



Fig. 36 : The circle around the duck is assumed correctly as the *cartouche* which has been used for the glorification of the royal name of the King Zaśarātha (MIC 93). The circular drawing of the *cartouche* and the pre-enveloped reptilian shape of the letter Z fix up the date of the King round about 3000 B.C. The enveloped form of Z has the sound-value of Y (MIC 96).

INDUS SCRIPT

(Memorandum No. 2)

417.70934

R 217.1-R 217.2

BY

SUDHANSU KUMAR RAY

Junior Field Officer, Crafts Museum,
All India Handicrafts Board, New Delhi

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(Memorandum No. 2)




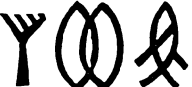

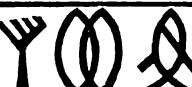

“LAKKI” THE GODDESS OF WEALTH	
	← MIC.409
IIE-KK-L	
	 ← MIC.458
IIE-KK-L	T YW
	 ← MIC 467
IIE-KK-L-L	KU
	 ← MIC 431
IIE-KK-L-L	-RĀ-Ā-NĪ-BA'

Fig. 35 : The seal MIC 409 contains the name of the goddess Lakshmi which it spells as L-KKie. The index-vowel long ī-kāra, used at the end of the word as final sign, is in fact a diphthong of I and E. From MIC 458, we have the name Yw - T - L - KKie, Ywata - Lakkie, the goddess Lakkie who bestows longevity); from MIC 467, Ku-LL-KKie, Kula-Lakkie, the goddess Lakkie of the family); from MIC 431, BAI-NĪ - Ā - Rā-LL-KKie, (Bāni-

ārāla-Lakkie, the goddess Lakkie of the businessmen). In India, the goddess Lakkie (modern form Lakshmi) is still worshipped under these names. The fish-shaped L has been marked with an oblique tick in 431 and 467 to indicate that the sign should be taken as “double”. The tick-mark on the body of the human figured letter on the Seal MIC 321 does not pictorially indicate the generative organ of the figure but technically nota bene the double quality of the sign (MM). But when the sign Y is marked with an oblique tick, it does not indicate the “double” (YY); but a reversion to the old but hard sound of Z (MIC 447).

INDUS SCRIPT

(Memorandum No. 2)

BY



Sr



Su—DHā—n(m)—Su(*)



Ku—Mā—R



Rā—Y

Junior Field Officer, Crafts Museum,
All India Handicrafts Board, New Delhi



NABA NIKETAN

50 Sarojini Market, New Delhi-3

MUNSHI RAM MANOHAR LAL

Original of the ...

To the memory of

G. S. DUTT

who initiated me in the study
of art, craft and script of the
Indus Valley in the year 1935
and

W. M. FLINDERS PETRIE
whose methods of "Sequence
Dating" in archaeology enabled
me to analyze its inscribed seals.



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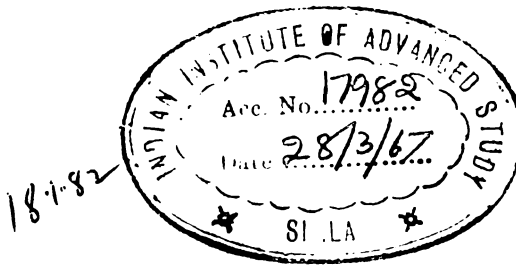


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P R E F A C E

This little brochure, like the Memorandum No. 1, will occupy a place of honour amongst the archaeological books by bringing to light, with a great impact, important facts which Indian history was from time to time yearning for. It lifts the mysterious curtain hiding from our eyes many a significant episode of Indian civilization. After decades of study and scientific decipherment of the Indus script, Mr. Sudhansu Kumar Ray, Junior Field Officer of the Crafts Museum, has meritoriously restored to us several millennia of our unknown history by giving meaning to the mute inscriptions of the Indus Valley which for the last forty years remained unintelligible to us.

Whatever assistance may be offered to Mr. Ray will not only form a tribute to his abilities and determination to continue the work but, will also be an encouragement in his sincere and courageous pursuit of knowledge to understand the basic language of this subcontinent.

I am happy to introduce *Memorandum No. 2*, dealing with comparative philology.

Thapar House,
Janpath, New Delhi,
June 7, 1965

Ajit Mookerjee
Director, Crafts Museum

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ACKNOWLEDGMENTS

The cost of printing of this brochure on the Indus script has been met out of the generous donations from anonymous American and Indian friends. Thanks are due to Shri A. Ghosh, Director-General of Archaeology in India, for his kindness in permitting me to reproduce a few photographs of the seals from Mohenjo-daro and Harappa. Thanks are also due to Shri L.C. Jain, Shri Ajit Mookerjee, Mrs. Ruth Reeves, Mr. B.B. Lal, Dr. M.K. Roy, Prof. Rames Basu, Shri T. Keshava Rao, Shri J.R. Luthra, Shri J. Saksena and Shri N.D. Mastana for their unfailing encouragement.

Donations from Shri G.D. Birla and Shri B.K. Birla enabled me to meet the preparation cost of the drawings included in this book. Without their help the printing of the book would have been held up for a long time. I must thank Mrs. G.J. Watumull and other members of the Watumull Foundation, Honolulu, U.S.A., for awarding me the G.J. Watumull Memorial Prize in Art and Archaeology for 1964 on the basis of my books on the ritual art of Bengal and the first memorandum on the Indus script. It is very significant that the late G.J. Watumull originally hailed from Sind in which Mohenjo-daro is situated and with which my research work is primarily concerned.

I am proud to say that I have already received learned and competent guidance from the great intellectuals of Great Britain, including Mr. C.J. Gadd, Prof. J.H. Hutton, Prof. A.L. Basham, Dr. R.O. Faulkner, Prof. W.B. Emery, Dr. I.E.S. Edwards, Dr. A. Biver, Dr. H. Saggs, Dr. F.R. Allchin, Prof. C.F. Haimendorf, Prof F.E. Zeuner, Mr. J. Boardman, Mr. John Irwin, Mr. W.G. Archer and Mr. D.E. Barret. I was amply rewarded by the discussions that I had on my problems with Miss Gauri Chawdhury, an Eshan Scholar of the University of Calcutta, and a keen student of Vedic Sanskrit at the University of London.

My thanks are due to Dr. Kalidas Nag, Prof. M. L. Sondhi, Smt. Madhuri Sondhi, Shri Adrish Banerjee, Dr. P. Banerjee, Prof. D.P. Ghosh, Prof. V.S. Agrawala and Prof. A.S. Dani for their kind advice and comments. I am thankful to the staff of the Zodiac Press for taking special interest in Printing my book. Mention should be made of Shri N. Guha, Shri N.N. Ghosh, Shri S. Deb, Km. Jharna Mitra, Shri Prasant, Shri Man Chand and Shri Projjal Dutt, who have helped me in the various stages of printing of the book. I am also indebted to a student of Sanskrit for composing a sloka for the text.

S.K. Ray

July 20, 1965
DG-817, Vinaynagar (main),
New Delhi-3.

FOREWORD

BY

Dr. RAYMOND O. FAULKNER

*Special Lecturer in the ancient Egyptian Language,
Fellow of University College, University of London*

The decipherment of the Indus Valley script is a task of major importance not only to Indian archaeology but also to comparative philology, and it is highly desirable that funds should be made available for the prosecution of this task.

Mr. S.K. Ray who has devoted much study to this script, has consulted me in University College, London.¹ I am sure that he is attacking his problem by sound methods, and if enabled to continue his studies by a financial grant or grants, bids fair to make an important contribution towards the solution of the script of the Indus Valley.²

¹ I consulted a few indologists also during my stay in the U.K., to check up my work on the indigenous and local aspects of the Indus script. I take opportunity to quote from Prof. J.H. Hutton, an undisputed authority on Indian anthropology, which may please be read along with Dr. Faulkner's recommendation cited above as its complementary : "Your method of approach to the problems involved in translating it seems to me to offer a better chance of success than any other yet tried and I sincerely hope that you will be enabled to carry on your research till success is complete."—J.H. Hutton, new Radnor, Wales—16.9.1963.

² Egyptologists are very few in the world whom one can count on his finger-tips. Fewer among them are those whose subject of study is the language and script. One can hardly expect to meet and discuss his problems in length with such a scholar who remains preoccupied mostly with his intricate research work. It was, therefore, a privilege to meet and receive learned guidance from Dr. Faulkner, who very kindly spared much of his valuable time for me, specially during the examination period of University College. My deep gratitude to this great Egyptologist is to be recorded here.

“*Speak to me Goddess, honey—tongued !.....
Yet once more Thee I invoke, the lotus-feet
To adore. What if a devotee dull
Am I ? O vouchsafe me Vani, with
Thine form all dainty fair ! As alight thou didst
On Valmiki’s lips-so graciously !
As on thine lotus-seat, when in th’ forest
Deep, with a wilful shaft the fowler pierced
A heron fond, dallying with his mate—
Deign to shower alike thine dower on me,
Thy servant suppliant. Who ever can
Thy glories fathom in this universe wide ?
Thy touch doth turn a poison-tree
To a sandal lovely ! Alas, Mother !
Have I such a talent to merit they boons ?
Yet, of all her sons, him she loves the best
The mother tender, who’s the most unworthy.
Come, then, Delighter of the World benign !
In my heart appear ! And I shall chant
An Epic grand, steeped in thy radiance
Soft. Descend and me inspire ! Thee too
I hail, Heavenly maid, O thou
Imagination sweet ! Build thou thine hive
Exquisite ! Let the World enjoy the nectar
Delicious !.....”*

—MICHAEL MADHUSUDAN DUTT (1824-73)
(Translated from Bengali by
Shri Umanath Bhattacharya)

INTRODUCTION

*Under the grove of Simula trees (Simaialla-vana-a),
The bull (basa) chews cucumber (?) (kakadhata-chima-a)
While guards of the Union Government (Bairakkidana)
Are eating pān (pāna-khāisuda) and snarling (khakha-a) at times !*
—A reconstruction from the Indus-valley inscriptions.

Since the publication of Memorandum No. 1 in December, 1963, great enthusiasm has been roused among the Orientalists all over the world regarding my methods of study of the Indus script. "...your most interesting article on Indus script," wrote Prof. Giuseppe Tucci from Rome on February 5, 1964, "I have greatly appreciated. While congratulating you on your learned contribution in this field of studies, I send you my best regards, and all good wishes." I am glad to quote from Prof. Tucci's letter because it has truly voiced many top ranking Orientalists of the world who have conveyed their congratulations verbally or in writing. It was then agreed that a good beginning had been made.¹ But I regret that it has also given rise to the wrath of a few *pandits* belonging to the old school of philology in India, who have utterly failed to grasp the real significance of my first Memorandum. "Who told you that there was any difficulty in inscribing the signs for want of space on the seals?"—an Indian Professor of Art shouted excitedly. I did not argue with him but consoled myself as Dr. Jung had done by resolving that the Professor did not understand it any more than I did. It is useless to argue with such persons who have not even seriously read the three large volumes of Sir John Marshall's book, *Mohenjo-daro and Indus Civilization*. I realised that the learned Professor neither had carefully looked through the plates in MIC nor cared to remember a single line from its masterly texts on the script written by Marshall himself and his collaborators Mackay, Langdon, Smith and Gadd. I must frankly say at the outset that these two Memorandums should be taken as *bhāsyas* (commentaries) on the three volumes of MIC, for my comments and criticisms are based mainly on the findings of these five great scholars, which have been largely interpreted therein. Those who have not learnt by heart what is already written there, my commentaries would naturally remain unintelligible to them.

¹ "I have read carefully your most interesting and thought-provoking brochure (Memorandum No. 1) on the Harappan script and I must say that it has impressed me most deeply.....I expect with impatience the second Memorandum," wrote Prof. Kamil Zvelebil from Praha on 18.2.1964.

With superficial knowledge of Indus script, one would naturally fail to understand the methods of decipherment and the drawings and charts analysing epigraphical materials of so complex nature. On the other hand, a scholar, who has practically handled the script for a long time, will certainly find my work profitable. With all its faults, Memo. No. 1 has thrown new light on the traditional values of the script, which have been readily recognised by the expert Indologists both Indian and foreign. Prof. A. S. Dani, Head of the Department of Archaeology, University of Peshawar, West Pakistan, remarked : "The pamphlet is a memorandum No. 1 containing a brief résumé of thesis on the interpretation of the Indus script. After the initial efforts made by Gadd, Sydney Smith, Langdon, and Hunter to recognise the Indus signs, Mr. Ray has further advanced our knowledge and placed before us the different components in the formation of the Indus signs. The analytical approach adopted here is the recognisable principle in the palaeographical world. I entirely agree with him and accept his important discovery of the two main principles underlying the formation of the Indus signs, viz.—(1) the accentuation of the original signs, and (2) combination of two or more signs—both these principles were hinted by me in my chapter on the Indus Script (*Indian Palaeography*, Oxford, 1963, p. 19). My analysis was only exploratory as I had not much time to devote to this script, but Mr. Ray has successfully worked out in detail and further shown the evolution of simplified forms from the original recognizable animals or objects. As far as this stage is concerned, it is clearly an advance over our existing knowledge."² To these remarks of Prof. Dani, the learned opinion of Mr. C. J. Gadd, one of the pioneers to the study of Indus script, may also be added : "Thank you for sending me the printed form of your preliminary study of the structure of the 'Indus' script, which I have read with appreciation. It seems to me that you have carried further the analysis of the signs as compounds, a principle which, as you duly observe, has been noted from the beginning; and you have shown that such a principle is *fully traditional* in the Indian system of writing. Thereby you have made a useful advance in the study of this script." I am quoting from these two experts of Indus script because, Memo. No. 1 has brought from the most eminent palaeographers of the world a big prize for mother India—a recognition for the glorious beginning of the tradition of her writing system five thousand years ago ! The reader must, therefore, acquaint himself with the "traditional values" of it from the very beginning, otherwise, his entry into the structure of the script will certainly be delayed. On the basis of the systematic evidences of Indian traditional writing, "the clogged door of Mohenjo-daro" can only be opened. There is no escape from it. It is, therefore, desirable that I should say a

² *Ancient Pakistan*, Vol. 1, 1964 (Peshawar), pp. 142-143.

few words again on the significance of those points which I had discussed in Memo. No. 1, for the benefit of the reader.

The pivotal point that has been brought to the notice of the Indologists is the *mātrā* (index-vowel) system used for the modification of basic signs. Uniform use of certain *mātrās* in the Indus script provokes a person to presuppose for the existence of the alphabetic signs in the inscription (Fig. 6). Dr. V.S. Agrawala, the elder scholar of India, remarked: ".....I should congratulate you on this brilliant attempt to decipher the ancient-most script of India for which no certain clue is available and which have proved a teaser to so many before you. I do hope that with this new method of yours of detecting the conjunct letters and the existence of *mātrās*, you may attain final success in reading the labels on the seals."

