CHAPTER - 6

THE

ORIGIN AND DEVELOPMENT

OF THE MEDIAL SIGNS

FROM CIRCA 3RD CENTURY B.C.

TO CIRCA 16TH CENTURY A.D.
It is very essential to make an outline to note about the medial forms with the study of the evolution and development of the body of the letters. Medial form is generally a symbol used to indicate the spelling of various vowels in conjunction with different consonants. A gradual development of various medial signs such as ā, i, u, ū, e, ai, o and au been studied on the study of various Orissan inscriptions from circa 3rd century B.C to circa 16th century A.D.

Ā: In the Dhauli and Jaugāda edicts of Aśoka1 (3rd century B.C.) the medial ā is primarily marked by a small dash added to the top right of the consonants (Plate No. XLVIII, XLIX, Serial No. 1). The variation is found in the case of kha, ja, tha (Plate No. XLVIII, Serial No. 1), nā, bā and lā (Plate No. XLIX, Serial No. 1) where the small dash is added in the middle of the consonants. This principle is also adopted in the Hāthigumpha Inscription of Khāravela2 as well as other Minor rock inscriptions3 at Udayagiri hill. In the case of jā some changes occurred in the Hāthigumpha Inscription of Khāravela where medial ā is added in the middle portion of the upper curve line. (Plate No. XLVIII, Serial No. 1). But in the Bāgh cave inscription4, the horizontal line is added slightly below the right top of the consonant (Plate No. XLVIII and XLIX, Serial No. 3). It became a top slanting bar in the 5th-6th centuries A.D. epigraphic records of North and Central Orissa. That has been used in the case of gā, chā, nā, pā, vā, bhā, rā, lā, sā and hā of the Asanpāṭ Naṭārāja Image Inscription of Śatrubhaṇḍaṅga5 (Plate No. L and LI Serial No. 13). The same style is also found in the cases like kā, jā, tā, dā, nā, yā and hā in the records of the

2. EL, Vol. XX, pp. 71-97 ff and plates.
Vigraha dynasty assigned to the 6th century A.D. (Plate No. L, LI Serial No. 15, 16). The upward slanting bar is attached on the right top or the letter which is found in the case of $d\ddot{a}$ and $dh\ddot{a}$ of the Jayarampur copper plate of Gopachandra\textsuperscript{6} (Plate No. LIII. Serial No. 17). That type is also used in $th\ddot{a}$ of the Nala records (Plate No. L Serial No. 9) and $k\ddot{a}$, $t\ddot{a}$, $th\ddot{a}$ (Plate No. L, Serial No. 11), $dh\ddot{a}$, $p\ddot{a}$, $v\ddot{a}$, $bh\ddot{a}$, $y\ddot{a}$, $l\ddot{a}$ and $s\ddot{a}$ (Plate No. LI, Serial No. 11) of the Śarabhapurīyas and also $d\dddot{a}$, $p\dddot{a}$, $r\dddot{a}$, $bh\dot{a}$ and $s\ddot{a}$ of the Pāṇḍavaśīns records of western Orissa (Plate No. LI Serial No. 10). The difference is noticed in $n\dddot{a}$ of the Sumanḍala copper plate of Prthivivigraha $bhaṭṭāraka$\textsuperscript{7} where a downward slanting base is added on the left side of the letter (Plate No. LI Serial No. 14) while in $y\dddot{a}$ a right ward curve is added as its medial sign (Plate No. LI Serial No. 14). Though this feature is some what related with the Asaṇpāṭ Naṭrāja Image inscription but in the case of $s\dddot{a}$, a slanting bar is added on the lower part of the right vertical line (Plate No. LI Serial No. 13). In some other instances of the Datta and Vigraha records the top slanting bar is slightly curved downwards.

In the records of the Māṭharas and Vāsishṭhas (Plate No. XLVIII, XLIX Serial No. 6), Pitṛbhaktas (Plate No. XLVIII, XLIX Serial No. 7) and early Gaṅgas of Kaliṅganagara (Plate No. XLVIII, XLIX Serial No. 8) from the 4th to the 7th century A.D., the medial $\ddot{a}$ is displayed by a top horizontal stroke and that is prolonged downwards. The variety closely resembles with the medial sign used in the Pallavas, Vākāṭaka and early western Chālukyan records of the 5th - 6th centuries A.D. In some other instances the upward stroke is used in medial $\ddot{a}$ occurring in the case of $j\ddot{a}$, $h\ddot{a}$ of the Māṭharas records (Plate No. XLVIII, XLIX Serial No. 6) and $n\ddot{a}$ in the records of the

\textsuperscript{6} OHRJ., Vol. II, No. 4, pp. 206-09 ff and plate.

\textsuperscript{7} EL, Vol. XXVIII, pp. 79-85 ff and plates.
Pitṛ bhaktas (Plate No. XLIX, Serial No. 7) and *na of the Gaṅgas of Kalihganagara.

A different form of medial ā is used in the Peddādugam plates of Śatradamana where the top right of the slanting bar curved downward (Plate No. XLVIII, XLIX Serial No. 5). In the case of thā and bā of the Pāṇḍuvanāṁsins records, a vertical bar is prolonged downwards from the short horizontal on the right part of the letter. (Plate No. XLVIII, XLIX Serial No. 7) The same formula is also used in the case of Pāṇḍuvanāṁsins (Plate No. L, Serial No. 10) and Śarabhapūriyas (Plate No. L, Serial No. 11) medial ā of the 6th - 7th centuries A.D. The south Orissan principle of medial ā are used in kā, khā, tā (Plate No. L, Serial No. 9) dā, nā, yā, rā, lā, sā and hā (Plate No. L, Serial No. 9) of the Nala inscriptions and chā, dhā, nā, pā and rā of the grants of Tuṣṭikāra. Similar forms are used in dā, dhā, nā, yā, rā, lā and sā (Plate No. L, L, Serial No. 12) of the records of the Datta’s and thā, dā, nā, mā and lā (Plate No. L, L and Serial No. 13) of the Asanpāṭ Naṭāṛāja Image Inscription of the 6th century A.D. In the records of the Nalas the medial ā is represented by a slanting bar which is added in the right arm of the letter while in the case of jā the slanting bar is raised and curved towards left (Plate No. L Serial No. 9) as seen in the records of the Māṭharas, Vāśishṭhas and Pitṛ bhaktas of southern Orissa.

The top slanting bar of the medial ā is curved towards right in the inscriptions of the Svētakā Gaṅgas. (Plate No. LIII, LIV Serial No. 18). That closely resembled with the medial ā of the Mandasor inscription of Yasodharman and it is influenced by the medial sign used in the records of the region of Middle Ganges Valley.

10. CII., Vol. III, pp 146 - 47 f
In some cases as an \textit{ja} (Plate No. LIII, Serial No. 19) and \textit{la} (Plate No. LIV, Serial No. 19) of the Gautami plates of Gaṅga Indravarman\textsuperscript{12} and \textit{nā} (Plate No. LIII, Serial No. 19) in the Svalpa-velura grant of Gaṅga Anantavarman\textsuperscript{13}, medial \textit{ā} is composed of an upward slanting bar on the top of the letter. In the Kālahandi plate of Anantavarman Vajrahasta\textsuperscript{14}, a simple curve line is hanged down from the right top of the letter particularly in the case of \textit{da}, \textit{dhā}, \textit{nā} and \textit{lā} (Plate No. LIII, Serial No. 19) while a vertical bar is added to the right part of the letter in \textit{kā}, \textit{rā} and \textit{lā} of the plates of Rāṇaka Jayavarmadeva\textsuperscript{15}. The vertical bar separated from the letter in \textit{nā} and \textit{yā} of the plates of Rāṇaka Jayavarmadeva. In the svalpa-velura grant of Gaṅga Anantavarman. The earlier type of simple horizontal bar is added on the right part of the letter \textit{sa} (Plate No. LIII, Serial No. 19). All these formulas are used for medial \textit{ā} in the inscriptions of the Gaṅgas of Kaliṅganagara of the 9th-10th centuries A.D. Besides these, we have to come across the development of other types in their records. Firstly in the plates of Rājarāja I Devendravarman\textsuperscript{16}, the medial \textit{ā} is either a beat horizontal or addition of a downward vertical bar from the short horizontal. The peculiarity is found in the case of \textit{gā} and \textit{nā} (Plate No. LII, Serial No. 1) where it has an upward stroke.

