

# MOHENJO-DARO AND THE INDUS CIVILIZATION

Being an official account of Archæological Excavations at  
Mohenjo-daro carried out by the Government of India  
between the years 1922 and 1927

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Volume II Text Chapters XX—XXXII  
Appendices and Index



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CHAPTER XXIII

THE INDUS SCRIPT

FOREWORD

IN this study of the inscriptions of the early seals of the Indus Valley I have definitely stated that the early Indian alphabet, known as the *Brāhmī script*, is derived from the ancient Indus pictographic writing, and I have identified the origin of many Brāhmī characters with confidence. In my *Sign List* the phonetic values of the derived alphabetic characters have been inserted, but I do not wish to convey the inference that these are the correct values of the original ideograms, any more than the phonetic values of the Phœnician alphabet represent the values of the Egyptian pictographs from which they are derived. It is highly improbable that the signs of the Indus script have reached the syllabic stage, that is, a consonant + vowel, as in the Brāhmī alphabet. Many of them may possibly be so used, and used as phonetic elements in the writing of the words, as many Sumerian pictographs are in the oldest known Sumerian texts. If the roots of this unknown language are mainly biconsonantal, as in Sumerian and Indo-Germanic languages, then it follows that the syllabic values, such as *ba, ta, ga*, etc., of the derived Indian alphabet, have lost a final consonant, and may have been *bad, bag, ban*, etc., *tad, tag, tab*, etc., *gal, gan, gab*, etc. It is no more possible to transliterate the Indus signs from the derived Brāhmī alphabet than to operate in the same manner upon Egyptian hieroglyphs with the derived Phœnician alphabet. Here we have, already from the seals, a sign list approaching 300 numbers<sup>1</sup>, obviously the initial consonants of a very restricted proportion would be known, even in the successful identification of all the forty-five Brāhmī characters.

**Indus writing the original of Brāhmī script**

**Transliteration of the Indus script from the Brāhmī not possible**

The proper names and names of professions on these seals do not supply sufficient material for successful decipherment. It is not possible to separate word and sign groups, the declensions and verb inflections cannot be detected here, and the pronouns are entirely absent. Until longer inscriptions of a literary and historical character are discovered, not much advance in the interpretation can be expected. A good many important facts can be determined, however, to clear the ground for more satisfactory research. In the first place this script is in no way even remotely connected with either the Sumerian or Proto-Elamitic signs. I have compared some of the signs with the signs of these scripts. For the references to the Sumerian pictographs, or the earliest forms of the Sumerian signs,<sup>2</sup> I have referred the reader to the numbers of *REC* (Thureau-Dangin, *Recherches sur l'Origine de l'Écriture*

**Indus script unconnected with Sumerian**

<sup>1</sup> It should be noted that at the time of writing this chapter (it was finished in April, 1927) Professor Langdon did not have access to all the inscriptions utilized by Messrs Sidney Smith and C J Gadd in the preparation of their sign manual—[Ed.]

<sup>2</sup> But see the Postscript (July, 1928)

Indus signs  
resemble  
Egyptian  
hieroglyphs

*Cuneiform*), and for the Proto-Elamitic signs to Professor Scheil's "Textes de Comptabilité Proto-Elamites", in vol xvii of *Mémoires de la Mission Archéologique de Perse*, pp 31-66. This series is commonly cited as *Dél Per* (*Délégation en Perse*). The Indus inscriptions resemble the Egyptian hieroglyphs far more than they do the Sumerian linear and cuneiform system. And secondly, the presence of detached accents in the Indus script is a feature which distinguishes it from any of these systems. Although vowels must be inherent in all the signs, nevertheless some of the signs and accents must be pure vowel signs. For this reason alone it is necessary to resign further investigation to Sanskrit scholars. If future discoveries make it possible to transliterate the signs, and the language proves to be agglutinative, it will then be a problem for Sumerologists. I am convinced that all attempts to derive the Brāhmī alphabet from Semitic alphabets were complete failures.

\* \* \* \* \*

Indus seals  
found in  
Mesopotamia  
and Elam

This study of the script of a pre-Sanskrit civilization of the Indus Valley is made from the material supplied by 541 impressions of small press seals. Five hundred and sixteen were supplied to me in photographs by the Archaeological Department of the Government of India, together with photographs of several more which are not inscribed. The remainder consists of photographs of seals (not of the impressions), published by Sir John Marshall in the *Illustrated London News*, 1924, pp 624 ff, and 1926, p 346, in *Cambridge History of India*, vol 1, pl 21 (two seals), and in the *Archaeol Survey Report*, 1923-4, pl xiv, 15 (one seal). Three seals found at Harappā (1872, 1885, 1886) were published by J F Fleet in the *Journal of the Royal Asiatic Society*, 1912, pp 699 ff, and five have been found in Mesopotamia. Since the archaeological criteria for dating prehistoric monuments in Mesopotamia and Elam are much more secure than in India, they constitute the most valuable evidence for dating the early civilization of the Indus Valley.

Animal file  
motif one of the  
oldest designs  
Two-horned  
bull not known  
in Sumer

One of these five seals is a bone roll cylinder found at Susa, apparently in the same strata as that of the tablets in Proto-Elamitic script of the second period of printed ware. Scheil, in *Délégation en Perse*,<sup>1</sup> vol xvii, assigns this group of tablets and printed pottery to the period of Sargon of Agade, twenty-eighth century B.C., and some of the tablets to a period as late as the twenty-fourth century.<sup>2</sup> The cylinder was first published by Scheil in *Delegation en Perse* II, 129, where no precise field data by the excavator are given. The text is there given as it appears on the seal, and consequently the text is reversed. Louis Delaporte in his *Catalogue des Cylindres Orientaux du Musée du Louvre*, vol 1, pl xxv, No 15, published this seal from an impression, which gives the proper representation of the inscription. Now, it will be noted that the style of the design is distinctly *pre-Sargonic*—witness the animal file and the distribution of the text *around the circumference* of the seal, and not parallel to its axis as on the seals of the Agade and later periods. See the pre-Sargonic seals of Lugaland, *Revue d'Assyriologie*, vi, 105-25, by Col Allotte de la Fuje, seal of Eniggal by the same scholar in *Documents Presargoniques*, pl 12, Delaporte, *Cat*, II, pl lxx, No 3. It is certain that the design known as the animal file motif is extremely early in Sumerian and Elamitic glyptic, in fact it is among the oldest known glyptic designs.

But the two-horned bull standing over a manger was a design unknown in Sumerian glyptic, except on the small round press seal found by De Sarzec at Telloh and published by Heuzey, *Découvertes en Chaldée*, pl xxx, fig 3a, and by Delaporte, *Cat* I, pl II, t 24.

<sup>1</sup> This title no longer appears on the title page of the official publications, which are now called *Mémoires de la Mission Archéologique de Perse*.

<sup>2</sup> See my review of Scheil's latest study of the Proto-Elamitic script in *JRAS* 1925, p 169.

The Indus seals frequently represent this same bull or bison with head bent towards a manger. See Seals 317, 318, 319, etc. Two archæological aspects of the Susa seal are disturbing. The cylinder roll seal has not yet been found in the Indus Valley,<sup>1</sup> nor does the Sumero-Elamitic animal file *motif* occur on any of the 530 press seals of the Indus region.<sup>2</sup> It seems evident, therefore, that some trader or traveller from that country lived at Susa in the pre-Sargonic period and made a roll seal in accordance with the customs of the seal-makers of the period, inscribing it with his own native script, and working the Indian bull into a file design after the manner of the Sumero-Elamitic glyptic. The Susa seal clearly indicates a period *ad quem* below which this Indian culture cannot be placed, that is, about 2800 B C.

On a roll cylinder it is frequently impossible to determine where the inscription begins and ends, unless the language is known, and that is the case with the Susa seal. However, I have been able to determine a good many important features of these inscriptions and I believe that this text should be copied as follows —



Pictograph of  
Indus seal  
from Susa

The last sign is No. 194 of my list, a variant of No. 193, which is a post-fixed determinative, denoting the name of a profession, that is "carrier, mason, builder", and invariably stands at the end. (The script runs from *right* to *left*.)

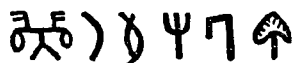
As to the small *circular* press seal found by De Sazec at Telloh (Lagash),<sup>3</sup> a site in the extreme south of Sumer, which has furnished monuments anterior to 3000 B C, here again no archæological data have been preserved concerning the stratum in which it was found. The text here follows the upper circumference, and for similar round and oval seals from Harappā and Mohenjo-daro see Seals 309, 478, and 527. It is extremely probable that this seal also belongs to the *pre-Sargonic* period, and it is regrettable that no exact information is available from the field notes of the excavator. The material is a "soft grey greenish" stone. The text is —



Indus seals  
found at Telloh  
and elsewhere

The postfix No. 87 has here a more archaic form than on any of the seals from the Indus Valley.

A small square press seal of steatite of the usual Indian type has been acquired by the Louvre and published by Dr. F. Thureau-Dangin, *Revue d'Assyriologie*, xxii, 99. He suggests that it came from Telloh also. The text is —



The last sign is No. 195, a postfixed determinative of a profession. The fourth sign may be nothing more than No. 219, the accretions being due to defects on the surface of the seal. The animal on this seal is the Indian tiger with head over a manger, facing right, as in Seal 351, cf. Seals 350, 353, and 355.

