

A Study of Writing Styles through Early Brahmi Inscriptions from Anuradhapura Sacred City, Sri Lanka

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අනුරාධපුර පැරණි නගරය ශ්‍රී ලංකාවේ උතුරු මැද පළාතේ අනුරාධපුර දිස්ත්‍රික්කයට අයත් මධ්‍යම නුවරගම් පළාත් ප්‍රදේශීය ලේකම් කොට්ඨාශයේ පිහිටා ඇත. එහි ආගමික වටිනාකමක් ඇති පුරා වස්තු පැතිරුණු භූමිය අනුරාධපුර පූජා නගරය යැයි වෙන් කර තිබේ. එම වෙන්කළ භූමිය පුරා ම ශිලාලිපි රාශියක් පැතිර පවතී. ඒවා ගිරි, ලෙන් හා පුවරු මත රචනා කර ඇත.

මෙම වර්තමාන පර්යේෂණ පත්‍රිකාවෙන් සුදානම් වනුයේ තත් පූජා භූමිය පුරා ම පැතිරී ඇති මුල්කාලීන බ්‍රාහ්මී සෙල්ලිපි අක්ෂරවල ලිවීමේ ශෛලිය පිළිබඳ අධ්‍යයනයක යෙදීම යි. ඊට අදාළ ව එහි විද්‍යාමාන විවිධ ලක්ෂණවලින් යුක්ත අක්ෂරවල හැඩරූප අවබෝධ කර ගැනීමට ද උත්සාහවත් වේ. මේ සඳහා ක්‍රිස්තු පූර්ව පළමු වන සියවසේ මුල් භාගය තෙක් වූ කාලයට අයත් ශිලාලිපි පමණක් තෝරාගත් අතර ඒවා අනුරාධපුර පූජා භූමියේ වූ වෙස්සගිරිය, රුවන්මැලිසැය, ලංකාරාමය,

අභයගිරිය හා හල්මිල්ලකුලම යන නමැති පුරාවිද්‍යා ක්ෂේත්‍රවලින් ලබා ගන්නා ලදී.

කාලය හා අවකාශයට යටත් වූ මෙම සෙල්ලිපි අභිලේඛනඥයන් විසින් පූර්ව පර්යේෂණයට ලක්කර ඇති අතර එයින්ද දොන් මර්තීනෝ ද සිල්වා වික්‍රමසිංහ, සෙනරත් පරණවිතාන මෙන් ම අහමද් හසාන් දානි වැන්නනු ප්‍රධාන වෙති. ඔවුන් සිදුකළ පර්යේෂණවල කාලමය හා අවකාශමය පෘථුලතාව හේතුවෙන් මෙහි ඇති ශිලාලිපිවල පුරා අක්ෂර පිළිබඳ අවධානය අල්ප මාත්‍ර ව යොමු වී ඇත. අක්ෂර රූප විද්‍යාත්මක ව එකී උභයතාව පරිපූර්ණ කරනු වස් මෙම පත්‍රිකාවෙන් තත් කාලීන අක්ෂර ලිවීමේ තාක්ෂණයේ සුවිශේෂතා අවධානයට බදුන් කෙරේ. තව ද එම අක්ෂර හැඩරූපවල සම විෂමතා සංසන්දනය කරනු ලැබේ. එනමුත් පිලි හා සංකේත රූප අධ්‍යයනය මෙම පර්යේෂණයේ දී සිදු නො කෙරේ.

අනුරාධපුර පූජා භූමිය ආශ්‍රිත ශිලාලේඛනවල අක්ෂර කෝණාකර හා ලතාකර ස්වරූපයෙන් දක්නට ලැබෙන අතර එයින්ද ලතාකාර හැඩරුව බහුල වේ. අක්ෂර රේඛා ද සෘජු, වක්‍ර හා රැලි වූ ලක්ෂණ පෙන්වුම් කෙරේ. එමෙන් ම රේඛාවල දිග පළල සමාන වීම ඇතැම් විට සිදු වී ඇත. ඒ අනුව ලේඛන ශෛලියන්හි ස්වලක්ෂණ මත මෙම අක්ෂර ක්‍රිස්තු පූර්ව පළමුවන සියවසට හෝ ඊට ආසන්න කාලයකට අයත් බව තීරණය කිරීම යුක්ති සහගත වේ.

