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Proposal to Encode Indic Siyaq Numbers in Unicode

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1 Introduction

This is a proposal to encode Indic Siyaq Numbers in the Unicode standard. It draws upon information originally presented in the following documents and it supersedes those documents:

- L2/07-414 “Proposal to Encode Siyaq Numerals”
- L2/09-166 “Raqm Numerals: Towards a Model for Encoding Numerals of the Siyaq Systems”
- L2/11-270 “Preliminary Proposal to Encode Indic Siyaq Numbers in the UCS”

Discussions regarding the encoding model for Indic Siyaq Numbers were presented in L2/09-166 and L2/11-270. Proposals to encode characters of the other three Siyaq systems have been submitted. These following documents contain information on the typology of the numbers and the notation system, and explain the necessity for encoding independent blocks for the four Siyaq systems:

- L2/15-066 “Proposal to Encode Indic Siyaq Numbers in Unicode”
- L2/15-072 “Proposal to Encode Ottoman Siyaq Numbers in Unicode”
- L2/15-122 “Proposal to Encode Persian Siyaq Numbers in Unicode”

2 Script Details

Name and allocation The proposed characters belong to a block named ‘Indic Siyaq Numbers’. The block is tentatively allocated to the SMP at U+1EC70..1ECBF.

Representative glyphs The representative glyphs for Indic Siyaq Numerals have been produced by the proposal author using glyphs from the Jameel Noori Nastaliq font.

Structure Indic Siyaq Numbers represent units of a decimal positional system. The notation system is additive, that is, the numeric value is the sum of each number in a Siyaq number sequence. There is no character for zero; it is inherently represented in the distinct numerals for the various decimal orders. There

are distinctive numbers for the primary units, tens, hundreds, thousands, and ten thousands. The hundred thousands, millions, and higher orders are represented using distinctive numbers as well as unit marks.

Directionality Indic Siyaq Numbers are written right-to-left in the regular manner of the Arabic script. The system differs from the Arabic-Indic digits, which are written left-to-right.

Ordering The ordering of Indic Siyaq Numbers is visual, which reflects the method of expressing numbers in Arabic. In a Siyaq sequence the largest number occurs first and smaller units follow in order to the left. An exception occurs for compound numbers containing primary numbers. Such compounds are written transposed, with an alternate form of the primary unit placed before the larger number.

Orientation Indic Siyaq Numbers are written not only right to left, but in a south-east to north-east orientation. This orientation occurs from the practice of stacking numbers above the horizontal stroke of preceding numbers, in which this stroke is present. The result is that the baseline is not completely horizontal. The baseline for Urdu in the *nastalīq* style descends, while the baseline for Indic Siyaq ascends.

Script Environment Indic Siyaq Numbers are generally used within an Arabic script environment and within an Urdu linguistic context. Arabic-Indic digits may be used within Siyaq sequences, particularly for representation of small currency units (see section 4). The 'extended' Arabic-Indic digits of the Arabic block should be specified as extensions (see section 6).

3 Characters Proposed

3.1 Primary numbers

The following 9 characters are used for representing the primary units:

Character		Arabic source		Value
𞺻	INDIC SIYAQ NUMBER ONE	احد	*aḥad*	1
𞺼	INDIC SIYAQ NUMBER TWO	عددا	*ʿadadān*	2
𞺽	INDIC SIYAQ NUMBER THREE	ثلاثة	*ṯalāṯa*	3
𞺾	INDIC SIYAQ NUMBER FOUR	اربعة	*arbaʿa*	4
𞺿	INDIC SIYAQ NUMBER FIVE	خمسة	*ḫamsa*	5
𞻀	INDIC SIYAQ NUMBER SIX	ستّة	*sitta*	6
𞻁	INDIC SIYAQ NUMBER SEVEN	سبعة	*sabʿa*	7
𞻂	INDIC SIYAQ NUMBER EIGHT	ثمانية	*ṯamāniya*	8
𞻃	INDIC SIYAQ NUMBER NINE	تسعة	*tisʿa*	9

The Indic Siyaq numbers for ONE and TWO differ in their origins from corresponding characters in other Siyaq systems. The 𞺻 ONE is derived from the Arabic word عدد *ʿdad* "single", not from واحد *wāḥid* "one". The 𞺼 TWO is derived from the Arabic word عددان *ʿdadān* "dual", not from اثنان *iṯnān* "two".

3.2 Alternate forms of the primary numbers

Character	
𐹠	INDIC SIYAQ ALTERNATE NUMBER ONE
𐹡	INDIC SIYAQ ALTERNATE NUMBER TWO
𐹢	INDIC SIYAQ ALTERNATE NUMBER THREE
𐹣	INDIC SIYAQ ALTERNATE NUMBER FOUR
𐹤	INDIC SIYAQ ALTERNATE NUMBER FIVE
𐹥	INDIC SIYAQ ALTERNATE NUMBER SIX
𐹦	INDIC SIYAQ ALTERNATE NUMBER SEVEN
𐹧	INDIC SIYAQ ALTERNATE NUMBER EIGHT
𐹨	INDIC SIYAQ ALTERNATE NUMBER NINE

The alternate forms of the primary numbers are used for representing the unit in compound numbers. The alternate form is not a glyphic variant, but is used in place of the regular form when writing compounds involving the tens, ten thousands, lakhs (hundred thousands), and crores (tens of millions). A comparison of the regular and alternate forms is shown below:

	Regular	Alternate
ONE	𐹩	𐹠
TWO	𐹪	𐹡
THREE	𐹫	𐹢
FOUR	𐹬	𐹣
FIVE	𐹭	𐹤

	Regular	Alternate
SIX	𐹮	𐹥
SEVEN	𐹯	𐹦
EIGHT	𐹰	𐹧
NINE	𐹱	𐹨

3.3 Tens

The following 10 characters are used for representing the tens:

Character		Arabic source		Value
𐹲	INDIC SIYAQ NUMBER TEN	عشرة	*ʿašara*	10
𐹳	INDIC SIYAQ NUMBER TWENTY	عشرون	*ʿišrūn*	20
𐹴	INDIC SIYAQ NUMBER THIRTY	ثلاثون	*ṯalāṯūn*	30
𐹵	INDIC SIYAQ NUMBER FORTY	اربعون	*arbaʿūn*	40
𐹶	INDIC SIYAQ NUMBER FIFTY	خمسون	*ḫamsūn*	50
𐹷	INDIC SIYAQ NUMBER SIXTY	ستّون	*sittūn*	60

𞺺𞺸𞺻	INDIC SIYAQ NUMBER SEVENTY	سبعون	*sabʿūn*	70
𞺺𞺹𞺻	INDIC SIYAQ NUMBER EIGHTY	ثمانون	*ṯamānūn*	80
𞺺𞺺𞺻	INDIC SIYAQ NUMBER NINETY	تسعون	*tisʿūn*	90

Modified forms of the tens are used for representing the tens of lakh (primary millions) and tens of crores (hundred millions). These forms are identical to the regular tens, but possess a elongatd horizontal tail instead of a terminal loop. With the exception of TEN, TWENTY, and EIGHTY, these 'alternate' forms of the tens are nearly identical to the corresponding alternate forms of the primary numbers; the difference being the length of the horizontal stroke. A comparison is shown below:

	Regular	'Alternate'
TEN	𞺻𞺸	𞺻𞺸
TWENTY	𞺼𞺸𞺻	𞺼𞺸𞺸
THIRTY	𞺽𞺸𞺻	𞺽𞺸𞺸
FORTY	𞺾𞺸𞺻	𞺾𞺸𞺸
FIFTY	𞺿𞺸𞺻	𞺿𞺸𞺸
SIXTY	𞻀𞺸𞺻	𞻀𞺸𞺸
SEVENTY	𞻁𞺸𞺻	𞻁𞺸𞺸
EIGHTY	𞻂𞺸𞺻	𞻂𞺸𞺸
NINETY	𞻃𞺸𞺻	𞻃𞺸𞺸

ALTERNATE NUMBER ONE	𞺸𞺸
ALTERNATE NUMBER TWO	𞺼𞺸𞺸
ALTERNATE NUMBER THREE	𞺽𞺸𞺸
ALTERNATE NUMBER FOUR	𞺾𞺸𞺸
ALTERNATE NUMBER FIVE	𞺿𞺸𞺸
ALTERNATE NUMBER SIX	𞻀𞺸𞺸
ALTERNATE NUMBER SEVEN	𞻁𞺸𞺸
ALTERNATE NUMBER EIGHT	𞻂𞺸𞺸
ALTERNATE NUMBER NINE	𞻃𞺸𞺸

Furthermore, these 'alternate' forms are identical to the ten thousands (see section 3.6 and figure 3). Despite these similarities, Indic Siyaq undoubtedly uses a set of 'alternate' forms for the tens, and does not simply repurpose the alternate forms of the primary numbers or the ten thousands. This is supported by the fact that the 'alternate' numbers for TEN, TWENTY, and EIGHTY differ from the alternate forms for ONE, TWO, and EIGHT, while the rest are identical. Secondly, the 'alternate' tens are used instead of the regular tens for denoting the tens of lakhs and tens of crores, while the primary lakhs and primary crores are expressed using regular forms of the primary numbers, not the alternate forms. Although it would be logical to encode a complete set of 'alternate' tens on semantic grounds, seven of these numbers would be nearly identical to the alternate forms of the primary numbers, apart for the difference in length of the horizontal stroke. For this reason, instead of encoding a separate set of 'alternate' tens, it is proposed that the numbers for the ten thousands be used secondarily as 'alternate forms' for the tens when representing lakhs and crores.

3.4 Hundreds

The following 10 characters are used for representing the hundreds:

Character		Arabic source		Value
𞺺	INDIC SIYAQ NUMBER ONE HUNDRED	مائة	*miʾa*	100
𞺺𞺸	INDIC SIYAQ NUMBER TWO HUNDRED	مائتان	*miʾātān*	200

سما	INDIC SIYAQ NUMBER THREE HUNDRED	ثلاث مائة	*ṯalāṯu miʾa*	300
اعما	INDIC SIYAQ NUMBER FOUR HUNDRED	اربع مائة	*arbaʿu miʾa*	400
صما	INDIC SIYAQ NUMBER FIVE HUNDRED	خمس مائة	*ḫamsu miʾa*	500
سما	INDIC SIYAQ NUMBER SIX HUNDRED	ستّ مائة	*sittu miʾa*	600
لما	INDIC SIYAQ NUMBER SEVEN HUNDRED	سبع مائة	*sabʿu miʾa*	700
لما	INDIC SIYAQ NUMBER EIGHT HUNDRED	ثمان مائة	*ṯamānu miʾa*	800
لعما	INDIC SIYAQ NUMBER NINE HUNDRED	تسع مائة	*tisʿu miʾa*	900

3.5 Thousands

The following 10 characters are used for representing the thousands:

	Character	Arabic source		Value
الـــ	INDIC SIYAQ NUMBER ONE THOUSAND	الف	*alf*	1,000
اعمـــ	INDIC SIYAQ NUMBER TWO THOUSAND	الفان	*alfān*	2,000
سمـــ	INDIC SIYAQ NUMBER THREE THOUSAND	ثلاثة الاف	*ṯalāṯa ālāf*	3,000
للعمـــ	INDIC SIYAQ NUMBER FOUR THOUSAND	اربعة الاف	*arbaʿa ālāf*	4,000
صمـــ	INDIC SIYAQ NUMBER FIVE THOUSAND	خمسة الاف	*ḫamsa ālāf*	5,000
سمـــ	INDIC SIYAQ NUMBER SIX THOUSAND	ستّة الاف	*sitta ālāf*	6,000
معمـــ	INDIC SIYAQ NUMBER SEVEN THOUSAND	سبعة الاف	*sabʿa ālāf*	7,000
ثمـــ	INDIC SIYAQ NUMBER EIGHT THOUSAND	ثمانية الاف	*ṯamāniya ālāf*	8,000
لعمـــ	INDIC SIYAQ NUMBER NINE THOUSAND	تسعة الاف	*tisʿa ālāf*	9,000

3.6 Ten Thousands

The following 10 characters are used for representing the ten thousands:

	Character	Arabic source		Value
عـــ	INDIC SIYAQ NUMBER TEN THOUSAND	عشرة الاف	*ʿašara ālāf*	10,000
عمـــ	INDIC SIYAQ NUMBER TWENTY THOUSAND	عشرون الفا	*ʿišrūn alfan*	20,000
ثمـــ	INDIC SIYAQ NUMBER THIRTY THOUSAND	ثلاثون الفا	*ṯalāṯūn alfan*	30,000
للمـــ	INDIC SIYAQ NUMBER FORTY THOUSAND	اربعون الفا	*arbaʿūn alfan*	40,000
صمـــ	INDIC SIYAQ NUMBER FIFTY THOUSAND	خمسون الفا	*ḫamsūn alfan*	50,000
ســـ	INDIC SIYAQ NUMBER SIXTY THOUSAND	ستّون الفا	*sittūn alfan*	60,000
معمـــ	INDIC SIYAQ NUMBER SEVENTY THOUSAND	سبعون الفا	*sabʿūn alfan*	70,000

ـــ	INDIC SIYAQ NUMBER EIGHTY THOUSAND	ثمانون الفا	*ṯamānūn alfan*	80,000
ـــ	INDIC SIYAQ NUMBER NINETY THOUSAND	تسعون الفا	*tisʿūn alfan*	90,000

The numbers for the ten thousands are modified versions of the tens; they possess elongated instead of looped tails. Several of the elongated forms of the tens are virtually identical to the alternate forms of the primary units, simply being versions of the latter with longer strokes (see section 3.2).

TEN THOUSAND	ـــ	‘alternate’ ten	ـــ
TWENTY THOUSAND	ـــ	‘alternate’ twenty	ـــ
THIRTY THOUSAND	ـــ	‘alternate’ thirty	ـــ
FORTY THOUSAND	ـــ	‘alternate’ forty	ـــ
FIFTY THOUSAND	ـــ	‘alternate’ fifty	ـــ
SIXTY THOUSAND	ـــ	‘alternate’ sixty	ـــ
SEVENTY THOUSAND	ـــ	‘alternate’ seventy	ـــ
EIGHTY THOUSAND	ـــ	‘alternate’ eighty	ـــ
NINETY THOUSAND	ـــ	‘alternate’ ninety	ـــ

The distinction between the ten thousands and alternate forms of primary numbers is quite evident in the sources, and numbers for the ten thousands must be encoded. For this reason, representative glyphs for the ten thousands have been created with a slight upward curve of the tail. This feature is not an instrinsic aspect of the ten thousands, but is necessary for glyphic differentiation. The ten thousands are used as ‘alternate forms’ of the tens when writing the tens of lakhs and crores.

3.7 Hundred thousand

The following character is used for representing the hundred thousands or lakhs in the Deccani style:

Character		Arabic source		Value
ـــ	INDIC SIYAQ NUMBER ONE HUNDRED THOUSAND	مائة الاف	*miʾat ālāf*	100,000

The INDIC SIYAQ NUMBER ONE HUNDRED THOUSAND is used primarily in the ‘Deccani’ or south Indian style of Siyaq. In the ‘Hindustani’ or northern Indian style, the hundred thousands are generally represented using the ‘lakh marks’ shown below.

3.8 Lakh (hundred thousand)

The following 3 characters are used for representing the hundred thousands:

Character		Hindi source		Value
𐹠	INDIC SIYAQ NUMBER LAKH	ایک لاکھ	*ek lakh*	100,000
𐹡	INDIC SIYAQ NUMBER LAKHAN	دو لاکھ	*do lakh*	200,000
𐹢	INDIC SIYAQ NUMBER LAKH MARK	لاکھ	*lakh*	100,000

The 𐹠 LAKH is derived from the Hindi word लाख *lakh*, which is equivalent to "one hundred thousand". The glyph for 𐹡 LAKHAN or "two hundred thousand" is based upon the same pattern by which عصا TWO is derived from عصم ONE; by the adding of the the suffix *-an* for denoting a doubling. The 𐹢 LAKH MARK is a further contraction of 𐹠 LAKH that is used for writing multiples of the primary units. While it is possible to represent LAKH, LAKHAN, LAKH MARK using sequences of Arabic letters, they are proposed as atomic characters because they possess numerical values that cannot be obtained from letter sequences.

The resemblance between 𐹢 LAKH MARK and ـــلـــ ONE HUNDRED THOUSAND is coincidental. The similarity occurs because of the original letters that constitute the shapes of the Siyaq numbers, but the forms are derived from different sources. As shown above, 𐹢 is derived from the Arabic representation لاکھ of Hindi *lakh*, while ـــلـــ is a contraction of Arabic مائة الاف *miʾat ālāf*.

3.9 Crore (tens of million)

The following 10 characters are used for representing crores, or tens of millions:

Character		Hindi source		Value
𐹣	INDIC SIYAQ NUMBER KAROR	ایک کروڑ	*ek karoṛ*	10,000
𐹤	INDIC SIYAQ NUMBER KARORAN	دو کروڑ	*do karoṛ*	20,000

The 𐹣 KAROR is derived from the Hindi करोड़ *karoṛ*, equivalent to "ten million". The glyph for 𐹤 KARORAN or "twenty million" is derived in a fashion similar to عصا TWO and 𐹡 LAKHAN. The 𐹣 KAROR is used as a unit mark for writing multiples of the other primary units. While it is possible to represent KAROR and KARORAN using sequences of Arabic letters, similar to the the 'lakh' characters, they are proposed as atomic characters because they possess numerical values that cannot be obtained from letter sequences.