The impression on clay of a similar seal was found at *Djokha* (Umma) near Telloh, a site which has supplied no antiquities later than the twenty-fourth century B C, and many

<sup>1</sup> The cylinder seal has since been found at Mohenjo-daro — [Ed.]

<sup>2</sup> This motif occurs, however, on the sealings, e.g., Pl. CXVIII, 10 — [Ed.]

<sup>3</sup> Published by Delaporte, *Catalogue des Cylindres, Louvre*, 1, pl. 11, t. 24.

of the greatest antiquity. This seal has the usual horned bull<sup>1</sup> over a bowl-shaped stand surmounted by a box as in Seals 40 and 115. The reverse of this clay tag from Djokha is impressed with another seal bearing the same simple design of a surface ruled in small squares as found on the Indian seals, see *Revue d'Assyriologie*, xxii, 56, and compare Seals 524, 525, 526, and 528. Professor Scheil, however, thinks that this is only the impression made by a coarse cloth. The inscription on the Djokha seal is —

Ψ... U 8 K 8

Here the text ends with the postfix No 96

Of the four Indus Valley seals found in Mesopotamia, that excavated by Mr Mackay in the temple of the war-god Ilubra at Kish is the only one concerning which exact field records exist. It came from a chamber in the temple beneath the Samsuiluna pavement and is described as found lying in the debris used to fill up the foundation of the chamber. A plaster copy is published by Mr Mackay in the *Journal of the Royal Asiatic Society*, 1925, pl. 1. It was originally covered with a blue glaze. The text is —

人 人 田 11

The postfixed determinative No 182 shows that the text bears the name of a person, or profession.

However these five seals may have arrived in Mesopotamia and Elam, it is obvious that they are *pre-Sargonic*, that is, earlier than the twenty-eighth century, and consequently the civilization of the Indus Valley may be as old as that of Sumer and Egypt. I make no comment on pottery as inadequately known to me, but the statuette published by Sir John Marshall in the *Illustrated London News*, 1926, p. 343, is so entirely un-Sumerian that any close racial connection must be dismissed at once. The familiar design of a bull, buffalo, elephant, rhinoceros, and tiger before a manger or sacred symbol is also unknown in Sumerian and Elamitic glyptics. The survival of the *svastika* design on Seals 500 to 515, a religious symbol characteristic of India, suggests that perhaps other survivals may be found, which will enable us to interpret the script also. For I hardly believe that there can be any doubt concerning Sir A. Cunningham's brilliant suggestion of an early Indian pictographic system as the origin of the Brāhmī alphabet.<sup>2</sup>

The origin of the Brāhmī monumental script of the Aśoka Edicts has been the subject of numerous theories. They are summarized by Georg Buhler, *On the Origin of the Indian Brāhma Alphabet* (1898), and in his standard German work *Indische Paläographie*, p. 10 (1896).

Cunningham's suggestion was the first one put forward as an explanation of the origin of the Sanskrit Nāgarī alphabet. It has been derived from the Phœnician alphabet by Weber and Buhler, from the Sībæan-Himyaritic alphabet by Isaac Taylor and from the cuneiform syllabary of Assyria and Babylonia by Deecke. The comparisons of individual signs of the Brāhmī script of early Indian epigraphy, which dates from 350 to 220 B.C., with the letters of the Phœnician alphabet on the one hand, or with those of the Himyaritic alphabet on the

<sup>1</sup> Only one horn is shown on the design, which is merely a usual method of glyptic common to Sumerian seals also, one horn is hidden behind the other. See *Revue d'Assyriologie*, xxii, 100, n. 1. See, however, pp. 68 ff *supra* — [Ed.]

<sup>2</sup> *Corpus Inscriptionum Indicarum*, 1, 52

Indus seals of Mesopotamia are pre-Sargonic

Racial connection between Indus and Sumer unlikely

Cunningham on Indian pictographic writing Buhler's theories

other, do not inspire much confidence in those theories. Their advocates claim "obvious connections" between certain syllabic signs of the Brāhmī script and certain letters of the two Semitic alphabets with an enthusiasm altogether unwarranted.

In approaching an epigraphical and linguistic problem so difficult as that presented by the new script of the Indus Valley, the chronology and nature of the script must first be settled. The evidence for a minimum date, twenty-eighth century B C, has been stated above. Is it then reasonable to suppose that this pictographic script of ancient India survived without any archæological evidence of its existence during the long interval between the age of the seals of Harappā and Mohenjo-daro and the age of Aśoka in the third century B C? Obviously the geographical and historical aspects of the problem favour an ancient Indian pictographic system as the origin of the alphabet finally adopted by the Āryans of India.<sup>1</sup>

In my sign list I have compared some of the signs with early Sumerian and Egyptian pictographs, and a few comparisons with Hīmyaritic-Sabæan letters have been made. I do not wish the reader to infer that I believe in any actual connection between the signs thus compared. The similarity is due to pure hazard, such as is bound to occur in pictographic scripts. The script as represented by the Indian seals is more like the Egyptian pictographic system than any other known script. As in the case of the earliest Egyptian inscriptions, this Indian script is already standardized, a large number of the original pictographs have been reduced to neat monumental forms, which indicates a long period of evolution. It will be seen in the subsequent pages that the writer believes that the early syllabic alphabet of Northern India, known as the Brāhmī script, from which all later characters were derived, is most probably a survival of the early pictographic system of the Indus Valley. But even though future discoveries confirm this thesis, it does not follow that the language of the early Indus Valley seals is Indo-Germanic, the Babylonians borrowed the Sumerian ideographic and syllabic script for writing their Semitic language and the same circumstance may have obtained in India.

**Great antiquity  
of Indus picto-  
graphs**

**Brāhmī script  
derived from  
Indus writing**

The Indus script runs from *right to left*. The Sumerian pictographic writing also ran from right to left. Nothing can be determined in this respect about the Proto-Elamitic writing, for it has been preserved in lists of objects only, and consequently its signs are written in columns. The direction of the writing of the Indus script from *right to left* is proved by the following facts<sup>2</sup> —

**Indus writing  
from right to  
left**

1 All the pictographs face to the *left* with the sole exception of the *homo*-signs Nos 189, 196*b*, 201, 204, and there is certainly some good reason for this. These signs convey some such sense as "retreat, defence, ward off, backward, behind." For signs facing *left*, see Nos 74, 165-74, 250. It is curious that the *fish*-signs, 175-80, and most of the *homo*-signs are drawn *en face* in the old perpendicular style.

2 But even more conclusive is the *internal evidence*. The determinative No 87 stands at the left end of a large number of the lines. Now if the *left* were not the *end* of the line, how can we explain a text like that in Seal 52, where the material is too much for one line, and runs over into the second line by one sign? This is the postfix No 87 and stands immediately below the *left* end. If the line began on the left this sign would stand at the left end of the line. Again, compare the text of Seal 554, where No 30 stands just below the left end, and Seal 355 where it again stands below the line. That this sign is the ending is made certain by Seals 386, 387. The text on Seal 302 is interrupted by the

**Internal  
evidence**

<sup>1</sup> Indian tradition, at any rate, places the invention of writing as early as the end of the fourth millennium B C, 3101, and ascribes it to the creator Brahmā. See Fleet's edition of Buhler's *Indian Palæography*, p. 1.

<sup>2</sup> Cf also Mr Gadd's observations on this subject in the preceding chapter — [ED.]

bull's head and continued below with Nos 57, 87. It is certain from the repeated occurrences of No 87 at the left ends that it is either a prefix or a postfix. But were it a prefix and the writing to be taken from left to right, clearly it must stand where No 237 is there placed. It will be observed that, when a line is broken by the design, it is continued below on the *left* side, see Seal 167. Finally, compare Seal 101 with Seal 247. Here is a clear case of boustrophedon, the second line *returning* in the order Nos 48-87, as it appears on Seal 101.

3. When the text contains one line and a second incomplete line, the second line runs from *left* to *right*, or boustrophedon. A good example was cited above by comparing Seal 101 with Seal 247. For No 99 at the end of a one-line text, see Seals 101, 102, 396, and 413. Compare Seal 126 with Seal 340, No 214 stands next to the last line in Seal 126, but on the two-line text in Seal 340, the second line of which has only two signs, No 214 stands first, which indicates boustrophedon. On the other hand, a text having two or more *complete* lines is not boustrophedon. See Seals 12 and 321, where No 220*b* stands at the left end of line two, and compare Seal 397, where this sign ends the word. The longest text is that of Seal 400, where line two ends with the usual postfix 87, and line three with No 153, which also has the last place in Seal 471, and often at end with postfix 87. But Seal 329, on which the three signs in line two are a continuation of line one, is probably boustrophedon, No 237 standing at the right end in the last place as in Seal 302. No 126 comes first in Seal 139, line two, and note that this sign usually comes first on one-line texts. It is also certain that if (which is very probable) Seals 435 and 440 are parts of one and the same text, the Seal 440 is boustrophedon of Seal 435, from the position of No 98*c*, always last, and of No 5, usually first.