ප්‍රමුඛ පද- අනුරාධපුර පැරණි නගරය, අනුරාධපුර පූජා භූමිය, මුල්කාලීන බ්‍රාහ්මී අක්ෂර හා ලේඛන කලාව, ශිලාලේඛන

Introduction

The style originates on the individual way of its usage with own identity. Consequently, the writing styles can be recognized in accordance with different person, place, or period as well as using instrument and material.

The sacred city Anuradhapura is located in the Nuvaragam Palata Central division in the Anuradhapura district of the North

Central Province which is situated in the northern lowlands of Sri Lanka. It was the capital of Sinhalese dynasties known as the Maurya and the Lambakarna until the beginning of the 11th century CE. It became an important ancient trade center in Sri Lanka which was famous amongst foreign traders who came via the shipping roads as well as an international educational center influenced by the Mahayana and Theravada sects of Buddhism.

The Brahmi scripts with the main characteristics of the evolution occupy a central position in Anuradhapura period. Therefore, the present study attempts to understand the writing styles through the early Brahmi inscriptions from Anuradhapura sacred city. It covers the time period until the end of the first half of the 1st century BCE. Under the selected period, twenty-three inscriptions were selected for this study. The selected inscriptions were inscribed on the rocks, caves, and slabs found from the Buddhist monasteries called as Halmillakulama, Abhayagiriya, Lankaramaya Ruvanmalisaya and Vessagiriya.

Study Area

The study area is covered under the Anuradhapura sacred area planning scheme represented by the department of town and country planning. Under it, the river Malwathu Oya and Halpanu Oya, the canal, flow in a northerly direction on the eastern part of the site. In the western part of this site, the hummock boulders of gneiss rock stand not far apart from each other and the tanks named as Tisawewa, Basawakkulama, Perumiyankulama and Puliyanakulama lie from south to north.

On the geo-coordinates, the sites Vessagiriya lays Lat: 8° 19' 43.1" N., Long: 80° 23' 24" E. and Ruvanmalisaya is Lat: 8° 20' 59.99" N., Long: 80° 23' 28. 19" E. and also Abhayabiriya stands Lat: 8° 20' 59.99" N., Long: 80° 22' 59. 99" E.

Research Problem

The present research intends to explore that how the usage of diverse forms was occupied in Anuradhapura period. It intends to study the minute palaeographic changes that occurred in early Brahmi inscription period.

Previous Works

These inscriptions have been studied by scholars such as De. Z. Wickremasinghe (1912), P. E. E Fernando (1949), Tennakoon Vimalananda (1951), Rev. Madauyangoda Vimalakeerti (1958), A. H. Dani (1963), Senarath Paranavitana (1970), Rev. Kotmale Amarawamsa (1969), Bandusena Gunasekara (1996), Jayasiri Lankage (1996), Rev. Makuruppe Dammananda (2000), Rev. Okkampitiye Pagnnasara (2005), and Rev. Galweve Wimalakhanti (2013).

These well-known scholars, according to their choice, have discussed these inscriptions by phonological process to realize the language as well as the historical, social, religious and cultural points and by palaeographical view to understand the Brahmi script to explain the diffusion of writing styles from India to Sri Lanka.

However, none of them has sufficiently explained the styles of writing to represent the script which shows its own identity through the frame of reference.

Aims of the Research

The aims and objectives are attempted the following steps:

To study the techniques of writing styles.

To compare and understand the conformations and differences of writing styles.

Research Methodology

Literature Survey

The early reports have been studied to realize the location of inscriptions, to understand the basic information and to document the details from the published estampages and plates of inscriptions. The literary materials for this study are culled from the **Epigraphia Zeylanica, Vol. 1 (1912)** and the **Inscriptions of Ceylon Vol. 1 (1970)**, as well as from the Indian **Palaeography (1963)**.

Field Work

The field work was carried out by exploring the site to understand the present location of inscriptions and by plotting locations on a map. However, in the present, Hallmillakulama slab inscription has been laid in the museum at Anuradhapura. The photographs and autographs of inscriptions were documented to understand the basic knowledge of writing.

Documentation Process

For this study, the inscriptions under study were selected that the scripts were not thickened on the top and also the estampages, photographs and autographs can be visible at present. The texts of inscriptions were written by ourselves by doing field work and by studying the estampages from the book **Inscriptions of Ceylon Vol. 1 (1970)**.

While discussing the writing styles, the quantitative research method was applied by explaining the question words how and how many. The alphabets were arranged according to the places for their articulation. The vowels appeared first in the arrangement of the letters and then consonants were written secondly along with the vowel letter A. Abbreviation method was also used by documenting as CIV: cave inscription of Vessagiriya, RIA:

rock inscription of Abhayagiriya, RIL: rock inscription of Lankaramaya, SIH: slab inscription of Halmillakulama, SIR: slab inscription of Ruvanmalisaya. Conclusion was analyzed in accordance of conformation and difference of writing styles with their techniques.