A wise woodcutter, if he can recognise the tree, will bring back only the sandalwood from the jungle. Similarly, from the jungle of signs, we should try to recognize at first the "alphabetic or alphabeto-syllabic" signs, if they are there. I have suggested earlier that the unaccented basic sign of an accented series may be recognised as an "alphabeto-syllabic" character which, in lieu of its proto-syllabic quality, is also forming conjuncts with other basic signs following an important orthographic formula of Indian syllabary. For example, Hindi alphabetic sign क् in combination with various index-vowels can form its own accented series viz., का, कि, को, कु, कू, के, कै, को, कौ,.....etc., as well as can co-operate with other alphabetic signs to form conjuncts like क्स=क्+स. Similarly, we see in the Indus-valley inscriptions, that the unaccented basic sign of the accented series, shown at Fig. 3 in Memo. No. 1, is also forming conjuncts with other basic signs following the traditional methods at Fig. 7 of the same Memo. It can, therefore, be taken as an alphabetic sign. When worked out in detail, such sign series would provide with a "detector" of alphabetical signs to the students of ancient Indian epigraphy.

Although, scholars had taken note of the traditional qualities of the script at the very beginning of its discovery, no attempts were made to define them clearly, because, the number of Indus signs, as listed by Prof. Langdon, being more than 288, gave rise to the supposition that the script was simply a closed syllabary and not alphabetic. "Since the Indus-valley script has considerably more signs," remarked a reputed philologist, "it need not be an open syllabary (e.g. k̄a, ki, ku) but may include signs only for closed syllables (e.g. K̄ak, kik, kuk)." We shall see that this supposition is quite unjustifiable. Traditionally, Indian "alphabet" is having both alphabetic as well as syllabic quality,³ namely "K" (क) lies

³ In this connection the reader is requested to refer to the most important book, **Phonetics in Ancient India** by Prof. W. S. Allen, (London, 1953).

dormant in Ka (क). It is really “alpha-beto-syllabic”—something like a soldier “standing at ease and in attention”. Proto-syllable Ka never loses its fundamental alphabetic quality of “K”, which it exerts at required times, especially at the time of forming conjuncts with other basic consonantal signs and during the accentuation with index-vowels. As such, a single character of Indian alphabet may alone have 14 (adjuncts) x 34 (consonantal pointers)=476 modified forms. A scholar can say that the Deva-Nagari script has only 48 signs including 14 vowels and 34 consonants but, we should know that a compositor in a press at Delhi, has about 350 Deva-Nagari types in his typecase to handle with. He cannot compose a single line in Hindi with only alphabetical types like Ma, La, Ra, Ka, etc., unless he is provided with a large number of conjoint types for MM, MB, LG, RSA, LLU, KNA, etc., etc., (Fig. 1). If number is a determining factor, then the Indus script cannot be exotic on the ground that there are more than 288 signs !

We know that the diphthongs \mathcal{E} and \mathcal{A} , are the two commonly known “compounds”, each composed of two letters (vowels). But how can we detect them ? It is possible because we are conscious about the original “basic” forms and shapes of the three alphabetical signs O, E and A, which are also independently used in the course of writing. A person who is not aware of the original basic forms of the components of these two diphthongs and their noncommittal phonetic values, he could easily assume that they represent two “combs” of two different designs drawn by a primitive artist ! Similarly, a space-saving monogram, a time-saving conjunct and a modified character of Indus script are not examples of primitive art (e.g. man carrying curd, man holding lamp, man walking with stick, etc.), but notations of grammatical enumeration. It is for this reason, I have suggested in my first Memorandum, that from the very beginning of our study we should be conscious of the original forms and shapes of the various components of the “compounds” or “conjuncts” used in the inscriptions on the Indus-valley seals. These “conjuncts” of alphabetical signs are really detaining the scholars at the outskirts of the field delaying their entry into the structure of the script.

मम	म्ब	लग	
mm	mb	lg	
A	+	E = \mathcal{A}	Or
Z	+	K = \mathcal{ZK}	Or
J	+	F + D = \mathcal{JFD}	Or

Fig. 1 : A grammar school student “diphthongs \mathcal{A} or \mathcal{E} in course of his writing would be nightmares to him. \mathcal{JFD} and real perspectives only when their components are separated from the compounds. Similarly, an compound signs of the Indus script by design will be puzzled over the illusory and vexed

स्सा	ल्लू	कना
rsa	llu	kna
O + E	=	œ
J + E	=	Ɔ
V + T + T	=	ʋ

London may be accustomed to use at the ZK, JE, JFD or VTT conjuncts TT conjuncts can be understood in the signs J+F+D or V+T+T are disentangled must attempt to recognise the meaning their basic elements, otherwise, he positions of them.

We must realise that signs having alphabetic or alphabeto-syllabic values are used here to spell words without any reference to their pictorial or ideographic meaning. For example, the picture of a betel leaf does not convey the ideographic meaning of the "leaf of *Piper betle*, which Indians chew with areca-nut parings", but stands for the sound "pān" or "pāna", as the name of the leaf is pronounced by the Indians, which in combination with the alphabetical sign for "a", would spell the word pāna-a (=pānaya) meaning "is drinking". Here the botanic aspect of *Piper betle* is not the point to be accounted for but the phone-values of its call-name. Specially, the "conjuncts" of signs, with their artificial and grotesque appearance, as we shall see, are unscrupulously drawing the attention of the scholars much more firmly to their false "apparent" meaning than to the non-

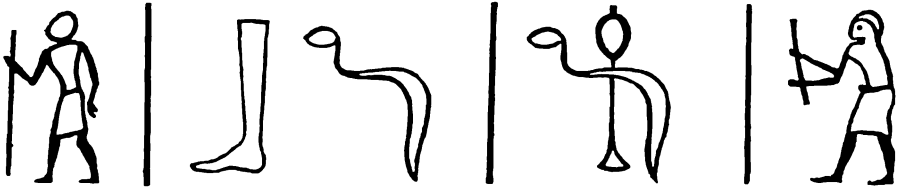
committal phonetic values they really convey. They are not sense-signs but sound-signs. So far we have remained their victims! The game of the "breaking up the compounds" would bring back a scholar to the normal, pure and solid philological foundation! We should remember that unless one becomes aware of the *vijaksharas* (root-signs), one will remain in the wilderness of the signs! Had we a Panini for the Indus-valley language he would have included in his *vyakarana* the following *sloka* under the heading "Beware of the *Vijaksharas*" :

सर्वमोहं परित्यज्य सर्वद्वन्दं विहाय च, पुराज्ञानी युक्तवर्णं मुक्तवर्णं विचारयेत् ।
(संक्षिप्तैयं लिपिर्यत्र वर्णबीजं जुगुप्सते) यथा ज्ञानतपस्विना मोहग्रन्थिर्विमुच्यते ॥

Translation:—As the collective value of a "conjoint sign" is assessed only on the individual sound quality of its component parts, a palaeographer, in spite of all difficulties, should try at first to recognise the basic signs which are forming the "conjunct", leaving every thing aside, as a wise ascetic rejects this illusory world and seeks God alone!

I have brought together enough indications in Memo. No. 1, to show that the people of Mohenjo-daro spelt their words with alphabetic signs together with many picture-signs having only noncommittal syllabic values which had no reference whatever to the apparent pictorial meaning of the signs. It would, therefore, be useless to speculate for their sound values on that basis. There was a time when one could speculate for the

meaning of the ancient Egyptian writing on the basis of the apparent pictorial value of the hieroglyphs in the way given below:



*The old pandit
(Sanirāmurthy),
while crossing
the road,*

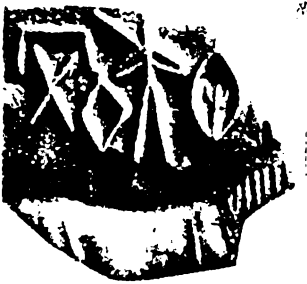
*expired
(as a result of)
snakebite
on his leg;*

*the snake
was (also)
hammered
to death*

*by an angry
youngman
(chhokrā) of
New Delhi !*

Today, we know the phonetic value of the hieroglyphs and no one would dare to explain them in the way shown above. Here, the “leg” and the “snake” are the two sound-signs representing two single consonants B and Z/D respectively. Discovery of alphabetic or alphabeto-syllabic characters brought revelations in the reading of the hieroglyphic writing of ancient Egypt. But I regret to say that most of the philological interpretations of the Indus-valley inscriptions are no less merited than the above explanations of hieroglyphic writing. Like the eighteenth century Egyptologists, we have committed once more to the error of mistaking the Indian “hieroglyphs” for symbolical signs with no specific phonetic character. So far the Indus script is concerned, we are still living in the pre-Champollionic age.

Let me cite an example from Dr. Ernst Doblhofer’s book, *Voices in Stone*, (pp. 305-306), in which he has adopted Prof. Meriggi’s interpretation of signs to the inscription appearing on MIC Seal No. 111 (Fig. 2).



MIC Seal No. 111

According to Meriggi’s interpretation, we are told that sign No. 1 represents “corn” and No. 2 an “Officer”; No. 3 suggests the “lozenge” shape of the “table” shown under 4. Thus, as Dr. Doblhofer told us, “very revealing readings” had been achieved from this series of signs: “Corn for the Officer’s mess” ! It is obvious from the above interpretation that the “pictorial” meaning of the signs has only been account-

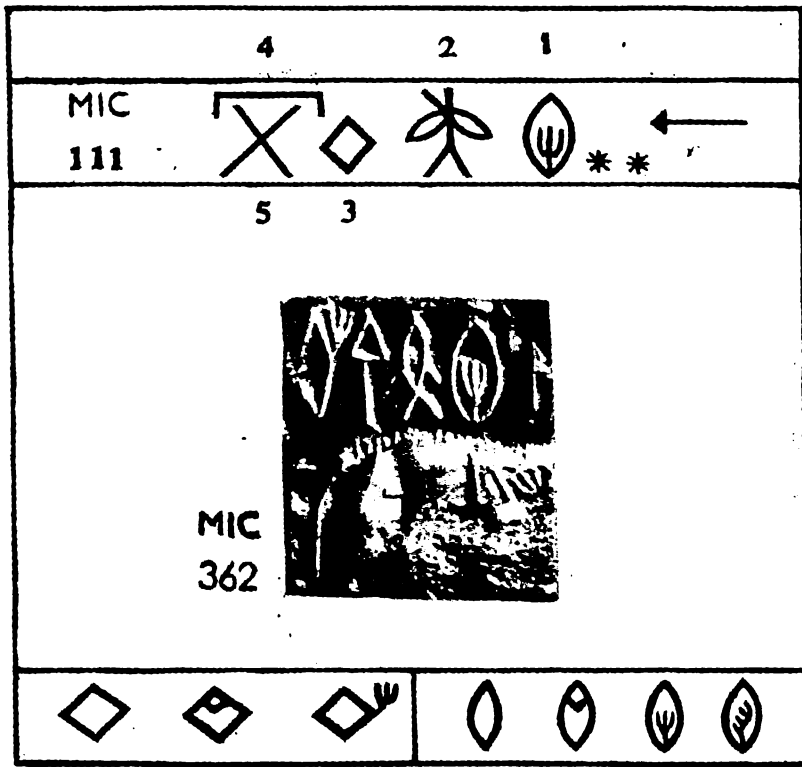


Fig. 2 : The inscription on the Seal MIC 111 has been compared with that of MIC 362. The basic forms of the signs 1 and 3 have been shown along with a few of their modified forms (at the bottom) to show that they are forming accented series of their own by the token of which they are sound-signs and not sense-signs.

ed for and not their sound-values. Even the existence of alphabetic signs has not been suspected. Certainly, we have underestimated the merit of the script which belongs to a very highly civilized people in the plastic arts of whom "are found creations of great artistic value, notwithstanding their small dimensions, the freedom of their shapes seems far removed from the rigid patterns of the primitive aesthetics."⁴ Specially, the designs on the seals—the bull, the buffalo, the unicorn—all speak of an aesthetic capacity befitting the "well-developed and flourishing civilization" of ancient India. How can we then think that the accompanying inscriptions have been obtained only with the primitive non-alphabetic system of "picture writing"? Even if it is written with "pictures" we should take

⁴ Cf. *Encyclopædia of World Art, Vol. VIII, p. 106.*

examples from the Egyptian hieroglyphic system which has taught us that the alphabets could also be written in pictures. The true importance of Memo. No. 1 lies in that it draws attention of the Orientalists to facts which are revealing the existence of alphabetic elements in the Indus-valley inscriptions. Inscriptions incorporating alphabetical signs should be studied in an angle different from the way in which primitive non-alphabetic picture-writing is usually interpreted.

Let us apply my methods of analysis to the inscription on MIC Seal No. 111. We know that No. 1 is an accented form of an alphabetic-cum-*proto-syllabic* sign (Memo No. 1, Fig. 3). It is to be noted that the same accenting index-vowel which has been set inside sign No. 1 has also been used for accenting sign No. 3 appearing as the final character on MIC Seal No. 362. It is noticeable that in this case the index-vowel has been set on the shoulder of the root-sign. The basic unaccented form of No. 1 appears on MIC Seal Nos. 188, 125 and on many other seals as components. No. 3 appears in its basic form (as it is shown here) also on MIC 71, FEM 86, 665 and is forming compounds with other signs on MIC 127, 157, 183, 338 etc., etc. As the sign No. 1 is an accented form of the "basic" sign which often takes part in forming "conjuncts" with many other root signs and belongs to its homologous accented series as one of the partners, I would like to take it as a modified alphabetical sign conveying an "open syllable". No 3 is an "alphabetic-rudiment-cum-*proto-syllable*", because, it represents the unaccented basic form of the accented series of its own and is capable of forming "conjuncts" with other root-signs by virtue of its originality. Sign No. 2, the "Officer", must be a biliteral or triliteral phonogram used here for spelling the word in co-operation with the sounds of the two juxtaposed alphabetical signs (No. 1 and No. 3). As a rule, being a phonogram, it neither forms a "conjunct" nor any accented series with other signs and thereby always retains its independent identity among the others. We can, therefore, take it as a "closed syllable". The sign No. 4 is a space-saving monogram consisting of two different signs. The upper part of the so-called "table" is again a phonogram (closed syllable) for the reasons described above in connection with the sign No. 2. The lower part of the "table", the cross-shaped "legs" (No. 5) is nothing but the alternative form of an alphabetic sign (refer to the drawings at Fig. 11). This sign is independently occurring also on MIC Nos. 179 and 203. It has nothing to do with a table ! It may be observed from the Seals MIC 405, 536 etc., that the "table-top" itself is not faithful to its "legs" as it shares bed with many other signs too ! What I want to say is that the signs appearing on the Seal MIC 111 are all sound-signs and not sense-signs.

