

APPENDIX.

PALAEOGRAPHICAL REMARKS

ON THE

HORIUZI PALM-LEAF MSS.,

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PALAEOGRAPHICAL REMARKS ON THE HORIUZI PALM-LEAF MSS.

I.

PROFESSOR Max Müller's discovery of the Horiuzi palm-leaves and the acquisition of trustworthy facsimiles of these documents, which we owe to his sagacity and untiring energy, are events the importance of which for Indian palaeography cannot be estimated too highly. In the first place, the mere fact of their existence puts an end to the doubts and misgivings, entertained by some of the most distinguished Sanskritists, regarding the age of the palm-leaf MSS. found during the last ten years in Nepâl and in Western India. Owing to the curse of uncertainty which seems to attach to most historical and literary documents, purely Indian, the possibility, at least, of doubting the age of the palm-leaves, discovered in India, could hitherto not be denied, in spite of the dates which their colophons very frequently exhibit. The objection, raised by Professor A. Weber and Dr. Burnell, that the dates might have been copied from more ancient originals, and that in some cases the fresh look of the palm-leaves favoured such a supposition, was, though not unanswerable, yet sufficiently plausible to remove the manuscripts from the class of the *ὁμολογούμενα*, and to place them in that of the *ἀντιλεγόμενα*. It was, indeed, possible to answer, as has been ably done by Mr. C. Bendall in his palaeographical introduction to the Catalogue of the Cambridge Collection¹, that the climate of the places where the finds were made, the tradition and the circumstances of the country, the correctness of the historical and astronomical statements contained in the MSS., and the chain of palaeographical and monumental evidence made their genuineness exceedingly probable. But there was not a single one among them regarding which one could say that its age was guaranteed by trustworthy external evidence, and, therefore, absolutely unassailable. This is the point in which the Horiuzi palm-leaves, though undated, are so much superior to all similar documents, and through which they gain a paramount importance for

¹ Catalogue of Buddhist Sanskrit Manuscripts, p. xvii ff.

the palaeographer. In their case we can say with full confidence¹, 'We have good evidence, showing that these leaves were brought to Japan in 609 A.D., and that they came from China. It is further probable that in China they belonged to the monk Yashi, who died in 577 A.D., and before him to Bodhidharma, who emigrated from India to China in 520 A.D.' Leaving all probabilities aside, it is certain that this MS., which evidently has been written by an Indian scribe, cannot date later than the first half of the sixth century A.D. As it is thus proved that a palm-leaf MS. has lasted more than thirteen hundred years, and, in spite of its transmission from India to China, and from China to Japan, has remained in a very fair condition, and is for the greater part legible, it is no longer reasonable to entertain on general grounds misgivings regarding the age of the Nepālese Bauddha and the Western India Gaina MSS., the earliest of which are dated from three to five centuries later. The force of this argument becomes even stronger, if it is taken into consideration that the MSS., belonging to the last two classes, were mostly kept in or near the places where they were written, and frequently left untouched for centuries, as well as that the climate of Nepāl and of the dry plain of Western India is more favourable to the preservation of such documents than that of Japan.

Important as is the service thus rendered to us by the Horiuzi palm-leaves, they yield, on closer examination, still more valuable archaeological and palaeographical results. First, they show that the writing materials were exactly the same as those employed later by the Bauddhas and Gainas, and that the technical contrivances used by the writer, and his method in forming the letters, partly resemble those still in use among the Indian Lekhakas. Secondly, they prove that in the first half of the sixth century a perfectly developed literary or cursive alphabet was used in Central India, the characters of which are, with the exception of very few letters, identical with those of the most ancient palm-leaf MSS. from Nepāl, while they differ from those of the cognate contemporaneous inscriptions, found in the same parts of India. Where they do not agree with the latter, they mostly show more advanced or more strongly modified forms, which in their turn appear in the inscriptions about two hundred years later, i.e. in the eighth century. Hence it is evident that in this case, at least, we have to reject the

¹ See Professor Max Müller's Letter, printed in the Transactions of the Sixth International Congress of Orientalists at Leiden, pp. 124-128.

commonly received theory¹, according to which the modifications of the characters, used in inscriptions, present a faithful view of the history of the Indian alphabet, and in particular give an ocular demonstration of the gradual development of the literary alphabets. On the contrary it is plain that in this case the characters of the official documents lagged behind those employed for literary purposes, and that they were gradually modified through the influence of the latter. The lesson, taught us by the Horiuzi palm-leaves, fully agrees with the precisely similar conclusions, drawn by Professor Dowson, Dr. Burgess, myself, and others from the simultaneous occurrence of archaic and modern-looking letters on a number of copper-plate grants from Gugarāt², and a comparison of the current handwriting, used on the latter, with the characters of the palm-leaves makes it highly probable that, as early as the beginning of the sixth century, two somewhat differing literary alphabets existed in the northern half of India. These results, which might be further confirmed and expanded by a correct interpretation of certain passages from various ancient works enumerating the names of a great number of Indian alphabets, will force the Indian palaeographers to modify their method of investigation which hitherto was based exclusively on a comparison of the epigraphic alphabets, and henceforth to pay greater regard to those used for literary purposes. In order to make these various points clearer, it will be advisable to subject the Horiuzi MS. to a close and detailed examination, and to compare its letters with those of other old MSS., and of the allied inscriptions.

II.

According to the facsimile the Horiuzi palm-leaves measure each eleven inches and a half, while their breadth slightly differs. The second (B) is nearly two inches broad. The left half of the first (A) has the same size, but its right half gradually tapers off towards the end, where it measures only one inch and three quarters. The inequality is due to the peeling off of a strip at the lower end, which must have occurred when the leaf was trimmed and prepared for use, because the

¹ This theory is worked out fully, and with seeming success, in Dr. Burnell's Elements of South-Indian Palaeography, the standard work on Indian epigraphy.