D. M. De. Z. Wickremasinghe (1912), Senarath Paranavitana (1970) and A. H. Dani (1963) talked about palaeographical features of Sinhalese Bhrahmi and same has been used for the present work to fix the date of the inscriptions.

Limitation

The inscriptions themselves do not attest the conjunct letters, numeral signs and auspicious symbols and hence these features of the script and medial vowel letters are not discussed in this work.

Inscription under Study

Vessagiri Cave Inscriptions

For the present study, nineteen inscriptions were selected from the site Vessagiriya. These were studied by D. M. De. Z. Wickremasinghe in the **Epigraphia Zeylanica, Vol. 1, pp. 12-21** and Senarat Paranavitana also recorded them in the **Inscriptions of Ceylon Vol. 1, pp. 6-7**. The Vessagiri caves in which inscriptions were engraved are numbered on the information of the book **Epigraphia Zeylanica, Vol. 1** and for this study, the inscriptions are also numbered by working the direction from the rock no. B to the rock no. C. The selected cave inscriptions are mentioned below such as

The Vessagiri inscription no. 01 is inscribed below the drip-line of the cave no. 01 of rock no. B. Text- {1} Damarakita-teraśa

The Vessagiri inscription no. 02 is the second inscription found from the cave no. 01 of rock no. B. Text- {1} Agata anagata catudiśa śagaśa {2} Aṅikaṭa-Śoṇa-pitaha bariya... paśika-Tiśaya leṇe

The Vessagiri inscription no. 03 is engraved below the drip-line of the cave no. 2 of rock no. B. Text - {1} Parumaka-Palikada-puta {2} Parumaka-Palikada-puta-upasaka-Harumasa leṇe catudisa śagasa

The Vessagiri inscription no. 04 is the second inscription which was found from the cave no. 2 of rock no. B. Text - {1} Parumaka-Palikadasa bariya {2} Parumaka- Śurakita- jhita-upaśika-Citaya leṇe śagaśa catu- diśa

The Vessagiri inscription no. 05 has been inscribed below the drip-line of the cave no. 3 rock no. B. Text- {1} Tuladara-Nagaya puta-Devaha leṇe agata-anagata-catu-diśa-śagaśa

The Vessagiri inscription no. 06 is engraved below the drip-line of the cave no. 4 of rock no. B. Text - {1} Parumaka-Palikada-puta-parumaka-Maha-Harumasa leṇe catu-disa-śagaśa

The Vessagiri inscription no. 07 is engraved below the drip-line on the brow of the cave no. 6 of rock no. B. Text- {1} Parumaka-Palikada-puta-Harumaha jhaya-Tiśaya leṇe śagaśa

The Vessagiri inscription no. 08 is inscribed below the drip-line on the brow of the cave no. 7 of rock no. B. Text- {1} Śoṇutara-kulaha marumakane Śumanaha pute Śoṇutaraha leṇe

The Vessagiri inscription no. 09 is found below the drip-line of the cave no. 8 of rock no. B. Text- {1} Upaśaka-vamakaraka-Tiśaha leṇe

The Vessagiri inscription no. 10 is engraved below the drip-line of the cave no. 9 of rock no. B. Text- {1} Gapati-Naga-puta-Tiśaha leṇe śagaśa

The Vessagiri inscription no. 11 is engraved below the drip-line of the cave no. 10 of rock no. B. Text- {1} Gaṇa- cadaka-Dataha leṇe śagaśa

The Vessagiri inscription no. 12 is written below the drip-line of the cave no. 11 of rock no. B. Text- {1} Upaśika-Retaya leṇe śagaśa

The Vessagiri inscription no. 13 is inscribed below the drip-line of the cave no. 12 of rock no. B. Text- {1} Parumaka-Visadeva-puta-parumaka-Sumanaha leṇe śaga-niyate

The Vessagiri inscription no. 14 is inscribed below the drip-line of the cave which is on the rock no. C. Text- {1} Gamika-Yaśobala-puta-Bata-Yagadataha leṇe

The Vessagiri inscription no. 15 is engraved below the drip-line on the brow of the cave near the Bata Yagadataha cave of rock no. C. Text- {1} Haritimataha Manorama

The Vessagiri inscription no. 16 is inscribed below the drip-line of the cave no. 06 of the rock no. C by the inscription no.17. Text- {1} Bata-Śumanaha leṇe śagaśa diṇe {2} Tiśa-maharajhaha kali

The Vessagiri inscription no. 17 is found below the drip-line of the cave no. 06 of the rock no. C. Text- {1} Yahaśini-samaṇiya leṇe agata-anagata-catu-diśa-śaga

The Vessagiri inscription no. 18 is incised below the drip-line of the cave no. 07 called Mihinda cave of rock no. C. Text. {1} Parumaka-Tiśa-puta-parumaka-Kumaraha leṇe Girivajhe śagaśa.