#### ACCENTS

Accents in  
Indus writing  
Signs syllabic,  
writing  
phonetic

A ('S) The most extraordinary feature of this script is the accents added to a large number of letters, and the simple accents are invariably at the left side, which shows that the ideogram or syllable ended on the *left* in the pronunciation. I am of opinion that most of these signs are *syllables* and that the writing is phonetic, with the exception of certain determinatives. The accent ('S) is added to Nos 87, 88, 97, 118, 124, 153, 154, 233, 264, that is, to the signs which most frequently occur at the end of words, and elsewhere. Since its doubled forms (" or ') suggest the sibilant *Visarga* of the Sanskrit, it is tempting to compare this accent with the Sanskrit *Anusvāra*<sup>1</sup> or nasalization of a vowel ending.

Analysis of  
accents

Since the accent ('S) occurs with so few signs in the Indus script, it can hardly be the common accent for nasalization. But it is curious that this short stroke, when added to the Brāhmī characters for A and I, indicates the *long* vowel, and note that this same stroke may be added to signs Nos 47 (50), 125 (130), *attached* and not standing free from the sign.

No 47, especially the form 48, is so similar to the Brāhmī syllable sign *ma, mo* that they may be identified.<sup>2</sup>

B ("S or `S) By doubling the accent A the most frequently employed inflection of a syllable or ideogram (") is obtained. It is found with Nos 47, 68, 87 (89, written inside), 95, 113 (114), 120, 126, 129, 131, 149, 153, 167, 187, 199*b*, 200, 232, 233, 234, 238, 264, also 72 is probably an example, cf 89.

<sup>1</sup> Placed over the sign

<sup>2</sup> My references to the Brāhmī characters are taken from Georg Bühler, *Indische Palaeographie*, Tafel 11 *with Umschrift*. It is possible that Nos 47, 48 are different signs and consequently only No 48 can be compared with *ma, mo*, No 32 of Bühler's list.

No 87 is probably the Brāhmī sign *la*, B 35<sup>1</sup>, No 113 is B 23, *ta*, No 125 is B 30, *ba*, Nos 126 and 232 are modifications of this sign and so perhaps No 11. Now No 11 resembles B 30, *bo*, and No 6 B 30, *bā*, No 129 without accent B 30, *bī*, these accents would then be not *vowel prolongations*, but something in the nature of the *dot* over a letter indicating nasalization, and the sign (*Visarga*). In other words, one stroke added to the simple sign *ba* would produce *bā*, and two strokes added produce *bo*, *bū*, in this case *ba* = 125 (simple sign), *bā* = No 6, *bo*, *bū* = No 11, *bī* would be produced by adding three strokes, 129 (= 26)

In case of the sign for *ma* 47 and 48, No 50 should be *mā*, corresponding to B 32 VI, XIX, XX. No 49 is made by adding *two* strokes one above and one below, producing a straight line, and this is B 32 XXII + XXIV *mo*, and B 32 VII *mo*, where the two strokes are added at the right. I would therefore read No 87 *la*, 88 *lā*, 89 *lū*, *lo*, 90 *lī*. No 224 should then be *bā*. But how then should *bi*, *bu*, *be* (short) be expressed if the simple sign is *ba*? No 132 is surely B 8, vowel *o*, and No 133 may be the same sign reversed. In that case Seal 195 would end in *la-o*, assuming that this script had reached a purely syllabic stage. If it had not, then different signs may have stood for *ba* and *be*, etc., as in Sumerian, and the suggestion that strokes are added to signs for vowel prolongation is entirely erroneous, this being a principle of the derived Aśoka script only. No 6, for example, may resemble B 30 XI (*bā*) by accident only. I am inclined to believe that this suggestion is not on the right track, and that the signs 6, 11, 26, 129, for example, have no connection with Nos 125 and 219 as base forms.

The *detached* accents, however, are clearly not all vowel prolongations, for several vowel signs of the Brāhmī script are obviously derived from the Indus script, and these are probably employed for vowel prolongation in this ancient writing, as the same vowels are employed in Sumerian, or for a final elided letter, or for indication of case and mood. Vowel *o*, B 8, has been identified with Nos 132-3. Vowel *i*, B 3, is clearly No 269*b*, vowel *e*, B 7, is most likely 219, and the character given as doubtfully *i*, B 4, is No 274*b*. The Brāhmī character for *a*, B 1, I suggest, comes from the *homo*-signs 193-4, turned 90° to the *right*.

C ("S") Accent B may be placed on each side of a letter, which I take to be one of the glides *h*, *h̄*, or *h̄*, see under D. It occurs with No 1 (see No 25) (between two signs).

D (|) Several signs are accompanied by this detached accent which is A doubled perpendicularly and resembles the sign *Visarga*. It occurs with No 156*c*, and the *fish*-sign, No 175, is followed by D + B on Seal 373.

E (|S|) Much more frequent is the accent D placed *before* and *after* a sign, representing probably the on and off glide, which according to the nature of the spoken language may be the "check" on and off glide (*h̄*), *Aleph* of the Semitic languages, the sonant glide (*h̄*) *Aym*, or the fricative rough on and off glide (*h̄*), *hē*. This does not assume that a *syllable* or *word* represented by a sign so accented begins and ends with a *vowel only*. It may occur with liquids and nasals, spirants and explosives. See Sievers, *Grundzüge der Phonetik*, pp 150-8. This accent occurs with Nos 163 (standing *between* two signs), 175*b* (at end), 176*b* (between two signs), 178*b* (at end and *between* two signs), 220*b* (always last).

F ("S") Accent C doubled perpendicularly on both sides of the sign, which suggests the vowel *i*, No 274*b*. On Seal 74, No 153, would be preceded by *i* and followed by *i*. Since No 162 is probably B 18 (*ta*), the Seal 296 would read *i-ta-i-la*, or if No 162 in the original script had a final consonant, *ita* (?) *ila*, assuming that the Brāhmī alphabet is taken from the first consonant or vowel of a word represented by an ideogram. This accent

Suggestions for reading

Detached accents

<sup>1</sup> B refers to Buhler's list



(or sign preceded and followed by vowel  $\bar{i}$ ?) occurs with Nos 96*d* (at beginning), 102 (at beginning)

G (|| S) The accent C doubled perpendicularly, only at end of the sign, with 232*c*. It will be noted that No 232 occurs with accents B and G. I take B for an *off glide*, and G for the vowel  $\bar{i}$ . These forms occur repeatedly at the beginning of names and are probably prepositions or determinatives.

H (Y or Y) Accent A after slanted line. With Nos 47 (at beginning), 99, 118, 131, 153, 160*b*, 233*d*, 240 (264*b*, I do not understand this form).

I (S) The circumflex accent placed over a sign occurs with No 96*b*, which I identify with B 12, *gha*, but the effect of the accent is entirely obscure. Also over No 177 and combined with accent E, No 177*b*, No 181.

J (S) This superimposed accent occurs with Nos 1 (25), 53, 98, 120, and 120 is also accented, J + B and J + E.

#### DETERMINATIVES

#### Determinatives probably not pronounced

There are certain signs which are obviously determinatives, and as such are naturally not accented, for, as in Sumerian, they were probably not pronounced. They may stand either *before* or *after* the name. Since the seal inscriptions are surely names of persons or professions, or both, the material now at our disposal contains only a small number of the determinatives, which must have existed, such as the signs for "stone", "metal", "garment", etc. It is due to the special character of these texts that the signs from which a number of the Br̄hmī characters were derived have not been found.

The following determinatives occur on the seal inscriptions —

- 1 No 68 is probably a sign for a place name, or gentile. Postfixed.
- 2 No 124, which see for citations.
- 3 No 130, prefixed and postfixed. This I take for the word "city". It should be noted that when Nos 130, 131 stand as prefixes, the sign 87 ends the line, wherefore No 87 may be a gentile ending.
- 4 No 182, simple sign for "man", is a postfixed determinative showing that the name is that of a person or profession, precisely as the Sumerian pictograph for "man" (*galu*) precedes the names of professions.
- 5 No 87 is clearly a *postfixed* determinative, usually followed by the inflections A or B.
- 6 No 190, postfixed, see this number.
- 7 Nos 193-5, postfixed determinatives for a profession.
- 8 No 198, *prefixed* determinative meaning "warrior", "soldier".
- 9 Nos 204-5, prefixed determinative for prince, high official.

Under Nos 264-78 I have entered a number of signs, which appear at first sight to be numerals, but I am convinced that they are syllables, or at any rate, numeral signs used as syllables in the phonetic pronunciation of the names. For it is certain that seals, on which the engraver patiently engraved such fine designs, could not have been used *ad præsens et pro hac vice*, for the passing purpose of sealing a document with an account of a fixed quantity of some commodity. These inscriptions contain names of men and professions, as the determinatives prove. Moreover, No 264 is probably the origin of the Br̄hmī sign B 34 (*ra*). And it should be noted that Sumerian signs for the numerals are often employed as phonetic syllabic elements of words.