Had we a Gardiner for the language of Indus-valley he would have included in his grammar the problem of compounds (with examples) as

Fig. 3: Various compounds have been analysed in this table. Out of the ten compound signs, Nos. 4, 9 and 10 are monograms (space-saving devices). No. 5 is a modified form of a basic sign in which a light accenting index-vowel has been significantly put. Other compound signs are consonantal conjuncts (time-saving devices). Also refer to Memo. 1, pp. 9-10.

COMPOUNDS		THEIR COMPONENTS									
1		=		+							
	15		227								
2		=		+							
	403		165		213						
3		=		+							
	FEM 651		436		463						
4		=		+		+		+		-	
	205		438		91		188		169		
5		=		+							
	467		188		467						
6		=		+							
	449		169		550						
7		=	(+	(or)						
	P. 425		PICXVI		6 10						
8		=		+	(
	253		340		403						
9		=		+							
	405		111		FEM 33						
10		=		+							
			136		X 179						

the Exercise No. 1: "What are the component-signs of the following compounds? Draw the "basic" forms of those components stating the respective number of the seals (at least one for each) in which they are independently occurring in MIC" (Fig. 3).

From the break-up of the compounds (Fig. 3), it may be observed that the sign No. 2 is not a lizard; No. 3 is not a bell; No. 4 does not purport "load or load to carry"; No. 5 does not depict "corn in a basket"; No.

10 does not represent a “table”; etc., etc. but they all are “conjuncts” of alphabetic or alphabeto-syllabic signs !

The understanding of the methods of segregation of one sign from another of different class and category, on technical grounds, is a prerequisite to the decipherment of the script. It will enable us to “process” the inscriptions with a view to placing them for “reading”. The “processing” will recover the signs from the puzzling entanglements on the one hand and favour a student with the orthographically classified signs of the embarrassing inscriptions on the other (Fig. 5).

The application of guiding principles for identification of alphabetical and other signs would naturally depend on the various well-planned illustrations bringing all the determining factors to the “rank and file parade”. Here I am really handicapped for want of necessary funds to meet their preparation costs, as a result of which, both the Memorandums are suffering from inadequate illustrations. For example, the “sign series” shown at Figs. 3 and 5 in Memo. 1, is by no means a complete one. For each “basic sign”, drawings of its “sign series” should be made exhaustively to make the reader completely informed of the various movements and behaviours of that particular sign at different positions and under changed conditions.⁵

⁵ For example, a single sign (No. 43 given at Fig. 8 in Memo. 1) is appearing more than 27 times at different positions and under changed conditions in its basic and modified forms on the various seals which have been illustrated between the plates CIII and CXIII in MIC, Vol. III.

PERSPECTIVES OF THE BRAHMI SCRIPT

It has been pointed out by many Indian and foreign scholars, with whom I had the privilege of discussing my problems, that the Indian traditional scripts—Bengali, Hindi, Gujarati, Oriya, Telugu, Tamil, Kannada, Malayalam etc., originated, as have been propounded by Buhler and Ojha, from the Brahmi script which Emperor Aśoka used extensively in his pillar and rock-cut inscriptions in the middle of the 3rd Century B.C. If so, how could the line of succession of the traditional scripts be traced back to the earlier script of Indus-valley? There was a time when Indian history used to begin with the invasion of Alexander the Great. Before the discovery of the Indus script scholars, specially Buhler and Ojha, wrote their books emphasizing the origin and developments of the Indian traditional scripts from Brahmi. We are to abandon that theory now as we have done in the case of Alexandrian theory of Indian history as a whole. Indus script, as we shall see, is the ancestor of the both, the secular Brahmi as well as the traditional vernacular script of India. As a matter of fact, the success of my decipherment of Indus script is dependent on the Brahmi alphabetic signs which have been brought to the proper juxtapositions with those of the Indus script (Figs. 6, 7 and 8). I have shown here that the traditional scripts of India are the direct descendants of the Indus script whereas Brahmi was a diversion from the main stream—introduced to serve religio-political purposes of the imperial Mauryans. The initiative might have come even from Buddha himself who wanted to preach his religion through the spoken language. Did he feel for a simplified script also? The Mauryans, the first Indian empire builders, certainly took advantage of it for political reasons a few hundred years later. However, “its development,” Prof. A. L. Basham rightly observed, “must have been at least in part deliberate”.⁶ Evidently, it was the Buddhist theologians and officials who, under the patronage of the Mauryans, introduced the Brahmi script largely to the people by revising the vernacular Brahmanical script for religio-political purposes. Aśoka wanted that his inscribed edicts should be read by a large audience throughout the country irrespective of their caste and nationality. A simplified writing system was, therefore, projected from the old but cumbersome system of current writing of the country. The revised script could be learnt and understood quickly by the people belonging to the various racial and linguistic stocks whom the Mauryans had brought, for the first time, under a single blanket of an imperial yoke in India. Brahmi is, therefore, representing the imperial (*darbāri*), secular and static phase

⁶ **The Wonder That Was India**, London, 1961, p. 396.









































 1	=  +  +  +  + 	MIC 536
 2	=  +  +  + 	MIC 30
 3	=  +  +  +  + 	MIC 205
 4	=  +  +  + 	MIC 315
 5	=  + 	MIC 312
 6	=  + 	MIC 182
 7	=  + 	MIC 189
 8	=  + 	MIC 183
 9	=  + 	MIC 338
 10	=  + 	MIC 136

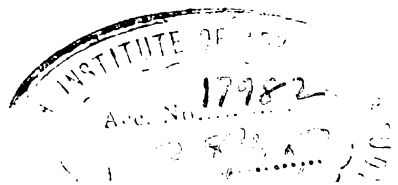
Fig. 4 : A few monogrammatic compounds have been analysed in this table. They occur normally either at the end or at the beginning, except in rare cases (MIC 464). Those monograms have been designed to save space like the modern abbreviations and contractions i.e. Ltd., Inc., etc., etc. It should be noted that they are not sense-signs but sound-signs. For detailed notes on monogram refer to Memo. 1, pp. 4-6 also.

of the indigenous script. It should be termed as the "Script of the Buddhists", as opposed to the traditional "Hindu Script", which gradually became obsolete with the decline of Buddhism in India. Due to "deliberate" revision, the basic shapes of the traditional script had been reduced to their skeletal forms (Figs. 6 and 7) to serve the very purpose of Brahmi. Thus, the Brahmi script became a mere mechanical device to express Indian sound and lost potentiality to give

any impetus to its contemporary Hindu traditional script which strangely survived in the different cultural pockets under the care of the Brāhmanas

MIC	WITH MON.& CON.	BASIC SIGNS	DISENTANGLED
30		=	+0+0+U ' ^ + !+U
	1 2 3 4 5 6		1 2 3 4 5 6
537		=	Y A U + + 0 + 0 " O
	1 2 3 4 5 6		1 2 3 4 5 6
47		=	* X Q Q II " R E + D . II E E D D
	1 2 3 4 5 6 7 8 9 10		1 2 3 4 5 6 7 8 9 10
121		=	A + 0 + 0 + D E + D " O C
	1 2 3 4 5		1 2 3 4 5
205		=	A + 0 + 0 + D + U 0 + 0
	1 2 3 4		1 2 3 4
334		=	U C A + A " O
	1 2 3 4 5		1 2 3 4 5
15		=	E + E + D + D X D A
	1 2 3		1 2 3
335		=	U X + E + E V O
	1 2 3 4		1 2 3 4

Fig. 5 : Before it is taken up for reading, each inscription would require a kind of processing, as shown above. Here, the component parts of the compounds have been brought into the rank and file parade along with other single signs so that the inscriptions are relieved of the chaotic entanglement of the formative signs. A scholar then comes face to face with the basic reality of the script which normally remains hidden from view due to technical and stylistic introduction of the lettering.



1	2	3	4	5	6	7	8	9	10	11	12	13	14
)									γ	γ			
15	l	ll	lll					^	,	γ			
16	78	29	16	174	40	362	454	40	148	LI-24 CDE			29
17	ᳵ			ᳶ	᳷	᳸	᳹	ᳺ	᳻	᳼	᳽	᳾	᳿
18	ᳶ			᳷	᳸	᳹	ᳺ	᳻	᳼	᳽	᳾	᳿	᳾
†19	f			f	f	t	t		†		f		†

Fig. 6 : Some of the root-signs (under No. 1) of the Indus script have been shown against their modified forms (under Nos. 2 to 14) accented with heavy, elaborate and significantly drawn index-vowels (against No. 15). Compare traditional index-vowels of Bengali (against No. 17) and Hindi (against No. 18) with those of Indus-valley (against No. 15) and the accented series of Ka of the Aśokan Brahmi (against No. 19). The mātrās (index-vowels) of Indus-valley have been used over the original root-signs in accordance with their individual forms and shapes following the present methods of Indian accentuation, whereas Brahmi modified forms are made of a "tick" which is an accenting device foreign to both the Indus and Indian traditional system.

in their orthodox pursuits (Figs. 8 and 9). This point becomes more evident when the non-traditional “ticking system” of Brahmi, used for accenting consonantal letters, is brought between the two accenting systems of the earlier script of Indus-valley and the Indian traditional scripts (Fig. 6). A glance to the drawings at Fig. 6 will furnish a scholar with the conviction that the heavy accenting system of the Indus script has survived in the Hindu traditional accenting system more vigorously than in Brahmi

P ₃	F ₃	L ₃	H ₃	S ₃	S ₃	GH ₃	Y ₃	KH ₃	V ₃	DH ₃	J ₃	S ₃	PHONETIC VALUE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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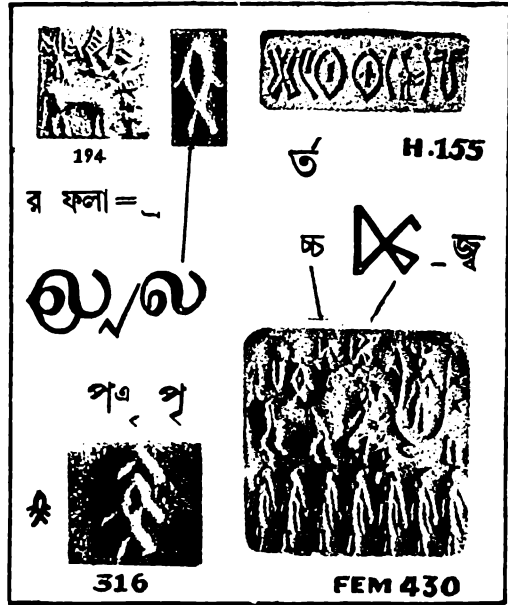
where the “ticking” methods show merely the mechanical efficiency. In Brahmi, the accenting “tick” has given meanings at given positions which are obtained by its clockwise movements. The simple hair-stroke design does not confer upon the “tick” any traditional graphic value. Whereas the traditional accenting signs have significant shapes with more identical features close to the index-vowels of the Indus script

KS	G ₃	C ₃	T ₃	D ₃	T̄ ₃	D̄ ₃	N ₃	P ₃	B ₃	M ₃	BHĀ	PHONETIC VALUE	
† _{K(S)}	^	d	C	∩	λ	∩	D	⊥	□	□*	∪	∩	BRAHMI
≡	^	⊥	(△	⊥	∩	D		≡	◇	∪	H	INDUS SCRIPT
219	32	40	6	436	32	457	EEM 148	8	38	71	426	342	MIC.Nos.
G ₃	H ₃	N ₃	P ₃	TH ₃	K ₃	L ₃	R ₃	C	CH ₃	G ₃	N ₃	T̄ ₃	PHONETIC VALUE
ग _*	ह _†	न _‡	प _§	थ _*	क _†	ल _{**}	र _‡	च _*	छ _§	ग _‡	न _§	त _*	TRADI- TIONAL
∩	∪	∩	≡	∩	∪	∩	⊙	⊥	≡	^		(or)	INDUS SCRIPT
4	378	106	38	12	188	32	55	40	54	32	8	6	MIC.Nos.

Fig. 8 (top) : Some of the Brahmi characters have been compared with the mechanically segregated alphabetic signs of Indus-valley (Memo. 1, Fig. 8). The Buddhists utilised some of the archaic alphabets having simplified forms from the Indus tradition (which they certainly knew well). As their shapes were graphically fulfilling the very purpose of remodeling, the Buddhists adopted them intact without much revision. The Brahmi script, with those unrevised forms of the earlier alphabetic signs, has provided us with a sure basis for the identification of many signs of Indus-valley. It may be noted that the Indus Q had been dropped from the Indian alphabet during the Sanskritization (revision of the script) and was allowed to mingle partially with K, specially in Bengali (Table—EJM). Brahmi Ka is the shortened form of KS and has nothing to do with either Indus or Indian Ka.

(Below) : On the other hand, the Brāhmanas have traditionally preserved many Indus characters in their religious writings undertaken from time to time within the various cultural pockets of India by jealously guarding them against the religio-political impacts of the Buddhists. Thus, many old signs have traditionally survived in slightly modified forms to fulfil the functions of the household-Universities (Tolls) of the Brāhmanas. We have inherited the Indus system of writing in its improved form within the conservative pursuits of the Hindu scholastic tradition.

Fig. 9 : The Index-vowel R-kāra, the consonantal-pointer R-falā and the “tearing” of R-repha are existing, as shown here, in the Bengali script surprisingly in their original Indus form. The use of consonantal-pointers (falā) for C, B, W, etc., which began at Mohenjo-daro, five thousand years ago, are still being traditionally maintained in the similar manner in the local writings all over India. Even the Tamil R is still retaining its archaic fish-design. All these show that the graphic value of the Indian traditional scripts is not less useful than the Brahmi in deciphering the Indus script. The



traditional Hindu scripts are much more richer in conservative usage of ancient forms than the Brahmi which is far removed from the tradition. Certainly, the Indian traditional alphabets deserve re-examination on the basis of new lights thrown by the Indus script.

EXAMPLES OF HARAPPAN SCRIPT



Fig. 10 : The seal No. H 96 (Sign Manual, MIC, Vol. III) from Harappa is having too perfect typography. The “linear” writing of Harappa displays the final stage of the script. The inscriptions of Harappa, therefore, do not allow a student to study the script in its incipient stages. The first letter from left has been identified as the predecessor of the Phoenician B. It is an aftermath of the pictographic sign for the “bee” shown in the Table—EJM. The Phoenician script,

as the analytical tables tell us, evolved directly from the Indus script. The letter B or Bai of this seal is an important document from that point.

(Fig. 6). Truly, they are their natural and traditional successors. On the contrary, the "ticks" of Brahmi are makeshift "indexes" of the Mauryan imperialists. Like the hybrid imperial art of the Mauryan artists, the Brahmi script of Aśoka is a result of shrewd political enterprise of the royal scribes. However, the importance of the Brahmi script as an intermediary milestone of Indian epigraphy should be recognised. Although, the Brahmi script ushered in major changes, many of its characters could retain their preformations due to the linear quality (Fig. 8). The decipherment of the Brahmi script began with Dā-Na-M, and we can now begin to decipher the Indus script with G, C, T, D, N, P, B, M, on the convincing evidences produced by it.