The Vessagiri Inscription no. 19 is written below the drip-line of the cave no. 08 of rock no. C. Text- {1} Bata-Palaha leṇe śagaśa

Ruvanmalisa Slab Inscription

This is inscribed on the limestone blocks found from the early ayaka plate form of southern vahalkada of Ruvanmali dagaba at Ruvanmalisa -viharaya. S. Paranavitana has discussed it as No. 98 in the Inscriptions of Ceylon Vol. 1, pp. 8.

Text- {1} Śiva (h) {2} Kaśabaha {3} Śurajhaha {4} Nila-Śamude {5} Kaṇika- Tiśaha {6} Cuḍaha {7} Gapati Citaha {8} Kośike {9} Kaṇika....śa

Lankarama Rock Inscription

The inscription is engraved on the west rock ridge at Lankaramaya. S. Paranavitana has discussed it as No. 96 in the Inscriptions of Ceylon Vol. 1, pp. 8.

Text- {1} Muriḍi Ūtaraha śeṇi

Abhayagiri Rock Inscription

This inscription is engraved below the hummock-boulder near the Sudassana Padanaghara at Abhayagiri-viharaya. S. Paranavitana has discussed this as no. 94 in the Inscriptions of Ceylon Vol. 1, pp. 7.

Text- {1} Ilubaratahi Dameḍa- Samaṇe karite Dameḍa-gahapatikana paśade

{2} Kubiraha aśane...śasaha aśane...aśane...taha aśa...

{3} Kubira Śujhataha.....Navika-Kāravaha aśane

Halmillakulama Slab Inscription

The inscription is inscribed on the edge of a stone slab found from Halmilla-kulama and now, it is in the Anuradhapura Museum. It was discussed by S. Paranavitana as no. 95 in the Inscriptions of Ceylon Vol. 1, pp. 8.

Text- ...śika-Tiśaya tiṇi śilapaṭani

Discussion

The script of these inscriptions is Brahmi, and the language is Sinhalese Prakrit. The main language feature of these inscriptions is that the long vowels including diphthongs, which are present in the old Indian languages, are replaced by the short vowels. The signs of anusvāra and visarga were also dropped. As regards the consonants, the main peculiarity is that a vowel is integral to the single consonant. A svarabhakti vowel is also added in the place of conjuncts (e.g. Pramukha > Parumaka) and all final consonants are dropped (e.g. Catuṣ > Catu). At the beginning of a word, only a single consonant is remained (e.g. Śroṇuttara > Śoṇuttara). A consonant that is aspirated mostly changes into non-aspirated (e.g. kha > ka). The conjoint consonants are also reduced into the single consonants.

Consequently, there are six vowel sounds and three short letters A, I, U which are visible to see. However, only one word can be seen for the long vowel Ū. In the consonant letters, the guttural letters KA and GA are written but their other letters like KHA, GHA and ŅA are absent, and their sounds changed into the non-aspirated consonants; KHA > KA and GHA > GA. The palatal letters CA, JHA are visible but their other letters like CHA, JA and ŅA are dropped, and their sounds also change themselves into the letters; CHA > CA and JA > JHA. The cerebral letters ṬA, ḌA and ṆA were written. The aspirated letters ṬHA and ḌHA were gradually changed into the non-aspirated letters ṬA and ḌA. The dental letters like TA, DA and NA were represented but other dental letters like THA and DHA were not used. The letters of labials PA, BA and MA are used except the other letters PHA and BHA. All the semi-vowels YA, RA, LA and VA are visible in these inscriptions. Among the spirant letters, the palatal ŚA and the dental SA were used

in this period, but lingual letter ṢA, which is in the Devanagari alphabet, is not visible.