In the table which follows I have drawn up a list of those signs, from which some of the Brāhmī characters appear to be derived. A notable parallel to this evolution of a pictographic script into an alphabet is the Phœnician alphabet, which is undoubtedly based upon the Egyptian pictographic writing. It is true that the agreement there has the additional advantage of agreement in the *direction* of the writing, for the Egyptian writing also runs from right to left. The Brāhmī and derived characters are written left to right, whereas the Indus script undoubtedly runs from right to left. Moreover, the Kharosthī script, contemporary with the Brāhmī, was borrowed from the Aramaic, and followed its parent in the direction of the writing. Why, then, if the Brāhmī was taken from the Phœnician alphabet, did it not follow the same principle? If one can depend upon the small five letter inscription on the Eran coin, the Brāhmī script did run from right to left as its parent, the ancient pictographs of the Indus Valley.<sup>1</sup> The Greeks borrowed the Phœnician alphabet and altered its direction to suit their own purposes, after having retained the order (right to left) of the parent Semitic writing for a short period after the borrowing. Obviously the same circumstances may have obtained in India.

If one studies Buhler's detailed defence of a Phœnician origin of the Brāhmī script in his *On the Origin of the Indian Brāhma Alphabet*, and his table on pl. 1, he will find only two letters which warrant anything like a satisfactory comparison, *Gimel* and *Teth*. Now *ga* of B. 11 is even more like No. 100 of the Indus characters than the Phœnician *Gimel*, and *tha*, B. 24, which Buhler derives from Phœnician *Teth*, is much more similar to No. 224 than Phœnician *Teth*. In fact, I am unable to see how anyone can even tentatively hold a resemblance between the Brāhmī alphabet and the Phœnician, and the positive assertion of the correctness of this theory is entirely unwarranted. Undoubtedly the great lapse of time between these seals of the Indus Valley and the age of Aśoka will be regarded as a fatal objection. But the epigraphical material may be found, and the evolution of the old pictographic writing into the late Indian alphabet will be traced. Obviously a large number of signs were discarded and only the necessary ones chosen, precisely the same procedure provided the Phœnician alphabet. If the excavations in the Indus Valley supply us with inscriptions which contain consecutive sentences and not mere proper names and titles, perhaps the key to the interpretation of this script may be discovered. Working with the present material, I suggest to Sanskrit scholars that they choose the names of a few mythical heroes and of deities, and with the few identifications here made attempt to separate the constantly recurring groups of signs and compare them with these names. The principles of ancient Indian nomenclature are only vaguely known to me. It is of course possible that this is not an Indo-Germanic language. So early a date (3200-2800 B.C.) for the existence of an Āryan civilization in India is confidently asserted to be pure legend and the dream of a national tradition.

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 advanced stage even at this early period, and the existence of the accents reveals the astonishing care and knowledge of phonetic principles which would hardly be conceded to the scribes of this remote period. But the archæological evidence of the mounds in the Indus Valley is said to admit of no doubt in this matter. The seals come from strata far below the earliest Buddhist monuments. With the epigraphical

**Table of  
Brāhmī and  
Indus  
characters**

**Suggestions for  
decipherment**

<sup>1</sup> Fleet, *Indian Antiquary*, XLXIII, p. 3 (Buhler's *Indian Palæography*), argues that this coin cannot be depended upon for the direction of the writing.

**Archæology  
decisive in  
dating Indus  
script**

material alone, I should have dated this script not earlier than 800 B.C. But the Mesopotamian seals are also decisive on the problem of the chronology. Lagash and Umma disappear from history before 2000 B.C., and three of these seals were found there. If inscriptions of no other type are found in the excavations of the Indus Valley, then we must suppose that the history of this fine civilization ends with these monuments, and the vast expanse of years between that catastrophe and the invasion of the Āryans is filled with uncertain traditions. If, however, this script was preserved and finally issued into the alphabet of the Buddhistic period, it proves that the Āryans must have had intimate contact with these founders of culture in India. In any way we may look at the problem, the Āryans in India are far more ancient than history admits. Their migration across Anatolia, where traces of them are found in the inscriptions of the Hittite capital, as early as the seventeenth century, is an hypothesis entirely contradictory to the new situation revealed by these discoveries in the Indus Valley. Far more likely is it that the Āryans in India are the oldest representatives of the Indo-Germanic race.<sup>1</sup>

**Aryans in  
India earlier  
than history  
admits**
























<sup>1</sup> On this subject see *supra*, p. 112 —[1 D.]

TABLE OF BRĀHMĪ CHARACTERS DERIVED FROM THE  
INDUS SCRIPT




























<i>Buhler Pl II</i>		<i>Syllabic Value</i>	<i>Number of the Indus Sign in my List</i>
1		<i>a</i>	185, 193, 194, turned to right
3	Or	<i>i</i>	269b
4		<i>ī</i>	274b
8		<i>o</i>	132
9		<i>ka</i>	1 or 2
	Pl IV, 7		
11		<i>ga</i>	100
12		<i>ḡa, ḡha</i>	96
14		<i>cha</i>	223
15		<i>ja</i>	66
18		<i>ta, tā</i>	162
23		<i>ta</i>	113
24		<i>tha</i>	224
28		<i>pa</i>	70
30		<i>ba</i>	125
32		<i>ma</i>	48
33		<i>ya</i>	75
34		<i>ra</i>	264
35		<i>la</i>	87 (?)
36		<i>va, vu</i>	244


























*Nota Bene* — There are many other characters of the Brāhmī script which are strikingly similar to signs of the Indus script, but to avoid misleading material for future research they are omitted

## SIGN LIST OF THE INDUS SCRIPT <sup>1</sup>

1		6, 179, 180 f <i>IIN</i> 1924, for accented forms, see No 25
2		267, twice as last sign Value <i>Ka</i>
2b		16
3		233, f, 155 f, <i>RA</i> xvii, 99, <i>CHI</i> 4, 1   xi, 22 81
4		155
5		388 f 410 f, 377 with accent B, 340, 90 f, 388 f, 448, preceded by No 269 211 Cf Proto-Ilamitic sign, No 236
6		388, 40, 81, preceded by No 270, 222, 265 f 418 430, 519 f 388 404, 52 Accent I 478, 292
7		580, identical with Sabtean letter for Samekh
8		337 18 l, 389 l 19, followed by accent B, <i>IIN</i> 1924 I <i>IN</i> 1926 463 l Cf No 6
9		<i>IIN</i> 1924, followed by accent B
10		<i>JRAS</i> 1912, 700 B
11		253, 130, 201 in all cases followed by No 119 and termination No 87
12		101 l, 342, preceded by No 265, 237 f
13		262 f
14		328
15		32, 469, 277, 198, 50 In 32, 277, and 198 followed by No 175 and terminal sign No 124 540 between first signs
16		494 l, 360, 341, 234 Delaporte, <i>Cat</i> 1, pl xxv, No 15 f
17		<i>DH Per</i> ii, 129 = Delaporte, <i>Cat</i> 1, pl xxv, No 15
18		142
19		329, 309 l
		
		161, 176
20		497


























<sup>1</sup> Positions of signs in the text are indicated by f = first, l = last






























- 21   552, twice at end, so also 542, twice at beginning on 159, 180, twice after No 1  
On 253, line 2, after numeral III 282 l Stands alone 242, 121 f These are  
apparently identical signs, and employed indifferently for No 22 The first of them  
is identical with Sumerian *LU* (*dib*), to seize *REC* 456
- 22   334, 101, twice at end, 16, twice at beginning as on 437, 4, alone and twice at end  
175, twice Same form as Sumerian *GID*, *LIL*, reed mat, *REC* 425 The most  
probable comparison of Nos 21, 22, and 27 is Egyptian *sp-t*, district, determ  
for province
- 24  450 Cf Proto-Elamitic sign, No 327
- 25  Accent form of No 1 536
-  Accent form of No 1 39
- 26  391 f Same as 129
- 27  424, twice at end Probably same sense as No 21 The form is identical with Sumerian  
*LU* (*udu*), sheep, *REC* 454 That the sign is No 21, is proved by comparing 424 with  
437 Hence the script does not distinguish between *DIB* and *LU* as in Sumerian
- 28  *ILN* 1924, twice at beginning
- 28b  471 l
- 29  324 f
- 30  387 l, 122 f, 554 l, 386 l, or read No 30 as second sign? 355 l
- 31  341
- 32  2, 421
- 33   306 f, 38 f, 337
- 34  34 f
- 35  550, 139
- 36  444
- 37  89
- 38  58
- 39  438
- 40  18, 406
- 40b  465, a word in itself with prefix No 232b and postfix No 87
- 41  191 Cf No 56
- 42  206

