A number of variations are observed in the medial \textit{ā} as studied from the Šailodbhava copper plate grants of Orissa. The medial \textit{ā} is composed of a simple vertical bar on the right part of the letter which is hanged down from the short horizontal line on the top of the letter as seen in \textit{kā}, \textit{gā}, \textit{chā}, \textit{tā}, \textit{nā}, \textit{pā}, \textit{mā}, \textit{yā}, \textit{rā}, \textit{sā}, and

\textsuperscript{12} \textit{EL}, Vol. XXIV, pp. 180-83 ff and plates.
\textsuperscript{13} \textit{Ibid.}, pp. 129-37 ff and plates.
\textsuperscript{14} \textit{EL}, Vol. XXXI, pp. 317-22 ff and plates.
\textsuperscript{15} \textit{EL}, Vol. XXIII, pp. 267-69 ff and plates.
\textsuperscript{16} \textit{EL}, Vol. XXXI, pp. 187-99 ff and plates.
ha. (Plate No. LII, LIII Serial No. 20). This method is not applied for jā, tā, nā, dhā and phā but in all these cases simple upward slanting bar is added on the letter while its opposite form is seen in kā, nā, tā, dhā, phā and rā. We have also come across a simple horizontal bar in the case of vā (Plate No. LIII, Serial No. 20). In its later phase of Orissan palaeography medial ā is formed by a downward curve line in the right top of the letter as particularly presented in the Khadipada image inscription of the time of Śubhākara\(^1\) (Plate No. LII Serial No. 21). Here the bent horizontal stroke definitely becomes a short abrupt downward line. In the case of jā, (Plate No. LII, Serial No. 21) a slanting upward bar is used but in bhā and hā it is slanting up as of the earlier records.(Plate No. LIII Serial No. 21). The ornamental medial ā is used in yā (Plate No. LIII Serial No. 23) of the Bhairava image inscription of Vatsādevi. Here the top matra is curled inward on the top as in the Udayapur inscription of Aparājita\(^1\) of the 9th century A.D. In the middle phase of the Bhaumakara records the prolonged downward vertical line is slightly bent in the middle and it is curved inward mark in the case of medial ā of the Baud grant of Tribhuvanamahādevī (Plate No. LII, LIII Serial No. 22). That method is also used in kḥā, tā, (Plate No. LIV, Serial No. 25) and dhā, yā, rā, and sḥā, (Plate No. LV, Serial No. 25) of the Ganjam plate of Netribhāfijadeva.\(^1\) In its later record the bent vertical became a straight line.

In the epigraphic records of the Somavāṁśins (Plate No. LII, LIII Serial No. 24), Bhaṭājias (Plate No. LIV, LV Serial No. 25, 26) and Imperial Gaṅgas (Plate No. LIV, LV Serial No. 25, 26) from the 10th

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to the 14th century A.D. the medial $\ddot{a}$ is formed by elongated downward vertical bar on the right part of $\ddot{a}$ used for medial $\ddot{a}$. The variation is occurred in $\text{kha}$ and $\text{dha}$ of the Khiching plate of Mahānmadāhavabhañjadeva.\(^{20}\) In its later development the straight vertical line of the medial $\ddot{a}$ being separated from the letter which is simply presented in the right part of the consonant (Plate No. LIV, LV Serial No. 29, 30, 31) like that of the Nāgarī form. This method was gradually practised in the 15th-16th centuries A.D. inscriptions and that is also used in the present Oriya letters (Plate No. LIV, LV Serial No. 32).

I: The medial $i$ used in the Aśokan inscription one at Dhauli and the other at Jaugada is composed by adding of a vertical bar in the medial $a$ of the consonants (Plate No. LVI, LVII Serial No. 1). In order to distinguish it from the vertical line of the consonant it is usual to draw a short horizontal bar on the top of the letter. In the case of $\text{khi}$, $\text{thi}$ (Plate No. LVI, Serial No. 1) and $\text{bi}$ it is added on the middle right part of the letter (Plate No. LVII, Serial No. 1). Though the similar formula is used in the Hāthigumpha Inscription of Khāravela but in the case of $\text{khi}$, $\text{thi}$, $\text{thi}$ (Plate No. LVI, Serial No. 2) and $\text{dhi}$ (Plate No. LVII, Serial No. 2) the horizontal bar is partly omitted and it is simply added by a vertical bar. The Minor difference is noticed in $\text{ti}$ (Plate No. LVI, Serial No. 3) and $\text{ri}$ (Plate No. LVII, Serial No. 3) of the Bāgh cave inscription and of the Jambeśvara cave inscription at Udayagiri hill. Here the upward vertical line is added by a short horizontal line but the horizontal line is slightly bent and partly curved. A number of variations are marked in the epigraphic records of Orissa belonging to the 3rd-4th centuries A.D. as represented in the Bhadrak stone inscription of Gaṇa.\(^{21}\) In the case of $\text{di}$ the medial $i$ is formed by a leftward

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curve line on the top of \textit{d}. In other way it may be pointed out that it is formed by a curve line on the left top of the letter form in horse shoe shape (Plate No. LVI Serial No. 4) as seen in the Kshatrapa and Śātavahana inscriptions of the 2nd century A.D. Similar form is used in the Mathura inscription of Huvishka of the year 29. Another form is also obtained from the study of \textit{ti} (Plate No. LVI, Serial No. 4) and \textit{ni} (Plate No. LVII, Serial No. 4) of the Bhadraka inscription of Gaṅa. In these cases the added top curve line is curled on the top as found in the Ikṣvāku record of the 3rd century A.D. and Bijayagadā inscriptions of the Yaudheya of the late 2nd and early 3rd century A.D.\textsuperscript{22}

Thereafter it is represented by a leftward curve line which is particularly seen in the north-Orissan inscriptions from the 4th to the 8th century A.D. The left ward curve stroke is slightly prolonged downwards in \textit{ti} (Plate No. LVIII, Serial No. 13) bhi, vi, si, and si (Plate No. LIX, Serial No. 13) of the Asanpāṭ Naṭarāja Image Inscription of Śatrubhaṭija and bhi and vi (Plate No. LXI, Serial No. 17) of the Jayaramapur copper plate of Gopachandra.

In the epigraphic records of Southern Orissa from the 4th to the 7th century A.D the medial \textit{i} is represented by an upturned crescent stroke which sometimes appear as a full circle where the shape of the top stroke of the letter demands it (Plate No. LVI, LVII Serial No. 6, 7, 8). In \textit{di, ni, bhi} and \textit{ni} of the Peddādugam plates of Śatrudamana\textsuperscript{23} (Plate No. LVII, Serial No. 5), a simple leftward curve line is added on the top of the letter. Where as we have to come across three different forms in the records of the Pitṛbhaktas. In the first form it is just like an upward slanting bar on the top while in the second it became a curve line but in the last variation

\textsuperscript{22} CII. Vol. III, pp. 251-52 f.