Therefore, there are twenty-five scripts which can be seen in these inscriptions. They are the vowel letters A, I, U and Ū and the consonants KA, GA, CA, JHA, ṬA, ḌA, ṆA, TA, DA, NA, PA, BA, MA, YA, RA, LA, VA, ŚA, SA, HA and ḶA.

A- The initial letter A is represented by drawing a vertical line with two left strokes. There are three main groups of the letter A inscribed in these inscriptions. The first form is named as the angular shape- H . It can be seen in CIV.N.5. The second type is called as the cursive form- H . This is in CIV.N.2 and RIA. The third one is referred as the angular-cursive form-, came from RIA and also its other form- H , is found in CIV.N.2, CIV.N.5 and RIA. The third form has sub-varieties as the shapes thus- H , in CIV.N.17 and - H , in CIV.N.17.

I- The initial letter I is drawn by writing the straight vertical line with two dots on each side of its- † . It can be seen in RIA.

U- The initial letter U is formed by a straight vertical line with a horizontal bar adding to the right side of vertical as a base. There are two types in shape- L , and - L . The form - L , can be found in CIV.N.3, CIV.N.4 and CIV.N.12 and next type- , is visible in CIV.N.9.







Ū- The letter Ū is written by adding a horizontal line to the middle of the vertical line of the letter U. - L - This is found in RIL



KA- The letter KA is represented by a simple cross. Two writing styles can be found in these inscriptions. The first one shows that the straight vertical line is bisected by the horizontal line-. The second type is written by two horizontal strokes from



each end of vertical line to both directions- † . These both forms have two sub-varieties in length. The first one is that both lines are rarely written to be equal in length and its horizontal line meets on the middle of the vertical line - † . The equal shape can be seen in CIV.N.2, CIV.N.3, CIV.N.4, CIV.N.6, CIV.N.7, CIV.N.9, CIV.N.11, CIV.N.14, CIV.N.16, CIV.N.18, SIH, RIA and SIR and this was written as the shape- † , in SIR and- † , is CIV.N.1 and SIR. The second one is made by adding the short horizontal bar to the long vertical- † . This one is in CIV.N.3, CEV.N.4, CIV.N.6, CEV.N.8, and SIR. Sometimes the horizontal line crosses the cervical through its lower and upper half. The shape- † , can be seen in CIV.N.3, CIV.N.4 and CIV.N.13. The form- † , is in CEV.N.4. The type - † , of its shows that the horizontal lines curve slightly downwards in CIV.N.2. Sometimes, the letter- † , was written by bending the vertical to the left in CIV.N.12. This shape- † , shows that the horizontal line is longer than the vertical line in SIR.





GA- The letter GA is composed of two inclined lines meeting on the top, which opens downwards. There are two main angle groups. The first group is called as the acute angle - ^ . It can be seen in CIV.N.4, CIV.N.5, CIV.N.10, CIV.N.11, CIV.N.14, CIV.N.16, CIV.N.17 and RIA. However, it is represented by adding a short line to other - ^ , in CIV. N. 2, CIV.N.7 and - ^ , in CIV.5. The straight line is also curved slightly as the form - ^ , in SIR and - ^ , in CIV.N.3, CIV.N.5, CIV.N.14 and CIV.N.19. The second shape is the rounded angle- ^ . This appears in CIV.N.5, CIV.N.6, CIV.N.13 and CIV.N.18. Sometimes, the letter GA is formed by straight line with curved bar- ^ . This










is in CIV.N.2, CIV.N.5, CIV.N.10, CIV.N.12, CIV.N.17 and CIV.N.18.







CA- The letter CA is represented by a bracket joining to the left of the vertical line. There are two main groups represented as the forms semi-circle and box. The first one-, is found in CIV.N.2, CIV.N.4, CIV.N.5 and SIR and the next one -, appears in CIV.N.4, CIV.N.17. Sometimes, the loop of the latter becomes large with short vertical line-. This shape shows in CIV.N.5 and SIR. An opposite pattern-, can be seen in SIR. The varieties divided on the bottom arc of the letter included as -, in CIV.N.6, CIV.N.11 and-, in CIV.N.3.








JHA- The form of the letter JHA is a hook going from the middle of the vertical to upside at right angle. The varieties are seen on the difference in height of the hook. The shape -, can be seen in CIV.N.4, RIA and SIR. The form -, is represented in CIV.N.7, CIV.N.16 and CIV.N.18.









ṬA- The feature of the ṬA letter looks like a bracket which opens to the right. It shows as semi-circle in shape. Its shape-, can be seen in SIH and SIR and next one -, is in CIV. N. 2.