- 43  65, *ILN* 1924
- 44  *ILN* 1926
- 45  438, 444
- 46  316
- 47  Preceded by a numeral sign, 282, 456, 471, 269, 96, all have this sign after No 178 and before terminal sign No 68 110, 579, with No 48, which indicates two different signs
-  *ILN* 1924 f At the end this sign is usually followed by the ending No 68 121 with accent B
- 48  188, 412 f, 170 f, 199, 420, 23 f, 107, 458, 447 f, 139, 134 At the end this sign is usually followed by the ending No 87, cf 247 boustrophedon, with 107, etc Value *ra, ru*
-  19, 5 f, 29, 9 f
- 49  245, *CHI* 1, pl xi, 23 f, 190
-  33, 35 f Ligature with No 219
- 50  350, 180 447, in all cases followed by No 68, is its cognate No 47, and preceded by the *fish* sign It is probably No 47 with A accent
- 51  33, 335
- 52  319
- 53  420, 215, 6
-  Accented form, 405
- 54  389
- 55  426
- 56  336, 191?, 72
- 57  302, 329
- 58  321
- 59  52
- 60  434
- 61  142, 340, 77, 396 Bow and arrow? See No 198
- 62  *JRAS* 1912, 700 C
- 63  84, 14, 99, 557, 553, *ILN* 1924, 20



























64		325
65		343 54 f
66		173, 343, 336, 204 l, 70 l, 163 l, 138 l, 580, 116 l, 110 l, twice, 227 l, twice, 138 l This is certainly a postfix occurring after the homo determinative, as No 87 Cf 116, with 339, and 227 Value <i>ja</i>
66b		This sign occurs repeatedly in the Jemdet Nasr script, but is unknown in Sumerian See <i>OECT</i> vii, <i>Sign List</i> , No 408
67		545, twice
68		Apparently a terminal sign, or postfixed determinative 456 l, 238 l, 319 l, 269 l, 96 l, 75 l, 180 l, 158 l, accented form, 51 This is the Sumerian sign for "plough", value <i>apin</i> , <i>pin</i>
69		444 l Probably = No 68
69b		403 at end followed by postfix 87
70		477, 165 f, 212 l, 578 f, 476 f, 206 l Identical with Sabæan letter Beth inverted The sign seems to be an inflectional ending or postfix Value <i>pa</i> <i>ILN</i> 1926. 1, on two texts
71		<i>ILN</i> 1926
72		209 f Probably accented form of No 70
73		99, 544 413, 131
74		131, 150
75		142, frequently followed by numbers, <i>ILN</i> 1924 Value <i>ya</i>
		557, 425, 202, 142, 147, 170, 389, 340, 30, 544, 90, with accent B, 310
75b		128 No 75 is clearly <i>ya</i> , B 33
76		463, <i>JRAS</i> 1912, 700 B, 3, 464 f, 8, 38 l
77		61
78		<i>ILN</i> 1926
78b		<i>ILN</i> 1924
79		420
80		286, 336, 47, 367




















































- 81   115, 81*b*, 81
- 82  22 Compare Egyptian hieroglyph for "papyrus bush", Irmay, *Grammatik*, 215, No 42
- 83   *ILN* 1924, 1926 Undoubtedly a plant hieroglyph See Delaporte, *Cat* 1, pl II, No 8
- 86  286
- 87  The most frequently employed sign of the script, and certainly either an inflectional ending or determinative 245 l, 120 l, 188 l, 222 l, 178 l, 432 l, 211 l, 385 l, 122 l, 21 l, 466 325 l, 351 l, 339 l, 142 l 369 l, 459 l, 296 l, 160 l, 253 l, 231 l, 226 l, 305 l, 81 l, 99 l, 557 l 174 l, 95 l *JRAS* 1912, 700 B 66, 553, *CHI* 1, pl XI, 22, 412 Delaporte, *Cat* 1, pl II, No 8 l Within the text 286, 418, 139, 448, 122 262, 160, 553, 119
-  As first sign, rare Value *la*?
- 87*b*  Accented form 122, 347
- 88  Accented form of No 87, 234, 179, 253, 222, 442, 155, 395 f, 99
- 88*b*  329 Accented form of 88?
- 88*c*  490 l
- 89  Accented form of No 87, 535, 29, *CHI* 1, pl XI, 23 f, 247
- 90  Accented form of No 87, 469, 548, 120, 21, 461 70
- 90*b*  *ILN* 1924
- 91  393
- 91*b*  429 See 264*b*
- 90  402 Same sign as 89?
-  434 Same sign as 90?
- 91  49, *ILN* 1924
-  233, 237
- 92  494
- 93  178, 142, 97, 294, 374
- 94  415
- 95  52 See No 149


























- 96  Apparently an inflection or postfix *RA* xxi, 56 l, 7 l, 36 l, 207 l, 76, 537, 35, 395, 80, 159 Commonly after number signs It is similar to the Sabæan letter *Hhā* Value *gha* This sign is found scratched upon vacant spaces of inscribed tablets at Kish of the Fara period, *circa* 3200 B C
- 96b  Accented form, 51 l, 397
- 96c  150, 60, 48
- 96d  130
- 97  Same sign as No 96, or accented form of it Cf No 15
- 
-  *RA* xxii, 99, *ILN* 1924, after numeral at end, 40, 580, 246 at end after numeral, as 418, 6, 449, 448, 439, 411, 220, 25
- 
-  If No 113 (cf 448) is a numeral, 410 belongs here
- 
-  For this sign within the text, 539, after No 6 See No 230 Accented form 309
- 98  179, 209 l, 203 Identical with Sabæan letter *Tau*, and Egyptian sign for "divide, count", Erman, *Grammatik*, 228, No 7
- 98b  Accented form, 393 Cf No 130
- 98c  Accented form 53 l, 136 l, 435, 440
- 
-  13, 193 Probably same sign as No 99, 21, 412, 413
- 98d  398 Sign defaced
- 99  100 f, 321, here it begins a word within the text, in both places with accent ↓  
101 l, 370, 102 l, 33, 87, 396 l, 413 l, 101 l
-  Accented form, 149, 195, 100 f, 321, 12 106 f, 390 f, 149 f, 95
-  *ILN* 1926
- 100  355, 321, 373, 404, 283 Value *ga*
-  391  accented form, 262
- 101  32
-  527
- 102  242 f, 155 f
-  Accented form, 400 f on line two
- 103  427 l
- 104  132



























- 105  383
- 106  309
- 107  47, 33 (with accent B)
- 108  219 Compare Egyptian pictograph *psd*, back, spine
- 109  397, 357, 400
-  319 Accented form of 109
- 110  69
- 111  357
- 112  *ILN* 1924
- 113   Apparently two forms of the same sign Cf No 97, and 410 with 285, 448, 538, 149  
514 f, *RA* xii, 56, 901, 242, 110, 211, 130, all before *fish* sign  
265 l After No 266, on 425, 127 Value *sa*
- 114  Accented form of 113, 349
- 115  21
- 116  51, *ILN* 1924, 401, 436, 
- 117  *JRAS* 1912, 700 CL, 185 f
-  Accented form 108
- 118  8, 29, 69, 539, *ILN* 1924
-  Accented form 67
-  Accented form 186
- 119  Cf Sumerian KUR, mountain range, *REC* 287, 555, 197, 459, after No 120 with  
which it forms a ligature in some texts, 160, 420, 201, 54, 247, before No 47  
Followed by postfix No 124 on 197, 459, 160, or by the postfix No 87, on 201,  
by accented postfix No 89 on 420, by No 88 on 420 Similar sign in Egyptian  
means "foreign land" (*h3-sh t*), which is also the original Sumerian meaning
-  130, followed by No 87, 186, 495
-  Ligature of Nos 119 and 120, 416, 526b, both followed by No 87
- 120  537, 66, 123 Cf Proto-Elamitic sign, Scheil, No 839

- 120<sup>b</sup>  Accented forms, 367, 49, 540, 274
- 121  182
- 122   Sign defaced, 66 f Cf Sumerian *zu*, to know
- 122  90
- 123   471
- 123  321
- 124   A postfix, determinative or ending, see No 119 At end with No 175, 32, 41, 277, 103, 198, 534, followed by No 266, at end with No 178, 347, 324 At end after 266, 147, 170, 8, 3, 168, 345 At end with No 176, 380, 583 f, 286 l, 225 l  
Within the text, *ILN* 1926 See No 226
- 124<sup>b</sup>  30 Within the text after No 175, *ILN* 1926 (✓)
- 124<sup>c</sup>  556 after No 175
- 125  *ILN* 1924 f 111 Same sign as No 219 Resembles Sabæan letter *Fā* Identical with Sumerian sign for DUG "good", *REC* 206, Proto-Elamitic sign, 720 + 865 Value *ba*
- 126  Same sign as No 232 ? 305, 94 f, 215 f, 67 The Sumerian ideograph for "heart", *REC* 255, is obviously not this sign, see the early forms, *ibid* 78 f, 139 f on line two
- 126<sup>b</sup>  Accented form 494 f, 340 f, 433 f, 246 f, 115 f, 326 f, 369 f, 97 f, 181 f, 127 f, 57 f, 80 f, 476 l, 477 l Within the text, 426, 97 On 386 this sign stands at the beginning of the name of a profession, or N Pr 551 f
- 127  183 Cf the Sumerian sign *Širgadu*, *REC* 215
- 127<sup>b</sup>  329
- 128  362 l Ligature of 125 and 96 Note that 96 is also an ending
- 128<sup>b</sup>  99, independent sign standing beneath the text as No 217
- 129  *ILN* 1926 f Same as No 26
- 130  Accented form of 125, 360 f Cf No 99, and Proto-Elamitic sign, No 726
- 130<sup>a</sup>  227, accented form of No 125 Cf No 98
- 130<sup>b</sup>  Same sign as No 234 285 f before No 113, 432, 338 l This sign probably means "city" as does the corresponding Egyptian determ for city, Erman, *Grammatik*, 217, No 1 It is totally different from the Sumerian pictograph for "city", *REC* 358
- 131  118 f
- 131<sup>b</sup>  Accented form, 416 f See No 234
- 131<sup>c</sup>  Accented form, 387 f