\textsuperscript{23} EI., Vol. XXXI, pp. 89-93 ff and plates.
it became a complete circle and all these varieties are used in *dhi*.
(Plate No. LVI, LVII, Serial No. 7)

In the copper plate grants of the Svetaka Gaṅgas (7th - 8th centuries A.D.) the medial i is formed by a complete circle on the top of the letter (Plate No. LX, LXI, Serial No. 18). This formula is adopted in some instances of the Gautami plates of Gaṅga Indravarman, Kalahandi plates of Anantavarman Vajrahasta, and Svalpa velura grant of Anantavarman of the Svetaka Gaṅga records. In the case of *di, dhi, vi* and *si* (Plate No. LXI, Serial No. 18) of the Indian Museum plate of Gaṅga Indravarman the medial i is represented by a left ward curve line which is hanged down. The change is occured in *di* and *ni* of the Kalahandi plates of Anantavarman Vajrahasta where medial i is an upturned crescent stroke. In the records of the Śailodbhavas medical i is simply composed of a curve line added on the left part of the letter (Plate No. LX, LXI Serial No. 20). but in the case of *chi, ti, thi* (Plate No. LX, Serial No. 20), and *pi, li, vi* (Plate No. LXI, Serial No. 20) the curve line is slightly prolonged downwards. The left ward curve line is curved down deeply upto the base of the letter in the Bhaumākara records belonging to the 8th-9th centuries A.D. (Plate No. LX, LXI, Serial No. 21, 22, 23). In some cases the curve line starts from the middle point of the top horizontal or wedged serif as seen in *di, bhi*, and *vi* of the Haṁśeṣvara temple Inscription of the time of Śubhākara I (Plate No. LXI, Serial No. 2) like that of the Pratihāra records of the 9th century A.D. while in *si* and *hi* it encircles the lower half of the base of the letter.

The left ward curve line is prolonged downwards straight in the Somavamśins inscriptions of the 10th - 11th centuries A.D. (Plate No. LX, LXI Serial No. 24). It looks like the addition of a vertical bar on its left. That principle is also adopted in the Imperial Gaṅga records from the 11th to 14th centuries A.D. (Plate No. LXII, LXIII, Serial No. 28, 29). The changes are found in bhi and vi (Plate No. LXIII, Serial No. 28) of the Bhubaneswar Inscription of Rāghava and Bhilmadeva where it is formed by the addition of a half circle from the right part of the letter. In its later phase the adding half circle on the top of the letter became separated from the letter. The remarkable change is found in the Oriya text of the tri-lingual copper plate of Kapliśvaradeva. Here the form of medial i changed where a curve line is added on the upper right of the consonant (Plate No. LXIII, Serial No. 30). Its later development is seen in the axe head copper plate grant of Purushottamadeva. Here the adding curve line from the upper right of the letter being separated (Plate No. LXII, LXIII Serial No. 31). This formula is found in pi of the Baud plate of Solan abhajadeva of the 13th-14th centuries A.D. (Plate No. LXIII Serial No. 25). This method is still used in modern Oriya medial i (Plate No. LXII, LXIII, Serial No. 32).

\[ \ddot{I} \]: The medial long (dirgha) \( \ddot{i} \) is represented by adding of two vertical bar in the medial \( \dddot{a} \) of the Aśokan inscriptions (Plate No. LXIV, LXV Serial No. 1). In the case of thī, thī ad bī two parallel slanting strokes are added while in some other cases it is formed by the doubling of the vertical stroke on the top of the horizontal bar which

30. SH., Vol. VI, No. 748
is added on the right part of the consonants. The difference is found in using of the vertical stroke in between the Dhauli, Jaugaḍa and Häthisigumpha Inscription of Khāravela is that in the Dhauli and Jaugaḍa edicts the left stroke is added in close to the right stroke whereas in the Häthisigumpha inscription it is added on the top of the letter. In the case of mī the vertical strokes are added sometimes on the left limb and sometimes on the right limb of m.

A number of different varieties of medial ihat are obtained in the South Orissan inscriptions ranging from the 4th to the 7th century A.D. In the records of the Gaṅgas of Kaliṅganagāra, medial ihat is composed of a circle and has a small circle within it (Plate No. LXIV, LXV Serial No. 8). It is particularly seen in ni, ti, si and hī of the Achyutapuram plates of Indravarman33, ni, si, si and hī of the Narasingapali plates of Hastivarman34, and gi of the Terasing plate of Tuṣṭikāra. In another variety it is simply presented by a complete circle on the top of the letter and a dot within the circle.

That formula is also used in the scripts of the Pitṛbhaktas (Plate No. LXIV, LXV, Serial No. 7) of Southern Orissa and also in the Pāṇḍuvaṁśins (Plate No. LXVI, LXVII Serial No. 10). and the Śarabhapūryyas (Plate No. LXVI, LXVII Serial No. 11) records of western Orissa. In the third variety medial ihat is represented by a short stroke generally vertical, springing from the bottom of the circle. In another variety medial ihat is presented with a curl attached to the end of a broad curve to the left which appears to have been derived from the curled type. That is particularly found in vi, ri and hī of the records of the early Gaṅgas of Kaliṅganagāra. That variety is still continued in nī of the Sudeva plates of Anantavarman

Gaṅga year 204, Sudeva plates of Devendravarman and Alamanda plates of Anantavarman (Plate No. LXVIII, LXIX Serial No. 19).

In the Ṛpārduṇḍa of Narendra the second mode is displayed but the upper end of the stroke inside the circle shows a leftward curve line. The second mode is found in the Arang plate of Mahāsudevarāja though the stroke inside the circle is horizontal while it is short vertical in the second set of Mallār plates. The dot variety is found in the first set of the Mallār plates and the Arang plates of the Śarabhapurīya records. That variety is also found in the Bihar kotra inscription of Naravarman (vikrama) year 474 and Gangadhar inscription of Viśvavarman (vikrama) year 480.

In all the records of northern and central Orissa from the 4th to the 7th century A.D., medial į is represented by a curve line which is formed to right but the curl is obtained on the starting point just on the top of the letter. Similar form is obtained in ni, ɨ and hɨ of the Urmal plate of Hastivarman (Plate No. LVI, LVII Serial No. 6) and ni of the Achyutapuram plates of Indravarman (Plate No. LVI, LVII, Serial No. 6). In another variety the curve line is leftward having a curl on the base or top of the letter which has been manifested in the Kesaribeda plates of Nala Arthapati bhattāraka (Plate No. LVIII, LIX Serial No. 9). In the Rajim stone inscription of Vilāsatuh ga the curve line extended down while in the Rithapur plate of Bhavadattavarman it is simply presented by a curve stroke on the right. In the Šailodbhava copper plate grants the medial ɨ is simply presented by a curve stroke on the right as in dɨ and ɨ. (Plate No. LXI Serial No. 20). That has been particularly seen in the Banapur

copper plates of Ayasobhita Madhyamarāja and Chandesvara plate of Māṅabhitā Dharmarāja. The second variety is adopted in some of the Sailodbhava copper plate grants where medial \(i\) is formed by the curve stroke on the top and that is prolonged downwards straightway. In the case of \(ti\) (Plate No. LX, Serial No. 20) and \(bhi\) (Plate No. LXI, Serial No. 20) the downward stroke does not stand parallel to the bottom line which resembled with the medial \(i\) of the Ganjam copper plate grant of Daṅḍimahādevī. This formula is also adopted in a number of other records of Orissa such as Kudopalli plates of the time of Mahābhavagupta II and Khiching plate of Mahānmadāhavbhāṣṣajādeva (Plate No. LX, LXI Serial No. 20). That is also continued in some cases of the later Gaṅgas inscriptions. The first variety of Sailodbhava formula has been used in the Nagpur Museum plates of Janamejaya Mahābhavagupta (Plate No. LX, LXI, Serial No. 24), Ratnagiri plates of Somavāṇī śins Karṇa (Plate No. LX, LXI, Serial No. 24), Kesari copper plate of Satrubhāṣṣajādeva (Plate No. LXII, LXIII Serial No. 25, 26) and Baud plate of Solaṅ abhaṇjādeva (Plate No. LXII, LXIII Serial No. 25, 26). In its later phase of Orissan inscriptions assigned to about the 12th - 13th centuries A.D. the addition of right stroke became straight except at its lower end. The top of the right vertical is curled inwards in the Asankhali plates of Narasimha II (Plate No. LXII, LXIII Serial No. 28, 29). In its later

phase the curl was transformed into early Oriya form and it looks the addition of a leftward angular hook on the right (Plate No. LXII, LXIII, Serial No. 32).