I hope, the reader will agree that the principle of formation of compounds, as has been exhibited by the writing system of Indus-valley, "is fully traditional". Despite "all changes in race and language", these inventions of early Indians have come down to us in their fully developed form.

TOLL (Grammar School) TABLETS

Another important aspect of the seals may be discussed here before we actually proceed to fix up phonetic values on the script. It has been noticed that the picture of a miniature seal, when photographically enlarged, brings forth details of the design to show that the subject of the picture is vitally related to the theme of the accompanying inscription. The design, with its "pictorial meaning", is complementing the "philological interpretation" of its accompanying inscription. These facts, and the nature of the "speeches", as I have understood them, give rise to the supposition that the seals were used for the production of educational equipment, with a view to teaching grammar to the beginners. The artists adopted the "designs" from the moods and actions of the "faithful, unchanging and trustworthy" life of the animals, which were easily understandable to the young scribes, while the teachers took the opportunity of furnishing them with the appropriate corresponding "captions" necessary to explain the difficult formulas of the grammar and proper application of scripts. It becomes more evident when we come across the seals which have been unearthed from the lower levels. It seems there was no system of incorporating design on the seals at the beginning. Thereafter, it was felt, as we feel now, that the designs would be helpful to the young "students of the language" for learning complicated rules of grammar quickly through the visual phenomena. Teachers, by arranging systematically various seal-impressions, probably used to make a kind of illustrated glossary of words with a view to imparting regular lessons. We can imagine that these word-books were also beautifully illuminated to bring forth interesting results from the drab and dull engravings.⁷ The round ball-seal MIC Fig. 28 in Pl. CXVI (line drawing of which has been given at Fig. 8 in Pl. CXVIII also) has survived the ravage of time to tell us the correct use of the illustrated seals. It gives two different notations of the modified forms of a written word in a really miniature book. The graphic differences between the two inscriptions may have been effected from a single root-word as a result of the application of a particular rule of the Indus-valley grammar. Soon we will know it fully. For the present, the reader is requested to take note of the designs only in which two animals have been shown looking towards the same direction,

⁷ *In India, alphabet is called varna-mālā—band of colours. The name might have been derived from the coloured seal-impressions used for instructional purposes in ancient India. It seems that each letter had its own colour attributed to it, because, a "letter" in Indian languages is still called varna (colour).*

but from two opposite "hemispheres" of the globular seal. The words inscribed on the two sides of the "globe" suggest that a kind of grammatical classification has been "juxtaposed" thereby. It may be the differences between the feminine and masculine genders or northern and southern dialects which have bearings on the design.

FEM 5 and 6 in Pl. XCII are the two important and early examples of seals (Fig. 2^s) which are depicting clearly their usage for the purposes of instruction. FEM 5 gives the inscription on the reverse while the corresponding picture of a "strolling park" on the obverse. According to my reading system the inscription stands for (from right) G-M-N-C-R-Rā-A-M, i.e. gamanacharāam, meaning "going for a stroll". Similarly, FEM 6 depicts a "square" for complementing the caption C-T-L-A-E, i.e., chatala-e, meaning a "square" (Sn. *chattara*). Again, the reader is requested to take note only of the designs of the "strolling park" and the "square". Soon we will see that both—the text and the picture—are complementary to each other.

Seals, when observed through a magnifying glass, show the different attitudes of the animals illustrating clearly the theme of the inscriptions. The designs were not static at the beginning but, as time went on, they became stereotyped and formal and thereby gradually lost life and vigour. Specially, the "Unicorn School" quickly lost its illustrative quality due to enclosing of the "two horns in one", most probably for political reasons. It may be observed that each design has a peculiar message of its own which may help us greatly when attempts would be made to read the explanatory inscriptions. The reader is, therefore, requested here to acquaint himself minutely with the designs of a few important seals with the help of a magnifying glass while keeping in mind the following captions : MIC 370—(the female elephant) "passing" urine; MIC 46—(the unicorn) stares at; MIC 19—(the unicorn) coughs out; MIC 25—(the unicorn) listens to; MIC 33—(the unicorn) secretly observes ; MIC 333—(the bull) with fear in the eyes ; MIC 30—(is the soldier coming ? MIC 536—(the buffalo) leaks pan with sound; MIC 542—"exhausted"; MIC 15—(is there) the commander of army from the fort ? MIC 100—is (it) entering ? MIC 76—(the unicorn) is eating; MIC 246—(is it) coming in ? MIC 77—(is there) apprehension of murder ? MIC 93 (on the cover)—(is there king) Zasarātha ? etc., etc. The fixed look with eyes open (46), the violent efforts made during the time of expelling air from lungs (19), the craning of neck for secret observation (33), the dreadful mood (77), and the benumbed expression (93) of the animals have been portrayed with great exactitude on the seals to complement the messages of the written words. The correctness of the decipherment of the script will be determined by the fact whether the pictorial meaning of the accompanying design corroborates with the conveying idea of the

inscription or not. Here, we must be sure, that the "picture" should confirm our reading fully by this way or that.

There are also difficulties in determining the standard form of the basic signs due to the presence of "calligraphic detraction". I have already given indication that the seals were used mostly for educational purposes. I am sure that the letterings of the many inscriptions engraved by young scribes were too bad in comparison with those of mastercraftsmen. One of the most interesting seals in which we have a very revealing document is MIC 387. Here we see that a complicated design, executed by a masterhand, has been complemented to worthless lettering from an apprentice ! Out of the whole lot published in MIC, the Seals 32, 38, 40, 457, 351 represent the best "writing" while the Seals 321, 82, 400, 139 represent the worst. An idea of the *standard* form of the Indus script can be achieved from the excellent typography that has been exhibited by these five seals. While facing the carelessly and poorly built scripts, we shall have to keep in our mind the high *standard* of "calligraphy" that has been exhibited by these five seal-inscriptions; otherwise, a "detraction" may be counted mistakenly by us, as we have done before, as a separate sign of independent identity. A person who wants to know a *vijakshara* should know it in the correct form also. Once we are acquainted with the few basic forms of the "alphabeto-syllabic" characters which have been used in the inscriptions (Memo. 1, Fig. 8), the large quantity of signs would not be an embarrassing factor to us, because, many of them are only the modified or conjoint forms of the same. On the other hand, many of them are the variants produced by the faltering hands !

COMPARATIVE STUDY OF THE SCRIPT

Comparative study of the script undertaken purely on the basis of external resemblance with a view to imposing phonetic value on the signs is not only a dangerous game but a worthless academic pursuit that often confuses the intellectual understanding. The only way of escaping from this banality is to bring internal evidences, as much as possible out of the inscriptions themselves, in support of the conclusions to be drawn from the comparative study. Internal evidences, when brought out, show that Meriggi's "horse" has come out of a "locust" and his "mortar with corn pestle" evolved out of "a duck and a hand" (Fig. 11-A). A stray sign may look like another sign from Sumer, Egypt or China, but such a formal simile neither creates any confidence for accepting it as an equivalent, nor impresses with any historical perspective. It was, therefore, suggested in Memo. No. 1 that the developmental series of a sign should be brought out first, before a comparative study is undertaken. A stray sign is a mute witness which, without the support from its ancestors and descendants, cannot validly speak for itself. By bringing together the related signs, I have compelled them to reveal their genealogy, and thereby make the signs talk. It would be a great mistake if we wilfully impose any sound-value upon an unknown sign without realizing the circumstances in which it inhabits. We should re-discover the signs in their own habitats. To re-discover the species of signs we must know their genesis. To know Man scientifically, we should realize that the species had evolved from Pithecanthropes, and in India, it might be from Rama-pithecanthropes.

"In all this widely spread epigraphical material, ranging from the upper to the lower parts of the Indus Valley, and to ancient Sumer and Elam, there is not a single text which differs in archaic style from the others. The epigraphist has no scope for studying the evolution of the script. It represents a standardized and advance stage even at this early period...", remarked Prof. Langdon in sheer disappointment.⁸ This is the real handicap on the scholars for studying the script. Specially, at Harappa we see that, as if, a lino-operator is composing his text from a machine with uniformly-built "standard" types. The form, spacing, marginal registers and proportions of the lettering have been carried out to a large degree of excellence and accuracy at Harappa (Fig. 10). It furnishes us only with the late phase of the script marked by "linear" typography largely engrossed in accentuations. Even the miniature seals which preceded the larger ones exhibit the very developed form of the

⁸ MIC, Vol. II, p. 431.

script. Being too perfect, Harappan typography is a useless material to the intending decipherer of the script. It is Mohenjo-daro which alone provides us with the developmental stages of the signs and the progressive achievements of the writing system. Certainly, the system of writing had been imported suddenly to Harappa from the south along with the miniature seals as its vehicle which was superseded ultimately by the introduction of larger seals in imitation of Mohenjo-daro. We see from the inscriptions that Mohenjo-daro was struggling for the script and Harappa for the language. I have, therefore, left Harappan script outside the scope of my Memo. except in rare cases where it was found unavoidable. A person who will be able to read the inscriptions from Mohenjo-daro will also be able to follow those of Harappa. As the script originated in the south, we find many pictographic signs with syllabic values are occurring among the alphabetical signs in the inscriptions from Mohenjo-daro, whereas alphabetic signs are the dominating factors in the writings on the Harappan seals. "A large number of the original pictographs," noted Prof. Langdon, "have been reduced to meet monumental forms, which indicates a long period of evolution."⁹ We can now see from the five comparative tables included in this Memo. that it happened only at Mohenjo-daro. Harappa may be archaeologically contemporary to Mohenjo-daro but epigraphically much younger to it. As such, the most popular term "Harappan Culture" used to denote the Indus-valley culture as a whole, has been nullified partially by these facts.

Unfortunately, the excavators at Mohenjo-daro could reach only up to the inner side of the "ridge" and never crossed it to peep into the farther side wherein the tradition of the script had been originally augmented. We know nothing what had actually happened beyond the "ridge". Secondly, the "ridge" where much of its preliminary activities had been carried out was continuously disturbed by tribal warfare resulting in the destruction of many documentary seals. This is evident from the Seals MIC 488, 397. 260 etc., etc., which are mostly found broken into pieces due to ruthless handling by the quarreling tribes (Fig. 31). These broken seals are containing the most important archaic forms of the signs. Most of the seals, bearing archaic style, must have been lost or have still remained buried under the earth. Whatever may be the case, Mohenjo-daro should be given credit for giving birth to certain scripts and their nursing (Fig. 11-A). It is Mohenjo-daro alone which has given us chance of unrolling the whole panorama of epigraphical journey of the Indus script from the beginning to the end (Table—SJM).

However, the available materials have been classified into two main groups : (a) OD-I, and (b) OD-II for the purpose of comparative study. As the (O)xford (D)ictionary gives different meanings of a single word

⁹ *Ibid.* p. 427.

under figures 1, 2, 3 etc., indicating a total shift from one another, pictographic stages of a sign have been differentiated from its alphabetical stages (when, as "alphabet", it forms "conjuncts" with other basic signs and forms "accented series" of its own) under these two terms (Table—SJM and Fig. 11-A). OD-I includes three "artistic sequences" of a sign, viz. (1) PICTORIAL, (2) ARCHAIC and (3) TRANSITIONAL. The natural and fully plastic form, in which the "object" originally began to exist in an identifiable state, has been termed as PICTORIAL. The ARCHAIC form retains all the natural phenomena of the preceding sign but partially admitting linear modelling and cramping in the shape. A summary drawing of the object has been introduced completely in linear drawing during the TRANSITIONAL stage of the "archaic" sign. Its natural shape is then "abstracted" for obtaining an easily and quickly written form. It marks the last stage of a pictographic sign classified under OD-I. The "transitional" form is responsible for giving birth to the alphabetic sign noted under OD-II as DERIVATIVE. For example, the alphabetic sign for "F" in MIC 107 evolved out of the "transitional" sign in MIC 67 by eliminating its linear details (Fig. 11-A). We shall see that in 67 the sign is having a long syllabic sound as its value, whereas its derivative is having only the initial sound-value of the syllable in 107. The change in the form has bearings on the phonetic value. The alphabetic signs, noted under OD-II, have been drawn invariably in line. Here again, the "duck" series of the Table—SJM draws our attention to the onward movements of the incipient forms of the alphabetic signs. We see that the primary form of the alphabetic sign, shown above 38, has been reduced further to much simplified forms by continuous revisions in its original abstracted drawing. Such changes in the forms of alphabetic signs—from linear to linearmost—have been considered as "technical developments" separately in a column under OD-II. We may guess the date of the beginning of such ramifications of alphabetic characters from the seals found abroad (MIC, p. 425-6). It must be a date much earlier than 2400 B.C. However, the simplified alphabetic signs have furnished us with many epigraphical sequences, with the help of which, the reader may look at the whole range of the script under correct perspectives (cf. Tables—SJM, RDB, DRS, EJM, MSV and NGM).

The ancestral descents of a sign by sublimating its gross pictographic forms (noted under OD-I at Fig. 11-A) and the successive progressions of a proto-alphabetical character through technical developments (noted under OD-II at Fig. 11-B) have been juxtaposed in the Table—SJM for the purpose of comparative study. Obviously, OD-I contains older forms which can be compared with the scripts of the Ancient World and the signs under OD-II, being comparatively newer, can be compared with those of the New World—both Indian and foreign. When

an ancient script is compared with OD-I series, it may be called +plus sign study, and when OD-II series is compared with the sign of the New World, it may be called -minus sign study. Fig. 11-A illustrates the examples of +sign study and Fig. 11-B the examples of -sign study (Indian only).

The +plus sign study reveals that the script, at its incipient stages, maintained a close relation with the hieroglyphic system of writing of ancient Egypt. "The script as represented by the Indian seals," noted Prof. Langdon, "is more like the Egyptian pictographic system than any other known script."¹⁰ Because that a few seals of Indus style had been discovered from Ur and other cities in Mesopotamia, the archaeologists were searching for the analogy of Indus script with Sumerian, Elamitic and Assyrian writing. Thus the existing Egyptian analogy remained unnoticed by the Indian scholars, although, Dr. Langdon warned us at the very beginning that: "In the first place this script is in no way even remotely connected with either the Sumerian or Proto-Elamitic signs...The Indus inscriptions resemble the Egyptian hieroglyphs far more than they do the Sumerian linear and cuneiform system."¹¹ The extraordinary similarity that exists between the ancient Egyptian art and the art unearthed from the deep down the "ridge" of the Indus-valley should also be observed in this connection. Mackay's remarks about the Seal MIC 5 in Pl. CXVI (Fig. 34) are most significant. "The third slide," says Mackay, "contains a most interesting scene of four men in file, each carrying a standard...This particular scene is certainly Egyptian in feelings; indeed, if it had been found in that country probably no particular attention would be paid to it."¹² The existence of uniliteral, biliteral and trilateral phonograms (sound-signs), ideograms (scene-signs), and especially, a spelling system using "phonetic complements" (Figs. 18, 19 and 21) unmistakably detects the generic relations between the two systems of writing. As the available materials display mainly the pseudo-hieroglyphic state of the script, this aspect of the inscriptions has remained undetected by the Egyptologists.