² Journ. Roy. As. Soc., New Series, IV, 265-266; Ind. Ant., V, 113; XI, 305; XII, 151; XIII, 70; Arch. Rep. W. Ind., IV, 79.

writing in the seventh line stops exactly at the point where the leaf begins to become narrower. These dimensions agree very closely with those found frequently in the Nepālese and Gaina palm-leaf MSS., see Bendall, Catalogue, Nos. 1161, 1267, 1648, 1649, 1653, 1657-8, 1662, 1679, 1691, 1699, 1701-8; Kielhorn, Report for 1880-1, Nos. 1, 20, 30, 32, 50, 68, 73. Each leaf shows two small holes, placed three inches from either end, and almost exactly in the middle between the top and the bottom, as they divide the fourth line into three parts. As is known from the usage still prevailing in Southern India, and from the examples found in the ancient Nepālese and Gaina palm-leaf MSS., the holes were intended to pass a string which kept the leaves together. One side of each leaf is left blank. This circumstance shows that the two were intended to form a complete diminutive Pothî or manuscript. For according to the Indian custom, observable in ancient and modern MSS., the outer sides of the first and last leaves are not utilised, because the letters would be destroyed by the friction of the wooden boards or metal plates, between which the Pothis are usually placed.

The number of lines is on the first leaf six and a half, and on the second seven; the number of aksharas or syllables in each line varies between 47 (B.1.6) and 65 (A.1.6 and B.1.2). The lines are so straight and the distances between them have been kept so carefully, that one is led to suspect the writer having had some such contrivance as a wooden board with parallel strings tied across, which the modern copyists of Western India usually place under the thick country-paper in order to be able to keep the line. This circumstance as well as the regularity and neatness of the letters points to the conclusion that the writer was a skilled Lekhaka, while the numerous uncorrected clerical mistakes show that he was not a scholar. The whole style of the writing shows that it has been done with a hard-nibbed pen, possibly a reed-pen, but not with a brush. The same conclusion may be drawn from the appearance of the half-effaced letters, and the look of the latter makes it further very probable that the ink was of the same quality as that used by the Gaina writers for their ancient palm-leaf MSS. When copying the ancient MS. of the Vikramānkaṭarita at Gesalmîr, I found several passages where, though the ink had been rubbed off, the outlines of the letters were yet recognisable with the help of a magnifying glass¹. It also

¹ Vikramānkaṭarita, Introduction, p. 45. If after the ink has been rubbed off, the

happened several times that on my touching a leaf incautiously the ink of one or several letters came off in a cake or dissolved into a fine black powder, leaving the outlines of the aksharas still faintly visible. A great many letters on the Horiuzi leaves present exactly the same appearance as the half-effaced characters of the Gesalmîr MS., while the space between them looks as if it had been blackened by the dust or powder of the rubbed-off ink. It is worthy of note that, if the various copies of the original on plates ii-iv are to be trusted¹, the MS. must have suffered greatly during the last few years. For a number of letters, which the copies give, are illegible on the photograph or have quite disappeared.

In turning to the consideration of the letters, it will be advisable to begin with a remark on a statement, made by Ziogon, which seems to reveal their ancient name. He says in the third 'Additional Note,' above, p. 16, 'Among the Mo-ta (Mâtra or vowels²) the Fourteen Sounds³ (of Siddha), the four letters of *ri*, etc. (*rt*, *li*, *ll*) are added. It shows that these are the Brahma letters of Central India.'

outlines of the letters remain visible, that is the most certain sign that the MS. has been written with a pen. For that can only happen when small portions of the fluid are forced by pressure into the surface of the leaves.

¹ It was because I did not quite trust these copies that I waited before publishing them till I had received a photograph. My impression is that the copies depended more or less on Ziogon's copy or on old wood-blocks preserved in the monasteries. Ziogon, who lived two hundred years ago, could evidently read many letters which we can only guess at. The wear and tear of the palm-leaves need not therefore be ascribed to the last few years.—F.M.M.

² Mota, I think, ought to be rendered in Sanskrit not by Mâtrâ, but by Mâtrikâ, 'matrix.' For initial vowels cannot be called Mâtrâ, which either means aksharâvayava 'mora,' or denotes the e-stroke. Mâtrikâ, on the other hand, is the technical name of the varṇasamâmnâya or the whole alphabet, as taught in the indigenous schools (lekharâlâs or pâtharâlâs) of India, and also of each individual sign (matrîkâkshara) or spoken syllable (mâtrîkâpada), occurring in this alphabet. The former meaning of mâtrîkâ is given by Hemakandra, see the Petersburg Dictionary, sub voce, where, owing to a misprint in the Calcutta edition of the Anekârthakosha, a second erroneous meaning, svara, 'vowel,' has been added (Zachariae, Lexicographische Beiträge, p. 85, correction of H. an. III, 81). The second meaning occurs in the introductory verse of the Mâtrîkâkosha, published in Phateh-Nârāyaṇasimha's Twelve Koshas, Benares, Saka, 1787. It is also given in Molesworth's Marâtî Dictionary.

³ This curious expression, which Ziogon uses also, p. 14, in his description of the contents of the leaves, refers, I think, to a division of the letters into fourteen groups of sounds identical with or similar to that which we find in the fourteen Mâhervara Sûtras of Pāṇini.

The name Brahma letters, i.e. brahmākṣharāṇi or brāhmī lipi which Ziogon thus assigns to the characters of the Horiuzi palm-leaves, has a double meaning. It may denote all Indian writing, because according to an ancient myth the invention of the alphabet is ascribed to Brahman, the creator. This story is explicitly mentioned by Hiouen Tshang, *Mémoires*, I, p. 71, and in the fragments of the *Bṛihaspati Smṛiti*¹. Its existence is also implied by Al-Bêrûnî's remark that the invention of the Indian alphabet was 'une révélation du ciel'², as well as by the customary representation of Brahman in pictures and sculptures where he holds an inscribed leaf or book in one of his hands³. But the term brāhmī lipi has also a more restricted meaning, and denotes a particular Indian alphabet in the well-known passage of the *Lalita-vistara*, p. 143 (Calcutta edition)⁴. Both these significations are apparent in the interesting passages from the *Gaṇa Āgamas*, quoted and discussed by Professor Weber, *Indische Studien*, XVI, pp. 280, 399-401, where it is said that the bambhī livi (brāhmī lipi) has eighteen varieties, the first of which is again called bambhī. If Ziogon took his expression in this restricted sense, and if the tradition on which he based his assertion is trustworthy, it may be that he teaches us the precise meaning of an ancient term which hitherto was no more than an empty name.

The palaeographical character of the alphabet of the Horiuzi palm-leaves is determined chiefly by the following general principles, visible in the formation of the letters: 1. the separation of the aksharas from each other; 2. a predilection for the use of small wedges, the so-called nail-heads; 3. the substitution of flat tops for the angular or round ones of the old alphabets; 4. the development of right-hand verticals, projecting beyond the body of the letters; 5. the retention of open tops wherever they existed in the old letters.