**U:** In the Dhauli and Jaugaḍa rock edicts of Aśoka the medial $u$ is denoted by a stroke which is either horizontal or downward vertical in continuation of issuing from the bottom point of the letter (Plate No. LXXII, LXXIII Serial No. 1). The horizontal bar is added in $ku$, $gu$, $tu$, $du$ and $dhu$ while vertical on $khu$, $ju$, $nu$, $pu$, $vu$, $nu$ and $su$. In the case of $tu$ the vertical bar is joined on the bottom of the right limb as particularly seen in $tu$ on the word *anuvatatu* in the 5th rock edict of Dhauli in line - 8 (Plate No. LXXII, Serial No. 1). The Hāthisgumpha Inscription of Khāravela follows the same formula (Plate No. LXXII, Serial No. 2) as used in the Dhauli and Jaugaḍa edicts of the 3rd century B.C.

In the South Orissan inscriptions ranging from the 4th to the 7th century A.D., medial $u$ is formed by a hook shaped sign on the left which also forms a short angle (Plate No. LXXII, LXXIII Serial No. 6, 7, 8). The lacking of definite angularism is marked in the Pedḍādugam plates of Śatrudamana (Plate No. LXXII, LXXIII Serial No. 5) like the Pallava and Western Chālukyan varieties of southern India belonging to 5th - 6th centuries A.D. The central Indian variety is adopted in the case of $ku$. In $tu$ and $su$ of the Terasing plate of Tuṣṭikāra the hook is right ward while in $gu$, $tu$, $bhu$ and $nu$ a semi circle is drawn with flourish narrow into a long drawn hook with its end shooting up the whole length of the letter like the Chālukyan sign of the 6th century A.D. Similar form is also obtained in the Temberu plates of Umāvarman of the Piṭṛbhaktas (Plate No. LXXIII Serial No. 7).

In the North Orissan inscriptions four different varieties of medial *u* are obtained. In the first variety a horizontal bar is added either on the middle or bottom part of the letter as seen in the records of the Āmbhuyaśas (Plate No. LXXV Serial No. 16). In the case of *ru* of the Sumārṇḍala copper plate of Prthivīgraha ṃhattāraka an upward slanting bar is added in the right middle part of the letter (Plate No. LXXV Serial No. 14). Another form is found where a short vertical bar is extended down from the bottom of the right part of the letter as seen in *pu, nu, su, yu* and *hu* of the records of the Dattas (Plate No. LXXV, Serial No. 12). The earlier form of adding horizontal bar on the right bottom of the letter is transformed into a leftward curve stroke and it is so pronounced that it appears as sickle shaped. However the hook shaped medial *u* is present in *gu* (Plate No. LXXIV, Serial No.13), *tu* and *bhu* (Plate No. LXXV, Serial No. 13) of the Asanpāṭ Naṭarāja Image inscription like the Allahabad Pillar inscription of Samudragupta. A right ward curve stroke is added in the case of *hu* of the Jayarampur copper plate grant of Gopachandra (Plate No. LXXVII, Serial No. 7).

In the records of the Nalas (Plate No. LXXIV, LXXV Serial No. 9) Pāṇḍuvarāṁśins (Plate No. LXXIV, LXXV, Serial No. 10) and Śarabhapurīyas (Plate No. LXXIV, LXXV Serial No. 11) medial *u* is composed of a hook shaped sign of sharp angles to either left or right of the letter. In *du, dhu, pu, nu* and *yu* the angular hook is left ward (Plate No. LXXV, Serial No. 11) while it is right ward in *nu* and *bhu* of the Pāṇḍuvarāṁśins records of the 7th - 8th centuries A.D. (Plate No. LXXV, Serial No. 10). In the case of *ku* and *ru* a simple hook is added in either lower or middle part of the letter. In the case of *ru* an angular downward hook is added in the right part of the letter which resembles with the Central Indian varieties of the 5th century A.D. In the Rajim stone inscription of Vilāsatuṅga the medial *u* used in *su* is influenced by the nōrthern inscriptions.
where a simple prolonged downward vertical line is added. The sickle shaped hook of medial \textit{u} is found in the Sirpur inscription of Bālārjuna. That variety is also used in \textit{tu} (Plate No. LXXVI, Serial No. 20), \textit{shu} and \textit{hu} (Plate No. LXXVII, Serial No. 20) of the Śailodbhava copper plate grants of the 7th - 8th centuries A.D. In \textit{dhu}, \textit{pu} and \textit{yu} of the Chaṇḍēśvara place of Māṇabhita Dharmarāja a short vertical bar is attached on the bottom of the letter and a leftward horizontal bar is attached to that vertical line (Plate No. LXXVII Serial No. 20). In other way it may be pointed out that here the angular hook of the earlier forms is being replaced by a horizontal line. Two different varieties are obtained in the Kondedda grant of Dharmarāja one is the rounded curve line to the left and the other is the perpendicular downward stroke with a straight small line and that is one to the right and the other to the left (Plate No. LXXVII, Serial No. 20) as seen on the word \textit{pluti} in line 3. A number of forms are used for the medial \textit{u} in the Bhaumakara inscription of Northern Orissa belonging to the 8th-9th centuries A.D. In the first variety the earlier slanting or horizontal bar is used along with the addition of short vertical above as seen in \textit{pu} and \textit{su} of the Haṁseśvara temple inscription of the time of Śubhākara I (Plate No. LXXVII, Serial No. 23). Secondly medial \textit{u} is represented by a downward slanting bar on the right part of the letter as seen in \textit{gu} (Plate No. LXXVI, Serial No. 22) and \textit{ru} (Plate No. LXXVII, Serial No. 22) of the Terundia plate of Śubhākara. The changes are noticed in \textit{ru} of the Khadipada Image Inscription of the time of Śubhākara (Plate No. LXXVII, Serial No. 21), Santiragrama grant of Daṇḍīmahādevi, Year 180 (Plate No. LXXVII

Serial No. 21) and Baud copper plate grant of Tribhuvanamahādevi
(Plate No. LXXVI, LXXVII Serial No. 21) where the added slanting bar became upward. In the next variety the left ward curve line is added on the bottom of the letter in the cases of ku, gu (Plate No. LXXVI, Serial No. 23), du, dhu, yu (Plate No. LXXVII, Serial No. 23) of the Harīsesvara temple inscription of the time of Śubhākara I. In another variety the downward curve line is added on the bottom of the letter as in dhu and hu (Plate No. LXXVII Serial No. 23). All these varieties are used for the medial u of the Somavamśins inscriptions assigned to the 10th-11th centuries A.D. which suggest that these styles were borrowed from their predecessors. In the inscriptions of Orissa from the 11th to 13th century A.D. as particularly of the Bhaṭṭa. (Plate No. LXXVIII, LXXIX Serial No. 25, 26) and Imperial Gaṅga (Plate No. LXXVIII, LXXIX, Serial No. 28, 29) records the medial u is formed by the addition of a leftward curve line on the bottom of the letter. Some variations also occurred in some other instances. In the first case a downward slanting bar is used on the bottom right part as in ju of the Bhaṭṭa records (Plate No. LXXVIII Serial No. 25) and ku, gu, ghu and thu of the Imperial Gaṅga records (Plate No. LXXVIII, Serial No. 28). In other extents a simple slanting bar is added on the right middle part of ra in the Bhaṭṭa records. (Plate No. LXXIX Serial No. 25) while it is curved downwards in gu (Plate No. LXXVIII, Serial No. 25) and bhu (Plate No. LXXIX, Serial No. 26) of the Bhaṭṭa copper plate grants of the 10th - 11th centuries A.D. In some other instances of ku, (Plate No. LXXVIII, Serial No.25) du and su (Plate No. LXXIX, Serial No. 26) of the Bhaṭṭa copper plate grants the leftward curve line is ornamented.