3.10 Placeholder

𐹪 INDIC SIYAQ PLACEHOLDER

The PLACEHOLDER is written after a number to indicate the end of a numeric sequence. It is generally written after large amounts, particularly with thousands. Its usage is optional.

3.11 Fractions

- ⼀ INDIC SIYAQ FRACTION ONE QUARTER
- ⼁ INDIC SIYAQ FRACTION ONE HALF
- ⼂ INDIC SIYAQ FRACTION ONE THIRD

The glyphs for fraction characters are rudimentary shapes that resemble characters in the Arabic block, such as ٠ U+0660 ARABIC-INDIC DIGIT ZERO and ۰ U+06F0 EXTENDED ARABIC-INDIC DIGIT ZERO, and ۔ U+06D4 ARABIC FULL STOP; as well as generic characters such as · U+00B7 MIDDLE DOT and - U+002D HYPHEN-MINUS. However, the semantics of the Indic Siyaq fraction signs differs from those of characters that are visually similar. These fractions are included in the Indic Siyaq repertoire for this reason.

3.12 Currency mark

- ⼃ INDIC SIYAQ RUPEE MARK

The RUPEE MARK resembles existing Arabic characters, such as ؍ U+060D ARABIC DATE SIGN, currency signs in other scripts, such as ৻ U+09F4 BENGALI CURRENCY NUMERATOR ONE, and various other characters, such as / U+002F SOLIDUS.

4 Orthography

The ordering of Indic Siyaq Numbers is visual, which reflects the method of expressing numbers in Arabic. In a numerical sequence the largest number occurs first and smaller units follow in order to the left:

5	صہ	<صہ FIVE>
50	صـــہ	<صـــہ FIFTY>
55	صصـــہ	<صـــ ALTERNATE NUMBER FIVE, صـــہ FIFTY>
500	صما	<صما FIVE HUNDRED>
505	صماصہ	<صما FIVE HUNDRED, صہ FIVE>
510	صماعـــہ	<صما FIVE HUNDRED, عـــہ TEN>
515	صماصعـــہ	<صما FIVE HUNDRED, صـــ ALTERNATE NUMBER FIVE, عـــہ TEN>
5,000	صمـــ	<صمـــ FIVE THOUSAND>

5,000	صـــالـــ	<صـــ DEPENDENT NUMBER FIVE, الـــ ONE THOUSAND>
5,005	صمـــ صہ	<صمـــ FIVE THOUSAND, صہ FIVE>
5,100	صمـــ ما	<صمـــ FIVE THOUSAND, ما ONE HUNDRED>
50,000	صـــ	<صـــہ FIFTY THOUSAND>
50,000	صمـــ الـــ	<صمـــ FIFTY THOUSAND, الـــ ONE THOUSAND>
50,005	صـــ صہ	<صـــ FIFTY THOUSAND, صہ FIVE>
50,550	صـــ صماصـــہ	<صـــ FIFTY THOUSAND, صما FIVE HUNDRED, صـــہ FIFTY>
55,000	صـــ	<صـــ ALTERNATE NUMBER FIVE, صـــ FIFTY THOUSAND>
55,000	صـــ الـــ	<صـــ ALTERNATE NUMBER FIVE, صـــ FIFTY THOUSAND, الـــ ONE THOUSAND>
55,005	صـــ صہ	<صہ ALTERNATE NUMBER FIVE, صـــ FIFTY THOUSAND, صہ FIVE>
5,00,000	صہ لکھہ	<صما FIVE, لکھہ LAKH>
5,00,000	صہ للـــ	<صما FIVE, للـــ ONE HUNDRED THOUSAND>
5,05,505	صہ لکھہ صمـــ صماصہ	<صما FIVE, لکھہ LAKH, صمـــ FIVE THOUSAND, صما FIVE HUNDRED, صہ FIVE>
5,55,555	صہ لکھہ صـــ صماصـــہ	<صما FIVE, لکھہ LAKH, صـــ ALTERNATE FIVE, صـــ FIFTY THOUSAND, صما FIVE HUNDRED, صـــ ALTERNATE FIVE, صـــہ FIFTY>
50,00,000	صـــ لک	<صـــ FIFTY THOUSAND, لک LAKH MARK>

50,00,000	صللہ	<صہ FIFTY THOUSAND, للہ ONE HUNDRED THOUSAND>
55,00,000	صہلک	<صہ ALTERNATE NUMBER FIVE, صہ FIFTY THOUSAND, لک LAKH MARK>
5,00,00,000	صہ کرور	<صما FIVE, لکھہ KAROR>

Primary numbers Primary numbers are written using the respective character for each number when they occur independently and when they are used for expressing multiples of lakhs and crores.

3,00,000	سے لک	<سے THREE, لک LAKH MARK>
4,00,000	للہ لک	<للہ FOUR, لک LAKH MARK>
7,00,00,000	ہہ کرور	<ہہ SEVEN, کرور KAROR>
8,00,00,000	ہے کرور	<ہے EIGHT, کرور KAROR>

For primary numbers in compounds containing the tens and ten thousands, the primary unit and the larger number are transposed, with the primary unit placed before the larger number. Below are representations for 11–19. The pattern is the same for 21–99.

10	عہ	<عہ TEN>
11	لہعہ	<لہ ALTERNATE NUMBER ONE, عہ TEN>
12	عہعہ	<عہ ALTERNATE NUMBER TWO, عہ TEN>
13	سہعہ	<سہ ALTERNATE NUMBER THREE, عہ TEN>
14	للہعہ	<للہ ALTERNATE NUMBER FOUR, عہ TEN>
15	صہعہ	<صہ ALTERNATE NUMBER FIVE, عہ TEN>
16	ےعہ	<ےہ ALTERNATE NUMBER SIX, عہ TEN>
17	ہہعہ	<ہہ ALTERNATE NUMBER SEVEN, عہ TEN>
18	ہہعہ	<ہہ ALTERNATE NUMBER EIGHT, عہ TEN>
19	نوعہ	<نو ALTERNATE NUMBER NINE, عہ TEN>

Thousands The thousands are represented using the respective character that corresponds to each number:

1,000 الـــ <الـــ ONE THOUSAND>

2,000 اعمـــ <اعمـــ TWO THOUSAND>

3,000 سمـــ <سمـــ THREE THOUSAND>

9,000 لعمـــ <لعمـــ NINE THOUSAND>

In the Deccani style, the thousands are represented using الـــ ONE THOUSAND as a unit mark, while the primary numbers indicate the appropriate multiple:

1,000 عمم الـــ <عمم ONE, الـــ ONE THOUSAND>

2,000 عمما الـــ <عمما TWO, الـــ ONE THOUSAND>

3,000 سے الـــ <سے THREE, الـــ ONE THOUSAND>

9,000 لو الـــ <لو TWO, الـــ ONE THOUSAND>

Ten thousands The thousands are represented using the respective character for each number. Multiples are written using alternate forms of the primary numbers, similar to the pattern for 11–19 described above:

10,000 عـــ <عـــ TEN THOUSAND>

11,000 لہ عـــ <لہ ALTERNATE NUMBER ONE, عـــ TEN THOUSAND>

12,000 عـ عـــ <عـــ ALTERNATE NUMBER TWO, عـــ TEN THOUSAND>

13,000 سـ عـــ <ســـ ALTERNATE NUMBER THREE, عـــ TEN THOUSAND>

19,000 لو عـــ <لو ALTERNATE NUMBER NINE, عـــ TEN THOUSAND>

20,000 عمـــ <عمـــ TWENTY THOUSAND>

In the Deccani style, the ten thousands may be represented using الـــ ONE THOUSAND as a unit mark, while the ten thousands indicate the appropriate multiple:

10,000 عـ الـــ <عـــ TEN THOUSAND, الـــ ONE THOUSAND>

11,000 لہ عـ الـــ <لہ ALTERNATE NUMBER ONE, عـــ TEN THOUSAND, الـــ ONE THOUSAND>

12,000 <ع ـــ ALTERNATE NUMBER TWO, ع ـــ TEN THOUSAND, ا ـــ ONE THOUSAND>

13,000 <ث ـــ ALTERNATE NUMBER THREE, ع ـــ TEN THOUSAND, ا ـــ ONE THOUSAND>

20,000 <ع ـــ TWENTY THOUSAND, ا ـــ ONE THOUSAND>

Lakhs (hundred thousands) There are two different methods for representing the lakhs or hundred thousands. The first uses monograms derived from the word لاکھ *lakh*. The second uses the number ـــلـ ONE HUNDRED THOUSAND. The regular primary units are used for denoting multiples of this order.

1,00,000 (100,000) <لکھہ LAKH>

2,00,000 (200,000) <لکھان LAKHAN>

2,00,000 (200,000) <عصا TWO, لک LAKH MARK>

3,00,000 (300,000) <ے THREE, لک LAKH MARK>

9,00,000 (900,000) <نو NINE, لک LAKH MARK>

In the Deccani style, the hundred thousands are written as follows (see figures 9 and 10):

1,00,000 (100,000) <عصم ONE, ـــلـ ONE HUNDRED THOUSAND>

2,00,000 (200,000) <عصا TWO, ـــلـ ONE HUNDRED THOUSAND>

3,00,000 (300,000) <ے THREE, ـــلـ ONE HUNDRED THOUSAND>

9,00,000 (900,000) <نو NINE, ـــلـ ONE HUNDRED THOUSAND>

Tens of lakhs (primary millions) Tens of lakhs or 1–9 million are expressed using the ten thousands and the لک LAKH MARK. In this context, the ten thousands function as 'alternate' forms of the tens and possess the appropriate tens value. Multiples of the tens of lakhs are written in the same fashion as the ten thousands.

10,00,000 <ع ـــ TEN THOUSAND, لک LAKH MARK>

(1,000,000)

11,00,000 (1,100,000)  <لہ ALTERNATE NUMBER ONE, عـ TEN THOUSAND, لک LAKH MARK>

12,00,000 (1,200,000)  <عـ ALTERNATE NUMBER TWO, عـ TEN THOUSAND, لک LAKH MARK>

13,00,000 (1,300,000)  <سـ ALTERNATE NUMBER THREE, عـ TEN THOUSAND, لک LAKH MARK>

19,00,000 (1,900,000)  <نـ ALTERNATE NUMBER NINE, عـ TEN THOUSAND, لک LAKH MARK>

20,00,000 (2,000,000)  <عـ TWENTY THOUSAND, لک LAKH MARK>

30,00,000 (3,000,000)  <سـ THIRTY THOUSAND, لک LAKH MARK>

90,00,000 (9,000,000) <نـ NINETY THOUSAND, لک LAKH MARK>

In the Deccani style of Siyaq, the للـ ONE HUNDRED THOUSAND is used as a unit mark instead of لک LAKH MARK:

10,00,000 (1,000,000)  <عـ TEN THOUSAND, للـ ONE HUNDRED THOUSAND>

11,00,000 (1,100,000)  <لہ ALTERNATE NUMBER ONE, عـ TEN THOUSAND, للـ ONE HUNDRED THOUSAND>

12,00,000 (1,200,000)  <عـ ALTERNATE NUMBER TWO, عـ TEN THOUSAND, للـ ONE HUNDRED THOUSAND>

13,00,000 (1,300,000)  <سـ ALTERNATE NUMBER THREE, عـ TEN THOUSAND, للـ ONE HUNDRED THOUSAND>

19,00,000 (1,900,000)  <نـ ALTERNATE NUMBER NINE, عـ TEN THOUSAND, للـ ONE HUNDRED THOUSAND>

20,00,000 (2,000,000)  <عـ TWENTY THOUSAND, للـ ONE HUNDRED THOUSAND>

30,00,000 (3,000,000) <𐷳𐷴 THIRTY THOUSAND, 𐷴 ONE HUNDRED THOUSAND>

90,00,000 (9,000,000) <𐷸𐷴 NINETY THOUSAND, 𐷴 ONE HUNDRED THOUSAND>

Crores (ten millions) Crores are represented as follows: 1–9 crores are expressed using the regular forms of the primary numbers followed by 𐷹 KAROR; 10–90 crores are expressed using the ten thousands, which function as 'alternate forms' of the tens and represent the appropriate tens value.

1,00,00,000 (10,000,000) <𐷹 KAROR>

2,00,00,000 (20,000,000) <𐷹𐷺 KARORAN>

2,00,00,000 (20,000,000) <𐷯 TWO, 𐷹 KAROR>

3,00,00,000 (30,000,000) <𐷰 THREE, 𐷹 KAROR>

9,00,00,000 (90,000,000) <𐷸 NINE, 𐷹 KAROR>

Tens of crores (hundred millions) Tens of crores, or hundreds of millions, are represented using alternate forms of the tens. In encoded representations, the numbers for the ten thousands are to be used for the tens:

10,00,00,000 (100,000,000) <𐷶 TEN THOUSAND, 𐷹 KAROR>

11,00,00,000 (110,000,000) <𐷱 ALTERNATE NUMBER ONE, 𐷶 TEN THOUSAND, 𐷹 KAROR>

12,00,00,000 (120,000,000) <𐷷 ALTERNATE NUMBER TWO, 𐷶 TEN THOUSAND, 𐷹 KAROR>

19,00,00,000 (190,000,000) <𐷳 ALTERNATE NUMBER THREE, 𐷶 TEN THOUSAND, 𐷹 KAROR>

20,00,00,000 (200,000,000) عـــ كرور <عـــ TEN THOUSAND, كرور KAROR>

Placeholder The ؏ INDIC SIYAQ PLACEHOLDER is used for indicating the end of a numerical sequence, particularly when the last number possesses a horizontal stroke. It is generally positioned above the stroke.

1,000 الـــ؏ <الـــ ONE THOUSAND, ؏ PLACEHOLDER>

10,000 عـــ؏ <عـــ TEN THOUSAND, ؏ PLACEHOLDER>

Fractions and currency Currency in Indic Siyaq is counted in terms of the historical rupee, used before 1950 (see Pandey 2007 for a description of regional currency notation systems and the characters used for representing them in various Indic scripts). Currency is denoted using the ⁄ RUPEE MARK.

The روپیہ *rūpaya* ('rupee', abbreviated 'Rs.') and whole rupees are represented using Siyaq numbers and are denoted using the RUPEE MARK:

Rs. 10 ⁄عـــ٥ <عـــ٥ TEN, ⁄ RUPEE MARK>

Rs. 100 ⁄مـا <مـا ONE HUNDRED, ⁄ RUPEE MARK>

Rs. 1,000 ⁄الـــ <الـــ ONE THOUSAND, ⁄ RUPEE MARK>

Rs. 1,000 ⁄الـــ؏ <الـــ ONE THOUSAND, ؏ PLACEHOLDER, ⁄ RUPEE MARK>

The historical rupee is divided into 16 آنہ *ānā* ('anna', abbreviated 'As.'). The anna is written using Arabic-Indic digits:

As. 1 ⁄١ <١ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, ⁄ RUPEE MARK>

As. 2 ⁄٢ <٢ U+06F2 EXTENDED ARABIC-INDIC DIGIT TWO, ⁄ RUPEE MARK>

As. 3 ⁄٣ <٣ U+06F3 EXTENDED ARABIC-INDIC DIGIT THREE, ⁄ RUPEE MARK>

As. 14 ⁄١۴ <١ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, ۴ U+06F4 EXTENDED ARABIC-INDIC DIGIT FOUR, ⁄ RUPEE MARK>

As. 15 ⁄١۵ <١ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, ۵ U+06F5 EXTENDED ARABIC-INDIC DIGIT FIVE, ⁄ RUPEE MARK>

Rs. 1 ⁄عـم <عـم ONE, ⁄ RUPEE MARK>

Rs. 1, As. 1 ⁄١عـم <عـم ONE, ⁄ RUPEE MARK, ١ U+0661 EXTENDED ARABIC-INDIC DIGIT ONE>

The anna is divided into 12 پائی *pāī* (’pie’, plural ‘pice’, abbreviated ‘P’). The pie is written using Arabic-Indic digits, which are placed to the left of the RUPEE MARK. Figure 7 shows examples in which the word پائی is written after the quantity.

P. 1	۱/	<۱ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, / RUPEE MARK>
P. 2	۲/	<۲ U+06F2 EXTENDED ARABIC-INDIC DIGIT TWO, / RUPEE MARK>
P. 3	۳/	<۳ U+06F3 EXTENDED ARABIC-INDIC DIGIT THREE, / RUPEE MARK>
P. 10	۱۰/	<۱ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, ۰ U+06F0 EXTENDED ARABIC-INDIC DIGIT ZERO, / RUPEE MARK>
P. 11	۱۱/	<۱ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, ۱ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, / RUPEE MARK>
As. 1	/۱	<۱ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, / RUPEE MARK>
As. 1, P. 1	۱/۱	<۱ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, / RUPEE MARK, ۱ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE>

Additionally, the *pāī* is grouped into units called پیسا *paisā* (‘paise’, abbreviated ‘Ps’). Three pie constitute one paise. Four paise make one ana. The paisa is represented using fraction signs:

Ps. 1	/۱	<۱ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, / RUPEE MARK>
Ps. 2	/۲	<۲ U+06F2 EXTENDED ARABIC-INDIC DIGIT TWO, / RUPEE MARK>
Ps. 3	/۳	<۳ U+06F3 EXTENDED ARABIC-INDIC DIGIT THREE, / RUPEE MARK>
As. 1	/۱	<۱ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, / RUPEE MARK>
As. 1, Ps. 1	/۱۱	<۱ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE, / RUPEE MARK, ۱ U+06F1 EXTENDED ARABIC-INDIC DIGIT ONE>

4.1 Glyphic Variants

There are glyphic variants of several numbers. These are not proposed for encoding as distinctive characters and their usage should be managed using fonts.