The separation of the aksharas was, I think, carried through in all cases, though some letters, e.g. of A. l. 6, look on the photograph as if they were connected. But it seems to me that this appearance is merely due to the conversion of the ink-crust into a fine powder which stained the surrounding parts of the leaf. The custom of keeping the aksharas

¹ Führer, Darstellung der Lehre von den Schriften bei *Bṛihaspati*, vs. 2.

² Reinaud, *Mémoire*, p. 297.

³ See e.g. Moore, *Hindu Pantheon*, plate i, where however an incorrect explanation of the attribute is given in the text.

⁴ See also Foucaux's French translation of the Tibetan text, p. 122.

separate in small blocks prevails in all the ancient inscriptions and in the oldest palm-leaf MSS.¹ It may also be noticed in many later, even Devanāgarī paper MSS., where the writers have not been over-anxious to save space, or have not cared to prolong the horizontal top-strokes beyond the edges of the letters.

The wedges, which perhaps are the most characteristic point in this alphabet, are employed in various ways. They are placed at the top of the down-stroke or, if the letter has several down-strokes, at the top of the left-hand one. In this manner they are used in forty-one, or, if the copies on plates ii-iv, which alone give the letter *lla* *m*², may be trusted, in forty-two, out of the fifty-one characters of the alphabet. Another use to which the wedges are put, is to mark the end of horizontal strokes, as in the letters *na*, *ga*, and *ta*, or the lower end of down-strokes as in *kha*, *ga* (left-hand limbs), *g^hha*, and *ra*. Finally they serve as substitutes for curved or broken lines in the left-hand limbs of *bha* and *sa*. In the two latter cases, the top of the wedge is turned sideways or downwards. It is evident that the primary object of their employment at the top of down-strokes was to clearly define the end, to make the letters regular, and to mark the line. Various expedients have been tried by the ancient Hindus in order to effect these purposes. The oldest and simplest, which probably is the parent of the rest, consists in the addition of a small horizontal line, the so-called serif, to the top of the down-strokes, mostly the left-hand ones. It appears first, though rather irregularly, in many of the Andhra and Kshatrapa inscriptions of the Western caves, and becomes more constant on the copper-plates of the Guptas, the kings of Valabhī, those of Veṅgī, the Pallavas, Kalukyas, and so forth³. On the plates, especially those from the South, the line is sometimes slightly curved like a diminutive crescent, whence the angle at the top of the Kanarese and Telugu characters seems to be derived. By an extension of the serif to either side the characteristic top-line of the Nāgarī alphabets

¹ Bendall, Catalogue, p. xliii.

² As the exact shape of this letter seems to me doubtful, I shall not take it into consideration in the sequel. From its position I infer that it is meant for the Vedic *la*, which in many indigenous Indian tables of the alphabet is placed between *ha* and *ksha*.

³ In illustration of these and the following remarks, Burgess, Indian Alphabets, Arch. Rep. W. I. vol. iv, plate v, and the plates in Burnell, Elements of South-Indian Palaeography, may be compared.

is obtained. Another modification of the serif is the small square, either hollow or filled in, which is found in the Vākātaka inscriptions, and in Kandrāgupta's Udayagiri inscription of Samvat 82¹. The wedge, too, seems to be a descendant of the serif, and due to its artistic combination with the down-strokes. It occurs first in the Gupta inscriptions of the Kuhāon type, and is found in a very great number of later epigraphic documents from all parts of India, either by itself or in association with prolonged horizontal lines which close the tops of the letters. The latter process has given rise to the Kuṣṭha writing. A transformation of the wedge is the hollow triangle which occurs sporadically in many inscriptions, otherwise characterised by wedges².

The substitution of flat tops for angular round ones, which appears in the letters e, kha, ga, ṭa, tha, dha, and sa, is without doubt like the use of the wedges, due to the desire to make the characters more regular, and, above all, to mark the line. Sporadic instances of the operation of this principle occur in the Gupta inscriptions of the Kuhāon type and other documents of the same period.

The right-hand verticals projecting beyond the body of the letters are found in the letters kha, ga, gha, ṭa, ta, tha, dha, pa, ba, ma, ya, la, va, sa, sha, and sa, and occasionally in na. Sometimes there is instead of the vertical a slightly curved line, the ends of which incline towards the right. These peculiar down-strokes are either extensions of the old short ones, or substitutes for lines, curving to the right (e.g. in ta, tha). They probably owe their origin to the practice, still generally prevalent among Indian Lekhakas, of beginning the letters on the left side, next making the right-hand stroke, and finally adding the connecting links between the two³. With this method it was natural to allow a free sweep to the pen in forming the right-hand down-stroke, and to make it somewhat longer than the left-hand portion. When the connecting link was made, the down-stroke of course protruded beyond the body of the letter⁴. Though the origin

¹ Cunningham, Reports, IX, plate xix. 2.

² See e.g. No. 8 of Dr. Bhagvānlāl's Nepāl Series, Ind. Ant. IX, 171.

³ See my remarks on this subject in my Leitfaden für den Sanskrit Elementar-cursus, Note zur Schrifttafel. I may add that in the case of complicated signs like kha, the process of formation is as follows : 1. ॠ, 2. ॡ, 3. ॢ, 4. ॣ.

⁴ Sometimes the side-stroke protrudes in flat-topped letters also beyond the top-line, and through an artistic treatment of the upper prolongation of the vertices arise the

of this characteristic seems thus merely due to an accident, it has effected a very important transformation in the shape of the letters. It makes them look as if the right-hand stroke was not an integral portion of the letter, but merely a support on which the real letter leans. Looking at the formation of the compound letters in the modern Devanāgarī, where the right-hand vertical is so frequently omitted, it seems to me not doubtful that the Lekhakas, who first framed groups like ॡ, ॢ, ॣ, really considered the verticals to be unessential. Though the alphabet of the Horiuzi palm-leaves is a long way behind the development which the modern Devanāgarī has reached, it yet shows clearly how that was produced.

While the last-mentioned three peculiarities are innovations, produced by the same tendencies which operated in the formation of the modern Devanāgarī, the retention of the open tops in those letters where the old alphabets have them, is an archaic feature.