In the epigraphic records of the 15th-16th centuries A.D. medial u is composed by forming a loop base on the left and from

that loop a bar is slanted towards right which is placed on the bottom right part of the letter. This type is obtained in the copper plate of Kapileśvaradeva (Plate No. LXXVIII, Serial No. 30) and axe-head copper plate grant of Puruṣottamadeva (Plate No. LXIX, Serial No. 31). In the present Oriya form the loop placed on the middle and two upward slanting bar is added on its two top end which looks like Oriya numeral four (Plate No. LXXVIII, LXXIX Serial No. 32).

\( \ddot{u} \): In the epigraphic records of Orissa belongs to the 3rd century B.C, medial \( \ddot{u} \) is formed by the adding of two strokes on the bottom of the letters. It is either horizontal as in \( \ddot{t}u \) (Plate No.LXXX, Serial No.I) \( bh\ddot{u} \) (Plate No.LXXXI SerialNo.I) or vertical as in \( \ddot{v}u, \ddot{n}u, \ddot{y}u, \ddot{l}u, \ddot{s}u \) and \( h\ddot{u} \) (Plate No. LXXXI. Serial No. 1). The same principle is altogether followed in the Hāthigumpha Inscription of Khāravela (Plate No.LXXX, LXXXI, Serial No.2) while two slanting upward strokes are (Plate No. LXXX, Serial No. 3) added on the right bottom part of \( ch \) in the Minor rock inscriptions at Udayagiri hill. The later development of medial \( \ddot{u} \) is represented in the north - Orissan inscriptions of the 5th-6th Centuries A.D. A number of different varieties of medial \( \ddot{u} \) are used in the North Orissan epigraphic records from the 4th to the 7th century A.D. In the first of its type it is represented by a downward vertical line running to the left as a curve line. That is available in \( k\ddot{u} \) of the plate of Somadatta (Plate NoLXXXII Serial No.12 ), \( p\ddot{u} \) of the Jayarampur Copper plate of Gopachandra (Plate No.LXXXV Serial No.17) and \( p\ddot{u} \) of the Sumanḍala copper plate of Prthivivigraha bhāṭṭāraka (Plate No.LXXXIII, Serial No. 14). In its second variety medial \( \ddot{u} \) is composed by an upraised hook on the right and a terminally downward curve stroke attached on its right part. That variety is seen in \( bh\ddot{u} \) of the copper plate grant of Gopachandra (Plate No.LXXXV, Serial No. 17). Another variety is developed in the north Orissan inscriptions as particularly noticed
in \( \text{kū} \) (Plate No.LXXXII, Serial No.16) and \( \text{yū} \) (Plate No.LXXXIII, Serial No.16) of the plate of Mahārāja Śambhuyaśas where a leftward curve line is attached on the bottom of the right limb and a horizontal bar is added on its joint part.

In \( \text{kū} \) (Plate No.LXXXII, Serial No.10) and \( \text{pū} \) (Plate No.LXXXIII, Serial No.10) of the Pāṇḍuvarāṇīśins records of western Orissa, the medial \( \text{ū} \) is formed by the addition of an angular upraised hook on the left part of the letter where as a downward long slanting bar is added on the top as in \( \text{pū, mū, yū} \) of the Śarabhapurīya records (Plate No. LXXXIII, Serial No.11). Similar formula is used in some instances of the Peḍḍādugam plates of Śatrudama (Plate No.LXXX, LXXXI Serial No.5) and also some other cases of the Gaṅgas of Kaliṅganagara records in about the 5th - 6th Centuries.A.D. (Plate No.LXXX, Serial No.8). The difference is occured in the Narasinghapali plates of Hastivarman where medial \( \text{ū} \) is formed by adding of two small slightly curvilinear horizontal strokes of \( \text{ka} \) as of the Pallava variety of the 5th - 6th Centuries A.D. Another peculiarity is noticed in the case of \( \text{pū} \) of the Siripuram plates of Anantavarman of the Vāsishṭha record (Plate No.LXXXI, Serial No.6) and of the copper plate grant of Prthivimahārāja. Here the medial \( \text{ū} \) is represented by an either curve or angular left ward hook which is added on the bottom of the letter and a downward curve is added on the top part of the letter. Another form is found in the Peḍḍādugam plates of Śatrudama of Southern Orissa. Here the hook is rightward and a curve stroke is added on its top as of the western Chālukyan records of the 6th century A.D. In the case of \( \text{bhū} \) of the Pīṭhakha copper plate grants the horizontal stroke terminally curved downwards (Plate No. LXXXI, Serial No. 7).

The earlier formation of vertical stroke running to the left is found in \( \text{dhū} \) and \( \text{sū} \) of the Śailodbhava records (Plate No.LXXXV,
Serial No.20). **Bhū** is composed by a curvilinear horizontal bar which is added on the bottom right part of the letter and a downward stroke is added on the right middle part of the letter. The same formula is also adopted in **pu, bhū** and of the Gautami plates of Gaṅga Indravarman (Plate No.LXXXV, Serial No.19). The mode of medial ū takes a different turn in the Kondedda grant of Dharmarāja where it is manifested by two signs of rounded strokes one to the right and the other to the left (Plate No.LXXXV, Serial No. 20) as seen in **Svayambhū** and **bhūmi** in line twelve. In other case it consists of a downward stroke ending in a loop to the left.

In the Kalahandi plates of Anantavarman Vajrahasta one slanting bar is added on the right part of the letter while a leftward curve line is added close to it which is particularly seen in the case of **su** (Plate No. LXXXV, Serial No. 18). Another formula is adopted in the records of the Gaṅgas of Kaliṅganagara where medial ū is formed by a rightward curve line on the bottom of the letter as particularly seen in **chu** (Plate No. LXXXIV, Serial No. 19). In another variety medial ū is composed by the addition of a horizontal bar to the right part of the upraised hook on the right side of the letter and this formula is applied in the case of **bhū** and **sū** (Plate No.LXXXV, Serial No.19).

The slanting curve stroke of medial ū is added on the top of the prolonged vertical bar of the medial ū of the Bhaumakara records of Northern Orissa of the 9th - 10th Centuries A.D. (Plate No.LXXXV, Serial No. 22). In the case of **sū** of the Baud grant of Tribhuvanamahādevī, a bar is slanting towards right and it is curled inwards at the beginning which looks like a downward hook (Plate No.LXXXV, Serial No.22). That is also seen in the Keśarī copper plate of Satrubhaṅjadeva (Plate No.LXXXVII, Serial No. 25). In the case of the Somavāṁśins inscriptions medial ū is a simple rightward
curve stroke while in \textit{pu} it is the addition of a curvilinear stroke on the right where as in \textit{kū} it is almost same with the Nāgarī form (Plate No. LXXXVI, Serial No.24). In \textit{bhū} of the Nivina grant of Mahāśīvagupta Yayati\textsuperscript{56} and Vakratentali charter of Mahābhavagupta I\textsuperscript{57} (Plate No. LXXXV, Serial No. 24), medial \textit{ū} is represented by two horizontal bars added on the right part of the letter.