	Regular	Variant
INDIC SIYAQ NUMBER ONE		
INDIC SIYAQ NUMBER TWO		
INDIC SIYAQ NUMBER FIVE		
INDIC SIYAQ NUMBER TEN THOUSAND		
INDIC SIYAQ PLACEHOLDER		

5 Considerations for Rendering

The Siyaq number that is coupled with an alternate form of the primary number is generally raised and positioned above and to the left of the latter, such that the pair is partially stacked in a south-east and north-west direction.

When a number for the hundreds follows after a number for the thousands or ten thousands, the former may be written above the horizontal stroke of the latter.

When currency values less than 1 rupee are written with larger values, then the sequence of characters denoting the former are positioned beneath the latter.

6 Character Data

Character Properties Properties in the format of `UnicodeData.txt`:

```
1EC71;INDIC SIYAQ NUMBER ONE;No;0;AL;;;;1;N;;;;;
1EC72;INDIC SIYAQ NUMBER TWO;No;0;AL;;;;2;N;;;;;
1EC73;INDIC SIYAQ NUMBER THREE;No;0;AL;;;;3;N;;;;;
1EC74;INDIC SIYAQ NUMBER FOUR;No;0;AL;;;;4;N;;;;;
1EC75;INDIC SIYAQ NUMBER FIVE;No;0;AL;;;;5;N;;;;;
1EC76;INDIC SIYAQ NUMBER SIX;No;0;AL;;;;6;N;;;;;
1EC77;INDIC SIYAQ NUMBER SEVEN;No;0;AL;;;;7;N;;;;;
1EC78;INDIC SIYAQ NUMBER EIGHT;No;0;AL;;;;8;N;;;;;
1EC79;INDIC SIYAQ NUMBER NINE;No;0;AL;;;;9;N;;;;;
1EC7A;INDIC SIYAQ NUMBER TEN;No;0;AL;;;;10;N;;;;;
1EC7B;INDIC SIYAQ NUMBER TWENTY;No;0;AL;;;;20;N;;;;;
1EC7C;INDIC SIYAQ NUMBER THIRTY;No;0;AL;;;;30;N;;;;;
1EC7D;INDIC SIYAQ NUMBER FORTY;No;0;AL;;;;40;N;;;;;
1EC7E;INDIC SIYAQ NUMBER FIFTY;No;0;AL;;;;50;N;;;;;
1EC7F;INDIC SIYAQ NUMBER SIXTY;No;0;AL;;;;60;N;;;;;
1EC80;INDIC SIYAQ NUMBER SEVENTY;No;0;AL;;;;70;N;;;;;
1EC81;INDIC SIYAQ NUMBER EIGHTY;No;0;AL;;;;80;N;;;;;
1EC82;INDIC SIYAQ NUMBER NINETY;No;0;AL;;;;90;N;;;;;
1EC83;INDIC SIYAQ NUMBER ONE HUNDRED;No;0;AL;;;;100;N;;;;;
1EC84;INDIC SIYAQ NUMBER TWO HUNDRED;No;0;AL;;;;200;N;;;;;
1EC85;INDIC SIYAQ NUMBER THREE HUNDRED;No;0;AL;;;;300;N;;;;;
1EC86;INDIC SIYAQ NUMBER FOUR HUNDRED;No;0;AL;;;;400;N;;;;;
1EC87;INDIC SIYAQ NUMBER FIVE HUNDRED;No;0;AL;;;;500;N;;;;;
1EC88;INDIC SIYAQ NUMBER SIX HUNDRED;No;0;AL;;;;600;N;;;;;
1EC89;INDIC SIYAQ NUMBER SEVEN HUNDRED;No;0;AL;;;;700;N;;;;;
```

```
1EC8A;INDIC SIYAQ NUMBER EIGHT HUNDRED;No;0;AL;;;;800;N;;;;;
1EC8B;INDIC SIYAQ NUMBER NINE HUNDRED;No;0;AL;;;;900;N;;;;;
1EC8C;INDIC SIYAQ NUMBER ONE THOUSAND;No;0;AL;;;;1000;N;;;;;
1EC8D;INDIC SIYAQ NUMBER TWO THOUSAND;No;0;AL;;;;2000;N;;;;;
1EC8E;INDIC SIYAQ NUMBER THREE THOUSAND;No;0;AL;;;;3000;N;;;;;
1EC8F;INDIC SIYAQ NUMBER FOUR THOUSAND;No;0;AL;;;;4000;N;;;;;
1EC90;INDIC SIYAQ NUMBER FIVE THOUSAND;No;0;AL;;;;5000;N;;;;;
1EC91;INDIC SIYAQ NUMBER SIX THOUSAND;No;0;AL;;;;6000;N;;;;;
1EC92;INDIC SIYAQ NUMBER SEVEN THOUSAND;No;0;AL;;;;7000;N;;;;;
1EC93;INDIC SIYAQ NUMBER EIGHT THOUSAND;No;0;AL;;;;8000;N;;;;;
1EC94;INDIC SIYAQ NUMBER NINE THOUSAND;No;0;AL;;;;9000;N;;;;;
1EC95;INDIC SIYAQ NUMBER TEN THOUSAND;No;0;AL;;;;10000;N;;;;;
1EC96;INDIC SIYAQ NUMBER TWENTY THOUSAND;No;0;AL;;;;20000;N;;;;;
1EC97;INDIC SIYAQ NUMBER THIRTY THOUSAND;No;0;AL;;;;30000;N;;;;;
1EC98;INDIC SIYAQ NUMBER FORTY THOUSAND;No;0;AL;;;;40000;N;;;;;
1EC99;INDIC SIYAQ NUMBER FIFTY THOUSAND;No;0;AL;;;;50000;N;;;;;
1EC9A;INDIC SIYAQ NUMBER SIXTY THOUSAND;No;0;AL;;;;60000;N;;;;;
1EC9B;INDIC SIYAQ NUMBER SEVENTY THOUSAND;No;0;AL;;;;70000;N;;;;;
1EC9C;INDIC SIYAQ NUMBER EIGHTY THOUSAND;No;0;AL;;;;80000;N;;;;;
1EC9D;INDIC SIYAQ NUMBER NINETY THOUSAND;No;0;AL;;;;90000;N;;;;;
1EC9E;INDIC SIYAQ NUMBER ONE HUNDRED THOUSAND;No;0;AL;;;;100000;N;;;;;
1EC9F;INDIC SIYAQ NUMBER LAKH;No;0;AL;;;;100000;N;;;;;
1ECA0;INDIC SIYAQ NUMBER LAKHAN;No;0;AL;;;;200000;N;;;;;
1ECA1;INDIC SIYAQ LAKH MARK;No;0;AL;;;;100000;N;;;;;
1ECA2;INDIC SIYAQ NUMBER KAROR;No;0;AL;;;;1000000;N;;;;;
1ECA3;INDIC SIYAQ NUMBER KARORAN;No;0;AL;;;;20000000;N;;;;;
1ECA4;INDIC SIYAQ ALTERNATE NUMBER ONE;No;0;AL;;;;1;N;;;;;
1ECA5;INDIC SIYAQ ALTERNATE NUMBER TWO;No;0;AL;;;;2;N;;;;;
1ECA6;INDIC SIYAQ ALTERNATE NUMBER THREE;No;0;AL;;;;3;N;;;;;
1ECA7;INDIC SIYAQ ALTERNATE NUMBER FOUR;No;0;AL;;;;4;N;;;;;
1ECA8;INDIC SIYAQ ALTERNATE NUMBER FIVE;No;0;AL;;;;5;N;;;;;
1ECA9;INDIC SIYAQ ALTERNATE NUMBER SIX;No;0;AL;;;;6;N;;;;;
1ECAA;INDIC SIYAQ ALTERNATE NUMBER SEVEN;No;0;AL;;;;7;N;;;;;
1ECAB;INDIC SIYAQ ALTERNATE NUMBER EIGHT;No;0;AL;;;;8;N;;;;;
1ECAC;INDIC SIYAQ ALTERNATE NUMBER NINE;No;0;AL;;;;9;N;;;;;
1ECAD;INDIC SIYAQ PLACEHOLDER;So;0;AL;;;;;N;;;;;
1ECAE;INDIC SIYAQ FRACTION ONE QUARTER;No;0;AL;;;;1/4;N;;;;;
1ECAF;INDIC SIYAQ FRACTION ONE HALF;No;0;AL;;;;1/2;N;;;;;
1ECB0;INDIC SIYAQ FRACTION THREE QUARTERS;No;0;AL;;;;3/4;N;;;;;
1ECB1;INDIC SIYAQ RUPEE MARK;Sc;0;AL;;;;;N;;;;;
```

Linebreaking Linebreaking properties in the format of `LineBreak.txt`:

```
1CE71..1ECAD;AL  # No  [60] INDIC SIYAQ NUMBER ONE .. ALTERNATE NUMBER NINE
1ECAE..1ECB0;AL  # No   [3] INDIC SIYAQ FRACTION ONE QUARTER .. FRACTION THREE QUARTERS
1ECB1;PO         # Sc       INDIC SIYAQ RUPEE MARK
```

Script Extensions The following Arabic characters should be specific as extensions to the Indic Siyaq Numbers block:

```
0660..0669; # Nd  [10] ARABIC-INDIC DIGIT ZERO..ARABIC-INDIC DIGIT NINE
```

Confusion Data Given below are Arabic sequences that may mimic Indic Siyaq Numbers:

```
Indic Siyaq Numbers                Arabic
-------------------------------------------------------------------------
NUMBER ONE                        ; AIN, DOTLESS BEH, SAD
NUMBER TWO                        ; AIN, DOTLESS BEH, SAD, ALEF
```

```
NUMBER THREE                    ; DOTLESS BEH, DOTLESS BEH, YEH BARREE
NUMBER FOUR                     ; LAM, LAM, AIN
NUMBER FIVE                     ; SAD, HEH GOAL
NUMBER SIX                      ; LAM, YEH BARREE
NUMBER SEVEN                    ; HEH GOAL, AIN
NUMBER EIGHT                    ; HEH GOAL, YEH BARREE
NUMBER NINE                     ; LAM, AIN
NUMBER TEN                      ; AIN, NOON GHUNNA
NUMBER TWENTY                   ; AIN, DOTLESS BEH, NOON GHUNNA
NUMBER THIRTY                   ; DOTLESS BEH, DOTLESS BEH, NOON GHUNNA
NUMBER FORTY                    ; LAM, LAM, AIN, NOON GHUNNA
NUMBER FIFTY                    ; SAD, NOON GHUNNA
NUMBER SIXTY                    ; TATWEEL, NOON GHUNNA
NUMBER SEVENTY                  ; HEH GOAL, AIN, NOON GHUNNA
NUMBER EIGHTY                   ; LAM, NOON GHUNNA
NUMBER NINETY                   ; LAM, AIN, NOON GHUNNA
NUMBER ONE HUNDRED              ; MEEM, ALEF
NUMBER TWO HUNDRED              ; MEEM, ALEF, LAM, HEH GOAL
NUMBER THREE HUNDRED            ; SEEN, MEEM, ALEF
NUMBER FOUR HUNDRED             ; ALEF, AIN, MEEM, ALEF
NUMBER FIVE HUNDRED             ; SAD, MEEM, ALEF
NUMBER SIX HUNDRED              ; SEEN, TATWEEL, MEEM, ALEF
NUMBER SEVEN HUNDRED            ; LAM, MEEM, ALEF
NUMBER EIGHT HUNDRED            ; LAM, MEEM, ALEF
NUMBER NINE HUNDRED             ; LAAM, AIN, MEEM, ALEF
NUMBER ONE THOUSAND             ; ALEF, LAM, TATWEEL
NUMBER TWO THOUSAND             ; AIN, DOTLESS BEH, TATWEEL
NUMBER THREE THOUSAND           ; DOTLESS BEH, DOTLESS BEH, TATWEEL
NUMBER FOUR THOUSAND            ; LAM, LAM, AIN, TATWEEL
NUMBER FIVE THOUSAND            ; SAD, TATWEEL
NUMBER SIX THOUSAND             ; SEEN, TATWEEL
NUMBER SEVEN THOUSAND           ; HEH GOAL, AIN, TATWEEL
NUMBER EIGHT THOUSAND           ; HEH GOAL, TATWEEL
NUMBER NINE THOUSAND            ; LAM, AIN, TATWEEL
NUMBER TEN THOUSAND             ; AIN, TATWEEL
NUMBER TWENTY THOUSAND          ; AIN, DOTLESS BEH, TATWEEL
NUMBER THIRTY THOUSAND          ; DOTLESS BEH, DOTLESS BEH, TATWEEL
NUMBER FORTY THOUSAND           ; LAM, LAM, AIN, TATWEEL
NUMBER FIFTY THOUSAND           ; SAD, TATWEEL
NUMBER SIXTY THOUSAND           ; SEEN, TATWEEL
NUMBER SEVENTY THOUSAND         ; HEH GOAL, AIN, TATWEEL
NUMBER EIGHTY THOUSAND          ; HEH GOAL, TATWEEL
NUMBER NINETY THOUSAND          ; LAM, AIN, TATWEEL
NUMBER ONE HUNDRED THOUSAND     ; LAM, LAM, TATWEEL
NUMBER LAKH                     ; LAM, KEHEH, HEH GOAL
NUMBER LAKHAN                   ; LAM, KEHEH, HEH GOAL, ALEF, NOON
LAKH MARK                       ; LAM, KEHEH
NUMBER KAROR                    ; KEHEH, REH, WAW, REH
NUMBER KARORAN                  ; KEHEH, REH, WAW, REH, ALEF, NOON
ALTERNATE NUMBER ONE            ; LAM, HEH GOAL
ALTERNATE NUMBER TWO            ; AIN, TATWEEL
ALTERNATE NUMBER THREE          ; DOTLESS BEH, DOTLESS BEH, TATWEEL
ALTERNATE NUMBER FOUR           ; LAM, LAM, AIN, TATWEEL
ALTERNATE NUMBER FIVE           ; SAD, TATWEEL
ALTERNATE NUMBER SIX            ; SEEN, TATWEEL
ALTERNATE NUMBER SEVEN          ; HEH GOAL, AIN, TATWEEL
ALTERNATE NUMBER EIGHT          ; HEH GOAL, TATWEEL
ALTERNATE NUMBER NINE           ; LAM, AIN, TATWEEL
PLACEHOLDER                     ; SHADDA
FRACTION ONE QUARTER            ; FULL STOP
FRACTION ONE HALF               ; EXTENDED ARABIC-INDIC DIGIT ZERO
```

```
FRACTION THREE QUARTERS          ; FULL STOP, EXTENDED ARABIC-INDIC DIGIT ZERO
RUPEE MARK                       ; DATE SEPARATOR
```

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	1EC7	1EC8	1EC9	1ECA	1ECB
0		1EC80	1EC90	1ECA0	1ECB0
1	1EC71	1EC81	1EC91	1ECA1	1ECB1
2	1EC72	1EC82	1EC92	1ECA2	
3	1EC73	1EC83	1EC93	1ECA3	
4	1EC74	1EC84	1EC94	1ECA4	
5	1EC75	1EC85	1EC95	1ECA5	
6	1EC76	1EC86	1EC96	1ECA6	
7	1EC77	1EC87	1EC97	1ECA7	
8	1EC78	1EC88	1EC98	1ECA8	
9	1EC79	1EC89	1EC99	1ECA9	
A	1EC7A	1EC8A	1EC9A	1ECAA	
B	1EC7B	1EC8B	1EC9B	1ECAB	
C	1EC7C	1EC8C	1EC9C	1ECAC	
D	1EC7D	1EC8D	1EC9D	1ECAD	
E	1EC7E	1EC8E	1EC9E	1ECAE	
F	1EC7F	1EC8F	1EC9F	1ECAF	

The Indian Siyaq Numbers are also known as 'Raqm' or 'Rakam' numbers.