ḌA- The letter ḌA is also represented by a horizontal line with two verticals joined on either side. The left vertical is pointing downwards, and the right vertical is pointing upwards-. This form appears in RIA. Sometimes, the right vertical line becomes short-. This shape can be seen in RIL. However, an opposite pattern of this letter-, occurs in SIR. The shape of both angles is often written angularly but left side angle rarely becomes rounded shape-, in RIA.







ṆA- The letter ṆA is represented by a vertical line with two horizontal bars, one at the top and another at the bottom end of vertical line-. Here, horizontal bars are often straight. Sometimes, this latter is written by two horizontal strokes from each end of vertical line to both directions-. These two groups have sub-varieties forming the length of the line. Therefore, the long vertical shape-, is seen in CIV.N.4, CIV.N.5, CIV.N.7, CIV.N.8, CIV.N.9, CIV.N.13, RIL and SIR and the shape-, is in CIV.N.2, CIV.N.12. The both equal shape-, can be seen in CIV.N.10, CIV.N.14, CIV.N.16, CIV.N.17, CIV.N.19 and RIA. Sometimes, the vertical line also becomes short- - from CIV.N. 11. The varieties of this letter are rarely represented by shapes curve and curl with length such as-, in CIV.N.2, CIV.N.11, CIV.N.18, SIR and-, in CIV.N.3, , in CIV.N.4 and also  in CIV.N.6, SIH.





TA- The letter TA is formed of three variations in the early Brahmi inscriptions. The first one is represented by a straight vertical line with a short stroke moving away from right middle of the vertical line to bottom-. This shape can be seen in CIV.N.2, CIV.N.4, CIV.N.8, CIV.N.10, CIV.N.12, CIV.N.17, RIA and SIR. The short stroke rarely originates from lower half of the vertical to bottom-. This appears in CIV.N.2, CIV.N.3, CIV.N.8, CIV.N.15 and CIV.N.16. The vertical line becomes short in length-. This forms in CIV.N.12 and RIL. The form- - is in CIV.N.19. the letter-, can be seen in CIV.N.13, RIA, and-, in CIV.N.2, CIV.N.5, CIV.N.8 and CIV.N.17. The second










type is formed of a short straight vertical line with two forks at the bottom end point of vertical-. This latter is represented in CIV.N.1, CIV.N.7, CIV.N.9, CIV.N.11, RIA and-, in CIV.N.6 and SIH. The third one is formed of an inclined straight line with a short stroke going from middle of the vertical line to bottom on the left or right-- this shape is in CIV.N.1, CIV.N.2 CIV.N.3, CIV.N.8 CIV.N.14, CIV.N.18 and CIV.N.19. The vertical line of this latter also becomes short- - in CIV.N.14. The sub-forms are varied by the short strokes becoming curved, curled in shape like-, in CIV.N.6, RIA, , in CIV.N.2, CIV.N.5, CIV.N.14, CIV.N.16 and SIH, , in CIV.N.2 and CIV.N.5.









DA - The letter is represented by a bracket, which opens to the left, with its ends elongated to the top and bottom. There are three varieties in this period. The first one is called as rounded shape-. It is in CIV.N.2, CIV.N.3, CIV.N.4, CIV.N.5, CIV.N.11, CIV.N.17 and SIR. The second shape is represented as angular form-. This form can be seen in CIV.N.4 and RIA. The third shape is named the angular-rounded shape-. It is written in CIV.N.3, CIV.N.6 and RIA or it becomes like the shape-, in CIV.N.1. Sometimes, the lower half of the bracket is formed downwards-, in SIR or upper half of the bracket represented upwards, in CIV.N.5, CIV.N.6, CIV.N.13 and CIV.N.14. The bracket is rarely turned towards right-, in CIV.N.7 and -, in CIV.N.16.











NA- This letter NA has two writing styles. The first one is represented by a vertical line standing over the middle of the horizontal line. The vertical line is longer than horizontal line-, in CIV. N. 2, CIV.N.5, CIV.N.10, CIV.N.17, SIH and RIA but sometimes it became equal in length-, in CIV.N.8, CIV.N.13 and CEV.N.17. The second form is written by the two horizontal lines which were carried from the bottom of the vertical line to both dire0.17. These horizontal lines are straight and curved in shape and also they are shorter than vertical line in length.