Besides these general principles, there are several minor characteristic points, which can only be brought out fully by a separate consideration of each letter. In turning to this task, it will be advisable to combine with it the not less important comparison of the cognate alphabets, used in manuscripts and inscriptions. The number of documents which by their characters are more or less closely allied to the Horiuzi palm-leaves is so great, that it is necessary to make a selection among them, and to take into consideration only a few typical ones to which dates can be assigned with some certainty. Among the literary alphabets the most useful are (1) that preserved in the oldest Nepālese MSS., Nos. 1049 and 1702 of the Cambridge Collection (Bendall, Catalogue, plate i), the former of which, according to Mr. Bendall's very probable conjecture, dates from the year 252 of the Śrīharsha era, or 858-9 A.D. (2) The Sāradā alphabet of Kasmīr, which, according to the evidence of the coins, has certainly been in use since the times of Avantivarman or the middle of the ninth century A.D. Among the epigraphic alphabets the most serviceable are (1) the Gupta alphabet of the Kuhāon pillar¹, and for some letters that of the Indokhera copper-plate², dated respectively in Guptasamvat 141 and 146, and probably

little horns or projections at the side of ga, sa, etc., on the Morbi plate and other inscriptions with ornamental characters.

¹ Indian Antiquary, X, 125.

² Journ. Beng. Br. Roy. As. Soc. XLIII, 364.

belonging to the first half of the fourth century A.D.¹ (2) The Nepālese alphabets of Dr. Bhagvānlāl's series of inscriptions, which are dated in two different eras, Nos. 1-4, *Samvat* 386-535, and Nos. 6-15, *Samvat* 34-153, and probably range between the middle of the fourth and the middle of the eighth centuries A.D.² (3) That of the *Ghālrapāthan* inscription, dated in the year 746 of an unnamed era, and hence in no case earlier than 689-90 A.D., but possibly later³. (4) The closely-allied alphabets of the *Sāmangadh* plates of Dantidurga, dated *Sakasamvat* 675 or 753-54 A.D.⁴, and of the signatures of Dadda Prasāntarāga, on the Gurgara plates, *Sakasamvat* 380-415 or 458-493 A.D.⁵, which exhibit the oldest known form of the Devanāgarī alphabet.

¹ I consider the traditional date of the beginning of the Gupta era, 319 A.D., to be impossible for these inscriptions. Sir E. C. Bayley's calculations, which on the basis of the dates of the Kabul coins, fix it in 190 A.D., seem to me most probable.

² Indian Antiquary, IX, 163 seqq. The beginning of the era used in the first four may be calculated approximately with the help of the *Likkhavi vamsāvali*, given in No. 15. It falls shortly before the beginning of the Christian era. The details of the calculation will be published in the 'Considerations on the Chronology of Nepāl,' now being printed in the Indian Antiquary. The reasons why the dates of Nos. 6-15 must be referred to the Sriharsha era have been given by Mr. Bendall, Catalogue, p. xli.

³ Indian Antiquary, V, 180. The *Ghālrapāthan* inscription furnishes a good example of an archaic type, closely allied to the alphabet of the Horiuzi palm-leaves, from Western India. Other examples of the same type are found on the seal of Sarva-varman, the Maukhari (Journ. Roy. As. Soc. III, p. 377), on the Buddhist clay seals from Valabhi, Kanheri (Journ. Bomb. Br. Roy. As. Soc. VI, plates vii^a-vii^d), and Java (Burnell, Elements, plate xxii), on the Kāmavana inscription (Ind. Antiquary, X, 34), on the Morbi plate, dated Gupta (Gupta)-*samvat* 585 (Ind. Antiquary, II, 258), on the Deogarh pillar, dated (Vikrama)-*samvat* 919 and *Sakasamvat* 784 (Cunningham, Reports, X, plate xxiii), on the Seven Pagodas (Burnell, Elem. plate xxii), and on a number of unpublished photographs and facsimiles, among which the *Dasavatāra* fragment of the *Rāshtrakūṭas* (transcript published, Burgess, Arch. Rep. W. I. vol. v, 87-89) may be specially mentioned. All these documents show, in spite of numerous small divergencies, a family likeness, and agree in principle with the alphabet of our palm-leaves. There is not a single one among them which can be referred with certainty to an earlier period than the eighth century A.D.

⁴ Indian Antiquary, XI, 108.

⁵ Umetā plates, Indian Antiquary, VII, 61; Kaira plates, Journ. Roy. As. Soc. N. S. IV, p. 248, plates ii and iii. Though Dr. Bhagvānlāl (Indian Antiquary, XIII, 71 seqq.) has expressed strong doubts with respect to the genuineness of the Umetā and Ilāo plates, and has referred the dates of the Kaira plates to the seventh century, I have no hesitation in saying that his suspicions against the former are unfounded. My chief argument is that another unpublished grant of king Dadda Prasāntarāga exists, which

In order to facilitate reference, the annexed plate vi gives a tabular view of the most important among these alphabets, as well as of that of the Horiuzi palm-leaves. The characters have been taken from the published facsimiles referred to in the preceding notes. Only for the Sāradā alphabet, tracings of the unpublished MS. of the Sākuntala nātaka (Deccan College Coll. of 1876-1877, No. 192) have been used, and for a few letters of column viii, impressions from the original Bagumrā plates. The compiler of the table is Dr. Pfurtscheller, of Vienna. I now proceed to a detailed and comparative examination of the characters of the Horiuzi palm-leaves.

III.

A. INITIAL VOWELS.

a differs from Gu.¹ and the older alphabets, by the curve open to the left in the lower portion of the left half of the letter, and by the shortening of the right-hand vertical. The former peculiarity is characteristic of all the literary alphabets of Northern India. Identical with H. P. are Ne. MSS. 1049 and 1702, Sā., the modern Devanāgarī of Western India, Ne. I. Nos. 13-15, while Nos. 1-9, 12 agree with Gu., and No. 11 has a transitional form, similar to *Ghā*. Sā. agrees, too, but has, in addition, a closed top.

ā is formed like a with the addition of the mark of the long vowel, for which both a curve at the lower end of the right-hand vertical and the usual ā-stroke to the right of the top are used. The first form occurs in Ne. MS. 1049 and Ne. I. No. 15 (No. 1 showing the old a

is dated in *Sakasamvat* 415, and mentions an eclipse of the sun which really happened on the day named. This grant, the Bagumrā plates, will be shortly published in the Transactions of the Vienna Academy, together with a discussion of the whole Gurgara question. I will add, already here, that in consequence of Dr. Bhagvānlāl's discovery of a longer series of Gurgara kings, I no longer refer the date of the Kāvi plate of Gayabhaṭa (Indian Antiq. V, 103) to the Vikrama era. I admit that Mr. Fleet's and General Cunningham's calculations, which make the date *Sam.* 486 equal to 736 A.D., are probably correct.