"We must be careful," cautioned Sir John Marshall, "however, not to let these obvious resemblances mislead us into imagining that the Indus script was directly borrowed from any other country. The truth seems to be that all these scripts are inter-related, but only up to a certain point. Their underlying principles are the same, and there is every likelihood that they all derived from one common origin, which probably went far back into neolithic times;..."¹³ The archaeological documents

¹⁰ *Ibid*, p. 427.

¹¹ *Ibid*, pp. 423-4.

¹² *Ibid*, p. 395.

¹³ *Ibid*, p. 41.






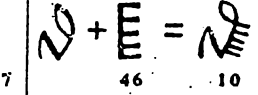





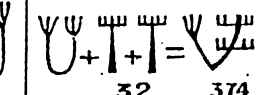





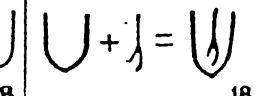
HEROICALLY PICTORIAL	OD-I			OD-II		SIGNI- FICATIONS
	PICTORIAL	ARCHAIC	TRANSI- TIONAL	DERIVATIVE (ALPHABET)	ALPHABETIC COMPOUNDS	
 4 9	 161	 100	 67	 107	 46 10	"PASSING" LOCUST
 13	 488	 60	 237	 337	 32 374	HANDS STRETCHED TO CATCH
 39	 93	 338	 340 397	 61 38	 18	DUCK

Fig. 11-A illustrates examples of +plus sign study. As a first step towards the decipherment, the evolution of simplified "linear" forms out of the "gross" pictographic signs has been recorded step by step. The ancestral descents of a sign, when brought into sequence, permit us to know its aboriginal signification. We know now who is who and what it signifies.






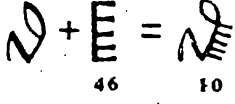





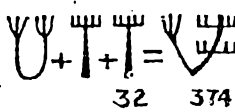





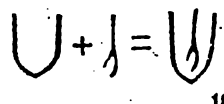

















unearthed from Mohenjo-daro point to that common source in India. It seems that the non-Aryan population of Sind had already a kind of pictographic system of writing at their disposal at a very remote period, out of which, both the writing systems—Egyptian and Indian—gradually evolved as two independent wings! The reader's attention is drawn to the prism-shaped Seal MIC 10 (Mus-4) in Pl. CXVIII, on which the story has been narrated, part by part, in detailed drawings. The middle portion, the side-C of this seal, has also been enlarged here (Fig. 31) to bring into focus the main point of study. From left to right: there are two trees, one of which being uprooted is falling rightwards; next to this scene is the figure of a running calf (four legged cattle with horns) which is being chased by a wolf or a pig. The attacking animal has been represented symbolically by its head only. The next scene depicts that a man is pushing another man, wearing a long cap, towards the right to form a "dyad" which has been symbolically represented by the last motif. The "head" of the chasing wolf or pig, whatever it may be, stands for the identification of the chasing man, and the chased calf for the man being knocked down. The other two sides, A and B of this prism-shaped seal, depict the scene of descents of the high-landers for "political fishing" into the delta area through the jungles. Their journey culminated, according to the story




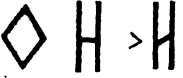

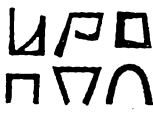
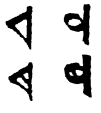



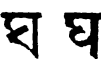




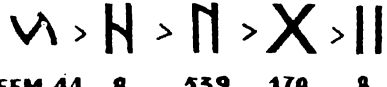


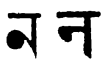
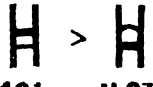

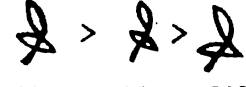





No.	ALPHABETIC STAGES	TECHNICAL DEVELOPMENTS	BRAHMI	TRADITIONAL	PHONE VALUE
1		 4 17 81 233	?	𑀓 𑀔 𑀕	G
2		 PI.XII-17 321 404 FEM 33	𑀖	𑀗 𑀘	G
3	 102	 FEM 44 8 539 179 8	𑀙	𑀚 𑀛 𑀜.	N
4	 406	 CDEP.LI-9 340 P. 426 457 FEM 148	𑀞 𑀟	𑀠 𑀡	D
5	-	 106	?	𑀣 𑀤 𑀥 𑀦	N

Fig. 11-B illustrates the examples of —minus sign study. The incipient “linear” forms of the “derivatives” have been revised further to reduce the script into “cursive” letters. Such technical developments of the script have been recorded in files with a view to comparing them with the scripts of the New World including India. Note the striking similarity with Brahmi.

given on the side-C, in an administrative unity of the “two lands”—the north and the south. (For epigraphical value of this seal refer to the notes on Figs. 30, 31 and 32.) Prof. Piggott has already suggested for a common authority having a dual seat of government in the Indus-valley at page 150 of his book, *Prehistoric India*, (Pelican, 1950). The seal, as a whole, commemorates the ancient tribal battle and the ultimate victory of the north over the south.

Who was the uniter of the two lands? The “head” of the pig or wolf identifies him as the god Set! The man wearing long *het*-crown is being identified by the calf. He represents the southern Hamitic population of ancient Sind. The pictographic script of the Indus-valley originally belonged to these Hamitic people. The Aryan-speaking followers of Set from the north, as the text of the seals tells us, soon began to utilize the script of the conquered Hamites for recording their own speech. Harap-

HIEROGLYPHIC WRITING	OD-I			OD-II		SIGNIFICATIONS	EARLY ALPHABETIC STAGE
	PICTORIAL	ARCHAIC	TRANSITIONAL	DERIVATIVE (ALPHABET)	ALPHABETIC COMPOUNDS		
 I 4 I 9	 101	 100	 67	 107	 46 10	"PASSING" LOCUST	NO FURTHER DEVELOPMENT
 V 13	 488	 60	 237	 337	 32 374	HANDS STRETCHED TO CATCH	NO FURTHER DEVELOPMENT
 G 39	 93	 338	 340 397	 61 38	 18	DUCK	MIC PAGE 429 C.2400 BC 
 O 6						HOUSE	 550 71
 W 12						STAND	
 D 36						FOREARM	 18
 N 35						RIPPLE OF WATER	 102
 P 6						ORIGINALLY A MAST ?	 18
 U 33						JACK FRUIT TREE	 52
 E 1	 PL. CXVII-10.C	 FEM. PL. CH. 6				OX HEAD	

TECHNICAL DEVELOPMENTS OF THE ALPHABETIC SIGNS WHICH MAY BE TERMED AS "LINEAR SMALL HAND"	BRAHMI	SEMITIC AND CLASSICAL	TRADITIONAL INDIAN	PHONETIC VALUE
	6		६	F
				DH
 370 PLCXVII-13				SĀ S
 71 560 342				B WB BHĀ
 PLXII-17 321 404 FEM33				G
 38 61 145 55				ĀIN
 FEM 44 8 539 179 8				N
 101 H 97				H
 12 58 315				TH
 402 PLCXVII 414				A



































Table—
SJM :
Mohenjo-daro alone has given us a chance of unrolling the whole panorama of epigraphical journey of the script from the beginning to the end. The Indus sign-series have been flanked by +plus and -minus signs, both from India and abroad, for the purpose of comparative study. (The page number of MIC noted in the Duck-column should be 426 and not 429).

HEROGLYPHS	SIGNIFICATION	EARLY STAGE OF THE SCRIPT	TECHNICAL DEVELOPMENTS OF THE ALPHABETIC SIGNS	DRIVEN SCRIPT	SEMITIC AND CLASSICAL	TRADITIONAL	PHON. VALUE
N 29	ARCHER WITH TRIANGULAR SHAPED BOW	403	← > ↑ PI CXVH, 10-A 457 OF 32	?	𐤍 𐤏 𐤑	?	Q
	ARCHER WITH ROUNDED BOW	406	C. 400 B.C. DE. PILLI, P 340 P. 426 457 FEM. 48		𐤒 𐤓 𐤔 𐤕	𐤒 𐤓 *	D DH
G 26	BEAK OF A BIRD		𐑖 > 𐑗 > (A+E=A) 401	N	𐤍 𐤎 𐤏	𐤍 *	DH
	HOOK OR CROOK		𐑘 𐑙 𐑚 𐑛 4 17 81 233	?	𐤖 𐤗 𐤘 𐤙	𐤖 𐤗	G
	MOUNTAIN OR TENT		𐑜 > 𐑝 > 𐑞 322 416	?	𐤛 𐤜 𐤝 𐤞		M
U 23	(1) MAN (2) EFFIGY	1 C. 2400 B.C. P. 426	117 FEM. 86 and 2 C. 2400 B.C. P. 425-6	𐑟	UPSIDE DOWN HEAD OR UPSIDE DOWN — 1495	𐤠 𐤡	M'
I 10	SNAKE	93 +	𐑠 > 𐑡 > 𐑢 319 96 FEM. 184	𐑣	𐤢 𐤣 𐤤 𐤥 *	𐤢 𐤣	Z/Y
P 8 F 32	HAMMER OF SPOON		𐑤 > 𐑥 553 40	d	𐤦 𐤧 𐤨	𐤦 𐤧	C
R 2	LAMP ON STAND	* 382	𐑦 > 𐑧 325 32	𐑨	𐤩 𐤪 𐤫 𐤬	𐤩 *	T
X 1	SIDE OF A PILLOW	46) or (251	C		𐤭 𐤮	T
	THATCHED ROOF OF A COTTAGE	*	𐑩 > 𐑪 > 𐑫 > 𐑬 45 533 550 PL. CXVH-II	?	V	𐤯 𐤰	V

Table—RDB : The incipient forms of the alphabetical signs, drawn in “linear” drawings, gave impetus to the technical developments of the script. Here, in this “linear” stage, true alphabetical signs were born to serve various nations of the world. We see that the hieroglyphic Q did not give birth to the Phoenician or Classical Q. It had altogether a different origin. The Indus Q derived from the phonogrammatic sign of a “bowman” (=Qāma-deva; MIC 12). (Cf. notes on Fig. 26).

HIERO-GLYPHS	SIGNIFICATION	EARLY STAGE OF THE SCRIPT	TECHNICAL DEVELOPMENTS OF THE ALPHABETIC SIGNS	BRAMI SCRIPT	SEMITIC AND CLASSICAL	TRADITIONAL	PHON. VALUE
	M8 POOL O30 SUPPORTING POLES				W W Z	म स	SH
	V4 LASSO			?	o o c	उ * *	O
	Q3 REED FAN				? n n P	श्र प L y *	P
	F39 BACKBONE?				अ अ E		E
	F40			?			EE
	Aa1 WHEEL			?			KH
	D46 HAND						B@ AS IN HARD
	V28 TWISTED CORD					इ * श ह	H
	D21 FISH				? 6 6 7	र ल ल	R / L
	V31 BASKET WITH HANDLE			?		क क उ क	K KK KH
	M17 REED			?	Y Y	ी ी	ie ie *

Table—DRS : The Roman D evolved out of the “bow and arrow” and never from the Greek “delta”, whereas, Greek “delta” evolved out of the bird’s “beak”. The signs for C, G, T, V, M, Z-Y, O, P, E, EE, etc., are not very far removed from our known forms. They have survived by their Indian and European alphabets with little detractions. The rounded R was substituted by tapering fish-sign to save space. K developed into KK and finally to KH. The Tāmil R distinctively retains the fish-shape.

MERO-GLYPHS	SIGNIFICATION	PHONOGRAMS	TECHNICAL DEVELOPMENTS	BRAHMI	SEMITIC AND CLASSICAL	PHON. VALUE
 N39	REED MAT →	 4	 101 PI. CXVII-8			SHA
	CHURN	 346	 FEM 405 29	 K(S)	 * ‡ † × †	KAS
 U23	EFFIGY?	 493			ASCERTAINED FROM PHON. COMPLEMENTS	MAR
 T28	SHEAF	 482			99	KHAR
 S42	PROTECTED FORT? → ←SEKHEM	 84			99	PANCIK (AMHAR)
 L2	BEE	 431	C. 2400 BC  P. 425 8  H 94		 B B	BĀ B
 M1	TREE	 P. 425 C. 2400 BC	 42		ASCERTAINED FROM PHON. COMPLEMENTS	IM VNA
 R4	ISLAND	 69	 539		99	AT
	PĀN LEAF	 150	 126 PI. XII-12  (HALF OF A PĀN LEAF)		99	PĀN PĀ
 G47	PAW	 93	 385	 ?	99	THA
 M16	A KIND OF WATER HYACINTH →	 22			99	PĀNA

Table—EJM : Brahmi Ka is the short form of KS (the last sound being dropped). Indus K survives vigorously in Tamil and Malayalam. Even in Hindi it stands with great originality. The phonograms speak of an early association of the Indus script with the hieroglyphic system of writing. Their values have been deciphered mostly with the help of the accompanying phonetic complements (Figs. 18 and 19). The signs for ht, im, bai, kher, mr, pr, pt, mes, tell as the story correctly (cf. fig. 20). The fact is that both the scripts derived from a common root in India.
































HERO GLYPH	SIGNIFICATION	PHONOGRAMS & PICTO-SIGNS	FISCH. VALUE
	PALACE	 452 FFM 54	PR?
	SEAT	 53	PAT
	TOWN	 405	UR
	FORT	 211	GAR
	POTTER'S WHEEL	 367	CHAKRA
	WATER	 PI. CXVII-7	JALA
	DRUM	 129	DAK OF DHAK
	DOVE	 237	U/ W
	COCK → ?	 207	3
	TWO OWLS	 325	MM
	HOE	 90 464	MAR

Table — MSV : The Indo - Aryans found many old phonograms unsuitable for transcribing their language. They adopted many of them by imposing Aryan phonetic value as well as introduced altogether a new set of signs—pān, chakra, etc.

HERO- GLYPH	PHONOGRAMS & ALPH. SIGNS	REMARKS: SIGNIFICATION	PHON. VALUE
	 548	MONOGRAM ←	HIR- NI- MES
	 (ALPH) 106	TRADITIONAL UT 601 G *	N
	 54	TRADITIONAL ← (ALPH.)	CH? O OCCAM
PI. CXVI, 16 →	 (ALPH) 325	CATERPILLAR RARELY USED MOTIF	G GG
c. 2400 BC → P. 426	 (ALPH) 211	SUBSTITUTE FOR THE ABOVE?	G/J
	 38	ASCERTAINED FROM PHONETIC COMPLEMENTS	RAKKI
	 18	"	SASHANA; SAHAE
	 101	"	SHANA
	 67	"	SNEHA & MOKHA PHON. FL/PR
	 342	"	HATA
	 PI. CXVIII, 20-C PI. CXVIII, 10-B	D 27 D	WISOM & S(NIK)

Table—NGM : The design of a beheaded goat, representing the sound khn was substituted by the design of a beheaded pigeon to represent its Aryan equivalent sound hata. The ht was pronounced as at according to Aryan phonetics (e.g. Hat-hor = Athyr).