PA- The letter PA resembles like a hook of which the mouth opens upwards. This latter is represented by using two styles. The first one is written by using vertical line with a curve stroke. The base of this latter is rounded and it is rarely written by shortening the left vertical-, and bringing it parallel to the right vertical-. The first shape is in CIV.N.2, CIV.N.3, CIV.N.4, CIV.N.6, CIV.N.10, CIV.N.18, CIV.N.19, SIH and RIA and the second form can be seen in CIV.N. 2 and CIV.N.6. The second shape is formed of three straight line joining together. The base of this latter is flat. The left vertical line is shorter than right one-, in CIV.N.7, CIV.N.8, CIV.N.9 and RIA, but they both became equal-, in CIV.N.13. The sub-varieties formed as -, in CIV.N. 3, CIV.N.4, CIV.N.10, CIV.N.12 and CIV.N.14,, in CIV.N.5.




BA- The letter BA is like a box. This is formed as -, in CIV. N. 2,, in CIV.N.4,, in CIV.N.14, , in CIV.N.16, CIV.N.19 and RIA.

MA- Representing the letter MA, Two types of writing styles can be seen. The first type is written by a U-shaped tubular with a cross-bar appending both sides together in the middle. The bottom shows the shapes square-, in CIV.N.9, triangle-, in CIV.N.7, CIV.N.13 and circle-, in CIV.N.1, CIV.N.8, CIV.N.13, CIV.N.14, CIV.N.15, CIV.N.16, CIV.N.17, CIV.N.18, RIL and RIA. The second style is composed of a circle on which is placed a semi-circle opening upwards. However, the base of this circle rarely becomes a flat shape. This shape-, can be seen in CIV.N. 3, CIV.N.4. This -, is in CIV.N.3 and CIV.N.4 and another form -, is in CIV.N.6. Sometimes, it is written that first, the circle is formed and then two vertical lines are attached on it-, in CIV.N.6 and RIA. In this shape, another forms are shown as- , in CIV.N.6 and - , in RIA.

YA- The letter YA looks like an anchor. In this time, it is found in three types of writing styles. The first one is written by a vertical line over the middle of a curved stroke which opens upwards-, in CIV.N.2, CIV.N.4,, in CIV.N.4. The second one is drawn by a vertical line without touching the curved line at the base-,. This form is seen in CIV.N.5 and SIH. The third form is written by the two curved horizontal lines which were carried from the bottom of the vertical line to both directions-, in CIV.N.2, CIV.N.12 and SIR. The curved base is often changed to flat-shape-, in CIV.N.7 and - , in CIV.N.7. The central vertical line is longer than other lines on both sides; however, the both ends of the semi-circle are raised parallel to the central line like-, in CIV.N.14 and-, in CIV.N.17.

RA- The letter RA is formed by either the straight vertical or the serpentine vertical. The first shape , can be seen in CIV.N.1, CIV.N.4, CIV.N.6, CIV.N.7, CIV.N.9, CIV.N.12, CIV.N.13, RIL and RIA. The second type has four varieties written by angular angle-, in CIV.N.15, , in CIV.N.3, -, in CIV.N.3, CIV.N.5, CIV.N.8, CIV.N.18 and-, in CIV.N.4. Sometimes, it is formed by curved angle as-, in CIV.N.4, CIV.N.18, , in CIV.N.7, , in CIV.N.8, , in CIV.N.18 and-, , in RIA.

LA- The letter LA is formed as a leftward turned fish-hook attaching the short stroke on the top of the left vertical. The right vertical of this letter is almost longer than left vertical-, in CIV.N.4, CIV.N.6, CIV.N.8, CIV.N.12, CIV.N.13, CIV.N.19, , in CIV.N.3, CIV.N.4, CIV.N.5, CIV.N.8, CIV.N.9, CIV.N.11, CIV.N.14, CIV.N.16, CIV.N.17, CIV.N.19 and RIA. However, it rarely forms with parallel lines-, in CIV. N. 2. However, this form-, was written in CIV.N. 10. Sometimes, the curved base becomes flat-, in CIV.N.7 and also the short stroke forms acute and curved angles with the left vertical- , in CIV.N.5, CIV.N.7 and SIH,, , in CIV.N.18.

VA- The letter VA is written by a vertical line on the circle or on the apex of the triangle-, in CIV.N.5, CIV.N.9 and-, in CIV.N.13 and RIA. In the same time, the vertical is shortened and attached on top of a circle or a triangle-, in CIV.N.13, CIV.N.18 and RIA.