¹ In the sequel the following abbreviations will be used: Gu. = Gupta; Gu. Ind. = Gupta of the Indokhera plates; Gu. Ku. = Gupta of Kuhaon; H. P. = Horiuzi palm-leaves; *Ghā*. = *Ghālrapāthan* inscription; Ne. I. = Nepālese inscriptions of Dr. Bhagvānlāl's series; Ne. MSS. = Nepālese MSS.; Sā = Sāradā alphabet; Sā. = Dantidurga's *Sāmangadh* plates; U. B. = signatures on the Umetā and Bagumrā plates. Figures in brackets without any addition refer to the columns on the accompanying table.

with the curve below). The second is found in Ne. MS. 1702. The curve at the bottom is used as a sign of the length, in many ancient and modern alphabets from various parts of India, compare e.g. the Veṅḡ, Vatteluṭu, the modern Grantha, Tamil, and Tulu (Burnell, Elem. plates i, xv–xviii). It is almost a principle in Indian palaeography, that the place where a stroke, denoting length, may be attached to the akshara, is immaterial, and that the choice of its form, whether straight, curved, or round, depends entirely on convenience.

i differs from the ancient forms by the arrangement of the dots or circles in a triangle, the base of which is turned upwards, and the apex downwards, as well as by the addition of a small curve to the lower dot. This arrangement of the dots is, no doubt, due to the desire to mark or to keep the line. The immediate precursor of the H. P. form is that of Gu. Ind. Gu. Ku. shows a slightly different arrangement of the dots and wedge instead of the right-hand upper dot. This form occurs throughout in Ne. I. Nos. 1–12, while Nos. 13–15 have the character of H. P., which appears also in *Ghā.*, *Sā.*, *Sā.*, Ne. MSS., and many other Northern alphabets. It continues sporadically in the Gaina Devanāgarī, as late as the fifteenth century.

î is characterised by the arrangement of the four dots which form a rhombus instead of a square (Andhra, Nânāghāt, Burgess, Ind. Alph. 5), and by the curve of the lower dot. The form of H. P. occurs on the Morbī plate in the name Gāikadeva. Ne. MS. 1049 differs slightly, as the dot above the line has a very minute tail. *Sā.* differs, its form, which consists of a straight line and two dots, being derived from that used on the Gurgara plates (Kaira) j̄.

u is again a test-letter, and characterised by the curve to the left into which the right-hand horizontal stroke of the old Maurya and Andhra letter has been converted. Gu. shows still a curve to the right, and so do Ne. I. Nos. 1–12. But Ne. I. 13–15, Ne. MSS., *Sā.*, *Ghā.*, *Sā.*, as well as all the Northern literary alphabets, agree with H. P. either fully or very closely.

û differs from the short vowel by a straight slanting stroke, issuing from the right side of the wedge, and has thus a slightly more archaic appearance than the closely allied forms of Ne. MS. 1049, *Sā.*, and the other modern literary alphabets, where the long vowel is marked by a curve attached in various ways.

ri seems to be the parent of the modern Devanāgarī forms, comes nearest to that used by the Marāṭhās, and is allied to the Nandināgarī form Ṛ (left out by Burnell). A comparison of the forms preserved in Ne. MS. 1049 and *Sā.*, leads me to suspect that the letter has in all cases been formed out of ra by the addition of a curve turned to the right, which serves to denote the medial *ri* in the Gupta and later alphabets. The differences in the form are caused partly by the adoption of various forms of ra as matrix or basis, and partly by the difference in the manner in which the curve is attached. In the H. P. sign, the basis is the left-hand part, a ra consisting of a vertical with a small horizontal line attached to the middle, on the left side, the curve denoting the medial *ri* has been expanded and placed to the right of the matrix, the connexion being formed by a horizontal bar. In the letter of Ne. MS. 1049 the matrix is a ra, consisting of a short vertical with a knob-like projection on the left, and the curve has been attached to the latter. In the *Sā.* form, the ra chosen as the matrix is the straight down-stroke, and the curve has been added to its lower end.

ri consists of the same elements and the mark of the long vowel, which in H. P. consists of a curve, in Ne. MS. 1049 of a slanting straight stroke, and in *Sā.* of a loop, all being attached on the right side, though at different elevations.

l and l̄ find their counterparts only in Ne. MS. 1049. The sign for l̄, given in the latter, seems to be that of H. P., only turned the other way, and the large curve, which in the l̄ of Ne. MS. is interlaced with the sign for the short vowel, represents the small slanting stroke which denotes the long vowel in H. P. Both the signs for the short vowel seem to be modifications of the cursive la, known from the Gurgara plates of the fifth century, and the Valabhī grants of Śīlāditya I, and his successors (Burgess, Ind. Alphabets, 29).

e shows the old triangle, but with the base turned upwards, and the apex downwards. This inverted form occurs already in the Mathurā Inscr. No. 20 (Cunningham, Reports, III, plate xv), the era of which is in my opinion not that of Kanishka, but the Gupta. In the Gupta inscriptions, both this and the older form, with the apex to the left or the right, are used, and the same vacillation is observable in the Ne. I., where Nos. 9 (l. 12) and 13–15 have the flat-topped form, while No. 10, l. 2, and No. 12, l. 15 exhibit the old one. The H. P. form occurs also

in *Ghâ.*, *Sâ.*, Ne. MS. 1049, and is the parent of all the varieties of the letter which are used in the *Sâ.*, Devanâgarî, and other alphabets.

o consists of an u with a *prishthamâtrâ*, and consequently is formed on the same principle as the old Maurya and Andhra o (Burgess, Ind. Alph. 1 and 16). Ne. MS. 1049 agrees almost exactly. *Sâ.* comes also very close, but substitutes another form of the *prishthamâtrâ*, while the Gaina Devanâgarî marks the latter by a straight stroke above the top ॐ and the Brâhmanical Devanâgarî in the word Om by a curve ॐ. As far as I can judge the word Om, which precedes in the H. P. the *Sûtra*, the *Dhârânî*, and the table of letters, did not differ from the letter, given in plate vi. Plates ii-iv give, however, a somewhat different sign, which occasionally occurs at the beginning of inscriptions. Ziogon (above, p. 16) mistakes it for a variety of ॐ i.

au is interesting by the manner in which a distinctive mark, in reality an â-stroke, is attached on the right side. Ne. MS. 1049, *Sâ.*, and the Western Gaina Devanâgarî agree very closely with H. P.