Primary numbers

1EC71 𞣱 INDIAN SIYAQ NUMBER ONE
1EC72 𞣲 INDIAN SIYAQ NUMBER TWO
1EC73 𞣳 INDIAN SIYAQ NUMBER THREE
1EC74 𞣴 INDIAN SIYAQ NUMBER FOUR
1EC75 𞣵 INDIAN SIYAQ NUMBER FIVE
1EC76 𞣶 INDIAN SIYAQ NUMBER SIX
1EC77 𞣷 INDIAN SIYAQ NUMBER SEVEN
1EC78 𞣸 INDIAN SIYAQ NUMBER EIGHT
1EC79 𞣹 INDIAN SIYAQ NUMBER NINE

Tens

1EC7A 𞣺 INDIAN SIYAQ NUMBER TEN
1EC7B 𞣻 INDIAN SIYAQ NUMBER TWENTY
1EC7C 𞣼 INDIAN SIYAQ NUMBER THIRTY
1EC7D 𞣽 INDIAN SIYAQ NUMBER FORTY
1EC7E 𞣾 INDIAN SIYAQ NUMBER FIFTY
1EC7F 𞣿 INDIAN SIYAQ NUMBER SIXTY
1EC80 𞤀 INDIAN SIYAQ NUMBER SEVENTY
1EC81 𞤁 INDIAN SIYAQ NUMBER EIGHTY
1EC82 𞤂 INDIAN SIYAQ NUMBER NINETY

Hundreds

1EC83 𞤃 INDIAN SIYAQ NUMBER ONE HUNDRED
1EC84 𞤄 INDIAN SIYAQ NUMBER TWO HUNDRED
1EC85 𞤅 INDIAN SIYAQ NUMBER THREE HUNDRED
1EC86 𞤆 INDIAN SIYAQ NUMBER FOUR HUNDRED
1EC87 𞤇 INDIAN SIYAQ NUMBER FIVE HUNDRED
1EC88 𞤈 INDIAN SIYAQ NUMBER SIX HUNDRED
1EC89 𞤉 INDIAN SIYAQ NUMBER SEVEN HUNDRED
1EC8A 𞤊 INDIAN SIYAQ NUMBER EIGHT HUNDRED
1EC8B 𞤋 INDIAN SIYAQ NUMBER NINE HUNDRED

Thousands

1EC8C 𞤌 INDIAN SIYAQ NUMBER ONE THOUSAND
• used as a unit mark for the thousands in the Deccani style
1EC8D 𞤍 INDIAN SIYAQ NUMBER TWO THOUSAND
1EC8E 𞤎 INDIAN SIYAQ NUMBER THREE THOUSAND
1EC8F 𞤏 INDIAN SIYAQ NUMBER FOUR THOUSAND
1EC90 𞤐 INDIAN SIYAQ NUMBER FIVE THOUSAND
1EC91 𞤑 INDIAN SIYAQ NUMBER SIX THOUSAND
1EC92 𞤒 INDIAN SIYAQ NUMBER SEVEN THOUSAND
1EC93 𞤓 INDIAN SIYAQ NUMBER EIGHT THOUSAND
1EC94 𞤔 INDIAN SIYAQ NUMBER NINE THOUSAND

Ten thousands

Also used as alternate forms for the tens when writing tens of lakhs and tens of crores

1EC95 𞤕 INDIAN SIYAQ NUMBER TEN THOUSAND
1EC96 𞤖 INDIAN SIYAQ NUMBER TWENTY THOUSAND
1EC97 𞤗 INDIAN SIYAQ NUMBER THIRTY THOUSAND
1EC98 𞤘 INDIAN SIYAQ NUMBER FORTY THOUSAND
1EC99 𞤙 INDIAN SIYAQ NUMBER FIFTY THOUSAND
1EC9A 𞤚 INDIAN SIYAQ NUMBER SIXTY THOUSAND
1EC9B 𞤛 INDIAN SIYAQ NUMBER SEVENTY THOUSAND
1EC9C 𞤜 INDIAN SIYAQ NUMBER EIGHTY THOUSAND
1EC9D 𞤝 INDIAN SIYAQ NUMBER NINETY THOUSAND

Hundred thousand

1EC9E 𞤞 INDIAN SIYAQ NUMBER ONE HUNDRED THOUSAND
• used in the Deccani style

Lakhs

Used for the hundred thousands and primary millions

1EC9F 𞤟 INDIAN SIYAQ NUMBER LAKH
= 1 lakh
= 100,000
1ECA0 𞤠 INDIAN SIYAQ NUMBER LAKHAN
= 2 lakh
= 200,000
1ECA1 𞤡 INDIAN SIYAQ LAKH MARK
= lakh multiplier

Crores

Used for the ten millions and higher orders

1ECA2 𞤢 INDIAN SIYAQ NUMBER KAROR
= 1 crore
= 10 million
= 100 lakh
• used as a mark for denoting crores
1ECA3 𞤣 INDIAN SIYAQ NUMBER KARORAN
= 2 crore
= 20 million
= 200 lakh

Alternate forms of primary numbers

Used for representing multiples of the primary units

1ECA4 𞤤 INDIAN SIYAQ ALTERNATE NUMBER ONE
1ECA5 𞤥 INDIAN SIYAQ ALTERNATE NUMBER TWO
1ECA6 𞤦 INDIAN SIYAQ ALTERNATE NUMBER THREE
1ECA7 𞤧 INDIAN SIYAQ ALTERNATE NUMBER FOUR
1ECA8 𞤨 INDIAN SIYAQ ALTERNATE NUMBER FIVE
1ECA9 𞤩 INDIAN SIYAQ ALTERNATE NUMBER SIX
1ECAA 𞤪 INDIAN SIYAQ ALTERNATE NUMBER SEVEN
1ECAB 𞤫 INDIAN SIYAQ ALTERNATE NUMBER EIGHT
1ECAC 𞤬 INDIAN SIYAQ ALTERNATE NUMBER NINE

Placeholder

1ECAD 𞤭 INDIAN SIYAQ PLACEHOLDER

Fractions

1ECAE 𞤮 INDIAN SIYAQ FRACTION ONE QUARTER
1ECAF 𞤯 INDIAN SIYAQ FRACTION ONE HALF
1ECB0 𞤰 INDIAN SIYAQ FRACTION THREE QUARTERS

Currency sign

1ECB1 𞤱 INDIAN SIYAQ RUPEE MARK

	*x*1	*x*10	*x*100	*x*1,000	*x*10,000	*x*100,000	*x*1,000,000	*x*10,000,000
1	عصم	عہ	ما	الہ	ع	لکھہ	عہ لک	کرور
2	عصا	عہ	مالہ	اعمہ	عب	لکھہان	عہ لک	کروراں
3	سے	سہ	سما	سمہ	سب	سے لک	سہ لک	سے کرور
4	للوہ	للوہ	اعما	للعمہ	للو	للوہ لک	للو لک	للوہ کرور
5	صہ	صہ	صما	صمہ	ص	صہ لک	صہ لک	صہ کرور
6	لے	لہ	سما	سمہ	ل	لے لک	لہ لک	لے کرور
7	موہ	موہ	لما	معمہ	مو	موہ لک	مو لک	موہ کرور
8	ہے	لہ	لما	ہمہ	ل	ہے لک	ہہ لک	ہے کرور
9	لوہ	لوہ	لعما	لعمہ	لو	لوہ لک	لو لک	لوہ کرور

Table 1: Indic forms of the Siyaq numbers for eight decimal orders.

RAQAM.

This is the method universally employed by nations using the Arabic character for recording pecuniary transactions, and for noting all computations of weight and measure. The word *raqam* denotes "marking," "noting," "writing," and is used for the "price-mark" placed on an article to express its value. The symbols themselves are merely abbreviations of the Arabic words denoting numbers; and, notwithstanding their apparent complexity, are exceedingly simple when their characteristic features are recognized. The *raqam* symbols from 1 to 10 are abbreviations of the Arabic words. Thus 1 is expressed by عدد "number," with a final stroke implying "unity"; 2 is represented by the dual form عددان; 3 is ثلثه; 4 is ربع; 5 is خمس; 6 is ستة; 7 is سبع; 8 is ثماني; 9 is تسع; 10 is عشره. As the symbols are Shikasta forms of these words they are written from right to left; and the initial of each is its characteristic feature. In forming the symbols from 11 to 19, the representative of 10 is written with the characteristic feature of each unit running out into a streak underneath. These symbols, therefore, may be read as 10+1, 10+2, 10+3, &c. The figure 20 is represented by the characteristic feature of 2 prefixed to the finial of the symbol for 10, and thus simply enough indicates "double ten." The units are placed under this, as before, to express "double 10+1," up to "double 10+9." The characteristic features of 3, 4, 5, 6, 7, 8, and 9, are prefixed to the finial of 10, to render the numbers 30, 40, 50, &c.; and the units are run under each, as before explained, to express the intermediate numbers, up to 99. The figure 100 is an abbreviation of the Arabic مائه; and the same process of prefixing the characteristic features of the units, carries us up to 900. These symbols are placed at the right-hand side of the lesser numbers; thus 123 would be written $\frac{20}{3}$.100. The symbol for 1000 is the Arabic word الف; and the usual modifications of its initial part carry the numeration up to 90,000. The representatives of thousands are placed to the right of those representing hundreds; thus, 1125 would appear as $\frac{20}{5}$.100.1000. To express numbers beyond 90,000 the Indian words لكهه or لاكهه 100,000, and كڑور 10,000,000 have been availed of. The word لكهه is not used alone, but has the figure 1 prefixed, indicating "one lakh"; for 2 lakhs a dual form is improvised, and لكهان is made to express "double lakh." To render 3 lakhs up to 90 lakhs, first the units, and, in this case, the tens also are run under the primary symbol, until we reach 1 *karor*, and its dual *karorán*, "2 karors," after which the former process is repeated, if such high numbers are ever required.

It is hoped that the foregoing explanation will simplify what appears to many Europeans to be a puzzling system of notation. A complete table of *raqam* figures is here added.

Figure 1: Description of Siyaq notation (from Palmer 1886: 39, 40). The table of *raqam* referred to in the last paragraph is the same as that given by Stewart (1825), shown here in figure 6.

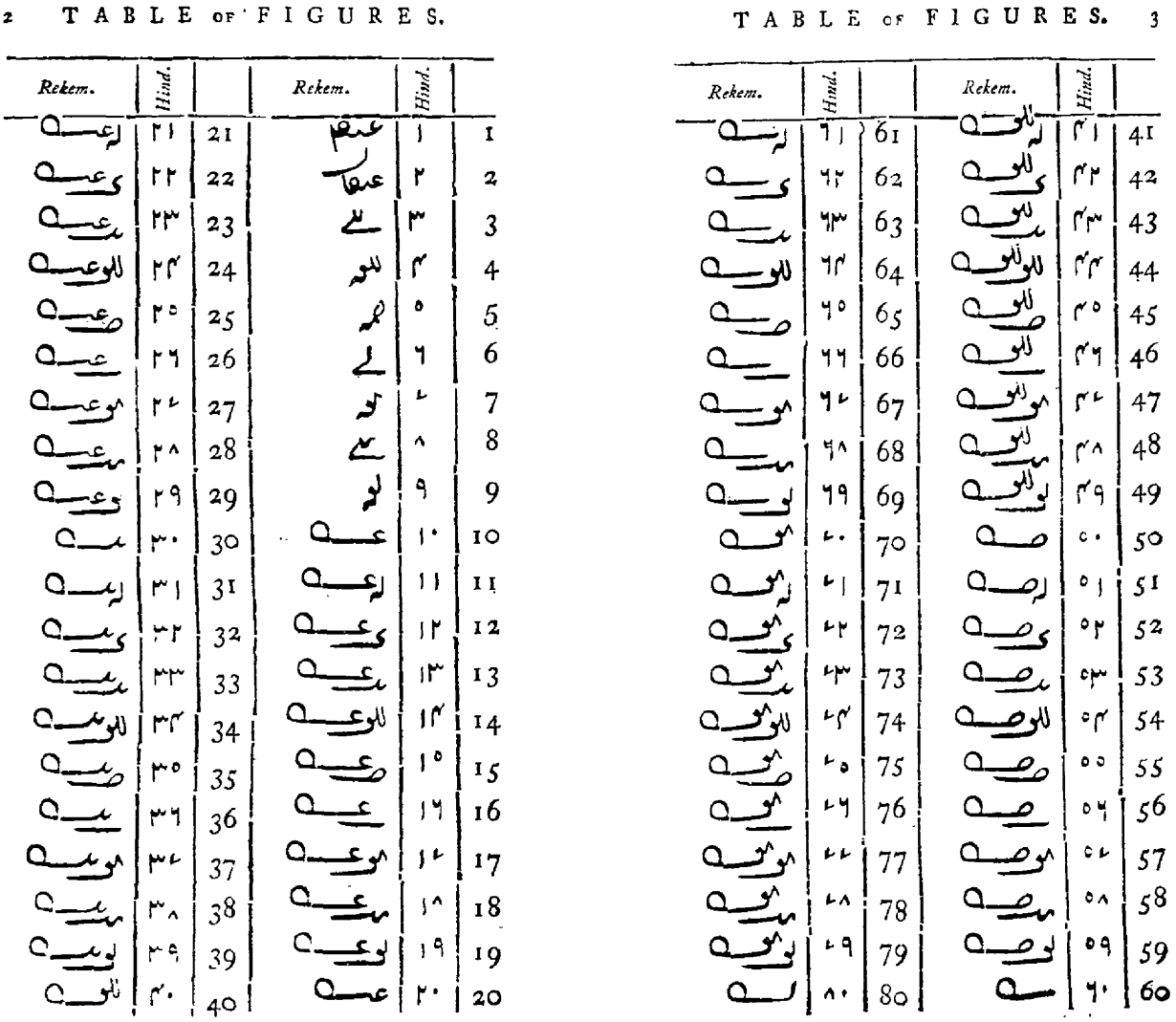
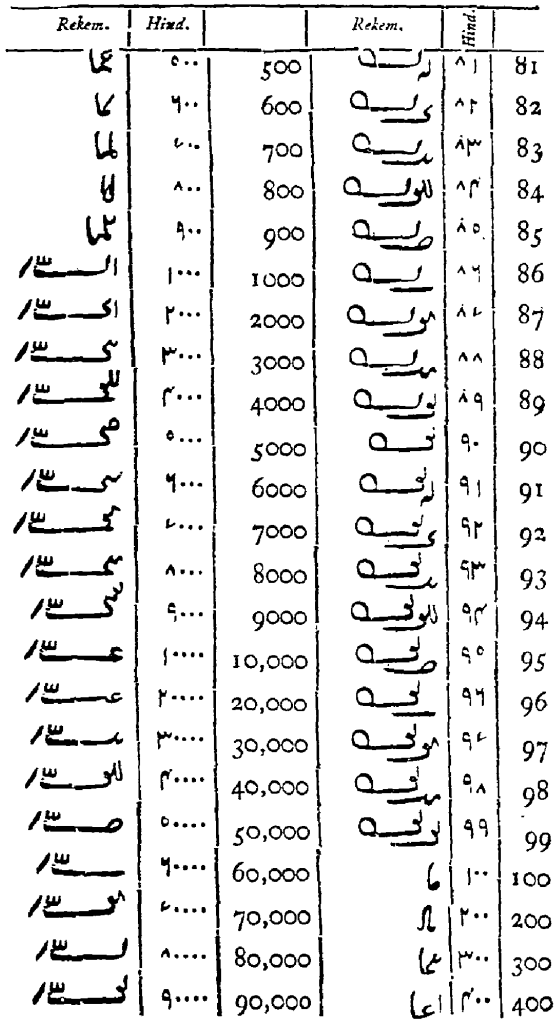


Figure 2: Printed forms of Indic Siyaq Numbers (from Gladwin 1790: 2, 3).



4 TABLE of FIGURES.

Rekem.	Hind.		Rekem.	Hind.	
	٥٠٠	500		٨١	81
	٦٠٠	600		٨٢	82
	٧٠٠	700		٨٣	83
	٨٠٠	800		٨٤	84
	٩٠٠	900		٨٥	85
١٠٠٠	١٠٠٠	1000		٨٦	86
٢٠٠٠	٢٠٠٠	2000		٨٧	87
٣٠٠٠	٣٠٠٠	3000		٨٨	88
٤٠٠٠	٤٠٠٠	4000		٨٩	89
٥٠٠٠	٥٠٠٠	5000		٩٠	90
٦٠٠٠	٦٠٠٠	6000		٩١	91
٧٠٠٠	٧٠٠٠	7000		٩٢	92
٨٠٠٠	٨٠٠٠	8000		٩٣	93
٩٠٠٠	٩٠٠٠	9000		٩٤	94
١٠٠٠٠	١٠٠٠٠	10,000		٩٥	95
٢٠٠٠٠	٢٠٠٠٠	20,000		٩٦	96
٣٠٠٠٠	٣٠٠٠٠	30,000		٩٧	97
٤٠٠٠٠	٤٠٠٠٠	40,000		٩٨	98
٥٠٠٠٠	٥٠٠٠٠	50,000		٩٩	99
٦٠٠٠٠	٦٠٠٠٠	60,000		١٠٠	100
٧٠٠٠٠	٧٠٠٠٠	70,000		٢٠٠	200
٨٠٠٠٠	٨٠٠٠٠	80,000		٣٠٠	300
٩٠٠٠٠	٩٠٠٠٠	90,000		٤٠٠	400

Figure 3: Metal types showing forms of the ten thousands that are elongations of the alternate forms for the primary numbers (from Gladwin 1790: 4).

