation of Ancient Civilisation, 101, Anna Salai, Guindy, Chennai-6000 32.
88. Sampath Iyengar G.S.(1998) 'Forerunners of Civilisation' in Ancient India Ed. Dr. N. Mahalingam, Revised Edition, Madras: International Society for the Investigation of Ancient Civilisation, 101, Anna Salai, Guindy, Chennai-6000 32.
89. Sivaramamurti Dr. C.(1979) Sources of History illumined by Literature, New Delhi: Kanak Publications.
90. Srinivasan K.R. (1988) 'The Harappan and the Vedic Cultures – Musings on some moot problems', Bulletin of the Madras Government Museum, New Series – General Section, Vol. XV, No.1, Madras: Director of Museums, Government Museum, Madras-6000 08.
91. Stapathy Ganapati Dr. V.(2001) Building Architecture or Stapathya Veda, Chennai: Dakshinaa Publishing House, Plot No.S-46, First Avenue, Vettuvankeni, Injambkkam village, Chennai-6000 41.
92. Sundar Raj M. (1997) Rig Vedic Studies, Madras: International Society for the Investigation of Ancient Civilisation, 101, Anna Salai, Guindy, Chennai-6000 32.
93. Sundar Raj M.(1998) 'Linguistics' in Ancient India Ed. Dr. N. Mahalingam, Revised Edition, Madras: International Society for the Investigation of Ancient Civilisation, 101, Anna Salai, Guindy, Chennai-6000 32.
94. Surendran (1998) 'Hindu Astrology is Sidereal' in The Astrological Magazine Vol.87, No.1 January 1998, Bangalore: Raman Publications, 5600 20.
95. Swamikannu Pillai L.D.(1911) Indian Chronology, Reprint 1982, New Delhi: Asian Educational Services, 1100 16.
96. Talageri Shrikant G.(1998) 'Vedic history and the Aryans' in The Astrological Magazine, Vol.87, No.2 Feb. 1998, Bangalore: Raman Publications, 5600 20.
97. The Quest for the Origins of Vedic Culture: The Indo-Aryan Migration Debate

98. Thurston, Edgar (1913), *The Madras Presidency with Mysore, Coorg and the Associated States*, Original Publisher – Cambridge University Press, Cambridge-Republished (2005) – Asian Educational Services, New Delhi.
99. Undergraduate Research Opportunities Programme in Science (UROPS) - Indian Calendars: 'Comparing the Surya Siddhanta and the Astronomical Ephemeris', Chia Daphne Associate Professor Helmer Aslaksen Department of Mathematics, National University of Singapore, Semester II, 2000/2001.
100. UNI(2000) 'Pre-historic cave paintings found in Kaimur Hills' by United News of India, a news agency in *The Hindu*, March 26,2000, Chennai: G. Kasturi & Sons, Anna Salai, Chennai-6000 02.
101. Vaidya R.K.(1997) 'Some Controversial Dates Established', in *The Astrological Magazine*, Vol.86, No.3, March 1997, Bangalore: Raman Publications, 5600 20.
102. Venkatasamy, Mylai Seeni (1970) *Samanamum Tamizhum*, Chennai: Tirunelveli Saiva Siddhanta Nool Pathippu Kazhagam, Chennai-6000 18.
103. Vijaya Muni O.B. (1998) 'The Vexed Question of Ayanamsa' – Paper VI in *The Astrological Magazine*, Vol.87, No.12, Dec. 1998 p. 1037, Bangalore: Raman Publications, 5600 20.
104. Vijayavenugopal (2000) 'From Hagiology to History: References from Tirunallaru inscriptions' in *Studies in Indian Epigraphy*, Vol. XXVI, 2000, Mysore: The Epigraphical Society of India.
105. William, Ernst (2012) [https:// ashevillevedicastrology. wordpress. com/ 2012/08/06/ mystery-of-the-zodiac-by-ernst-wilhelm/](https://ashevillevedicastrology.wordpress.com/2012/08/06/mystery-of-the-zodiac-by-ernst-wilhelm/)
106. Witzel Frank (1995) *The Indo- Aryans of Ancient South Asia – Languages, Material Culture and Ethnicity*, Ed. George Erdosy, Berlin & New York:
107. Walter de Gruyter from Talageri Shrikant G.(1998) 'Vedic history and the Aryans' in *The Astrological Magazine*, Vol.87, No.2, Feb. 1998, Bangalore: Raman Publications, 5600 20.
108. Woolley L.(1998) *History Of Mankind* Ed. by Leonard Woolley, Vol. I, Part II, p.389 from Talageri Shrikant G.(1998) 'Vedic history and the Aryans' in *The Astrological Magazine*, Vol.87, No.2, Feb. 1998, Bangalore: Raman Publications, 5600 20.
109. [www.thehindu.com/.../excavation...search-of- saraswati/ article7050382.ec](http://www.thehindu.com/.../excavation...search-of- saraswati/ article7050382.ec) ...Mar 31, 2015