B. SINGLE CONSONANTS.

ka retains its ancient cross or dagger-shape in combination with virâma (i, 65), and in the groups kta (i, 66), ksha (i, 67), and kya (?). In all other cases it shows to the left of the central down-stroke a heart-shaped figure, and to the right a downward prolongation of the crossbar ending in a slight twist to the right. The latter form occurs in Ne. I. 12 (once l. 23), 13-15, Ne. MS. 1049, and *Sâ.* It is clearly the parent of the forms used in *Sâ.*, the modern Devanâgarî, and other literary alphabets of Northern India. In Ne. I. 13-15 and *Sâ.* the older form is used too, and the rule, regulating its use, seems to be that it is retained, whenever a vowel or consonant is placed under ka. Thus we find it in ku, *kri*, kta, ksha, and kya, but not in ki, ko, etc. It is evident that the occasional retention of the crossbar in compound letters in the Devanâgarî¹, *Sâradâ*, and other literary alphabets is a remnant of this usage. *Ghâ.* and Ne. I. 3-12 show throughout the old dagger-shape, but have at the end of the vertical in the middle a small upward stroke turned to the left. It seems probable that the heart-shaped figure arose from the prolongation of this little stroke to the end of the cross-

¹ The Devanâgarî MSS., even of the sixteenth century, still use the dagger-shape in accordance with the rule of Ne. I. and *Sâ.*

bar¹. A similar development may be observed in the *Vākātaka* and *Kalukya* forms of ka (Burgess, Ind. Alphabets, 22 and 23, 30 and 31). Gu. and Ne. I. 1 have the old dagger-shape, without the up-stroke at the end of the vertical, but, as also the older Mathurâ inscriptions, with the ends of the crossbar bent downwards.

kha is characterised by its flat top and angular shape, the position of the loop on the left side of the right-hand down-stroke, and the prolongation of the latter beyond the loop. In Gu. and the older alphabets, the top is invariably round, and the loop attached to the right side of the right-hand down-stroke. In Ne. I. No. 1, ii, l. 11 has the round top, but the loop on the left side of the right-hand down-stroke, Nos. 7-15 show exactly the form of H. P., which appears with small variations at the end of the left-hand limb, of the size of the loop, in Ne. MS. 1049, *Sâ.*, *Ghâ.*, and *Sâ.*

ga differs from Gu. and many of the older alphabets by the flat top, the slight bend of the middle of the left limb towards the right, and a wedge marking the end of the latter. Ne. I. Nos. 1 and 3 vacillate between the round and flat tops, and with respect to the left limb, which is either straight or bent, and ends in a wedge or a triangle. The later ones show the flat top invariably, but vary with respect to the bend in the left limb. Ne. MS. 1049, *Sâ.*, *Ghâ.* agree with H. P. almost exactly; *Sâ.* and U. B. show, instead of a wedge at the end of the left limb, a triangle, which is an ornamental development of the former.

gha is characterised by the division of the lower horizontal line, on which in Gu. and older forms the three verticals rest, into two small curves, and by the prolongation of the third vertical beyond the body of the letter. Among the Ne. I. No. 1, ii, l. 5 shows the form of Gu., No. 13, l. 29 seems to agree with H. P., while No. 15 slightly differs by the pointed angle which the third vertical forms with the horizontal stroke. This last form appears in Ne. MS. 1049 and *Ghâ.*, while the shape presented by *Sâ.* comes nearer to H. P. *Sâ.* differs from H. P. only by the closed top.

ña looks, owing to the curve in the down-stroke, almost like *ta*. In this respect it resembles the form of *Sâ.* alone, the other alphabets all

¹ This theory explains the rule according to which the dagger-shape is retained, if a vowel or consonant is attached to the lower end of ka.

preserving the old angular shape. Its other peculiarity, the wedge at the end of the upper horizontal, is found in Ne. I. 3-15 (Nos. 1-2 only showing the straight stroke of Gu. and the older alphabets), in Ne. MS. 1049, and in Sâ. The use of this letter in *manoṣi* (H. P. A. I. 5), instead of the anusvâra, finds numerous analogies in inscriptions from various parts of India, where *ṇa* commonly stands before *sa*, *sa*, and *ha*. The fact probably finds its explanation by the peculiar pronunciation of the anusvâra before these three letters, where it very frequently has a guttural sound, resembling *gṇ*.

ka differs from the Gu. and older forms by its triangular form, and the prolongation of the right-hand down-stroke. The former peculiarity is constant in Ne. I. 10-15 (No. 1 showing the half-moon of Gu., and Nos. 3-9 wavering between the crescent and a triangle), as well as in *Ghâ*. But the prolonged down-stroke is found only in Ne. MS. 1049 and Sâ. The form of Sâ. is probably a modification of the triangle, the left-hand side of which has been attached to the left end of the top-line.

kha differs from the usual form by the opening in the left-hand circle. The same peculiarity occurs in Ne. MS. 1049 and Sâ.

ga differs from Gu. and the older forms by the wedge at the end of the first horizontal bar, by the slanting direction of the second horizontal, and by the curves given to the third horizontal as well as to the down-stroke on the left. The same peculiarities appear with slight modifications in Ne. MS. 1049 and *Ghâ*. Among the Ne. I. the slant in the second horizontal and the curve in the third appear already in No. 1, the wedge and the curve in the down-stroke are first clearly observable in No. 4, though the latter is not constant. The form of Sâ. is a further development, tending towards the final result, the conversion of the first horizontal into a top-line, of the second bar into a vertical, and of the third into a double twist on the left, which is reached in the modern Devanâgarî. In Sâ. the letter is turned round, the old vertical being made a horizontal line, and the three horizontals turned into verticals¹.

gha differs from the old Maurya and Andhra form merely by the wedges marking the ends of the strokes, and is identical with that of

¹ The H. P. form occurs, however, in ancient Sârâdâ MSS. of the fourteenth and fifteenth centuries.



Ne. MS. 1049. Sâ. presents a further development, the hook on the right being detached from the vertical and hung on the top bar. The modern Devanâgarî forms of the letter partly go back to the H. P. form, and partly to the Gaina *ṛ*, with the hook turned downwards.