ŚA- The letter ŚA has three kind of written styles in this period. They are represented by writing a straight line with two



downward opposite strokes meeting to the top and middle of the straight vertical, drawing two acute angle lines with a short line brought from middle of left vertical to down direction and forming a short downward line with vertical line which has two forks at the bottom end point of vertical. The angle of all styles is showed either angle or curve in shape and the lines

often are straight, curved or angular. The first shapes are thus - \hat{A} , in CIV.N.1, CIV.N.2, CIV.N.4, CIV.N.7, CIV.N.9, CIV.N.10, CEV.N.16, \hat{A} , in CIV.N.4, CIV.N.10, CIV.N.16, CIV.N.17, RIL, RIA, \hat{A} , in CIV.N.19, \hat{A} - CIV.N.12, CIV.N.19 and - \hat{A} - in CIV. N. 2. The second forms are thus - \hat{A} , in CIV.N.5, CIV.N.6, CIV.N.8, CIV.N.10, CIV.N.11, \hat{A} , in CIV.N.18, \hat{A} , CIV.N.16, CIV.N.18, \hat{A} , in CIV.N.12, CIV.N.14, CIV.N.17 and, \hat{A} , in CIV.N.17, CIV.N.18, SIH. The third one is represented as - \hat{A} in CIV.N.1, CIV.N.5, CIV.N.6, CIV.N.7, CIV.N.16 and RIA. Sometimes, the middle and upper lines are touched to bottom - \hat{A} , in CIV.N.3, CIV.N.8, CIV.N.12, CIV.N.17 and - \hat{A} , in CIV.N.6.

SA- The letter SA shows like a fish-hook attaching a downward stroke at the middle left of the vertical line - \hat{A} , in CIV.N.3. This stroke is oblique or curved - \hat{A} , in CIV.N.3, \hat{A} , in CIV.N.4, and - \hat{A} , in CIV.N.6. The base of these letters is flat, curved and triangular. In the same period, the both vertical are parallel - \hat{A} , in CEV.N.13 and - \hat{A} , in RIA.

HA- This letter resembles like a fish hook attaching the short stroke on the top of the right vertical. The left vertical of this letter is almost longer than left vertical - \hat{A} , in CIV.N.2,

CIV.N.5, CIV.N.6, CIV.N.8, CIV.N.14, CIV.N.19 and RIL, but sometimes it forms with parallel lines - \hat{A} , in CIV.N.13, CIV.N.15 and CIV.N.17. The shape of base is either rounded or flat. The flat shape - \hat{A} , is in CIV.N.7 and RIA. Sometimes it is written as - \hat{A} , in CIV.N.17. The rounded form \hat{A} -, is seen in CEV.N.3, CEV.N.9, CEV.N.10, CEV.N.15 and CEV.N.16. The short stroke becomes slanting shape - \hat{A} , in CIV.N.18.

LA- The letter LA is represented by the letter LA with a right angle downward stroke joining to the middle of the vertical of its. They are - \hat{A} - in CIV. N. 3, and - \hat{A} , in RIA.

Conclusion

The techniques of writing styles of these inscriptions seem the left to right direction process. First, the vertical line of the letter is written and then the horizontal strokes are represented. The straight vertical line shows the writing from top to bottom. The inscriber has written the horizontal bar from left to right. If there are two horizontal bars, they were moved from the both side of vertical line to outward sides. Other strokes like curved and curled bars also show to be written same direction processes which were used for vertical and horizontal lines.

The writing styles of these scripts with frame of reference were formed by identifying the shape, length, direction of them. These are represented as curve, curl, angular, straight in shape as well as short, long in length and left and right in direction. Therefore, the writing styles can be understood following peculiarities

- The left strokes of the letter A are straight and curved.
- The letters GA, TA, DA and SA are mostly written by angular form, and rarely they are drawn by curved form.

- The base of the letters like PA, MA, YA, LA, VA and SA is flat or circular.
- The bottom arc of the letter CA is included as semi-circle, square and rectangular shapes.
- The letter RA has four types of varieties in shape.
- The vertical line of the letter A, U and KA is longer than other lines in length. However, sometime the vertical line becomes as an equal line with others, but the horizontal line of the letter KA is longer than the vertical line in SIR.
- The both vertical lines of the letters PA, SA, HA and LA are mostly different in length but they rarely became equal.
- The letters CA, ḌA and DA are represented by opening the directions which go to the left or to the right.

In these inscriptions, the scripts were represented as curved and angular in shape and out of them, curved letters were written more than angular forms. The length of these letters rarely became equal. Therefore, outcome of this present research shows that the writing styles of Anuradhapura ancient city were written around the 1st century BCE.

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