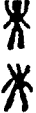

















- 132  195 l Value *o, u*
- 133  370, 267
-  549, 13, 27, 87, all after the *hare* sign, No 168, as also 370  
195 l
- 134  107 f, 494
- 135  195 f, 475 f, 279 f, 27, 295, 28, 20, 426, 23
-  306
- 136  306
- 137  *ILN* 1924 l
- 138  Delaporte, *Cat* 1, pl 11, T 24 L See No 87
- 139  Delaporte, *Cat* 1, pl 11, T 24 Cf No 83
- 140  Delaporte, *Cat* 1, pl 11, T 24 The sign is not very clear on the impression, and its form is to be restored from 309
- 141  *RA* xxii, 56 f It is possible that the Brāhmī character *sa*, B 39, is derived from this or No 142
- 142   *RA* xii, 56, Delaporte, *Cat* 1, pl 11, T 24 Cf the Egyptian sign determ for "to bind", *st*
-  *ILN* 1924
- 143  *RA* xxii, 56
- 144  214 f
- 145   540 f, 464, 226
-  340
-  426 f
-  Accented form 474.
- 146  *ASR* 1923-4, pl xix, 15
- 147  574, in two places
- 148  172 f
- 149  12, 58, 139, 265, 211 f See No 95
-  315, 395, 52



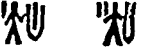



















- 150  *ILN* 1924 f , followed by No 68
- 150b  446 Partly obliterated Probably to be restored as No 151
- 151  464 , 446 f , *CHI* 1, pl xi, 22 , cf No 212
- 152  *ILN* 1924
- 153  36 , at end followed by suffix 87 , 188 , 460 , 311 11 , 72 before and after *horro*-sign 473 f and l 472 f , 471 , l on A after No 264 108 f , 185 Identical with Sabæan letter *Rā* It has also the same form as No 162 with opposite position No 162 is also identical with the Sumerian sign  $\delta U\delta$ , *REC* 257, which indicates the fraction  $\frac{1}{3}$  and the Proto-Elamitic sign, Scheil, No 127, 3, which indicates  $\frac{1}{3}$  there 257 l on line 3
- 153b  41 f , 160 f
- 153c  321 f
-  444 f , after prefix 233 , also 20
-  321 Before *fish*-sign
- 153d  403 Before *fish*-sign 212 f
- 154  At end followed by postfix 87 , 23 , 499 , 540, and cf No 265 also in same position which seems to indicate an identity of No 153 with 264 and 154 with 265 461 l , 221 f after prefix 233b, and compare 114, which again indicates 154 = 265 421 in text, 397 after ? But 540 has 265-154-87, which excludes the identification suggested, see also 42
- 154b  21 f
- 155  72, after No 155
- 156  At end followed by suffix No 87 , 120 , 351 , 224 , 5, which seems to prove the identity of Nos 156 and 154 439 f , followed by No 87, 11 followed by No 153
- 156b  Delaporte, *Cat* 1, pl xxv, No 15 f
- 156c  373
- 157  43 , 434 f
- 157b  289
- 158  42 , followed by postfix No 87 Certainly *two* signs, Nos 156 + 265
- 159  74 This is hardly an accented form of No 153 See No 269b and 274b
- 160  186 f , 457 f , 302 f , 161 , 100 Cf No 161 pictograph of a shield ?
- 160b  Accented form, 361 f , 29 f , 160 f , 469 f 24 f , 469 f , 24 f


























- 161  225 f Cf No 160 457
- 162   161, 403 But used with No 153 to enclose signs See Nos 167, 171, 201, 175c  
Accented form, 296 Value /a See remarks under No 153
- 163  122
- 164  194, after hare-sign, No 168
- 165  8 f
- 166  431
- 167  6
-  77, 306
- 168  262, 370, 27, followed by No 133, 194 f This seal has hare, fowl, and a bird with  
deployed wings Pictograph of a hare For some reasons these signs have been turned  
90 degrees to the left
- 168b  115, 49
- 168c  549, 67 Cf 370 with 549, where this sign and No 168 are followed on both seals by  
Nos 133-99-87
- 168d  No 168d on 87 is apparently identical with No 168g
- 168e  101, 12, followed by Nos 133-99-87, 179 Compare 12 with 13, same text ?
- 168f  13, followed by Nos 133-99-87
- 168g  21
- 169  237 The bird signs Nos 169-72 indicate various kinds of birds as do the corresponding  
Egyptian pictographs
- 170  228
- 170b   36, 338, twice at beginning
- 171  219 f
- 172  Bird with deployed wings 194
- 173  207 followed by No 267 and postfix No 96
- 174  *ASR* 1923-4, pl 21v, 15 This sign clearly suggests the emphatic or *gunu* form of the  
Sumerian sign for bird For the bird sign in Sumerian, see Thureau-Dangin, *REC* 33,  
and especially *Revue d'Assyriologie*, vi, 142, *Rev* 11, 3, and *Rev* 1, 1, Sign *MUD* "bird  
with egg" according to Genouillac, *RA* vi, 160, almost identical with this sign
- 174b  *Dél Per* 11, 129



























- 175   Probably intended for a *fish*, but the resemblance to the Sumerian sign *HA* is not very close  
41, 277, at end with postfix No 124, also 32, 198, often combined with No 178,  
  175-178 on 47, 324 (+ No 124), 14, 79, Nos 176-175 only on 455  
 Nos 178-175 on 53, 534, 88, 313
-  (373) Not combined with a *fish* sign, *ILN* 1924, 1926, *JRAS* 1912, 700 A  
81, 110, 188, 32, 211, 142, 130, 120, 104, 365, 254, 23, 261, 19, 87,  
before *hare* sign, 75 f, before No 212
- 175b  Accented form 177 l
- 175c  148
- 175d  Accented form, *JRAS* 1925, 697
- 175e  Accented form, 211
- 176  95, 170, 380, after No 177, 455, before No 175, *CHI* 1, pl xi, 22 f After No 177,  
 380, 350
- 176b  156, after No 175 Accented form
- 177  Accented form of No 175 540, 40 f Often with No 178 in the order 177-178, 400,  
544, 21, 404, 379, 87, 109, with No 175 in order 177-175, 350, 321, 470,  
*ILN* 1924 f with No 176 q v Not with a *fish*-sign, 420, 349, 418 f, 269,  
202, 580, 283, *JRAS* 1912, 700 C
- 177b  Accented form 425 f, 48 l, 66, 403, 316, only sign on this seal 156, after No  
175, 147
- 178  Probably also a *fish*-sign With No 175 in order 178-175, 534, 79, etc See No 175  
With No 177 in order 177-178, 400, etc See No 177  
Not with another *fish*-sign, 198, 347, 557, 351
- 178b   Accented form, 535 l, 36
- 179  Not same sign as No 176 370 f, 308, after No 176 Cf 370 with 549, same text ?
- 179b  75 f
- 180  415 f
- 181  4 The unaccented form is found on a seal in *ILN* 1924 L
- 182  395
- 182    The *homo* sign A large number of variant forms occur and there is not complete consistency  
in regard to its direction It occurs (1) *en face*, (2) facing *right*, (3) facing *left* They  
are given in this order This is the only pictograph which does not consistently face  
to the left, as do the numerous *homo* pictographs of Egyptian The Sumerian  
pictograph for *man* faces right naturally, but its early form is not known, *REC*, 289  
It is clear that these forms of the *homo* sign express some special aspect of human activity,  
as do the Egyptian forms *En face* 336 l, after No 87, 386, after No 87, followed  
by No 30, 225, followed by 124 214 l, after No 87, so also 115, 536, 295,  
109 This sign is undoubtedly a postfixed determinative indicating that these are










