ṇa shows two forms, the independent and that used in connexion with *ga* (i, 52). The former differs from the independent form of the older inscriptions and from Gu. mainly by the shape of the hook on the left, which turns its opening upwards instead of downwards. The only analogy is furnished by the compound letter of Gu. (iv. a, 52), and it is probably the parent of the modern Devanâgarî *ṛ*, where the whole letter has, however, been turned round. The compound form (i, 52) finds its explanation through the independent form of Ne. MS. 1049 (ii, 26), where the three elements of the ancient form have been converted into three curves of varying size, the uppermost representing the horizontal stroke at the top, the middlemost the vertical, and the third the hook originally attached to the right. The compound form of H. P. (i, 52) consists of the same elements, but has been made more regular, and placed horizontally under the *ga* in order to make it possible to preserve the distances between the lines. The proof for this assertion is furnished by Ne. I. Nos. 1-2, where the H. P. letter occurs in an upright position (see e. g. No. 1, iii, ll. 8, 12, 15), side by side with the older form (No. 1, ii, l. 3). Ne. I. Nos. 3-15 and Sâ. agree with H. P. In *Ghâ*. (v, 26, 52) we have a curious shape exactly agreeing with *ṇa*. I think it, however, unlikely that the writer has made a mistake. It is more probable that the likeness has been produced accidentally by the same process of turning the letter sideways, and that the curve on the left stands for the top-stroke of the old letter, the horizontal for its vertical, and the curve on the right for the hook.

ṭa differs from the Gu. and older forms by the wedge placed above the old half-circle and the addition of a small line to the left, which again ends in a wedge. Among the Ne. I. No. 1, iii, l. 16 wavers between the older form and that with the line attached to the top. Nos. 3-15, as well as the other alphabets of table vi, fully agree with H. P.

tha, *da*, and *dha*, which show very slight changes, require no special remarks. All the varieties occurring in table vi are identical with or go back to the angular Maurya form (Burgess, Ind. Alph. 1).

na again shows two forms, the independent (i, 31) and the subscribed

compound one (i, 54). The former agrees fully with Ne. MS. 1049 and Ne. I. No. 13 (ll. 14, 18, etc.), while the second comes close to the independent *na* of *Sâ.* and *Sâ.*, and to one variety of the subscribed *na* in Ne. I. 15 (vi, 73). It seems to me that the subscribed *na* of H. P. and its allies is merely a contracted or compressed form of the independent *na*. As regards the origin of the latter and of the cognate letters of Gu. Ind. (iv, l. 31) in *Ghâ.*, in Ne. I. No. 15, with which Ne. I. 2 and 4-12 agree, and of Gu. Ku. (iv, a, 31), found also in Ne. I. 1 and 3, it is necessary to begin with the corresponding Maurya letter. For the usual *na* of the Asoka inscriptions I, the Girnâr rock gives in one place (ed. ix, l. 8, *imina*)  *T*, with the substitution of two small curves for the top bar. From the latter arises the looped form , so common in the Western inscriptions (Burgess, Ind. Alph. 18, 19, 22-27, 28, 32), which in its turn produces that of Gu. Ku. and of Ne. I. Nos. 1, 3, by the separation of the right-hand curve from the top and its being attached to the right end of the horizontal bar below. The forms of Gu. Ind. and of the majority of the Ne. I. show the same change in the position of the left-hand hook, and besides, omit the loop on the left. The letter, found in *Ghâ.*, H. P., Ne. I. No. 13, and Ne. MSS., finally is a modification of the last-mentioned form, characterised by the conversion of the right-hand curve into an angular figure with the wedge, and in the last three cases by the addition of a small stroke protruding below beyond the body of the letter.

ta, which fully agrees with Ne. MS. 1049, is characterised by the conversion of the right-hand curved stroke, found in Gu. and in most of the older as well as later alphabets, into a vertical stroke and the shortness of the stout left limb, which is attached very high. An examination of the Ne. I. shows that the form of H. P. occurs occasionally in all of them, even in No. 1 (e.g. *karitam*, iii, l. 18, and *gaditai*, iii, l. 20). In Ne. I. No. 3 it is used in the majority of cases, while it occurs less frequently in the later ones. The form of U. B. resembles exactly a modern Devanâgarî *ta* turned round.

tha, with its notched left side, the vertical stroke on the right, protruding beyond the body of the letter, and the flat top, has a very modern appearance. Nearest to it comes *Sâ.*, with which Ne. I. Nos. 4, 6-7, 10 closely agree, the only difference being the want of the tail. Gu. and Ne. I. No. 1 show an ellipse with a bar across the middle, a modifi-

cation of the ancient circle with the dot in the centre¹. Ne. I. Nos. 2-3 have the same sign as Gu., but with a flat top. Ne. I. Nos. 11, 13-15, Ne. MSS., and *Ghâ.* show further modifications, in which a vertical is substituted for the right side of the ellipse. The form of *Sâ.* is based on the same principle.

da offers nothing peculiar except the little stroke at the right end of the curve, which appears in all the alphabets of our table except in Gu. In the Ne. I. it appears first in No. 4.

dha differs from the Gu. and older forms merely by the narrowing towards the lower end and by the prolongation of the vertical stroke. The Gu. form occurs in Ne. I. Nos. 1, 5, 6; one precisely similar, but with a notch in the left side, in Nos. 7, 9, 10, 11, and once in No. 12; the *Ghâ.* form in Nos. 12, 14, 15; and the exact H. P. form in No. 13.

na differs from the Gu. and older forms by the filling in of the interior of the loop and by the straightening of the right-hand down-stroke. In many cases (e.g. i, 50) the *na* of H. P. resembles the modern Devanâgarî with the left-hand limb placed rather high. The majority of the alphabets of table vi show the old looped form, but *Ghâ.*, Ne. I. Nos. 14-15 (see vi, 50), and Ne. MS. 1049 agree exactly with the two varieties in H. P. The form of the Indokhera plate (iv, b, 36) proves that the loop was not exclusively used in the fourth century.

pa is characterised by the curve on the left and the length of the vertical stroke on the right which protrudes beyond the body of the letter. In Gu. and the more ancient alphabets, with the sole exception of the Maurya, the letter is angular and usually square, with an open top. Sometimes, however, the stroke between the two verticals slopes downwards towards the right and thus forms at its junction with the down-stroke an acute angle. A further modification, visible in *Ghâ.*, consists in the introduction of a curve on the left, while the acute angle on the right remains. This proceeding necessitates a break, marked by a little notch, in the bottom line. Among the Ne. I. we find the form of Gu. in Nos. 1-2, 4, 5, 8, 12; that of *Ghâ.* with the notch in Nos. 3, 4 (once), 6, 7, 9, 11; and the H. P. form once in No. 12, constant in No. 13, and nearly constant in Nos. 14-15. Ne. MS. 1049, *Sâ.*, *Sâ.*, and U. B. (viii, 70) agree more or less exactly with H. P.