In some of the Bhaṅja records medial \textit{ū} is represented by the addition of a rightward curve line on the right bottom of the letter (Plate No. LXXXVI, LXXXVII, Serial No. 25,26). That has been seen in \textit{bhū}, \textit{nū}, \textit{pū} and \textit{yū} of the Khiching plate of Mahānmadāhavabhaṅjadeva (Plate No.LXXXVII, Serial No.25), Baudh plate of Solanabhāṅjadeva and Jurada grant of Netṭabhaṅjadeva. In the Keśari Copper plate of Satrubhaṅjadeva and Ganjam plates of Netribhaṅjadeva\textsuperscript{58}, a simple downward slanting bar or the prolonged vertical bar is added on the left part of the letter while in the case of \textit{ṛū} (Plate No.LXXXVII, SerialNo.26) a downward curve stroke is added on the right of the letter. The later development is seen in the Imperial Gaṅga records which is composed by a hook shaped bar and that is slanting towards right.(Plate No.LXXXVI, LXXXVII, Serial No.28,29). In otherway it may be pointed out that a line is slanted towards right but it is curled inwards on the left. That type is also used in the Gajapati records of the 15th - 16th Centuries A.D. while in \textit{bhū} of the axe-head Copper plate grant of Purusottamadeva a downward curve stroke is added (Plate No. LXXXVII, Serial No. 31). In the present Oriya alphabet medial \textit{ū} is presented by an upward hook with the addition of a rightward slanting bar on the

\textsuperscript{56.} \textit{El.}, Vol. XI, pp. 95-97 ff and plates.
\textsuperscript{57.} \textit{Ibid}, pp. 93-95 ff and plates.
\textsuperscript{58.} \textit{El.}, Vol. XXV, pp. 161-64 ff and plates.
In the Dhauli and Jaugada rock edicts of Aśoka (3rd Century B.C.) medial e is represented by a horizontal stroke added to the top left of the letter (Plate No. LXXXVIII, LXXXIX, Serial No.1). In the case of je and te, the horizontal bar is added on the left middle portion of the letter (Plate No. LXXXVIII, Serial No. 1). That principle is adopted in the Hāthigumpha Inscription of Khāravela (Plate No. LXXXVIII, LXXXIX Serial No. 2) and other Minor Brāhmī inscriptions at Udayagiri hill (Plate No. LXXXVIII, LXXXIX, Serial No.3).

In the records of the Māθaras and Vāsishṭhas (Plate No.LXXXIX, Serial No. 3) medial e is formed by an upward slanting bar which is sloped downwards and that is applied for ne, ve, se. This style shows that as it is influenced from the north Indian inscriptions. In the case of ke, je, te, de, ne, ye, se a leftward curve stroke is added on the top of the letter with a slope at the downward end, but in je it is added on the middle left of ja (Plate No.LXXXVIII, Serial No. 6). Another formula is used in the Peḍḍādugam plates of Śatrudamana (Plate No. LXXXVIII, LXXXIX, Serial No. 5) where the upward slanting bar is curled on the top left part of the letter as seen in ke, ne, de, ne, me, re but in ne a downward curve stroke is added on the left. In the records of the Pitrabhaktas (Plate No. LXXXVIII, LXXXIX, Serial No.6) and early Gaṅgas of Kaliṅganagara (Plate No. LXXXVIII, LXXXIX, Serial No. 8) medial e is formed by the addition of a leftward curved stroke which is either on the top or on the middle. In the case of ne it is added on the left of the looped base while in ne it is an upward slanting bar on the top of the letter (Plate No. LXXXIX, Serial No. 8). The medial e represented in the copper plate grants of the Dattas (Plate No.XC, XCI, Serial No. 12) and Mudgals (Plate No. XC, XCI, Serial No.16) of northern Orissa is simply formed of a horizontal top stroke added on the top
of the letter. An upward slanting stroke is added on the left top of the letter in the Copper plate grants of Vigrahas (Plate No. XC, XCI, Serial No. 14). The upward slanting stroke is slightly curved terminally in *ke, ne, te* and *de* of the *Asanpāṭ Naṭarāja Image* inscription (Plate No. XC, XCI, Serial No. 13). Two different forms are obtained in *Je*. In the first variety a long slanting upward stroke is curved on the top and in the second type the added horizontal bar terminally curved downwards on the left.

In the records of Western Orissa ranging from the 4th to the 7th Centuries A.D., two different forms are formed. In the first type a simple horizontal bar is added on the left top part of the letter as seen in *te* (Plate No XC, Serial No.9) and *se* (Plate No.XCI, Serial No.9) of the Nala records. In other instances the use of horizontal stroke curved downwards as in *ne* (Plate No.XCI, Serial No. .9) while in some other instances the medial *e* used in *me*, it is formed by the addition of a downward slanting bar on the left either on the top or on the middle of the letter. Similar formula is used in the Terasingha plate of Tushtikara but in *ne* it is slightly curved towards right. An upward stroke is added on the top of the letter in the records of the Śarabhapurīyas (Plate No. XC, XCI, Serial No. 11) while in the records of the Pāṇḍuvarṇīns the stroke curved gracefully and form the shape of stream or banner above the serif of the letters (Plate No. XC,XCI, Serial No. 12). Here the upward slanting bar is slightly upraised on the top as on the inscriptions of the Harṣavardhan. The medial sign *e* in the records of the Bhaumakaras is formed by an upward slanting stroke which is added on the top of the letter which is slightly upraised on the top as particularly seen in the Terundia plate of Śubhākara II (Plate No. XCII, XCIII, Serial No.22). This formula is also practised in *se* of the Nagpur Museum plate of Mahābhavagupta I Janamejaya (Plate No.XCIII, Serial No. 24) and *ye* of the Adipur Copper plate grant of
Narendrabhañjadeva. In **de, ne, and ye** a rightward curve stroke is added on the top left corner of the consonant.

In the records of the śailodbhava (Plate No.XCII, XCIII, Serial No. 20) and the Gañgas of Kaliñganagara of the 9th - 10th centuries A.D. (Plate No.XCII,XCIII SerialNo.19) a simple upraised slanting bar is added for medial **e** but in **ne** the top of the slanting bar is curved down and simply curled. The difference is noticed in **se** of the records of the Gañgas of Kaliñganagara where it is simply a downward curve line (Plate No. XCIII, Serial No.19) but in **se** of the śailodbhava Coper plate grants medial **e** is presented by a slanting bar on the top of **s** (Plate No. XCIII, Serial No. 20). In the later records of the Somavara śins (Plate No. XCI, XCIII, Serial No. 24) and Imperial Gañgas (Plate No.XCIV, XCV, Serial No. 28,29) medial **e** is marked with a pronounced curve stroke on the left part of the letter and it is bent more which touches the base line of the letter. This style is found in the Adipur Copper plate grant of Narendrabhañjadeva but in the case of **bhe** and **se** the slanting up stroke is bent on the middle.

The simple leftward curve stroke is added in **de, ye, re** and **se** of the Bhañjaja records (Plate No. XCIV, Serial No. 26). The added curve stroke in some cases separated from the top of the letter and curled inwards on its lower end as seen in **de, bhe** and **se** of the Siddheśvara temple inscription of Narasiñhadeva IV59 (Plate No.XCIV, XCV, Serial No. 29). That principle is used in the trilingual copper plate grant of Kapileśvaradeva (Plate No. XCIV, XCV, Serial No. 30) and axe-head copper plate grant of Purushottamadeva (Plate No. XCIV, XCV, Serial No.31). That curl is turned to loop in the present Oriya alphabet (Plate No. XCIV, XCV, Serial No. 32).

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**AI:** Generally medial *ai* is formed by two top horizontal strokes to left in the A§okan inscriptions of the 3rd Century B.C. and that continued upto 1st Century B.C. This is not used in the Dhauli and Jaugaḍa rock edicts as well as Hāthigumpha Inscription of Khāravela.