- either N Pr or names of professions In 218, 117, 553, 334, 117, it forms part of the N Pr
- 183  116, followed by No 87 and after No 204 Cf 339  
50 at end followed by No 87  
325 at end followed by No 87  
339 at end followed by No 87 and after No 204 209 (walking to left (?)), followed by No 87, end of line 1, at end followed by No 87, 99
- 184  Man supporting two clubs 419 l, 426, 28 end followed by No 87 l  
401, followed by No 87 L, 11, within text at end of a N Pr followed by name of a profession
- 185  *Dil Per* II, 129 f, after No 278b The Brāhmī character for a, B 1, is probably derived from this sign
- 186  *JRAS* 1912, 700 C f
- 187  Man holding branch or implement in left hand, 50 On No 188 clearly facing right Obviously No 188 is only a variant Cf 50 with 37, both after the same two signs
- 188  Man holding an implement, 37
- 189  410 f Man striking? Cf Egyptian pictograph *hr*, "to strike," but not precisely the same postures
- 190  182 l Man under sun shade? In any case a determinative after a name
- 191  189 l Determ
- 192  16, probably not a *horo* sign
- 193  Man carrying yoke with baskets, 121 l, 557 b, at end after No 264 218 l, 117 l, at end after No 96, 315 Also on 43 l, 360 l, 79 l Clearly a determinative of a profession, "builder, carrier," etc, at end after No 113, 127 See No 185
- 194  Probably same sign as No 193 312 l *Dil Per* II, 129 l
- 195  Sign partially defaced 163 at end followed by No 66
- 195b  At end after No 264, 30, 287 At end after No 265, 205 *RA* XXII, 99 l 228 l, 475 l, 178 an ideograph in the N Pr This is obviously a determinative and a *horo*-sign, but the head is invariably omitted Possibly a sign for a sun god, i.e. Janus headed, as in Sumerian glyptic, cf *Babyloniaca*, IX, p, 78, No 128
-  436 l, a comparison of 436 with 401 suggests a sense similar to No 184
- 196  Man with sceptre, like Egyptian pictograph *sr*, "prince," "great one," "great." Used as a determ in 78 at end followed by postfix No 87  
As a word or syllable meaning "great"? 118, 424, and duplicate 437 The N Pr on 437 and 424 has some meaning like "Master of the district" 325 f
- 196b  Apparently "man holding an implement", 347 f
- 197  321, line 2 Faces left














- 198  Man with bow and arrow In Egyptian this figure is kneeling and in act of shooting, there determ for "foe", and as noun *hftj*, "foe" 12 f on line 2, 70 followed by No 66 406, probably beginning of a title 15, 400, line 3, ideograph in N Pra 142 f, 305 f, 92 f, 69 f, 142 f, within text 190, 60 When this sign is a determ, it usually stands at the *beginning* 403 f
- 199  Man with boomerang 43 f
- 199b  42 f
- 200  165 f A ligature of 70 + 182 ?
- 201  575 f On this seal the two signs, 201b followed by No 175, seem to be enclosed in the parenthesis sign
- 201b  449 f Compare the Egyptian pictograph for "pass over, go beyond", Erman, *Grammatik*, p 208, No 100
- 202  307 l The inscription is not clear and this sign is not entirely certain
- 203  348 f, 301 f, followed by No 268 and postfix No 96, 331 at end followed by No 87
- 204  101 f, 373 f, 339, after No 266 f, and before No 184 f and No 87 l Same text on 116, but No 183 in third place 266 after No 268
-  151 f
- 205  555 f Same sign as No 204, facing left
- 205b  482, only sign on the seal
- 206  A plant pictograph, 537
- 207  Palm leaf, 42 The Egyptian sign *mm3*, determ for "tree", is similar
- 208  473
- 209  473
- 210  191 Probably sign No 204
- 211  200
- 212  75, followed by postfix No 68
- 213  161 at end followed by postfix No 87
- 214  126 at end followed by postfix No 87, 340
- 215  RA xxii, 99 f

- 216  320 f at end followed by postfix No 87
- 217  Defaced sign on 16, standing alone beneath the text
- 218  536
- 219  188 On 325 in independent sign beneath the text, 278 f on line 2, boustrophedon
- 219<sup>b</sup>  253 f  
398 f
- 220  235 f, 369, *JRAS* 1912, 700 A, 536, 215, *ILN* 1926 (in all places followed by No 265) 552 preceded by No 265 315 f, 99, 257
- 220<sup>b</sup>  Accented form, 321 l, 12 l on line 2, 397 l
- 221  80 at end followed by postfix No 96
- 222  409, 467, at end, followed by No 97 (96)
- 223  325, text A, followed by Nos 268 and 188 (187), 50 l, 37, 303 followed by No 268  
Value *cha*
- 224  221 l, 421 Cf the Sumerian sign TEMFN, *RFC* 217, value *te* 478, 236 f
-  400, line 3 Value *tha*
- 225  349 f
- 226  No 124 inserted in 219 292 l, and note that No 124 usually comes l
- 227  142, 105, *ILN* 1924, at end followed by No 137
- 228  389, 35
- 229  28 77, same sign ?
- 230  No 96 inserted in No 219 217 f, 173 f, 224 f 49 f, 45 f, 540, 126 This sign is here either in the first position or it immediately follows the initial sign 95 at end followed by postfix No 87
- 230<sup>b</sup>  161 f, 430 after initial sign, 164, 6, 66, 467 f, 445 l
-  204 twice before postfix No 66
- 231  552, 84
- 232  One of the most frequently recurring signs, and usually at the beginning See No 126 *ILN* 1924 f, followed by No 118, 245 at end followed by No 87 351 f, 36 l  
Stands alone on 486
-  Apparently variant of No 232 147 f
- 232<sup>b</sup>  *ILN* 1926 f, followed by No 178, 32 f, 372 f, 424 f, 537 f, 232 f, 96 f, 22 f  
553 within text 19 f, 554 f, 88 f, 317, 393 f
-  334 f

- 232c  131 f, 39 f
- 233  547 l, 110 f, followed by No 47, and at end followed by No 66b 186 at end followed by No 96 *ILN* 1924, at end followed by No 66b 490 twice f, 406 *ILN* 1926 l, 266, 444 f
- 233b  Accented form 221 f, 438 f, 61 f, 88 f
- 233c  Accented form 79 f, 76 f, 178 f, 10 f, 400 f, 105 f, 344 f, 327 f, 104 f, 148 f, 468 f, 498 f, 407 f, 126 f
- 233d  Accented form 134 f, 335 f, 192 f, 543 f, 345 f, 189 f
- 233e  478 But see 264c
- 234  445 f, 59 f See No 130
- 235  83 f twice, 15 l, 47 f, 319 f
- 236  Sign defaced, 3
- 237  52 f, 302, 121, 20 f, 175, 329, 336
- 238  330 f
- 239  203 l
- 240  174 f
- 241  276, 421 l
-  544
- 242  209 l
- 243  252 f
- 244   553, 67 f, 55 Value *va*
- 245  574
- 246  182 f
- 247  46 f Probably a musical instrument
- 248  Delaporte, *Cat* 11, pl xxv, No 15
- 249   253
- 250  Goose in circle *ILN* 1924, stands between two vegetation signs, No 91 (on either side)

- 251  Sign defaced 379, with *fis'*-sign To be compared with the Egyptian pictograph *hpr*, "beetle," and with the Sumerian sign GIR, "scorpion," *REC*, No 4
- 252  252 l
- 253  52
- 254  548 l
- 255  175 l
- 256  302
- 257  325, line 2
- 258  21
- 259  391
- 260  253 f on L 2, boustrophedon Similar to the Egyptian determ for worm, Erman, *Grammatik*, 213, No 22
- 261  102 f Undoubtedly sign for water, and similar to the Egyptian sign, Erman, *Grammatik*, 217, No 55 The Sabæan letter Mem is of the same pictographic design, and so is the Phœnician In actual form the Sumerian pictograph, A, "water," *REC*, 470, resembles the Indus script more than any known cognate sign
- 262  60 f
- 263  151
- 263b  329
- 264  336, after No 56, before No 237 202 f 117 twice as 2-No 182-5 218 after No 182, 286 between Nos 88-237, 30, before No 195, after No 124b, 318, before No 182 106 before No 87, 97 f, before 126b, 30, 287, at end followed by determ No 195 336 before No 237 202 f, 28 f, 287 f, 168 f, 187 f, 141 f, 190 f, 429, 286 450 l 189 f, after prefix No 233d Value *ra*
- 264b  Apparently two signs, 113
- 264c  Accented form, 267 f What is , 478 ?
-  Accented form, 66
-  Probably two signs, 441
-  Apparently two signs, 113
- 264d  429 Ligature

- 264c  389, sign defaced
- 265  48 after No 96c, 218 f, before No 182, 120 f, before No 175, 278 l after No 96, 552 f, 81 f and between 81b-175, 120 f, 369, 536 before No 87 23, 549, before No 175 215, 77, 42, 541, 146, 263 at end before No 87 222 after No 87b 357 l, 14 f, after prefix No 232b, as on 82, both before *fish* sign, see also same series in the text, 324, and 468 f, 114, 79 where prefix is No 233c 342 f 48, 47 (second and fifth signs), 8, and in text apparently beginning of a second word 406 205 f and third signs 65 f, 266 l On 551 f after prefix 126b before *fish*-sign, same sense as 14, 82, 432 after vowel sign 1, No 269b
- 266  429 after No 75, before No 264b, 425 before No 113, 253 l, 326 l, 147, 65, 94, 105, 68, 3, 168, 345, 170 at end followed by postfix No 124, and 30 followed by 124b 77 f, 414, 429, 456, 431 400 f on line 3 541, 104 The combination of Nos 266-124 occurs on 251 with postfix No 66 It will be seen from these citations that No 265 is usually followed by the postfix No 87, and No 266 by the postfix No 124 at the end of a word
- 266b  Doubled sign, 539, 54
- 266c  No 265 + 266, two signs, 191
- 267  574 f and l on both A and B 126 followed by No 96 At end with No 96, 395 321 f on line 2
- 268  325 f, before No 223 6, 16, 13, 2, 50 after No 223, in all places before No 188 or 187 54, etc See 266b
- 269  Accent on No 109
- 269b  Accent ? on No 241 But on 448 f, 432 f, 366 f, 257 f, Delaporte, *Cat* 1, pl II, T 24, this is clearly a sign See No 159
- 270  41, 372, 361 at end followed by No 96, 339 f, 365 f, 411, 220, 91 with No 96 116 f, 282 f
- 271  207 at end with No 96, also 449, 246, 229, 418, 159, 143, 441, 31, 346, 133 453 321 l on line 2 471 C, 19
- 272  301 between *homo*-sign and No 96 460 f 92 51 f 6 311, with No 96, 402, 418
- 273  66 between No 120 and No 87
- 274  253 f See No 162 123 between No 120 and No 87, also 466
- 274b  74 at end, followed by No 87, 296 f, 130, 400, line two, 131, 39 See accents F and G
- 275  439, followed by No 97, also 35, 227, 243, 249 314 before *fish*-sign
- 276  273 f followed by No 265, 548 f, followed by No 87