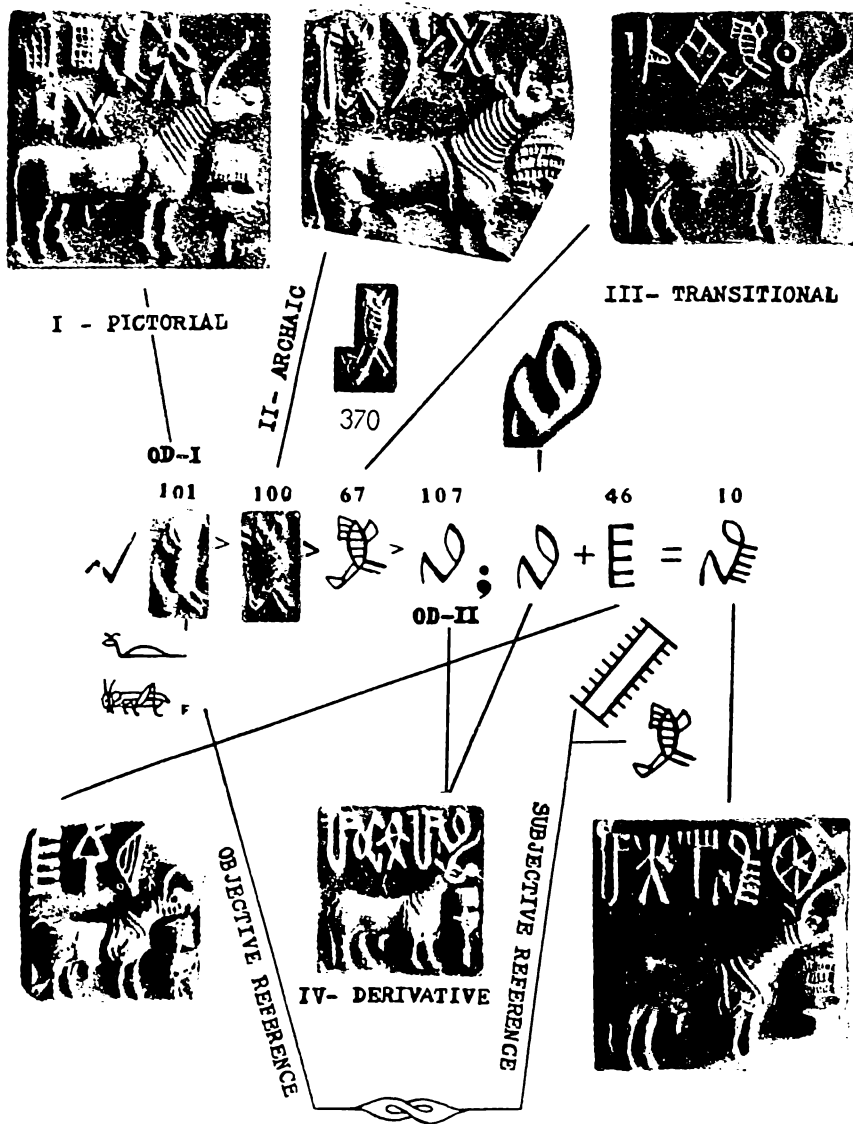


Fig. 13 : Analytical Chart Showing the PTT :

OBJECTIVE (Noncommittal)
REFERENCE

Grasshopper = pharing (phara)

OD-I = phonogram — phara.

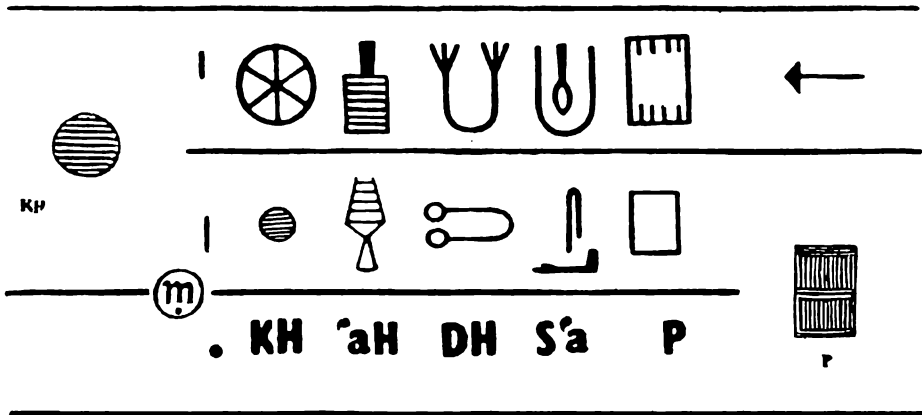
OD-II = alphabet — pha (f)

SUBJECTIVE (Committal)
REFERENCE

1. Falling = pharala (ph-r)
= Sn. patana

2. The end = sesha-a (MIC 13)

3. Elimination = nidha-a (MIC 49)



LORD OF THE CATTLE

Fig. 14 : This was the first seal that I could read correctly in 1954 with the help of the near similar hieroglyphic signs disregarding the trifling difficulty caused by the regional differences between the two scripts. From right, the hieroglyphical rendering of the inscription is P-S'a-DH-'aH-KH. Appended to it is a tick which has been identified as the short form of an accenting index-vowel ṁ. The total sound value of the inscription then comes to pas'adh'ahkhṁ meaning "Lord of the Cattle". The little formal disparity that we note in between the two scripts is bridged with the understanding of the epigraphical history of Indus-valley.

Fig. 15 : From right, the initial and final signs of this text, as we have seen, correspond with the first two signs of the inscription on MIC 337. These two signs must then represent P-S'a (Sn. pasu), meaning cattle. The intermediary sign (man with bow and arrow) is a phonogram, phonetic value of which has been determined from the semi-Masterseal MIC 11 (Fig. 23), where in the same sign is accompanied by the last part of its phonetic complements KKie (Fig. 18). The sign actually stands for the word rakki (Sn. rakshi) meaning "keeper". Although the sign for rakki has been put honoris



38



Dt.=

S'a (RAKKI)P

causa in the middle, it should be pronounced later. The word then comes to pas'a-rakki meaning "the Keeper of the Cattle".

pan typography tells us that, originally, the northerners had no script at their disposal for writing with, which was imported from the south, if not from Mohenjo-daro itself. Although, the excavated epigraphical materials, available at our hand, speak of an archaic Aryan tongue, they throw enough light on the suppressed language of the southerners too. The script and the language recorded on the seals display the period of "transliteration and transcription" in which exchanges of language and script took place under the control of an United Government (Wai-rā or Bai-rā) administered by the Aryan officials. Unless one knows the mechanism of these



18



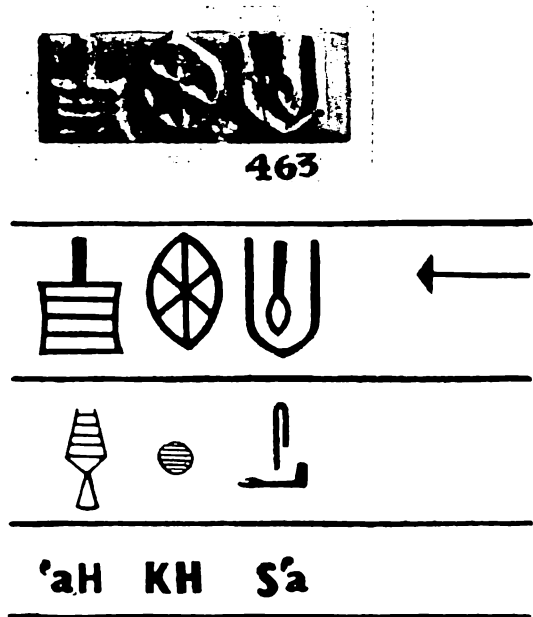
'aH SHA S'a

Fig. 16 : MIC 18 is an example of the Master-seal. The phonogram, first sign from right, is fully accompanied here by the phonetic complements in alphabetical signs which are expressing its complete sound-value following the hieroglyphic system (Fig. 18). Masterseals, singularly inscribed with such explanatory directions for reading the accompanying phonograms, certainly existed in large numbers at Mohenjo-daro. The sign stands for the word s'ashaha (Sn. Sāshaka), meaning "magistrate".

transliteration and transcription that was adopted in this early period by the dominating Aryan-speaking people, one will fail to grasp the real nature of the script. The illiterate nomadic Aryans, like the hungry men (*hābhāte*), began to gobble the newly found script-wealth in a desperate manner. Gradually, they were able to develop a writing system of their own choice on the basis of the old pictographic script.¹⁴ This process of

¹⁴ I have identified the Hamites on the basis of the available linguistic evidences and not on the basis of physical anthropology. Ethnically they might have been the Mediterranean people who were associated with the earliest agricultural settlements everywhere in Western Asia including Sind. It may be noted here that the predynastic Egyptians also belonged to this stock. Rf. *Prehistoric India* by Prof. S. Piggott, (Pelican, 1950) pp. 145-6.

Fig. 17 : The Seal MIC 463 hieroglyphically reveals the word S'a-KH-'aH (Sn. sakhya) meaning "friendship". For the time being it appears that Horkhuf is playing the Egyptian phonic instruments, on the basis of which, Putlibai, the dancing girl of Mohenjo-daro, sings the Indian songs. The real twist in the cord lies here.



developments, achieved through continuous experiments, has been termed as "PTT" (Figs. 13, 20, 21).

As regards — minus sign study, I have already spoken much about the Brahmi and traditional scripts of India in the Chapter II of his Memo. It may be noted here that I have purposely brought the Semitic and Classical scripts in the comparative tables to show that the Classical script had not been imported *via media* of the Semites. As the co-sharers of ancestral language, the Greeks, the Romans, as the seal-texts tell us inherited their due share too from these fundamental academic enterprises of the ancient Indo-Europeans. The Indus people did not call a bull *brsha* but *bos* (MIC 338); did say, unlike the Indians, "the cow drinks water" (MIC 537). True alphabetic writing (MIC 93) and purely syllabic writing (MIC 337)—both have left their traces on the seals. This is, of course, a subject for linguistic study (see Appendix). For the present, we should note that the "B" of the "Bee" and the "B" of the "House", both had their root and growth in Indus-valley. The last sign (from right) on the Seal H 96 (Fig. 10) is a derivative (alphabetical sign) representing the sound B or Bai which had technically evolved out of the gross pictographic sign of a bee shown in the Table—EJM. In any case, it is hard to imagine that the Phoenician B had direct bearings on the Classical B. At the most, the Classical form of the letter B might be the result of a compromise between the two forms of B, one from the bee and other

cf.						S42
PHON.COM:	1 2 3 4				↗	
MIC.13 FEM. 11					←	
	1 2 3 4				↗	←
MIC. 11			*		***	
	1 2			3	↗	
MIC.18					←	
	1 2 3			4	↗	
MIC. 101			* * *		←	
	1 2		3		↗	

Fig. 18: Like the hieroglyphic phonograms, the biliteral, trilateral or multilateral signs of Indus-valley are almost always accompanied by alphabetical signs expressing part or whole of their phonetic value. The phonograms are sometimes put honoris causa at the beginning of the word and their complements at the end (MIC 101, 406 etc.).

from the house.¹⁵ The Roman D evolved out of the “bow and arrow” and never from the Greek “delta”, whereas, the Greek “delta” evolved out of the bird’s “beak” (Table—RDB). The Phoenicians knew the “beak” but knew nothing of the “bow and arrow”. Where from the Romans got their D? The Greeks knew G, E and P in their nearest Indus form than the Phoenicians. However, I do not want to put forward any new theory about the Classical script at this moment. What I want to say is that the documents furnished with the comparative tables may be considered by the Classical scholars in this context also, so that the devil may get his due share too.

¹⁵Cf. *The Legacy of Egypt*, (Oxford, 1953), pp. 59-60.

Fig. 19 : The phonogram (a kind of water-hyacinth) on the Seal H 97, has its hieroglyphic counterpart in Gdr. M-16. The sign is accompanied here by its phonetic complements in alphabetical signs from both sides (see drawings below). The first sign from the left is P, and the third sign is N; as such the sound-value of this phonogram, in the first instance, should be PN. But when we check up with other seals having the same sign, its correct pronunciation then approximates to



pāna, e.g. H 256 gives (from right) jala-pāna-e "(she) is drinking water", and MIC 22 notes kāai - jala - pāna - a (the cattle is drinking water). The principle of homophony is represented by this sign along with the sign for pāna (Fig. 22, Nos. 1 and 2). It also confirms the identification of the water-sign drawn in the triangular form

PHON. COMPLEMENTS		
H.97		
	1 2 3 4	5 6
H.256		
	1 2 3	4
MIC 22		
	1 2	3 4 5

depicting a river in perspective. However, the existence of a spelling system with phonetic complements in alphabetical signs is the important point that should be noted by the reader.

Discovery of a large number of Grammar School tablets indicates that Mohenjo-daro was the world's first University-town. Here, in the "foundry", its Aryan-speaking academicians were hammering out the linear "types" from gross pictographs, transforming the hieroglyphic script into pseudo-hieroglyphics and gradually discovering the complicated principles of alphabetic and syllabic writings out of the primitive *rebus*

Fig. 20: Not only the hieroglyphic spelling system has been followed here, many hieroglyphic signs appear in their correct form on a few older seals also, though, their numbers can be counted on finger-tips. The signs for ht (pronounced as at) bai, u/w, mm, khr, mr, etc. do not appear accidentally. They can be checked formally as well as linguistically. They all retain hieroglyphical sound-value at the time of transcribing Aryan words (see Appendix). The seal MIC 237 is the world's first concise dictionary giving the word bhāglala in the first line and its equivalent word wadhā-a (Beng. udhāo) in the second line, both meaning "run-away". This concise dictionary helps us to check the correct sound-value of U/W (hieroglyphic sign Gdr. G-43). Use of such pictographic signs in spelling words was soon replaced by the introduction of true linear type of alphabets (cf. No. 8 with Nos. 9 and 10) under the control of the Aryan-speaking authority.