In the North Orissan inscriptions from the 4th to the 7th century A.D medial *ai* is composed of two upward slanting strokes on the top of the letter as in *nai, vai* of the Asanpāṭ Naṭarāja Image inscription (Plate No.XCIX, Serial No. 13) and *dai* of the records of the Mudgalas (Plate No. XCIX, Serial No.16). In *dai* of the Datta records, the upper end of the slanting stroke is more lengthened which look like the stream shaped stroke (Plate No. XCIX, Serial No. 12). In the Asanpāṭ Naṭarāja Image inscription (Plate No. XCIX, Serial No. 13) and Suman ḍala copper plate of Pṛthivivigraha bhaṭṭāraka (Plate No.XCIX, Serial No. 14) two upraised slanting bar is used. It is rarely used in the inscriptions of the Dattas, Pāṇ ḍuvāṁśins (Plate No. XCVIII, XCIX, Serial No.10) and Šarabhapurīyas (Plate No. XCVIII, XCIX, Serial No.11) of western Orissa. It is simply two upraised slanting bar on the top of the letter while *gai* (Plate No.XCVIII, Serial No.10) and *vai* (Plate No.XCIX, Serial No.10) of the Pāṇ ḍuvāṁśins inscriptions, two slanting strokes are lengthened and slightly raised upwards at the top.

In the inscriptions of southern Orissa from 4th to the 7th century A.D. two strokes are added for medial *aiṅ* in different way. In the records of the Māṭharas and Vāsishṭhas (Plate No. XCVI,XCVII, Serial No. 6), two downward curve stroke is added close to each other on the left top of the letter. In the case of *tai* one is curved down and the other is slanting up and curled inwards on the top. In the records of the Pitṛbhaktas ‘*ai*’ is only seen in the case of *vai* as from the study of their existing records. Here one is curved down.
and the other is upraised (Plate No.XCVII, Serial No. 7). In the
records of the Gaṅgas of Kalin ganagara two slanting up stroke is
added on tai where in nai and tai two strokes are curved down
from the top of the letter (Plate No. XCVI,XCVII, Serial No.8). Two
slanting upward strokes are used for kai, chai (Plate No. C, Serical
No. 20), nai, vai and bhai (Plate No. Cl, Serial No. 20) of the
Śailodbhava copper plate grants where as two horizontal strokes
are added towards left in chai of the Chaṇḍeśvara plates of Māṇabhita
Dharmarāja (Plate No. C Serial No. 20). In some other instances
the upper stroke is slanting up while in the lower one is slightly
curved down as seen in kai (Plate No. C, Serial No. 20), sai and
sai (Plate No. Cl Serial No. 20). In the Kondedda grant of
Dharmarāja the upper horizontal stroke became slanting up while
the lower part is in horizontal form as in chai (Plate No. C, Serial
No. 20) and rai (Plate No. Cl Serial No. 20). A slight different form
is obtained in the case of lati where it has upward short vertical
stroke which is bent towards left. These two strokes are added on
the top of the right part of the letter while the other on the top of
the left downward curve line.

The second formula is still in later date present in the Chaṇḍeśvara
plate of Māṇabhita Dharmarāja. Here the upper stroke is shaped
like a streamer and the other on the left stroke is curved down and
bent towards right as parallel to the base line. That variety is
adopted in a number of Bhaumakara records such as the Ganjam
grants of Daṇḍimahādevī (Plate No. C, Cl, Serial No. 21) and also in
the Adipur copper plate grant of Narendrabhaṇjadeva (Plate No.
CIII Serial No. 25, 26). In the records of the Somavamsīs the
curved line became straight as in gai, tai of the Santiragrama
grant of Daṇḍimahādevī (Plate No. C, Serial No. 21) and nai, dai of
the Sonepur plates of Satrubhaṇjadeva60 the curved downward

stroke became angular in form (Plate No. CIII Serial No. 25). In some other cases as in *dai* the left downward curve line became a straight vertical bar and that hanged down from the serif of the letter. That variety is more used in the Imperial Gāṅga records while in some other cases as in *rai* and *lai* the left vertical bar is separated from the letter (Plate No. CIII Serial No. 28). In the present Oriya form the left curve stroke formed a loop of the lower base and the waved horizontal on the top (Plate No. CIII Serial No. 32).

**O:** The medial *o* represented in the Dhauli and Jaugaḍa rock edicts of Aśoka is composed of two strokes making up medial *a* and *e* to the consonant. In the case of *kho* one is added on the left top and the other on the right (Plate No. CIV Serial No. 1). In the case of *do*, *no*, *yo* and *ho* it is added one on the right top while the horizontal bar added in the middle left of the vertical line (Plate No. CV Serial No. 1). In the case of *no* two horizontal bars are added on the two arms of the letter while in the case of *bo* two horizontal strokes are added in the middle part of the left and right of *ba*. In its later period of the 1st century B.C. as represented in the Hāthigumpha Inscription of Khāravela medial *o* is formed by adding of two horizontal bars on the left and right of the letter which looks like a horizontal bar on the top as seen in *ko*, *to*, (Plate No. CIV, Serial No. 2) *dho*, *po*, *bho*, *yo* and *lo* (Plate No. CV Serial No. 2). In case of *no* the horizontal bar is added on the top of the triangular loop and here the horizontal bar runs in one line (Plate No. CV Serial No. 2). This variety is also seen in *to* of the Haridās cave inscription at Udayagiri hill (Plate No. CIV Serial No. 3).

Generally in the South Orissan inscriptions ranging from the 4th to the 7th century A.D. medial *o* is formed by adding of a
downward curve stroke one to the left and the other to the right (Plate No. CIV, CV Serial No. 6, 7, 8). Its angular formation is obtained in \textit{dho} of the Khoroshanda plates of Viśākhavarman\textsuperscript{61} where in \textit{ko} follows the style of Hāthigumpha record. In the case of \textit{Jo} a rightward curve stroke is added in the left bottom part of \textit{j} while the middle bar is upraised and angularly curved towards left but in the case of \textit{no} two bars are slanted up. The difference is found in \textit{bho, so} and \textit{ho} where the left stroke is slanting up and the right stroke is slanting towards right (Plate No. CV Serial No. 6, 7, 8).

In \textit{no} of the Māṭharas and Vāsishṭha records one downward curve line is added on the left part of the notched loop (Plate No. CV Serial No. 6). The left stroke is still a short horizontal in the case of \textit{no} and \textit{yo} of the Khoroshanda plate of Viśākhavarman. In \textit{jo} and \textit{no} its left stroke is slanting up while the right bar is upward along with the letter in the records of the early Gaṅgas of Kaliṅganagara. In some other cases the leftward slanting stroke is added on the top left part and the right vertical line is added on the top.

In the North Orissan inscriptions three different methods of medial \textit{o} are used from the 4th to the 7th century A.D. In the first variety it shows the short horizontal terminally curved towards left and right as seen in \textit{ko, to} (Plate No. CVI, Serial No. 12) and \textit{vo} (Plate No. CVII Serial No. 12) of the Datta records. Such style is also seen in \textit{go, cho} of the Terasingha grant of Tustikāra of Western Orissa and \textit{go, to, no, mo} and \textit{sho} of South Orissan inscriptions. The earlier formula is used in the Asanpāṭ Naṭarāja Image inscription where two upward slanting bar is added and touches the left and right part of the letter (Plate No. CVI, CVII, Serial No. 13). The difference is found in the case of \textit{go} where the right slanting downward stroke is added on the middle part of the right vertical

\textsuperscript{61} El., Vol. XXI, pp. 23-25 ff and plates.
line and the other is added on the top of the letter (Plate No. CVI, Serial No. 13). Similar formula is also applied in po and so of the Pāṇḍuvāṁśins record (Plate No. CVII, Serial No. 10) and to, tho (Plate No. CVI, Serial No. 11), no, bho, ro and lo (Plate No. CVII, Serial No. 11) of the Śarabhapurīya records. In these cases two upward slanting strokes are added on the top of the letter one on the left direction and the other on the right direction. It looks like the Roman capital letter v or the shape of an indistinct flying bird at a distance in the picture. In other cases they are separated and added one on the left top and the other on the right top of the letter. Other variety is also found in some cases of the Śarabhapurīya inscriptions where two horizontal strokes are above the two short vertical strokes on the left and right top part of the letter. The peculiarity is noticed in no of the Thakurdiya plate of Mahāpravaraṟarāja, where the left slanting is added on the top of the box-headed serif while the right vertical stroke hangs down from the bottom part of the right upward of stroke of n. Another variety is found in no, po, bho and so of the copper plate grant of Tustikāra where medial o is formed by left ward slanting stroke which is connected by a short vertical to right. Another form is obtained as from the study of go of the Nala records (Plate No. CVI, Serial No. 9). In the first type two curve strokes are added on the left and right top of g when it is tripartite. In the second form a short horizontal added on the left top of the letter while in the right part a short horizontal is added and that is terminally curved downwards.