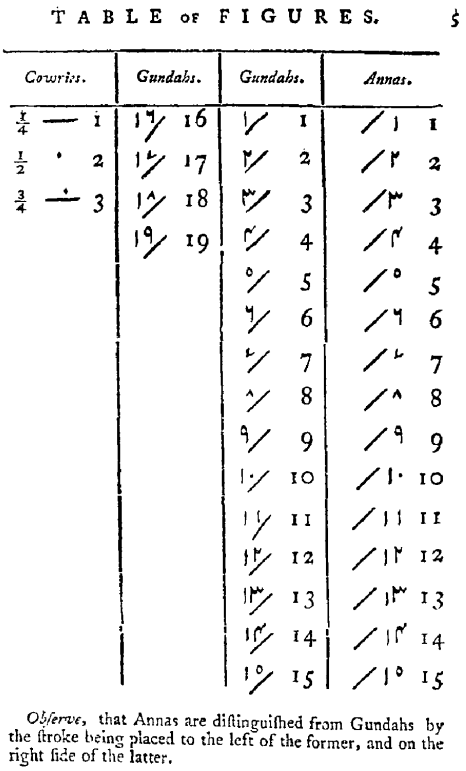


TABLE of FIGURES. 5

Cowries.	Gundahs.	Gundahs.	Annas.
$\frac{1}{4}$ — 1	17/ 16	1/ 1	/١ 1
$\frac{1}{2}$ • 2	18/ 17	٢/ 2	/٢ 2
$\frac{3}{4}$ — 3	19/ 18	٣/ 3	/٣ 3
	19/ 19	٤/ 4	/٤ 4
		٥/ 5	/٥ 5
		٦/ 6	/٦ 6
		٧/ 7	/٧ 7
		٨/ 8	/٨ 8
		٩/ 9	/٩ 9
		١٠/ 10	/١٠ 10
		١١/ 11	/١١ 11
		١٢/ 12	/١٢ 12
		١٣/ 13	/١٣ 13
		١٤/ 14	/١٤ 14
		١٥/ 15	/١٥ 15

Observe, that Annas are diſtinguiſhed from Gundahs by the ſtroke being placed to the left of the former, and on the right ſide of the latter.

Figure 4: Printed forms of Indic Siyaq Numbers (from Gladwin 1790: 5)

The Rekem, or Siyak characters, being only contractions of Arabic words, the following Table may serve to impress them on the memory.

Arabic Words.	*Rekem.*		*Arabic Words.*	*Rekem.*		*Arabic Words.*	*Rekem.* *joined.*	*separate.*	
عشر	ـعـ	10	احد عشر	لـعـ	11	١ ، د	ـلـ	١	1
عشرين	ـعـ	20	اثنا عشر	ىـعـ	12	عدوان	ـىـ	٢	2
ثلاثين	ـثـ	30	ثالثة عشر	ثـعـ	13	ثالثة	ـثـ	٣	3
اربعين	ـلـ	40	اربعة عشر	لـعـ	14	اربعة	ـلـ	٤	4
خمسين	ـصـ	50	خمسة عشر	صـعـ	15	خمسة	ـصـ	٥	5
ستين	ـسـ	60	ستة عشر	سـعـ	16	ستة	ـسـ	٦	6
سبعين	ـعـ	70	سبعة عشر	عـعـ	17	سبعة	ـعـ	٧	7
ثمانين	ـثـ	80	ثمانية عشر	ثـعـ	18	ثمانية	ـثـ	٨	8
تسعين	ـفـ	90	تسعة عشر	فـعـ	19	تسعة	ـفـ	٩	9

N O T E.

It is neceſſary to remark regarding the two firſt digits, that when combined with tens, لـ is a contraction of احد, and ىـ of اثنا

Arabic Words.	*Rekem.*		*Arabic Words.*	*Rekem.*	
الف	الـسـ/	1000	مايه	ما	100
الفان	اىـسـ/	2000	مايتان	مـا	200
ثلثة آلاف	ثـسـ/	3000	ثلثمايه	ثما	300
اربعة آلاف	لـسـ/	4000	اربعمايه	اعا	400
خمسة آلاف	صـسـ/	5000	خمسمايه	صما	500
ستة آلاف	سـسـ/	6000	ستمايه	سما	600
سبعة آلاف	عـسـ/	7000	سبعمايه	عما	700
ثمانية آلاف	ثـسـ/	8000	ثمانمايه	ثما	800
تسعة آلاف	فـسـ/	9000	تسعمايه	فما	900

Figure 5: Table showing the Arabic sources of Siyaq forms (from Gladwin 1790: 6–7).

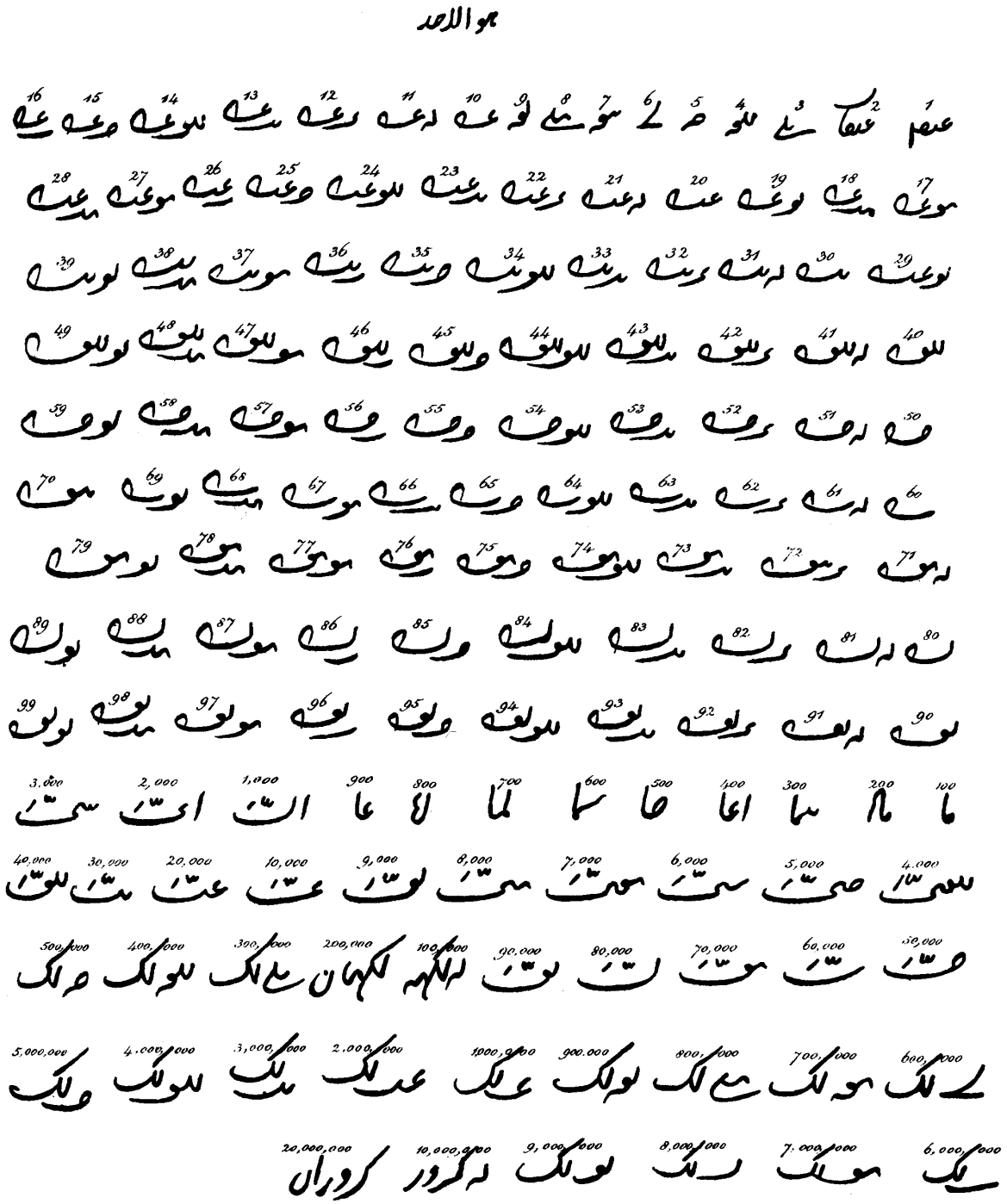


Figure 6: Table showing Siyaq forms as used in South Asia (from Stewart 1825: Plate 7).

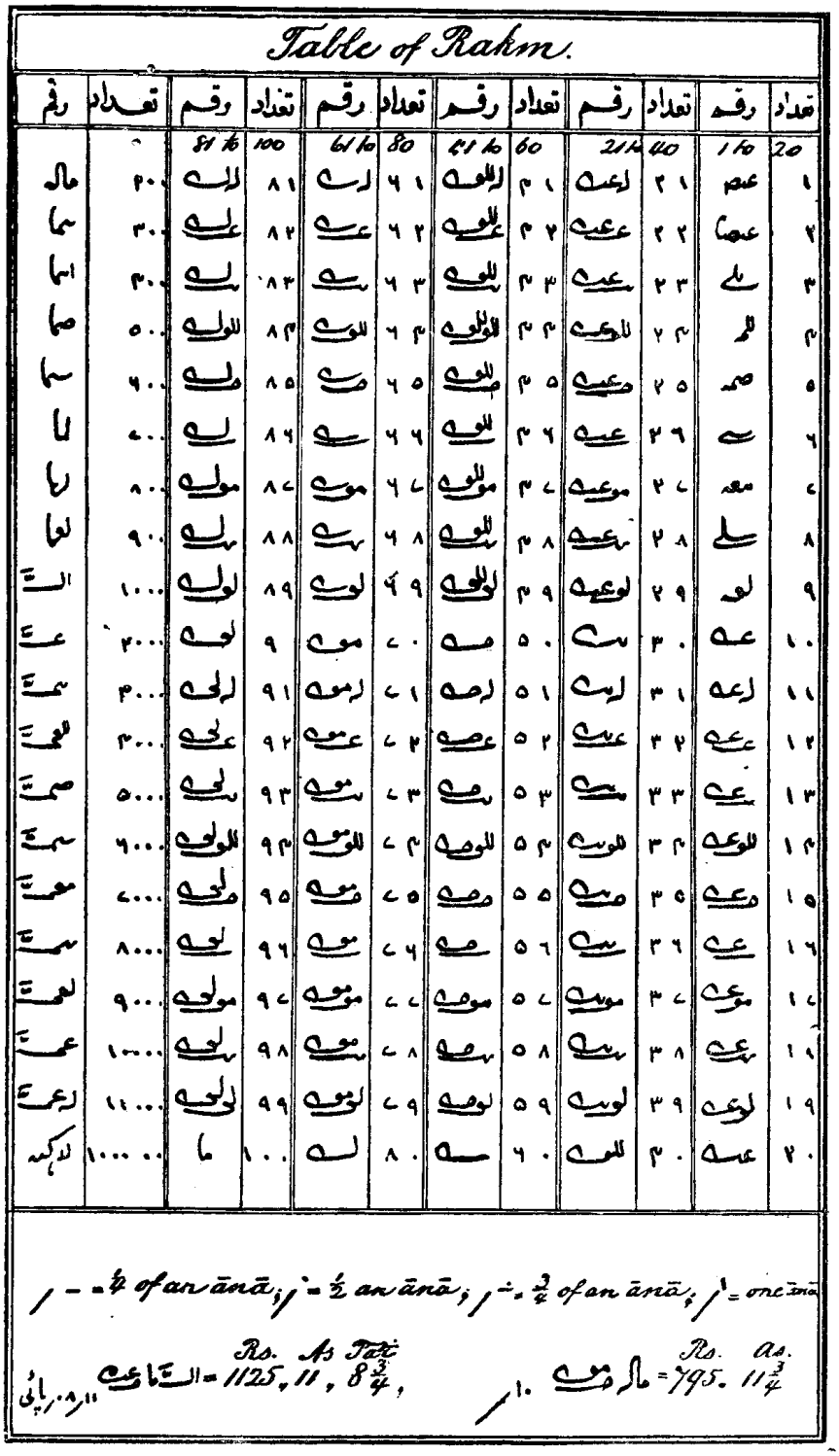
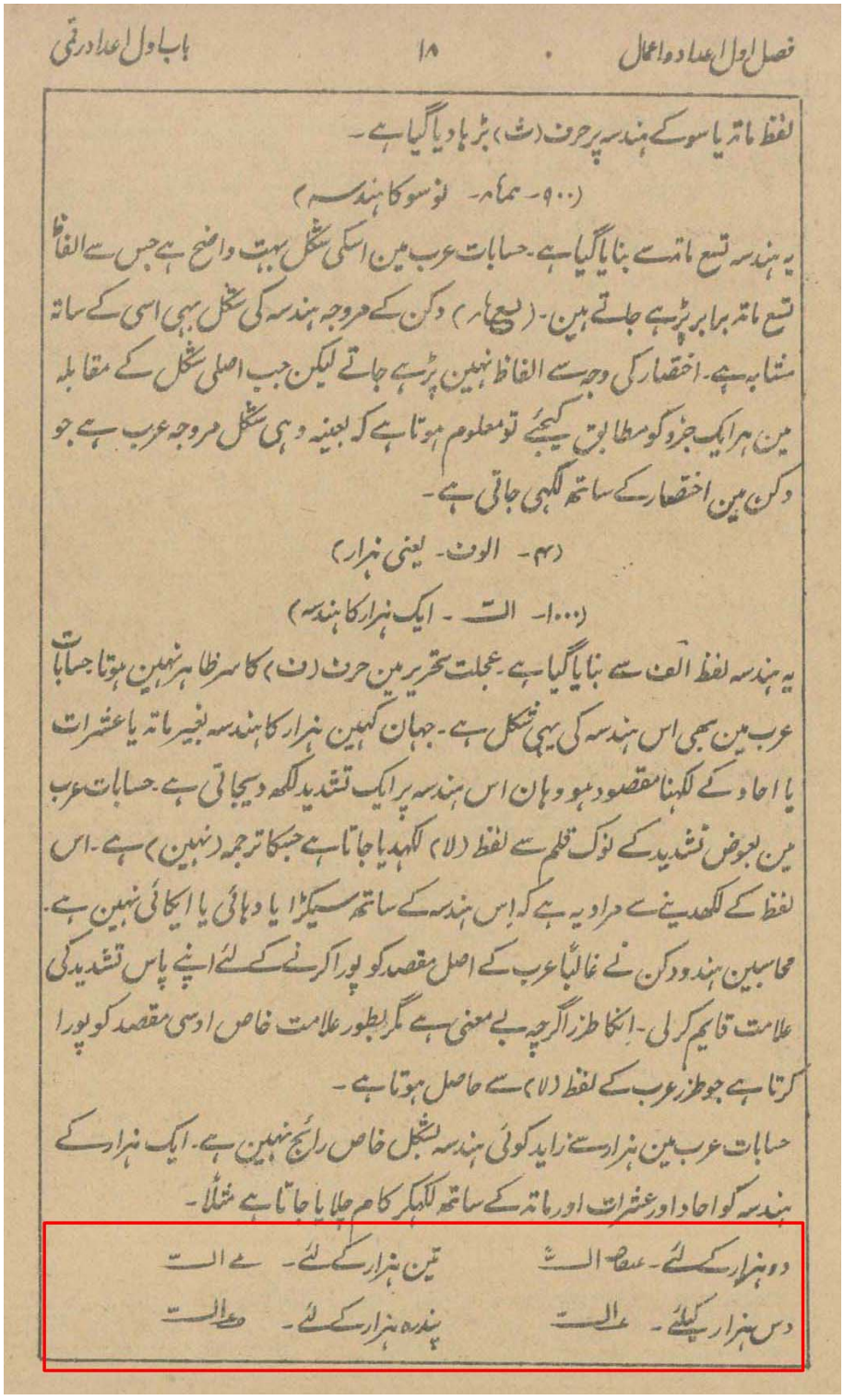


Figure 7: Table showing Indic Siyaq Numbers (from Platts 1909: 60). It should be noted that the values of the examples shown at the bottom of the table may be incorrect. The example to the right, "مالہ صد ۱۰ر" is given the value "Rs. 795, As. 11¾"; the actual value is "Rs. 297, As. 10". There is a slight error in the example on the left, "الف ماصد ۱۱ر ۰۸ر پائي", which is given the value "Rs. 1125, As. 11, Pai 8¾"; the actual value is "Rs. 1125, As. 11, Pai 8½".


فصل اول اعداد و اعمال ۱۸ باب اول اعداد رقمی

لفظ ماتہ یا سو کے ہندسہ پر حرف (ث) بڑہا دیا گیا ہے۔

(۹۰۰- ثماہ- نوسو کا ہندسہ)

یہ ہندسہ تسع ماتہ سے بنایا گیا ہے۔ حسابات عرب مین اسکی شکل بہت واضح ہے جس سے الفاظ تسع ماتہ برابر پڑہے جاتے ہین۔ (تسعماہ) دکن کے مروجہ ہندسہ کی شکل بہی اسی کے ساتہ مشابہ ہے۔ اختصار کی وجہ سے الفاظ نہین پڑہے جاتے لیکن جب اصلی شکل کے مقابلہ مین ہر ایک جزو کو مطابق کیجئے تو معلوم ہوتا ہے کہ بعینہ وہی شکل مروجہ عرب ہے جو دکن مین اختصار کے ساتہ لکہی جاتی ہے۔

(۴- الوف- یعنی ہزار)

(۱۰۰۰- الف - ایک ہزار کا ہندسہ)

یہ ہندسہ لفظ الف سے بنایا گیا ہے۔ عجلت تحریر مین حرف (ف) کا سر ظاہر نہین ہوتا حسابات عرب مین بھی اس ہندسہ کی یہی شکل ہے۔ جہان کہین ہزار کا ہندسہ بغیر ماتہ یا عشرات یا احاد کے لکہنا مقصود ہو وہان اس ہندسہ پر ایک تشدید لکہ دیجاتی ہے۔ حسابات عرب مین بعوض تشدید کے نوک قلم سے لفظ (لا) لکہدیا جاتا ہے جسکا ترجمہ (نہین) ہے۔ اس لفظ کے لکہدینے سے مراد یہ ہے کہ اس ہندسہ کے ساتہ سیکڑا یا دہائی یا ایکائی نہین ہے۔ محاسبین ہندو دکن نے غالبًا عرب کے اصل مقصد کو پورا کرنے کے لئے اپنے پاس تشدید کی علامت قایم کرلی۔ انکا طرز اگرچہ بے معنی ہے مگر بطور علامت خاص اوسی مقصد کو پورا کرتا ہے جو طرز عرب کے لفظ (لا) سے حاصل ہوتا ہے۔

حسابات عرب مین ہزار سے زاید کوئی ہندسہ بشکل خاص رائج نہین ہے۔ ایک ہزار کے ہندسہ کو احاد اور عشرات اور ماتہ کے ساتہ لکہکر کام چلایا جاتا ہے مثلًا۔

دو ہزار کے لئے۔ ٢ الف	تین ہزار کے لئے۔ ٣ الف
دس ہزار کیلئے۔ ١٠ الف	پندرہ ہزار کے لئے۔ ١٥ الف

Figure 8: Deccani style for writing the thousands (from Aziz 1894: 18).