	"PTT"	HIEROGLYPH	←
1	MIC. 69		
		1	2 3
2	P. 425		
		1 2 3 4 5	6 7
3	MIC. 237		
		1 2	3
4	MIC. 325		
		1 2 3 4	5 6
5	MIC. 182		
		1 2	3 4
6	MIC. 225		
		1	2 3
7	MIC. 464		
		1 2	3 4
8	MIC. 207		
		1 2	3
9	MIC. 246		
		1 2	3 4
10	MIC. 91		

system. Archaeologically, we know that they were present in Mesopotamia at about 2400 B.C. with their fully developed script. Like the theory of Brahmi origin of Indian traditional script, the theory of Phoenician origin of the Classical script has altogether to be revised, because the Classical



























"PTT"		M 1 →		PHON.COM.
H.247				← I
		1	2	3
H.341		 		←
		1 2	3	
PAGE 425	 +  +  + )   		← c.2400 BC.
		1 2 3 4 5 6 7 8	9	
MIC 42		   		     
		1 2	3 4	5 6 7 8
				

Fig. 21 : In the Seal H 247, the tree-sign is initially accompanied by the first part of its phonetic complement, the alphabetical sign I, which indicates the sound-value of it as IM (Gdr. M-1). The word should, therefore, be read as im-a or āima-a, meaning "(he) is coming". The word on the Seal H 341 should be read as ā-ma-ē, meaning "(she) is coming". The seal (MIC p. 425) from Telloh, dated c. 2400 B.C., retains the same IM sound for the tree-sign, i.e. IM-Gie-TT-T-AKKM (imgit-tata-akkam) meaning "(the tiger) is beckoning". But we see that a new interpretation of this sign has been introduced in pure Aryan tongue by setting the phonetic complements as V-N-A (Sn. vanaya) meaning "the forest" on MIC 42 which contains S'a-Mai-LL-V-N-A.

Fig. 22 : It is always awkward to narrate or discuss texts inscribed from right to left in English which is written from left to right. I have, therefore, changed here the direction of the inscribed matters to our advantage. There are three kinds of inflexions of the verb based on gender in Sanskrit viz. (1) the suffix for the masculine is ah, (2) the suffix for the neuter is am, and (3) the suffix for the feminine is ā or ī. Although, the Indus language is a kind of archaic Sanskrit, we shall see, its inflectional motifs are somewhat the same as used in the classical Sanskrit. No. 1 represents the word pāna-a (masculine), while No. 2 represents pāna-m (neuter). Due to the homophony of signs, we get its feminine form from the Seal H 256 (Fig. 19) where it represents the word as (jala)-pāna-ē. No. 3 gives the motif as mā-a (masculine). No. 4 mā-a-ēē (feminine), No. 5 mā-am (neuter). No. 6 has na (masculine), No. 7 na-a-m (neuter) and No. 8 na-a-ma-ē (feminine). No. 9 has fē-a (masculine), No. 10 fē-a-ē (feminine) and No. 11 fē-a-m (neuter). From these inflexions of the verb, we can linguistically confirm our identification of A, M and E.

1	CDE. 21 →				-
		PĀNĀ	A		
2	MIC. 12.6 →				-
		PĀNĀ		M'	
3	MIC. 339 →				-
		MĀ	A		
4	MIC. 116 →				EE
		MĀ	A		EE
5	MIC. 214 →				-
		MĀ	A	M'	
6	MIC. 369 →				-
		NA	A		
7	MIC. 536 →				-
		NA	A	M'	

people surely had full knowledge of their ancestral achievements in this field. The similarity between the Classical and the Phoenician scripts exists as a result of their common beginning in an aboriginal "type foundry" at Indus-valley and not because that one was successor to another. As the analytical charts show, Indus-valley provides us with the prototypes of almost all the alphabetical signs used by the various nations of the New World including India. Script is not a criterion of language as language is not a criterion of race. Although, Indo-Aryans cannot claim for the progenitorship of the Indus script, they were fully responsible for the procreation of true alphabetical characters out of the Indian spoils.

The sign for Y on the Seal FEM 101, the sign for M on the seal MIC 416, the sign for N on the Seal MIC 539, the sign for D on the Seals FEM 148 and MIC 401, the sign for A on the Seal MIC 154, the sign for B on the Seals MIC 550 and H 96, the sign for E on the Seal MIC 46, the sign for F on the Seal MIC 107, the sign for G on the Seal MIC 4, the sign

for H on the Seal H 97, the sign for I on the Seal MIC 55, the sign for O on the Seal MIC 560, the sign for P on the Seal MIC 56, the sign for S on the Seal MIC 12, the sign for T on the Seal MIC 32, the sign for V on the Seal MIC-Pl. CXVII-11, the sign for Z on the Seal MIC 319, etc. speak of an uninterrupted lineal descent of the alphabetical signs from Indus-valley to their immediate successors in Europe. We should remember that Europe is three thousand miles away from Bombay by sea but three hundred miles apart from Delhi across Kashmir-valley. The migration of nomadic and illiterate Aryan-speaking food-gatherers from one place to another has altogether a different story than the academic enterprises of the Aryan-speaking city-dwellers.

8	MIC 230 ↑	∞	II	U	⋈	E
			Nq̇	A	Mq̇	E
9	MIC 279 ↑	↻	U	U	-	-
			FE	A		
10	H 212 ↑	↻	U	U	-	E
			FE	A		E
11	MIC 295 ↑	↻	U	U	⋈	-
			FE	A	M'	



Fig 23 : Many of the seals contain the sign No. 1 as initial letter of their text. As the Table—SJM tells us, it is an accented form of the linear B. On checking, it is found that the original House-B is a half-vowel representing the sound-value Wa equivalent to Hindi ञ. The half-vowel nature is indicated by its use after Q (MIC 387, 534, 554, etc.). The arrow-shape of Q signifies "striking the end of the syllable". It is, therefore, seen mostly at the end of the text; where it is not, a stop sign is given to indicate the end of the syllable (MIC 30). Still in English only vowels are appended to Q. No. 2 is represented by two vertical strokes. In Hindi such strokes (see above) stand for the vowel sound ai. Oblique strokes, in hieroglyphic writing, exert the sound-value Y. The combined sound-value of Nos. 1 and 2 then comes to Wai. The sign Gdr. 0-6 may also be compared with the sign No. 1. It was pronounced as ei by the Egyptians (Greek ai, Latin ae; ref. G.I.G.E.C., British Museum, 1930, p. 4). We can see from the comparative tables that the sign No. 3 is an accented form of R; No. 4 is V; No. 5 is T; No. 6 is an accented form of M; No. 7 is T; No. 9 is a phonogram accompanied by the phonetic complements in part (Nos. 10 and 11). No. 11 is an index-vowel modifying the sound of the sign No. 10, which is a consonantal conjunct and represents the sound-value KK (Table—DRS). I have, therefore, read the inscription as Wai-rā-V-T-Mā-T-A-RAKKie, which may be pronounced as Wairāvata-māta-a-rakkī (Sn. Airāvata-mātaya-rakshī), meaning the "Keeper of the Airāvata Elephant".

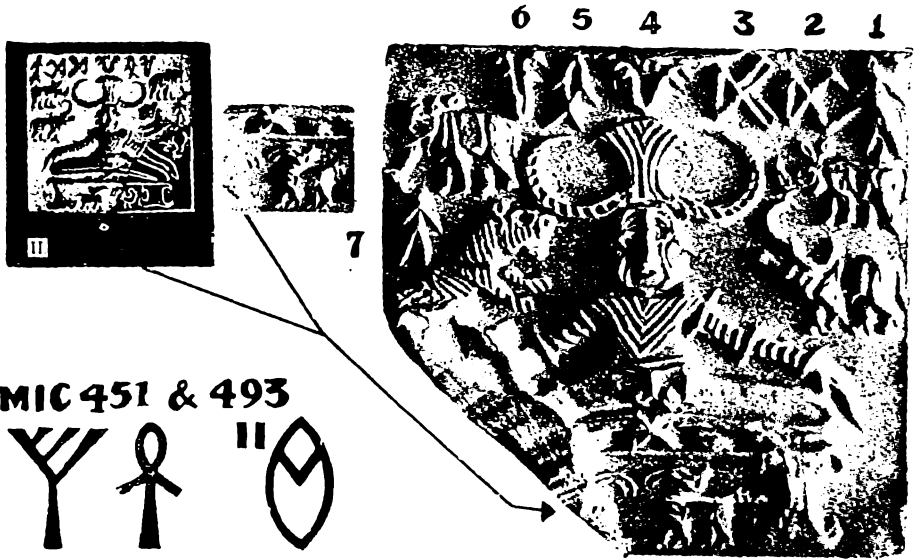
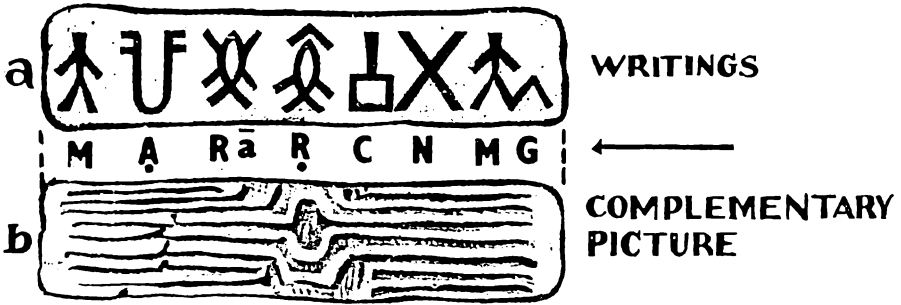
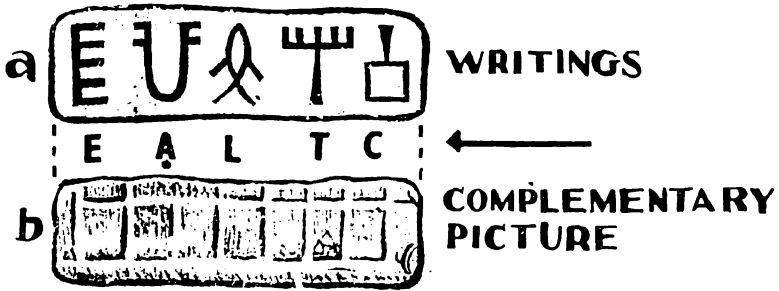


Fig. 24 : The so-called *gōḍ Pasupati*, Lord of the Beasts, is seated in the *paryānkabandha* (stuck-with-the-cot) *āshana*, being surrounded by six animals. The figure of an animal or bird, beneath the cot, remains invisible and unidentifiable due to the partial loss of the left-lower corner of the seal. But whatever portion remains, it gives a clear evidence for the existence of the sixth creature. We should, therefore, take the number of the surrounding animals as six, which corresponds with the six-faceted super-imposed drawing of the head of the seated god. He cannot be *Śiva* who is a five-faceted (*pancha-mukha*) god. The figure must then be of the god *Kārtikeya*. Traditionally, *Kartikeya*, the six-faceted god (*sarānana*), is the son of Lord *Śiva*, but is also his teacher in the science of yoga. This interpretation gets support from the Seals MIC 451 and 493 which represent the name of *Kārtikeya*'s wife as *Kāai-MĀRie* (Sn. *Kaumāri*). On the other hand, the *Puranas* connect *Śiva* with the *Gangetic Valley* only and not with the *Indus Valley*. The sign No. 1 of this inscription has been significantly drawn in a bigger size than the other signs to indicate its non-alphabetical quality. In fact, it is a determinative for *yogi* or *yoga* with which the seal is concerned. The 3rd sign with two legs, represents a stand (turned on the side). The Table—SJM displays its developmental stages and on the basis of plus and minus sign studies we can take it as G. The 2nd sign must be Y, the first letter of the syllable *yoga*. The Table—RDB confirms the sign as Z-Y. The sign No. 7 has been put below in the 2nd line due to short of space, which, we have seen, is M representing the initial sound of *manushya* (man). The sign No. 4 is *Ā*; No. 5 is L and No. 6 is A according to my analysis noted in the comparative Table—SJM. The whole inscription then can be read as (Z) Y-G-Ā-L-A-M (Sn. *yogālayam*) meaning the “gymnasium for yoga”.



FEM.PI.XCII.No.5



FEM.PI.XCII.,NO.6

Fig. 25 : We have seen that the picture illustrates the contents of the text of the seal (Chapter III). The seals FEM—Pl. XCII, 5 and 6 are two important documents in this respect. The side-b of No. 5 depicts the roads and lanes with bends and circles while the side-a furnishes with the explanatory caption “gamanacharrāam” which means “going for a stroll”. The side-b of No. 6 depicts a puckā square constructed with stone or brick while the side-a furnishes with the label “chatalaē” which means “the square”. Such illustrated tablets were used for educating pupils in the language.

APPENDIX—SELECTED READINGS

MIC 5 : V—A=va-a, Sn. vaya; (fear).

MIC 6 : WY—T—HATA—(T)ai—Ku—r—S’a—I—N—N—NI (.) I—IE
=wyta-hataikur-s’aānanani (.) āi-ie; (the army is advancing for
self-slaughter).

MIC 8 : BAI—AT—N—L—Rā—S’a—NI—Q=Baiatanalarā-sainiq;
(riverain soldiers of Baiata).

MIC 10 : KHai—FE—T—Mā—A=khaifētamā-a; Sn. kupita**;
(being angry).

MIC 15 : GAR—S’ANA—DHEE=gar̄sainadhee; (commander of army
from the fort).

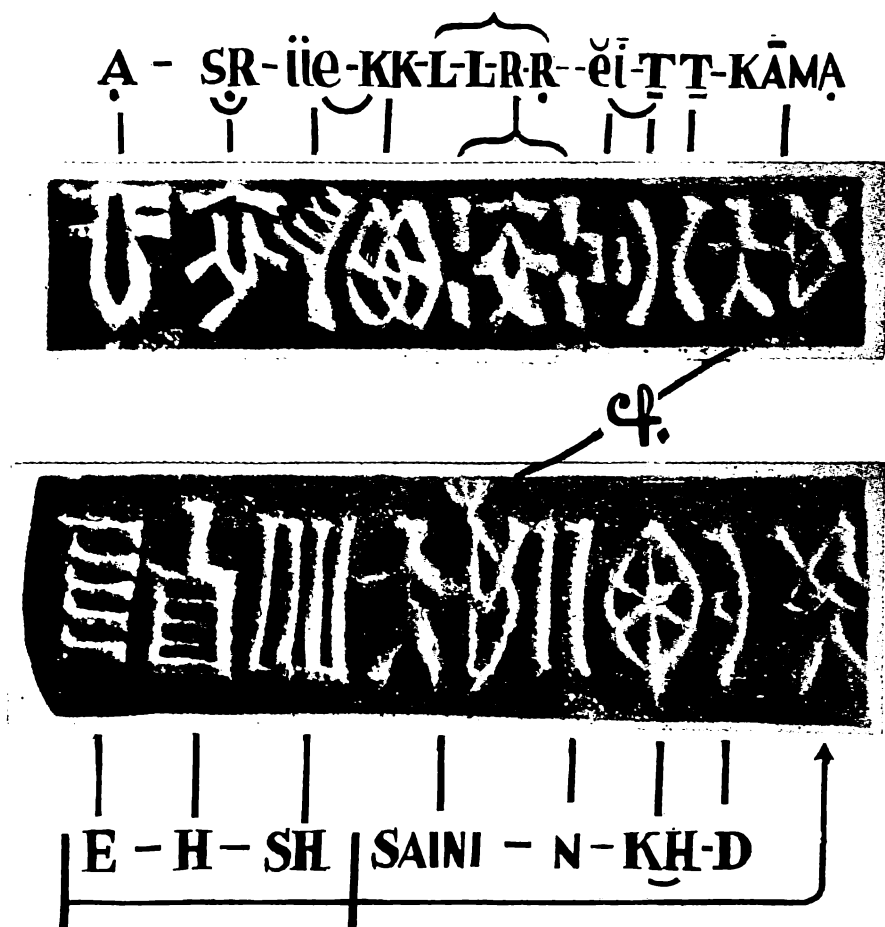


Fig. 26 : The figure of the "bowman" with a triangular shaped bow in the Seal MIC 403 should be compared with the figure with a rounded bow in the Seal MIC 406. The former sign stands for the sound qāma-(deva) and the latter for s'ani(q). Here the word qāma means "works" and most probably the military or public works. For the phonetic complements of the phonogram S'a-NI-Q refer to the Masterseal MIC 65. The phonetic complements (on the Seal MIC 406) interpret the initial phonogram as SH-H-E (sahā-ē) meaning "the commander".