In the copper plate grants of the Gaṅgas of Svetaka another variety is found where the medial o is formed by the addition of a stroke on the left and a short vertical on the right (Plate No. CVIII,
CIX Serial No. 18) as seen in the Gautami plates of Gaṅga Indravarman. That variety is also visible in the Kalahandi plates of Anantavarman Vajrahasta, Sudeva plates of Anantavarman, and Devendravarman. The difference is noticed in the Andhavaram plates of Anantavarman and Tekkali plates of Anantavarman (Plate No. CVIII, Serial No. 19) where the left slanting stroke is curled on the top. In the plates of Mahārāja Jayavarmadeva both the strokes are first slanting up and then curved down. In the records of the Šailodbhava of northern Orissa the upward slanting stroke is added on the top of the letter (Plate No. CVIII, CIX Serial No. 20). In some other instances the left stroke is slanting and the right short vertical line is prolonged down from the top horizontal line but in the case of go the left bar is a simple horizontal line. In ro of the Alamanda plates of Anantavarman one is terminally curved on the top and the other stroke is added on the right bottom which finally curved towards left (Plate No. CIX, Serial No. 19). The vertical stroke is added on the right part of the letter while the left stroke is more curved and parallel to the bottom of the consonant as used for medial o in no of the plates of Rājarāja I Devendravarman (Plate No. CIX Serial No. 19). Similar form is obtained in some of the Bhaumakara records such as the Santiragrama grant Daṇḍīmahādevi (Plate No. CXI, Serial No. 21). The exact principle is used for medial o in some other instances of the Somavāṃśins (Plate No. CVIII, CIX Serial No. 24) and Bhaṭṭija records (Plate No. CX, CXI Serial No. 25, 26). We find this formula in the Kudopalli plates of the time of Mahābhavagupta Yayāti, Vakratantali chapter of Mahābhavagupta I, Khiching plates of Mahānmadāhabhaṭṭija-deva and Baud plate of Solaṇabhaṭṭija-deva. This method is also adopted in the Bhubaneswar inscription of Bhimadeva (Plate No. CX, CXI, Serial No. 28, 29) and Puri inscription of Anāṅgabhimadeva III (Plate No. CXI, Serial No. 28, 29) of the Imperial Gaṅga records.
Another formula is used in go and yo of the early records of the Bhaumakaras particularly on the Neulpur grant of Subhākara where the leftward slanting stroke is added on the right top of the vertical line. This is also used in the later Orissan inscriptions such as the Nibina grant of Mahāśivagupta Yayāti (Plate No. CVIII Serial No. 24) and Vakrātentali charter of Mahābhāvagupta (Plate No. CIX, Serial No. 24), Adipur copper plate of Narendraśvajadeva and Sho of the Ganjam plates of Netribhāṉjadera (Plate No. CXI, Serial No. 25). In some other instances such as in the Patna Museum plates of the 6th year of Mahābhāvagupta I63 and the Cuttack plates of the 31st year of Mahābhāvagupta I64 the right vertical line is slightly curved and the left curve stroke is parallel to the base of the letter (Plate No. CIX Serial No. 24). The change of medial o is found in the Bhubaneswar inscription of Anāṅgabhana II and go, cho of the Anantavarman Choḍagaṅga65 (Plate No. CX Serial No. 28, 29) and no of the Bhubaneswar inscription of Bhimadeva66 (Plate No. CXI, Serial No. 28) and Rāghava (Plate No. CXI, Serial No. 28) where the vertical stroke added on the left is curled to form a loop at the bottom.

AU: The medial au does not appear in the early inscriptions of Orissa from the 3rd century B.C. to the 3rd century A.D. It is found in the Junagadh rock inscription of Rudradamana67 where it is either composed of a slanting top stroke or horizontal stroke to left. It became prevalent in the epigraphic records of the 4th century A.D. of Orissa. In all these periods it is generally formed with the addition of another stroke in medial o. In the Pāṇḍuvarāṇins and Sarabhapuriya records of Western Orissa the top vertical bar is added to the double

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64. Ibid, pp. 345-51 ff and plates.
arched sign (Plate No. CXIV, CXV Serial No. 10, 11). The later variety is found in the Sirpur inscription of the time of Bālārjuna where the horizontal serif is curved towards left and a short vertical to the right but the top stroke running to left. In **kau** of the Peḍḍādugam plates of Śatrudamana (Plate No. CIV, Serial No. 5) and **pau, yau**, of the Māṭhara records follow the same formula as of the Vākāṭaka and western Chālukyan sign of the 5th-6th centuries A.D. The downward curve line to left is continuation of the top line and a hook is added above the top right of the letter and that produce the medial sign **au** of the period. In **sau** and **yau** of the Kalahandi plates of Anantavarman Vajrahasta two slanting bars are used in the left while the horizontal line terminally curved to the right. In **tau** of the plates of Rāṇaṅka Jayavarmadeva (Plate No. CXVI, Serial No. 18) two downward curve strokes are added on the middle which is slanted towards left.

No trace is seen in the Ṣailodbhava records (Plate No. CXVI, CXVII, Serial No. 20). The difference is noticed in the Gaṅgas of Svetaka and Gaṅgas of Kalīṅganagara records from the 7th to the 10th century A.D. In the Andhavaram and Tekkali plates of Anantavarman the hook added above the top right of the letter while in **sau** of the plates of Rājarāja I Devendravarman Galavalli (Plate No. CXVII, Serial No. 19). In the records of the Bhaumakaras vertical stroke on the left is curved and straight vertical bar is added on the right which is curved towards left as seen in the grants of Daṇḍīmahādevī but in the Baud grant of Tribhuvanamahādevī year 158 (Plate No. CXVII, Serial No. 21) the short curve stroke in the left is hanged down. In **sau** of the Dhauli cave inscription of Śāntikaradeva ⁶⁸ (Plate No. CXVII, Serial No. 21) the short horizontal on the right terminally curved down along with a short horizontal on the left top and a hook is added above the top horizontal line. The

⁶⁸. EI., Vol. XIX, pp. 263-64 f and plate.
Bhaumakara variety is also found in the Kudopalli grant of the time of Mahābhavagupta II (Plate No. CXVII, Serial No. 24). In some of the Somavarmśins copper plate grants as in the Patna plates of the 6th year of Mahābhavagupta I and Kataka plates of the 3rd year of Mahābhavagupta II (Plate No. CXVI, Serial No. 24) the straight horizontal is above the top of the letter which is joined by a vertical bar on the right but the curve stroke on the left. In the Nagpur Museum plates of Mahābhavagupta I Janamejaya the top horizontal is slightly upraised on the top and the long vertical bar became shortened. The bottom of the right vertical is slightly slanting towards right as seen in the Nibina grant of Mahāśivagupta Yayāti (Plate No. CXVII, Serial No. 24) and Vakratentali charter of Mahābhavagupta I. All these varieties are also seen in the Bhañja records (Plate No. CXVII, Serial No. 25, 26). The same method is also adopted in nau, pau, and sau of the Bhubaneswar inscription of Anantavarman Choḍagaṅgadeva (Plate No. CXIX, Serial No. 29) while in the case of mau the top horizontal stroke is curled outwards (Plate No. CXIX, Serial No. 29). In the Asankhali plates of Narasimha II, Saka 1225 the top horizontal stroke is slightly upraised as in dhau and pau like the earlier Bhaumakara and Somavarmśins method.