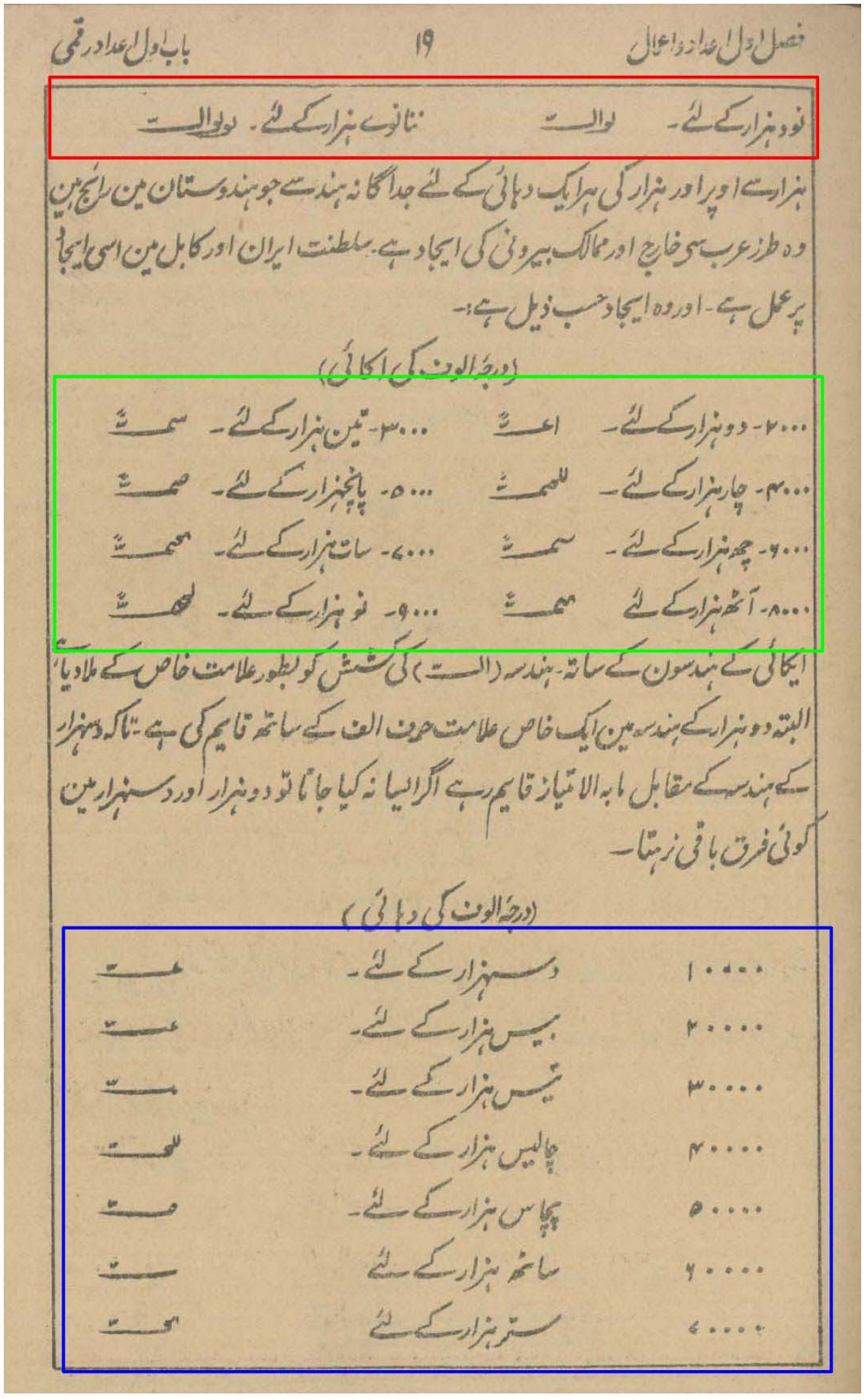


Figure 9: Forms of the thousands (red) in the Deccani style and the regular forms of the thousands (green). The ten thousands is boxed in blue (from Aziz 1894: 19).

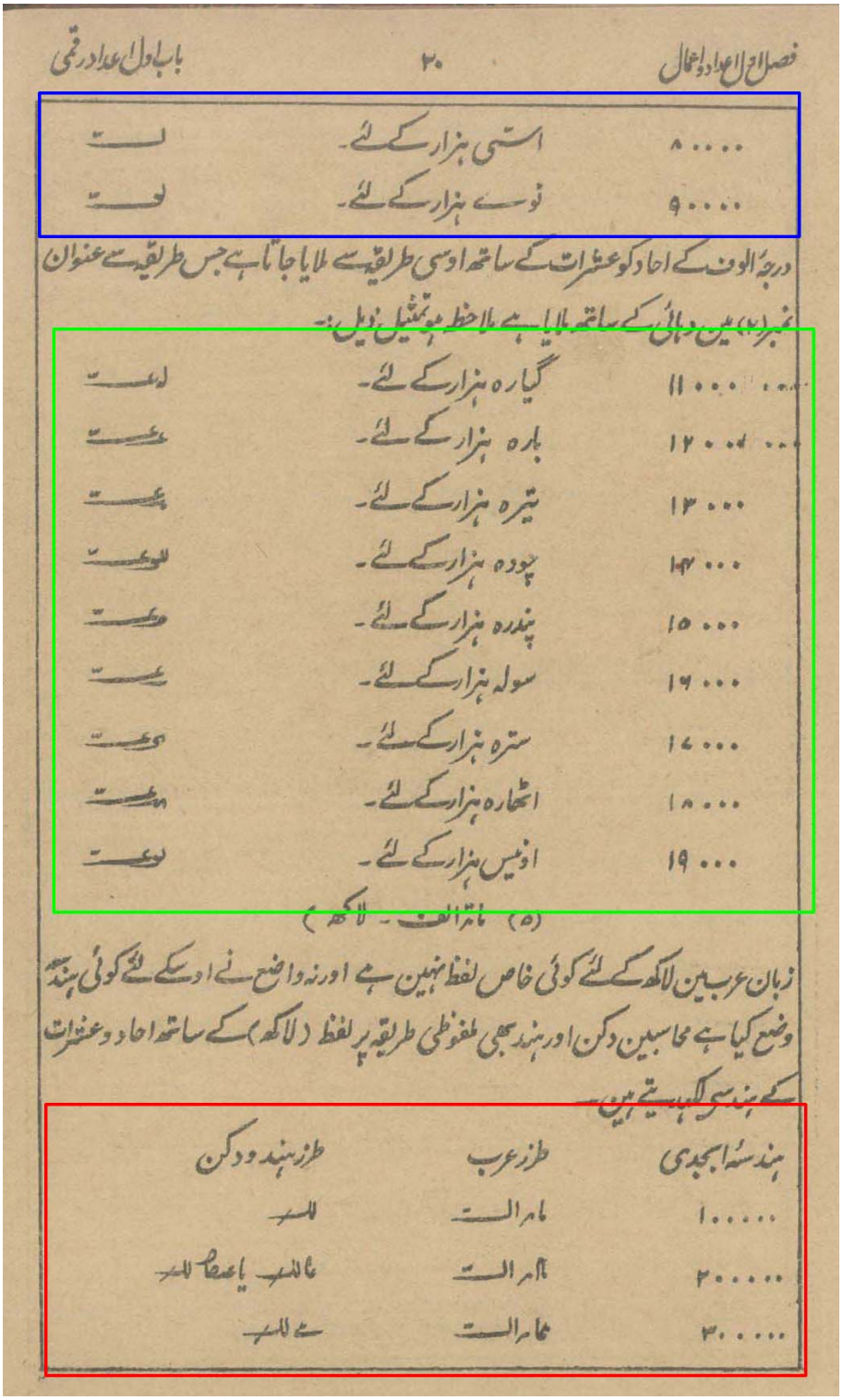


Figure 10: Method of writing the ten thousands (blue; continued from figure 9), the primary multiples of the ten thousands (green) and lakhs (red) in the Deccani style (from Aziz 1894: 20).

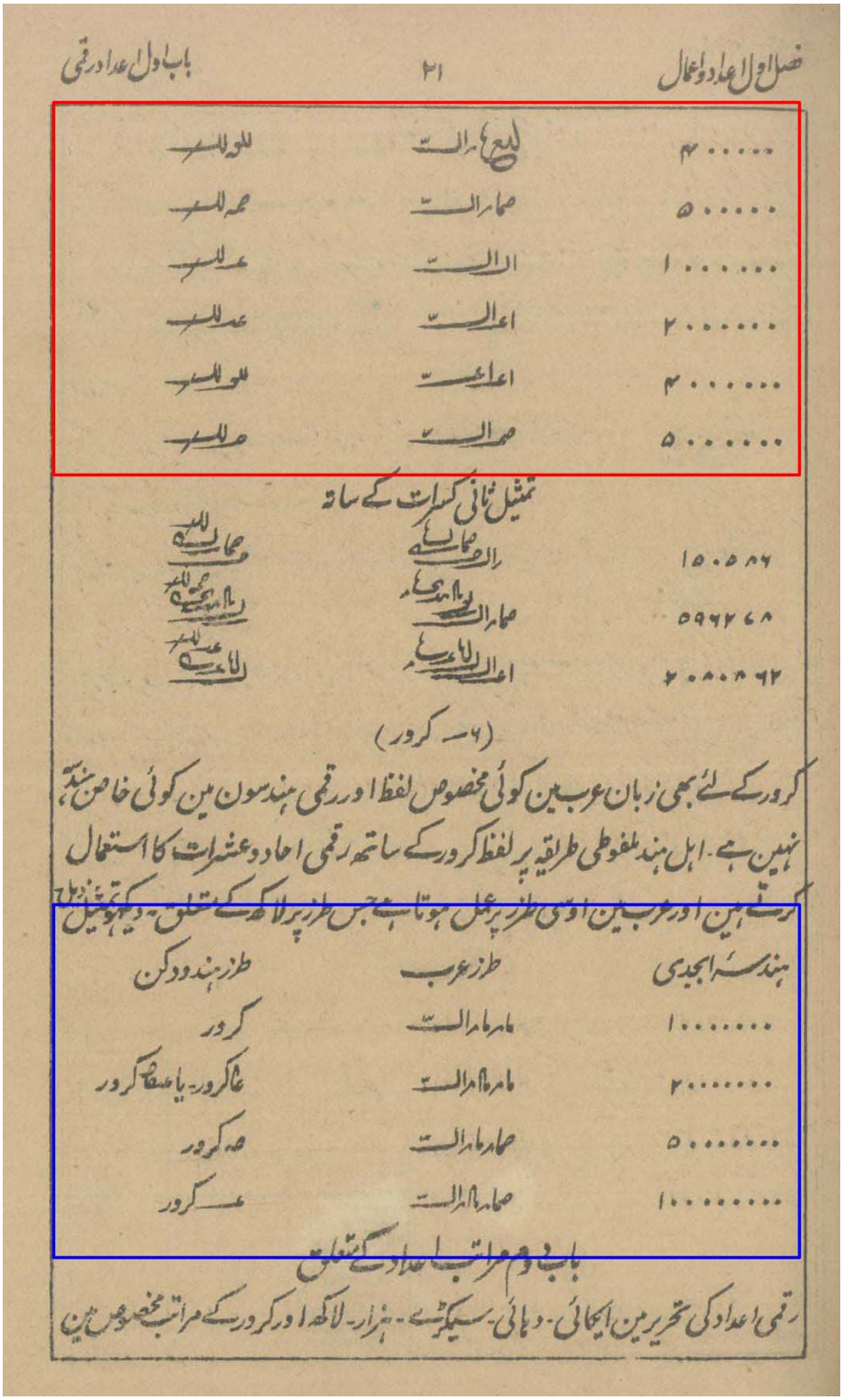
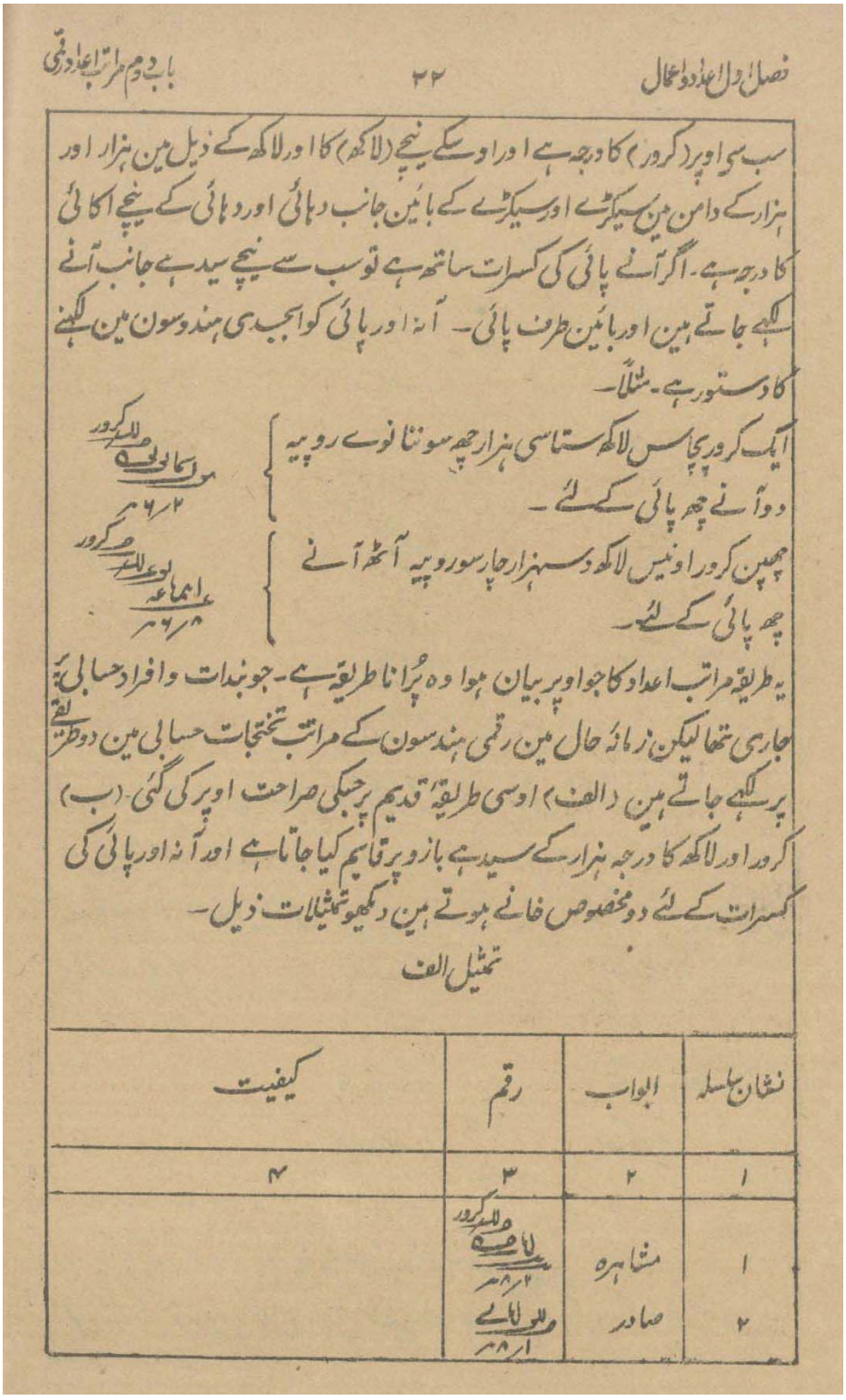


Figure 11: Method of writing lakhs (red; continued from figure 10) in the Deccani style and karors (blue) (from Aziz 1894: 21).