APPENDIX—SELECTED READINGS (contd.)

- MIC 19 : Kāai—SH—L—Q=kāaishalaq; (has coughed).
 MIC 21 : Tmæ—r—Rā—(× × ×)—S—SH—A=tmærra-sesha-a ; (has the workshop been closed ?).
 MIC 24 : Dm—A—LL—r—Mā—A=damalalarṃā-a; (takes breath).
 MIC 25 : SH—NI—IE=shuni-ie; (is over hearing).

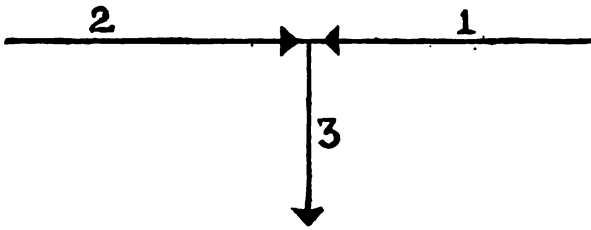


Fig. 27 : Although the direction of writing is mostly followed from right to left, in the Seal MIC 16, the direction is first followed from right to the 3rd sign, then from left to the third sign and from there to the down below. The arrow-shaped monogram of KH-N, put in the 2nd line, divides the first part of the word from the second. The inscription is read as “(1) SH-SH-Æ, (2) NI-R, (3) KH(in part only)-N”, the total sound-value of which, is “shasha-æ-nirkhana”, meaning “observes with dismay”.

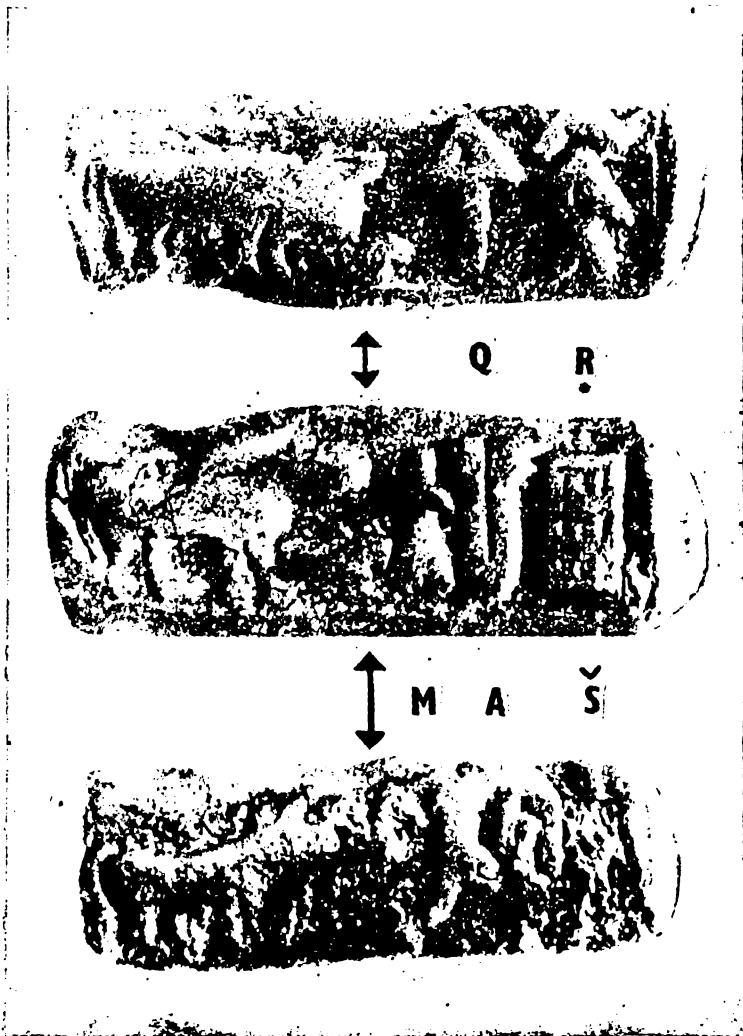
APPENDIX—SELECTED READINGS (Contd.)

- MIC 26 : N—GAR—Nai—S’a—DH—A=nagaranai-sidha-a; (enters into the city).
- MIC 29 : D_m—Ā—NI—AT=damā-niata; (is taking breath);
- MIC 30 : S’a—NI—Q(.)I—AKKN=S’aniq-iakkana ; (the soldier is coming in)
- MIC 32 : Kāai—G—G—N—T—L—Q=Kāai-gaganatalaq; (the cattle is lowing).
- MIC 33 : YEE—SH—Rai—L—HKY—A=yēesharai-lakkaya; (secretly observing).
- MIC 333 : SH—V—Ā—KH—A=shavaākha-a; (with fear in the eyes).
- MIC 334 : Kāai—GM—S—A=kāai-gamasa-a; (the cattle is going).
- MIC 335 : KH_m—YEE—A=khāmyee-a; (eating).
- MIC 336 : DĀK—I—DH—ĒE—A—M=dākaidhaēēam; (starts lowing).
- MIC 338 : SHĀ—SHA—WSH=shāshawasha; (is threatening).
- MIC 339 : NI—RAKKI—Mā—A=nirakkimā-a; (observes).
- MIC 340 : (1st line) Wai—SHĀ—S’a—DH— (2nd line from left) PĀNA—GAR=Waishās’adhapānagar; (name of a city).
- MIC Pl. CXVIII, No. 10 : (A) The fish in the mouth of the gharial represents ṛ, while the flying arrow behind the gharial represents q. The

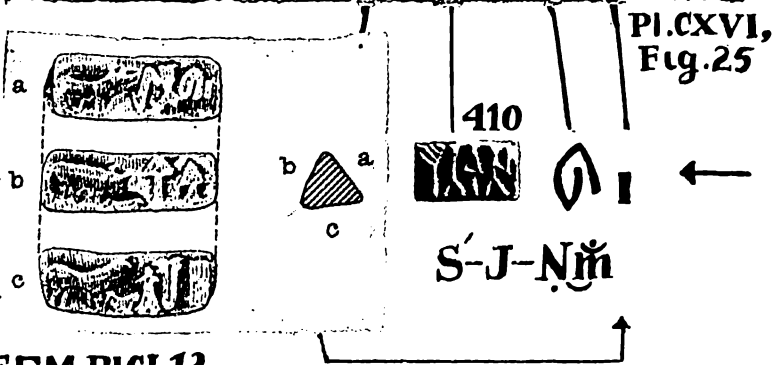
A—N—KK—L Ī—HATA—T—H—R—N ←



Fig. 28 : "Apprehension of murder" (narahatahtai-lakkana-a) is the content of the text on the Seal MIC 77. The third sign, from right, is a solitary motif which does not occur again in any of the seals. As such, there is no chance of checking it from other references. The fifth sign from right is a phonogram representing the sound hata, of which the sixth sign T is the concluding phonetic complement. The fourth sign is also T (turned to left for adding style to the lettering).







C Fig. 29 :
 The prism-shaped
 Seal MIC-
 Pl. CXVI-
 25 is
 having the
 names of
 the three
 Vedas
 inscribed
A serially on
 its three
 sides. The
 side-C
 contains
 R-Q and
B the side-A,
 S-A-M.
 The side-B
 is illegible.



FEM.PIC1,12

Fig. 30 :

However, from the side-a of the similar prism-shaped Vedic Seal FEM-Pl. CI-12 we recover the name as ṁN-J-S or 'ainN-J-S. (For line drawings of the former seal see MIC-Pl. CXVIII - 12). It is noticeable that the word

	$(\text{Q} + \hat{\ } = \hat{\text{Q}} \text{ or } \text{Q}^{\circ})$
PI.CXVI, 25 	32 40 395
	← FEM, PI, CI, 12-a
S-J-N+AIN	
	← PI.CXVI, 25
M-A-S	

ṚK has been spelt as ṚQ. SĀMA has been written as S-A-M. But it can be pronounced as s̄ā-a-m also. YAJUSA has been spelt, 'ain+Ṛ-J-S. If the first sign is ṁ or ṁ then in combination with Ṛ it may give the sound-value of Bengali or Hindi ऋ. The identification, however remains doubtful due to the short size of ṁ placed at the lower margin, which is usually put at the upper ridge. For the present, let us take it as a short form of 'ain.

SET THE DOMINATING GOD



Fig. 31 : (detail)
The prism-shaped Seal MIC-Pl. CXVI-14 is the Indian "Na'rmer Palette", depicting the local scene of an ancient tribal battle and the victory of the North over

the South. (For full-sized line drawings of this seal please refer to MIC-Pl. CXVIII-10). Refer to the Appendix also for epigraphical significance of this seal.





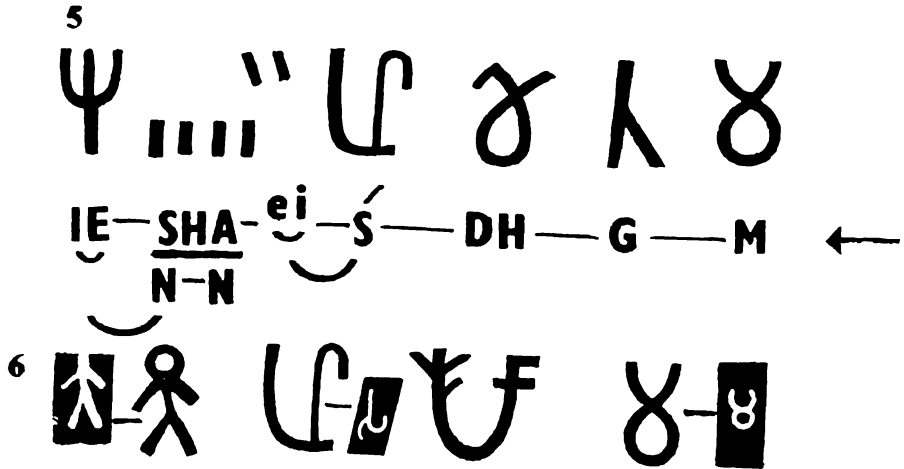
<p style="text-align: center;">1</p>  <p style="text-align: center;">A-M-AIE-NI</p> <p style="text-align: center;">UNLOADING or SCRIPTURE</p>	<p style="text-align: center;">2</p>  <p style="text-align: center;">A T-T T-IE-G-IM ←</p> <p style="text-align: center;">KK M</p> <p style="text-align: center;">(The tiger) IS BECKONING'</p>
<p style="text-align: center;">3</p>  <p style="text-align: center;">MA-RR-Pā-N</p> <p style="text-align: center;">UNABLE (to)</p>	<p style="text-align: center;">4</p>  <p style="text-align: center;">mTT-Bà-T ←</p> <p style="text-align: center;">(BOX FULL OF GOLD OR COIN)</p> <p style="text-align: center;">BEING CARRIED</p> <p style="text-align: center;">PRESEN- TATION</p> <p style="text-align: center; writing-mode: vertical-rl; transform: rotate(180deg);">Dt. for bearer</p>

Fig. 32 : The above inscriptions have been printed in MIC between the pages 425 and 426. The seal No. 1 comes from Telloh, a site in Sumer dated c. 3000 B.C. The seal No. 2 is also from Telloh. The seal No. 3 is from Kish

APPENDIX—SELECTED READINGS (contd.)

total epigraphical significance of this enigmatical writing is r-q which has been alphabetically inscribed on the side-C of the Vedic seal No. 12 in the same plate (B) It is an enigmatic representation of the side-B of the same seal. The closed mouth of the gharial represents 'ain and its legs portray n, while the legs of the duck represent j. The sign of the woman's breast (Gdr. D-27) at the top left corner stands for s. The total epigraphical significance of it is 'ainn-j-s. (C) It is an enigmatic representation of the side-A of the same seal. The pig's head represents s and the calf's head a. The tree, shaped in imitation of a human body, indicates m. Total epigraphical significance of the writing is s-a-m.

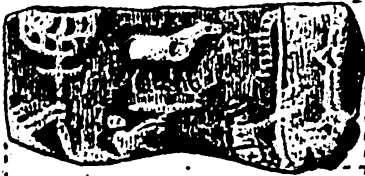


and No. 4 from Susā. The seal No. 5 is from Djokhā. The forms of the script, as appear on these seals, can be dated roughly as 2400 B.C. on the archaeological basis (Langdon—MIC, pp. 423-427). Against the column No. 6, (above), I have compared the human figure representing M of the Indus script with that of the seal No. 3 from Kish.

Fig. 33 : The Kish figure is having a clearly drawn round head over the body whereas the figure from Mohenjo-daro does not. It may be noted here that the determinative figure of yogi, on the Kārtikeya seal (Fig. 24), does not have any sign of the head on its body also. It shows that the iconoclastic rulers of Indus-valley did not permit the scribes to portray the human figure in full. Again, the particular form of S used on the seal No. 5 from Djokhā was not known to the Indus-valley people. This form of S is organically more akin to the later form of the Brahmi S. The next sign, the dipthong Æ, has been used rarely in the inscriptions of Indus-valley; whereas it occurs perfectly on the seal No. 1 from Telloh. The shape of the Brahmi loop-shaped M has striking parallel to the letter M on the seals from Djokhā and Telloh. Such a form of the letter for M has been rarely used on the Indus-valley seals. On these grounds and as the name of Magadha is appearing on the seal No. 5 from Djokhā, I am inclined to resolve that these seals (Nos. 1 to 5) did not travel to Mesopotamia from Indus-valley but from eastern India, where they had been manufactured under the care of non-iconoclastic rulers.

NI-KKAI-KU-RAKKI-BA

Fig. 34 : (at p. 64) The word nikkaiku-rakkiba may mean "shall protect the unity" or simply "shall (certainly) protect". If the latter interpretation is accepted by the linguists, then it would mean the "protection of cows" (cf S. Piggott—Prehistoric India, p. 263). It is an oath of allegiance.



SECTION



HR. 1546.



9

PI. CXVIII, Fig. 9



PI. CXVI, Fig. 5



B-RAKKI-Kū-ēi-KK-NI



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