- 277  548 f, 156, 414, at end followed by No 87 3, 79, 404 470 f 105 f after prefix No 233c 415
- 278  211, 442, 553 146 f, after prefix No 232b, also 344 25 with No 96 435 f, after prefix No 48
- 278b  Delaporte, *Cat* 1, pl xxv, No 15, 478 1
- 279  This is a hapax and there is no similar combination, 535 Perhaps a prefix like No 233d + No 264 is to be understood Cf 189
- 280  580, *sic*! Cf No 66
- 281  382
- 282  426
- 283  144 f
- 284  284
- 285  285
- 286  286
- 287  287
- 288  288

## POSTSCRIPT

Since the preceding study of the Indus Valley script was made over a year ago I have, in the interval, completed my study of over 200 tablets in the most archaic Sumerian script, excavated at Jemdet Nasr, 17 miles N E of Kish, in 1926. These tablets supply an almost complete corpus of the most archaic Sumerian signs, and, as they were found with a mass of painted pottery akin to the painted ware of the Indus Valley, which accompanied the Indus Valley seals, it is obviously necessary to comment upon the relation between the two scripts. In the following study I shall refer to the new early Sumerian sign list based upon the Jemdet Nasr tablets as PI = Pictographic Inscriptions from Jemdet Nasr, *Oxford Editions of Cuneiform Texts*, vol. VII, Herbert Weld Collection of the Ashmolean Museum. In the Jemdet Nasr tablets we possess the earliest large collection of tablets made by the people who invented the originally pictographic script used by the Sumerian people.

As to the racial character of the people who invented the Sumerian script, as it appears in its earliest known stage of development on the Jemdet Nasr tablets, and on a certain few archaic stone tablets of the same period from Nippur, Kish, and other unknown sites, I express the opinion that they are Sumerian. In any case the language of these texts is Sumerian, although the grammar is in such primitive state that the verbal system of Sumerian had not yet been attained. The signs have the same sense as in the later Sumerian texts. A few god names, which are Sumerian, such as the great trinity *An*, heaven god, *Enlil*, earth god, *Enki*, water god, and *Ianna*, the divine protecting genius, appear in these texts, but the determinative for god and in fact the entire system of determinatives of the later Sumerian are almost entirely absent. A good many new signs, unknown in later Sumerian, are present in this archaic script, and some of them are identical with signs of the Indus Valley script.














There is, then, definite linguistic evidence that the Jemdet Nasr and contemporary civilization of the Mesopotamian Valley at the time when the painted pottery was made, was Sumerian. On the Zoological side there is from the Jemdet Nasr texts the definite conclusion that the buffalo, *Bos bubalis* (No. 128 of PI), is the well-known prehistoric animal (represented by the Sumerian pictograph *DUN*) which disappeared in Mesopotamia about 2600 B.C. The archaic period represented by the painted pottery and tablets comes down to about 3500 B.C., and goes back to an indefinite period, certainly as early as 4000 B.C. There is also the astonishing fact revealed by the Jemdet Nasr tablets that the *horse* was in use then, for the ideogram for *horse* (*ansu-kur*) "ass of the mountain" occurs as a pictograph here. Of the important mammals occurring on the Jemdet Nasr tablets, viz. the ox (*Bos primigenius*), the buffalo, and the horse, one certainly occurs on the Indus Valley seals, the *Bos primigenius* (VS 3503, etc.), the bison (VS 3026, HR 2657, DK 2137, HR 4348 *et passim*) is also characteristic of early Sumerian art (Hilzheimer, *Die Wälder im alten Mesopotamien*, 10-13).<sup>1</sup> As to the animal most characteristic of the Indus Valley seals, with thin long nose, long *forward* protruding horns, and smooth body, I suggest that the forward protruding horn is stylistic, and that this is the buffalo, so characteristic of early Sumerian art, and the *DUN*, so common in the domestic life of the Sumerian people from the most archaic period until this animal disappears about the time of Sargon of Accad.<sup>2</sup>


<sup>1</sup> I am sorry to dissent from Professor Langdon regarding these identifications, but seal VS 3503 (= No. 312) appears to me clearly to depict the Indian bison (*Bos gaurus*), as do all the seals from No. 308 to No. 326. Similarly, the seals VS 3026 (= No. 333), HR 2657 (= No. 335), DK 2137 (= No. 339), and HR 4348 (= No. 329) seem to me just as clearly to portray the Indian humped bull (*Bos indicus*). So far as I am aware, the *bos primigenius* is not represented on the seals. See p. 70 *supra* —[ED.]



<sup>2</sup> The buffalo (*bos bubalis*) is illustrated in seals 304-6 and appears quite distinct from the unicorn commonly figured on the seals —[ED.]




It is, however, on the epigraphical side that I wish to emphasize more definite connection between the most archaic Sumerian script and the Indus Valley script than I was disposed to admit in my preceding study. The entire method of writing Sumerian pictographs in the upright and natural position exists on extremely few monuments which have survived, notably on the earliest of all known survivals of writing, the pictographic stone tablet of Kish (Langdon, *Excavations at Kish*, vol 1, pl xxxi). The great mass of archaic Sumerian texts already represent the signs turned 90 degrees to the left. This was done to facilitate rapid writing from left to right, whereas the original pictographs were written from right to left in perpendicular position. In the new system every sign lies on its left side. Now the Indus Valley system, which still retains many traces of its pictographic origin, remained true to its original principle, the writing still runs from right to left and the signs still retain their upright position. Obviously any comparison of the Sumerian signs with the Indus Valley signs must be made after turning each Sumerian sign 90 degrees to the right, thus bringing it into its original upright position. By utilizing the new material in PI, which provides far more ancient and extensive material than in REC, employed by the author in his preceding study, the following list of signs can be compared —

- 1 No 15 = PI 84,  *gal*, "large," "great"  
No 16 is, therefore, *gal-gal*, plural of No 15
- 2 No 2 = PI 35,  *ma*, "half"
- 3 No 8 = PI 6,  *na, za, ia*, "stone," "jewel"
- 4 No 33 = PI 246,  *gug*, "beans" or "peas"
- 5 No 29, cf PI 360, 
- 6 No 37 = PI 293, , disappeared in later Sumerian
- 7 No 63 = Sum  *ug*, "to die," "dead"
- 8 No 66 = PI 408, , so in secondary position. Very common in J-N, but disappeared in later Sumerian. Value unknown.
- 9 No 68 = PI 125, picture of a plough, values *apin, pin, engar, uru*
- 10 No 70 = PI 44, , disappeared in later Sumerian
- 11 No 71. This sign is so nearly identical with the form of *TUM* in its secondary position, PI 338, , values *ib, tum*, that the forms may be identical.
- 12 No 83, cf PI 144, possibly the pictograph of the date palm, values *sag, gisur-rar*
- 13 No 98 = PI 12, , disappeared in later Sumerian
- 14 No 100 = PI 270, , value *lal*, "lacking," "missing," "to weigh," "bind"
- 15 No 113, perhaps Sum  *bad*, "open"
- 16 No 264 = PI 1, values *as, rum, dil*. Cf value *ra*, suggested from Brthm.
- 16 No 265 = PI 41, *tab*, "double," "pair"
- 17 No 266 = PI 57, *es*, three. Used as a syllable, not as numeral, in Indus script and usually so in PI

18 No 276 = PI 64, 

19 Nos 277-8, cf PI 75-6,  and 

20 No 283 = PI 192,  *hu, musen, pag, dar*

Among the identifications above, (2) has the value *mas*, but the Brāhmī value *ka*, (14) value *lal, la*, but Brāhmī *ga*. If the two main hypotheses be assumed as true, (1) the identity of the Sumerian and Indus signs, (2) the derivation of the Brāhmī characters from the Indus signs, then it must follow that the Āryan Sanskritists gave values derived from their own language to these characters. In other words they knew the ideographic meanings, translated them into Sanskrit, and derived the syllabic values from the Sanskrit words.

The connection of this script with Sumerian is favoured by the many similar or identical signs noted in the sign list and in the new comparisons above. There is also the extraordinary fact that both Sumerian and Indus Valley scripts freely employ numerical ideographs as syllables and that the two both read from right to left.

OXFORD

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