فصل اول اعداد و اعمال ۲۲ باب دوم مراتب اعداد رقمی

سب سے اوپر (کرور) کا درجہ ہے اور اوسکے نیچے (لاکھ) کا اور لاکھ کے ذیل مین ہزار اور ہزار کے دامن مین سیکڑے اور سیکڑے کے بائین جانب دہائی اور دہائی کے نیچے اکائی کا درجہ ہے۔ اگر آنے پائی کی کسرات ساتھ ہے تو سب سے نیچے سیدھے جانب آنے لکھے جاتے ہین اور بائین طرف پائی۔ آنہ اور پائی کو انجدی ہندسون مین لکھنے کا دستور ہے۔ مثلاً۔

ایک کرور پچاس لاکھ ستاسی ہزار چھ سو ننانوے روپیہ دو آنے چھ پائی کے لئے۔

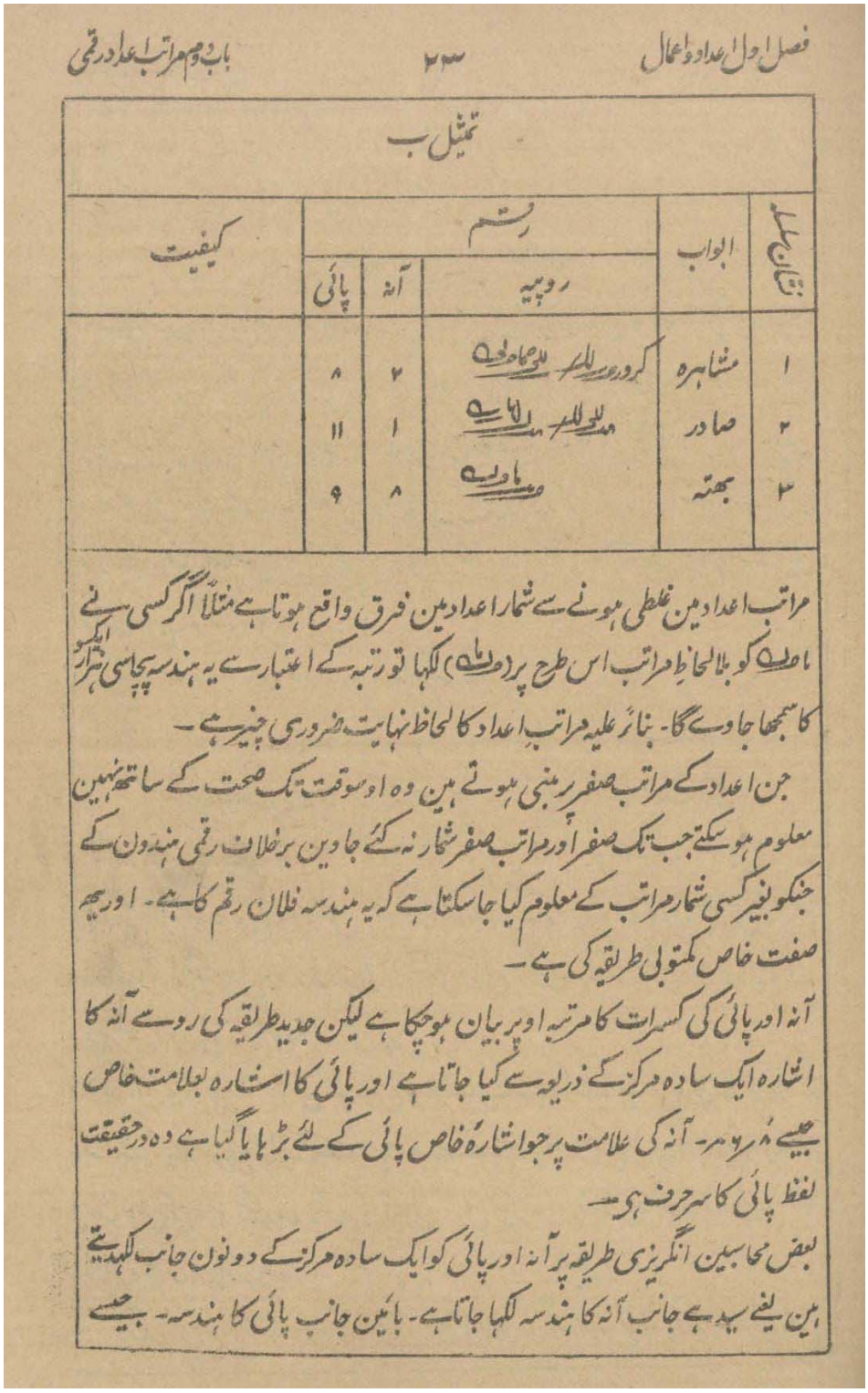
چھپن کرور اونیس لاکھ دس ہزار چار سو روپیہ آٹھ آنے چھ پائی کے لئے۔

یہ طریقہ مراتب اعداد کا جو اوپر بیان ہوا وہ پُرانا طریقہ ہے۔ جو بندات و افراد حسابی مین جاری تھا لیکن زمانۂ حال مین رقمی ہندسون کے مراتب تخمجات حسابی مین دو طریقے پر لکھے جاتے ہین (الف) اوسی طریقۂ قدیم پر جسکی صراحت اوپر کی گئی۔ (ب) کرور اور لاکھ کا درجہ ہزار کے سیدھے بازو پر قایم کیا جاتا ہے اور آنہ اور پائی کی کسرات کے لئے دو مخصوص خانے ہوتے ہین دیکھو تمثیلات ذیل۔

تمثیل الف

نشان سلسلہ	ابواب	رقم	کیفیت
۱	۲	۳	۴
۱	مشاہرہ		
۲	صادر		

Figure 12: Examples of complex numbers (from Aziz 1894: 22).



فصل اول اعداد و اعمال ۲۳ باب دوم مراتب اعداد رقمی

تمثیل ب

نشان سلسلہ	ابواب	رقم روپیہ	رقم آنہ	رقم پائی	کیفیت
۱	مشاہرہ	کروڑ لاکھ ۵	۲	۸	
۲	صادر	۵ لاکھ ۵	۱	۱۱	
۳	بھتہ	۵	۸	۹	

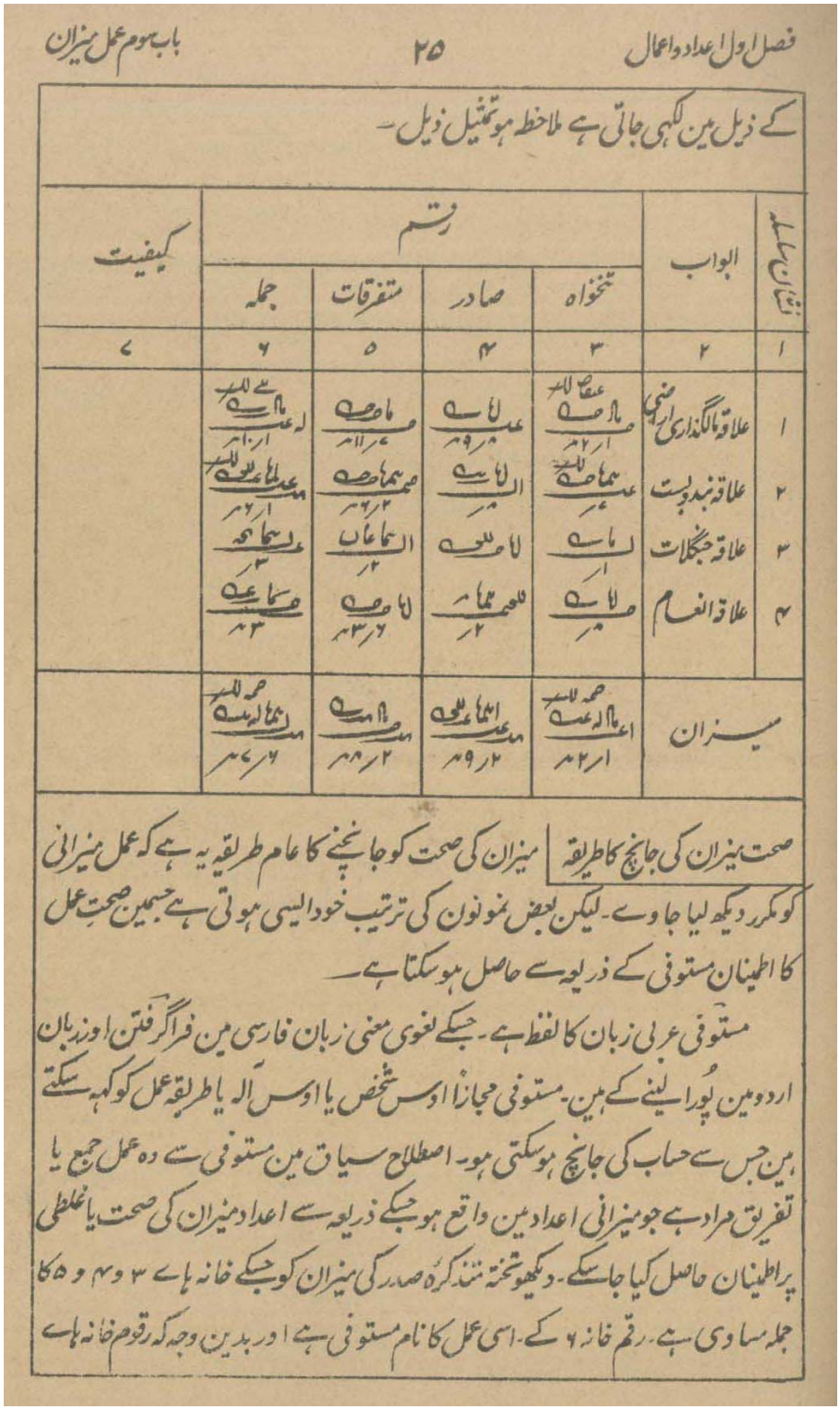
مراتب اعداد مین غلطی ہونے سے شمار اعداد مین فرق واقع ہوتا ہے مثلاً اگر کسی نے ۵ ماہ کو بلالحاظ مراتب اس طرح پر (۵) لکھا تو رتبہ کے اعتبار سے یہ ہندسہ پچاس ہزار کا سمجھا جاوے گا۔ بنائر علیہ مراتب اعداد کا لحاظ نہایت ضروری چیز ہے۔

جن اعداد کے مراتب صفر پر مبنی ہوتے ہین وہ اوسوقت تک صحت کے ساتھ نہین معلوم ہو سکتے جب تک صفر اور مراتب صفر شمار نہ کئے جاوین برخلاف رقمی ہندون کے جنکو بغیر کسی شمار مراتب کے معلوم کیا جاسکتا ہے کہ یہ ہندسہ فلان رقم کا ہے۔ اور یہہ صفت خاص کمتوبی طریقہ کی ہے۔

آنہ اور پائی کی کسرات کا مرتبہ اوپر بیان ہوچکا ہے لیکن جدید طریقہ کی رو سے آنہ کا اشارہ ایک سادہ مرکز کے ذریعہ سے کیا جاتا ہے اور پائی کا اشارہ بعلامت خاص جیسے ۱ر ۲ر۔ آنہ کی علامت پر جو اشارۂ خاص پائی کے لئے بڑہایا گیا ہے وہ درحقیقت لفظ پائی کا سرحرف ہے۔

بعض محاسبین انگریزی طریقہ پر آنہ اور پائی کو ایک سادہ مرکز کے دونون جانب لکھدیتے ہین یعنے سیدہے جانب آنہ کا ہندسہ لکھا جاتا ہے۔ بائین جانب پائی کا ہندسہ۔ جیسے

Figure 13: More examples of complex numbers (from Aziz 1894: 23).



فصل اول اعداد و اعمال ۲۵ باب سوم عمل میزان

کے ذیل مین لکھی جاتی ہے ملاحظہ ہو تمثیل ذیل —

نشان سلسلہ	ابواب	رقم تنخواہ	رقم صادر	رقم متفرقات	رقم جملہ	کیفیت
۱	۲	۳	۴	۵	۶	۷
۱	علاقہ مالگذاری اراضی					
۲	علاقہ بندوبست					
۳	علاقہ جنگلات					
۴	علاقہ انعام					
	میزان					

صحت میزان کی جانچ کا طریقہ | میزان کی صحت کو جانچنے کا عام طریقہ یہ ہے کہ عمل میزانی کو مکرر دیکھ لیا جاوے۔ لیکن بعض نمونون کی ترتیب خود ایسی ہوتی ہے جسمین صحت عمل کا اطمینان مستوفی کے ذریعہ سے حاصل ہو سکتا ہے —

مستوفی عربی زبان کا لفظ ہے۔ جسکے لغوی معنی زبان فارسی مین فراگرفتن اور زبان اردو مین پورا لینے کے ہین۔ مستوفی مجازاً اوس شخص یا اوس آلہ یا طریقہ عمل کو کہہ سکتے ہین جس سے حساب کی جانچ ہو سکتی ہو۔ اصطلاح سیاق مین مستوفی سے وہ عمل جمع یا تفریق مراد ہے جو میزانی اعداد مین واقع ہو جسکے ذریعہ سے اعداد میزان کی صحت یا غلطی پر اطمینان حاصل کیا جا سکے۔ دیکھو تختہ متذکرۂ صدر کی میزان کو جسکے خانہ ہاے ۳ و ۴ و ۵ کا جملہ مساوی ہے۔ رقم خانہ ۶ کے۔ اسی عمل کا نام مستوفی ہے اور بدین وجہ کہ رقوم خانہ ہاے

Figure 14: Examples of complex numbers showing currency notation (from Aziz 1894: 25). Note the positioning of small currency units beneath the sequence of Siyaq numbers.

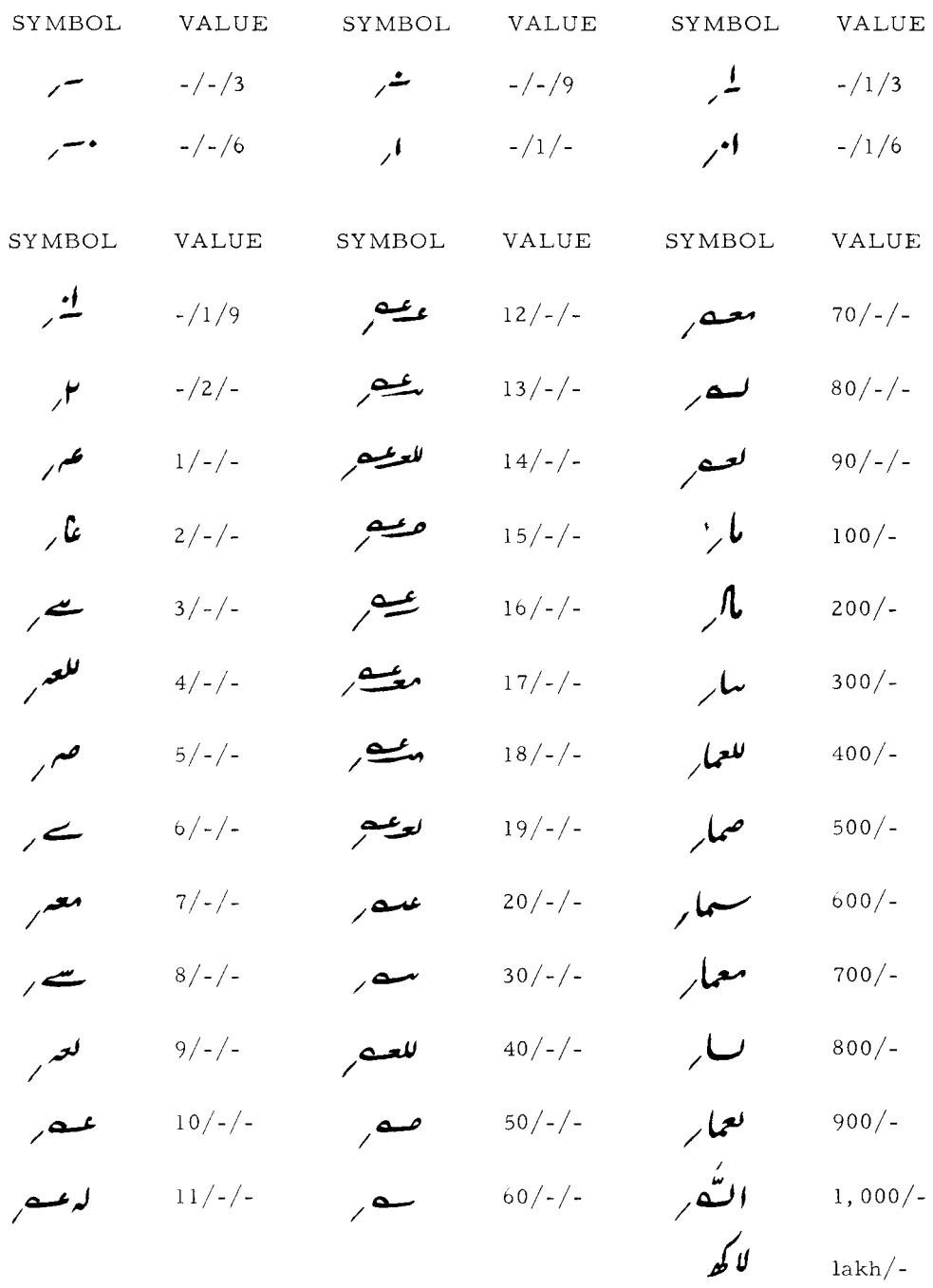


Figure 15: Table showing Indic Siyaq forms (from Barker 1967: 356, 357). Note the methods of writing currency and fractions.

8.6. Sums: Both India and Pakistan now have a decimal coinage system, a rupee being divided into one hundred paisas. In Urdu, the decimal point is wirtten as: ٫ .Examples:

١٫٠ = Re. 1.00 ٫٥٠ = 50 p. ٫٠٥ = 5 p. ١٫١٤ = Rs. 1.14

8.7. Before the currency was refomed in the two countries, a rupee was divided into sixteen annas or sixty-four pice (paisa). There was then also a different system, besides the numerals, for writing sums.

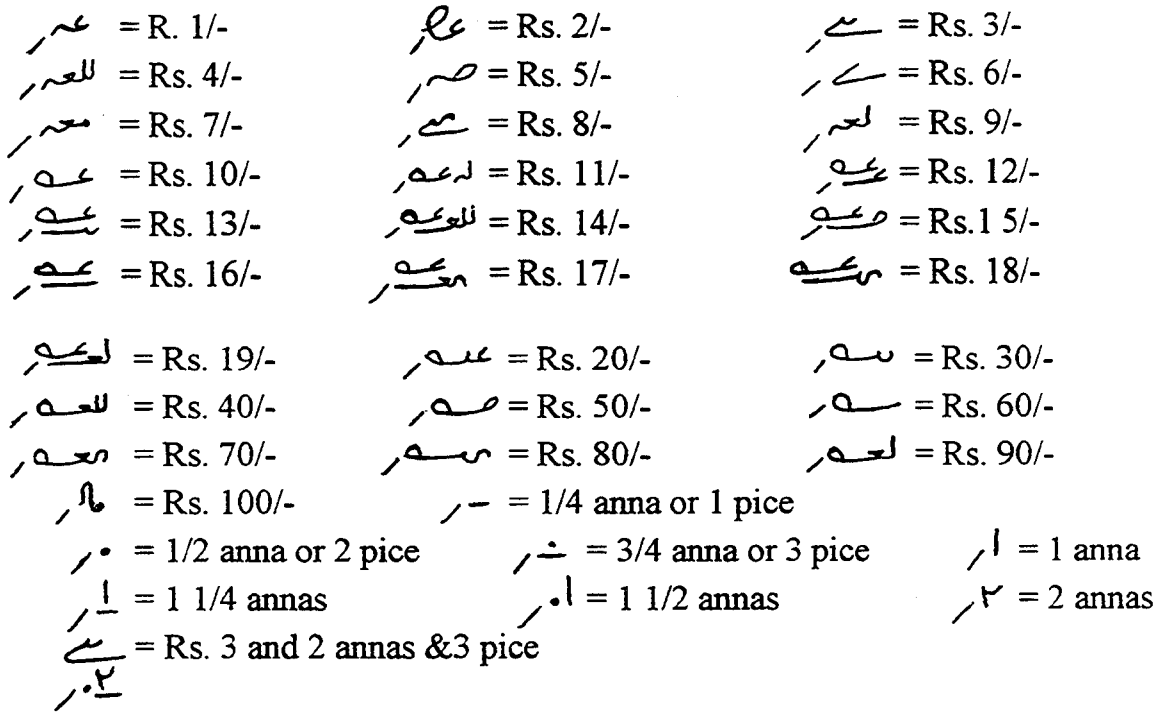


Figure 16: Table showing Indic Siyaq forms (from Naim 1999: 49, 50).

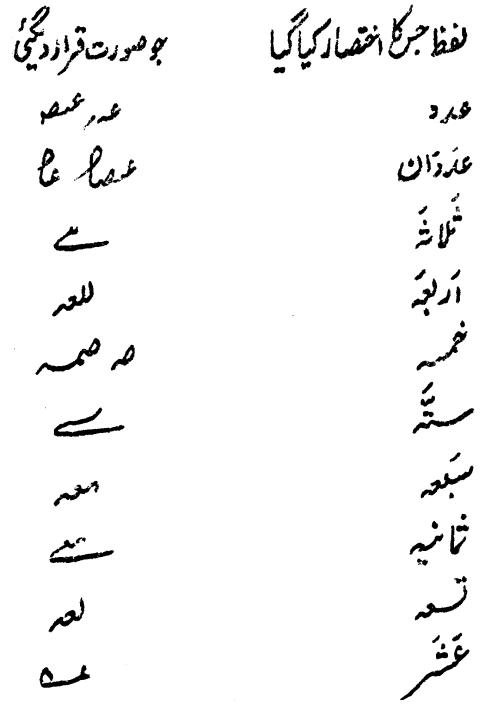


Figure 17: The Arabic sources of the Indic Siyaq numbers (from Muhazzab 195-?: 51).

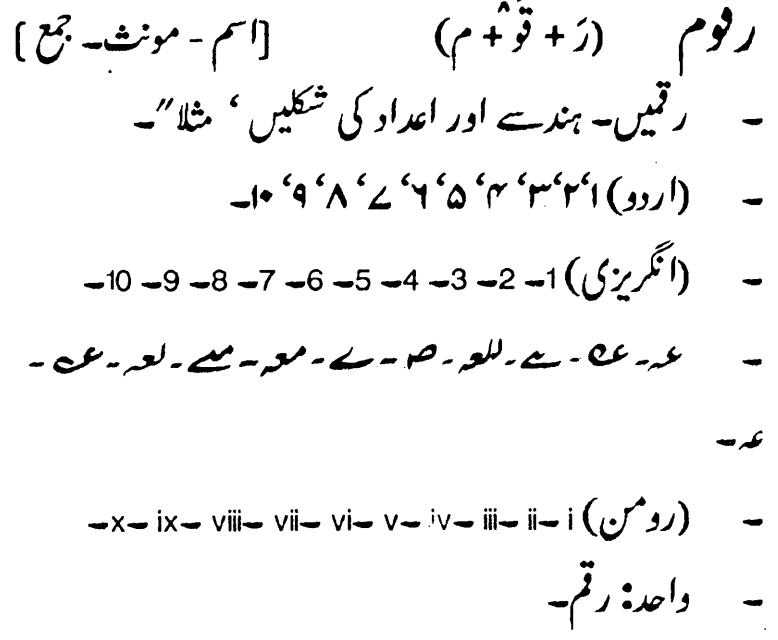


Figure 18: Table showing Indic Siyaq forms (from Muqtadirah Qaumi Zaban 2001: 718).

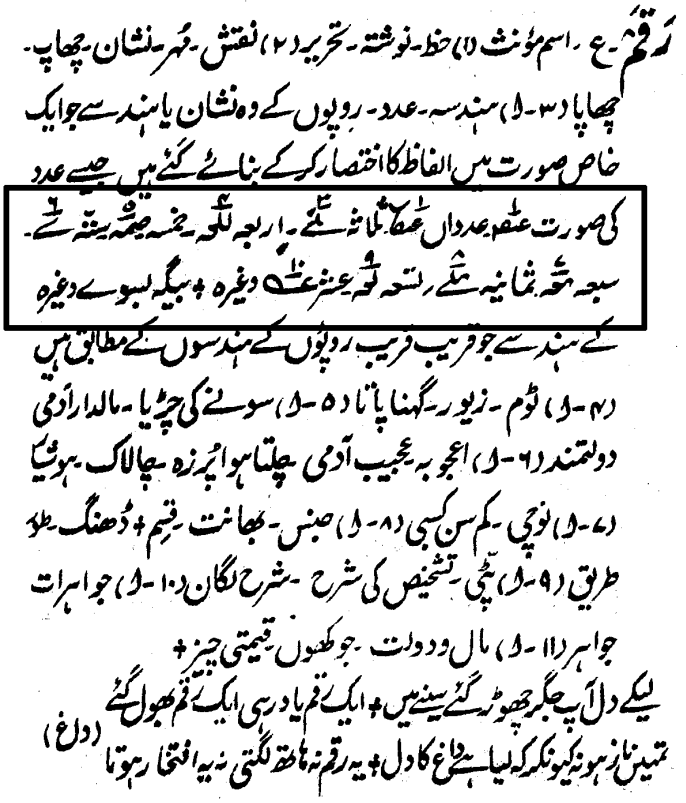

رقم ۔ع ۔اسم مؤنث (۱) خط ۔نوشتہ ۔تحریر (۲) نقش ۔مُہر ۔نشان ۔چھاپ ۔
چھاپا (۳ ۔۱) ہندسہ ۔عدد ۔ روپوں کے وہ نشان یا ہندسے جو ایک
خاص صورت میں الفاظ کا اختصار کر کے بنائے گئے ہیں جیسے عدد
کی صورت ۸ عدداں ۸ ثمانیہ ثمانیہ ۔ اربعہ ۴ ۔ خمسہ ۵ ۔ ستہ ۶ ۔
سبعہ ۷ ثمانیہ ۸ تسعہ ۹ عشرہ ۱۰ وغیرہ + بیگہ بسوے وغیرہ
کے ہندسے جو قریب قریب روپوں کے ہندسوں کے مطابق ہیں
(۴ ۔۱) ٹوم ۔زیور ۔گہنا پاتا (۵ ۔۱) سونے کی چڑیا ۔مالدار آدمی
دولتمند (۶ ۔۱) اعجوبہ ۔عجیب آدمی ۔چلتا ہوا پرزہ ۔چالاک ۔ہوشیار
(۷ ۔۱) نوچی ۔کم سن کسبی (۸ ۔۱) جنس ۔بھانت ۔قسم + ڈھنگ ۔طور
طریق (۹ ۔۱) پٹی ۔تشخیص کی شرح ۔شرح لگان (۱۰ ۔۱) جواہرات
جواہر (۱۱ ۔۱) مال و دولت ۔جو کھوں ۔قیمتی چیز +
لیکے دل آپ جگر چھوڑ گئے سینے میں + ایک رقم یاد رہی ایک رقم بھول گئے (داغ)
تمہیں ناز ہو نہ کیونکر کہ لیا ہے داغ کا دل + یہ رقم نہ ہاتھ لگتی نہ یہ افتخار ہوتا

Figure 19: Table showing Siyaq forms as used in South Asia (from Dihlavi 1974: 363).

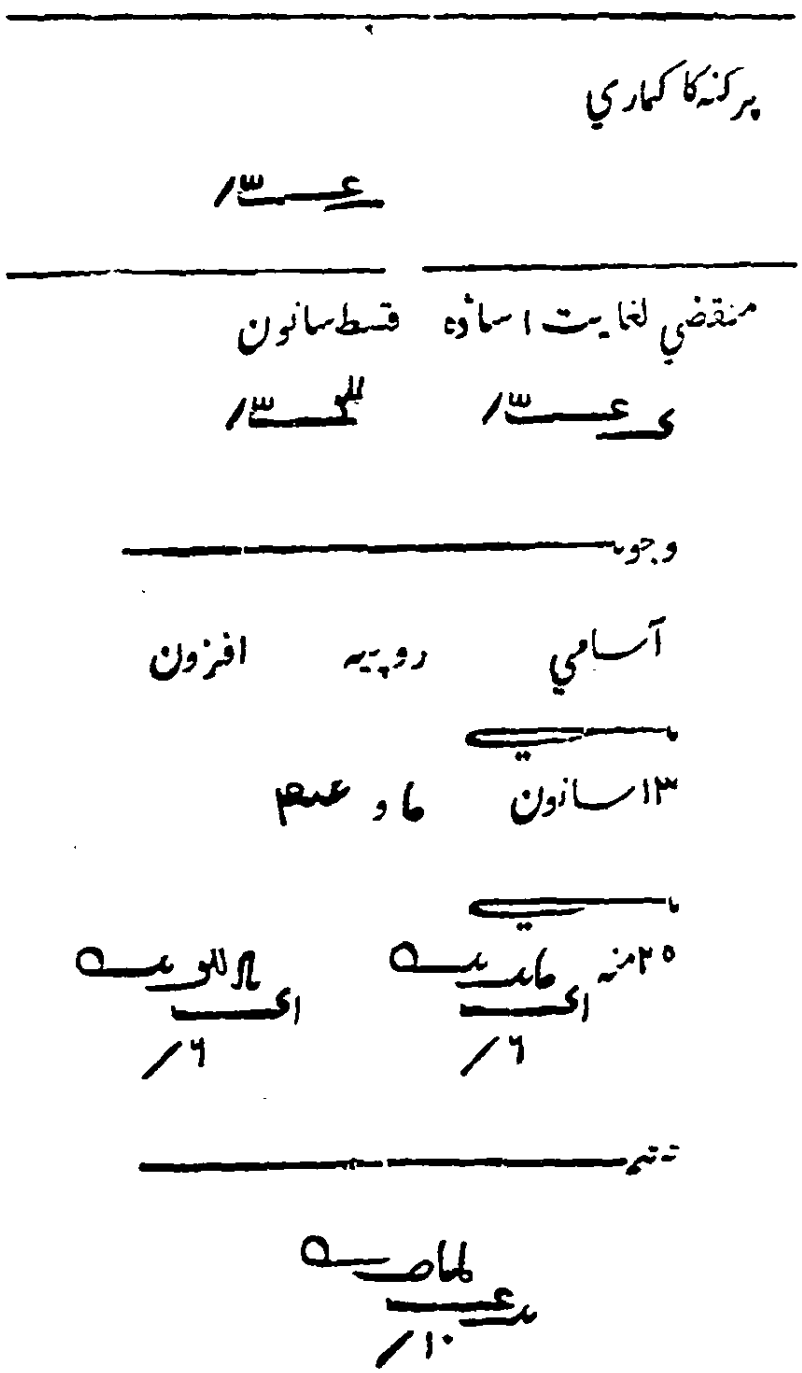


Figure 20: Revenue record from Bengal containing Indic Siyaq Numbers (from Gladwin 1790: 46). Note the ascending vertical manner of writing the Siyaq numbers and the placement of small currency values beneath the numbers.

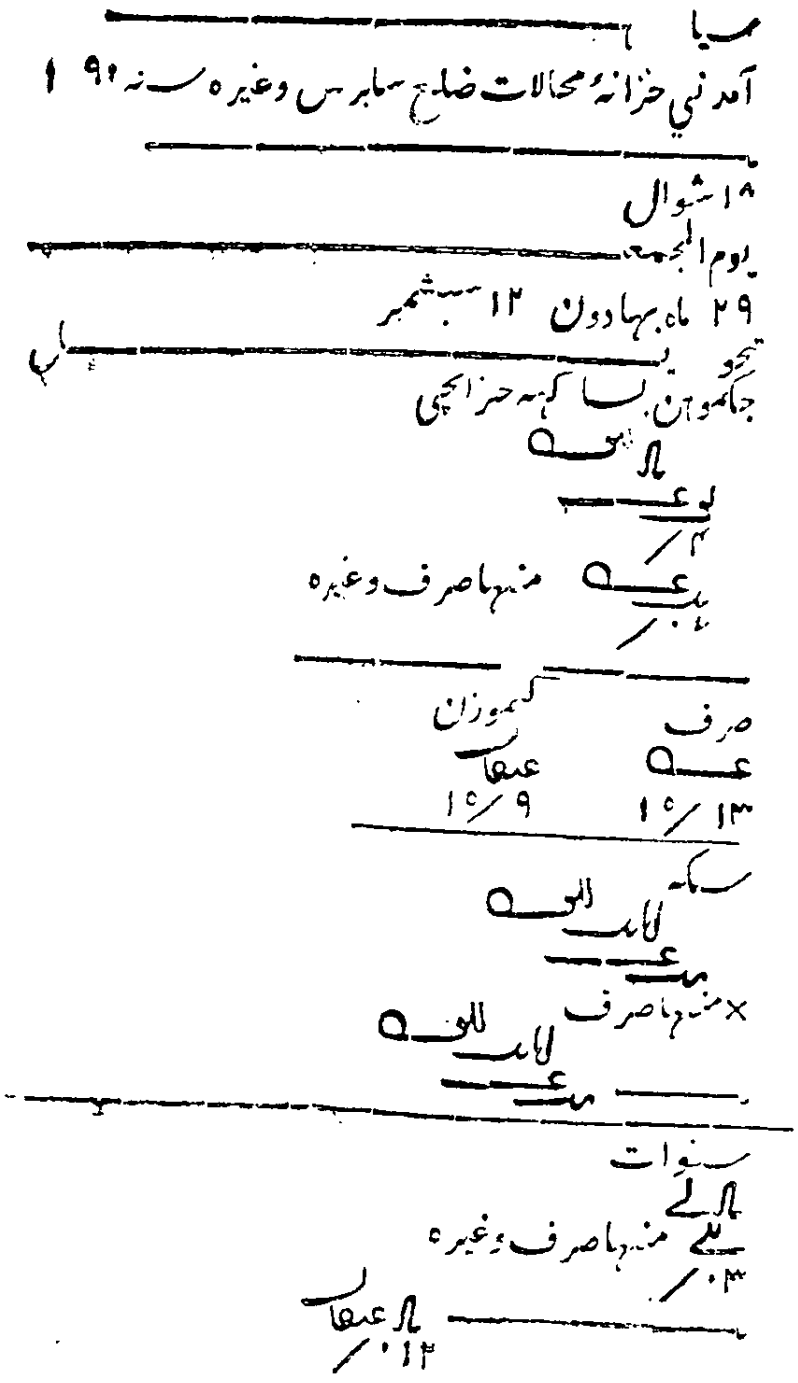


Figure 21: Another revenue record from Bengal containing Indic Siyaq Numbers (from Gladwin 1790: 63). Note the ascending vertical manner of writing the Siyaq numbers and the placement of small currency values beneath the numbers.

Figure 22: A one-rupee note from Hyderabad State from 1940 showing numbers written in Indic Siyaq, as well as in the Telugu, Kannada, Devanagari, Arabic, and Latin scripts. The 𞺻 INDIC SIYAQ NUMBER ONE is shown in the upper right-hand corner of the reverse. Image courtesy of Rezwan Rezack.

Figure 23: A ten-rupee note from Hyderabad State from 1940 showing numbers written in Indic Siyaq, as well as in the Telugu, Kannada, Devanagari, Arabic, and Latin scripts. The 𐹪 INDIC SIYAQ NUMBER TEN is shown in the center of the reverse. Image courtesy of Rezwan Rezack.