¹ This form survives later in the group *stha*, where the *tha* is, however, turned sideways, and has given rise to the curious Devanâgarî *stha*, which looks like *s + kâ.*

pha agrees in principle with the Gu. form, in which, as also in Ne. MS. 1049 and Sâ., a loop, marking the aspirate, is attached to the right of the pa instead of on the inside. It differs from Gu. only thereby, that instead of a loop the older open curve (see Burgess, Ind. Alph. 1, 13, 16, 18, 21, 28-32) has been retained. In the Ne. I. a similar form appears, probably in No. 11 and distinctly in No. 12, l. 23, while Nos. 13 and 15 show a loop on the inside of the pa. The curious form of Sâ., which frequently recurs in later inscriptions from Western India, is caused by the closing of the top of the pa, and is the parent of the modern Devanâgarî ष, where the loop has changed its position.

ba is represented by va, as is also frequently done in inscriptions, e. g. in Sâ. and *Ghâ.* (?)

bha is characterised by the shortness and wedge-shape of the left limb and the strong curve at the beginning of the down-stroke on the right. The treatment of the left limb is doubtlessly, if compared with the Gu. form, more modern. With respect to the curve the same assertion cannot be made with equal confidence, as it appears in several ancient alphabets (see Burgess, Ind. Alph. 6-7, 11-14). In the Ne. I., Nos. 1-6 show the form of Gu., Nos. 7-9, 12, 14, 15 either fully agree with H. P. or come very close to it, Nos. 10-11 vacillate between the two, and No. 13 has the left limb of H. P., but the straight down-stroke of Gu. Among the other alphabets, Ne. MS. 1049 and *Ghâ.* fully agree with H. P. The forms of Sâ. and Sâ. are modifications of that of H. P. With respect to the latter, which occurs in a great number of inscriptions of the ninth and later centuries, it may be remarked that its origin is well illustrated by a form occurring in Ne. I. No. 12 (ll. 9 and 16), where the wedge has been converted into a triangle, the middle of which is not filled in.

ma shows a slight modification of the form of Gu. and looks more archaic than those of Sâ., Ne. MS. 1049, and Sâ., in all of which the right down-stroke protrudes beyond the body of the letter. The Ne. I. vacillate between the Gu. and H. P. forms. The form of U. B. is in one respect more archaic than all the others. For the loop on the left is a better representation of the lower half of the ancient ma, which in the literary alphabets has been turned sideways, than the simple side-stroke of the other alphabets. This loop survives in the Western inscriptions

until the twelfth and thirteenth centuries, and is still occasionally used in the modern Devanâgarî of Western India.

ya is one of the test-letters. It shows an essentially cursive form, containing, instead of three down-strokes, two with a projecting point on the left which indicates the third. The same form appears in all the alphabets of our table excepting Gu. It is important to note that Ne. I. Nos. 1-12 have the form of Gu., and Nos. 13-15 alone that of H. P.

ra is remarkably short, and consists of two wedges the points of which are joined together. Sometimes (i, 59) the lower wedge has a small tail, turned to the right. According to what has been said above on the wedges, it cannot be doubtful that the lower wedge is, as in the left-hand limbs of kha (v, vi, 18), ga (i, 19), and other cases, merely intended to mark the end of the straight down-stroke, of which the letter originally consisted (see Gu. and older alphabets), and that the little projecting tail was originally a merely ornamental appendage. It seems, however, that later the wedge and its tail were considered essential elements of the letter, and that hence the forms of Sâ. and U. B. (viii, 50) arose, where ra consists of a straight down-stroke with a left-hand knob-like limb, or with a small horizontal line on the left. The last form still survives in the Devanâgarî of the Marâṭhâ country. Among the other alphabets of our table, Ne. MSS. and Sâ. closely agree with H. P., while *Ghâ.* shows a more strongly developed tail. Among the Ne. I., Nos. 1-2 have the same form as Gu., and Nos. 3-15 a peculiar one in which the end of the down-stroke is marked by a small projection to the left.

la shows in the left-hand limb a very archaic form, but the right-hand down-stroke being prolonged below has more the appearance of a support to which the letter leans than of an integral portion. It is evidently the descendant of a form like that used in Gu. Ind. (iv. b, 44), and has no connexion with the Gu. Ku. (iv. a, 44), which itself is a cursive variety of Gu. Ind., framed according to a somewhat different principle. Among the Ne. I., Nos. 1-3 have the letter of Gu. Ku., Nos. 4-10 that of *Ghâ.* without the prolongation of the right-hand down-stroke, and Nos. 11-15 partly the latter and partly that of H. P., with which also Ne. MS. 1049, Sâ., and Sâ. agree.

va shows the usual Devanâgarî form, a round figure, half an ellipse, clinging to a vertical which below protrudes beyond the former. All the

alphabets of our table, excepting Gu., which has the older triangular form, agree more or less closely. Among the Ne. I., Nos. 1-3 and 8 agree with Gu., while the remainder show the triangular shape rarely, or more frequently a transitional form with round left side, or simply that of H. P.

sa differs from the Gu. and older forms by its more angular appearance, though the top may be occasionally slightly rounded. In the Ne. I. the forms vary throughout between those of Gu. and H. P. (see vi, 44 and 56). Ne. MS. 1049 agrees, as usually, with H. P. *Ghâ* leans more towards the Gu. form. *Sâ*. as well as *Sâ*. and U. B. (viii, 54) show more modern developments. In the latter two the large triangle, a modification of the wedge, at the end of the left-hand stroke is worthy of note.

sha differs from the form of Gu. Ind. and the older ones chiefly by the prolongation of the right-hand side-stroke, which appears also in Ne. MS. 1049, *Ghâ*., *Sâ*., and *Sâ*. Gu. Ku. preserves the old sha only in ksha (iv. a, 67). In all other cases it uses a cursive form, in which the curved bottom of the letter has been converted into a loop, not extending to the right-hand down-stroke, but attached to the crossbar in the middle of the letter. This form we find also in Ne. I. Nos. 1-10, 12, and once in No. 11 (l. 9), while No. 11, l. 2, and Nos. 13-15 have the sha of H. P., the prolongation of the right-hand down-stroke being particularly well developed in No. 13.

sa differs from Gu. Ind. by the conversion of the hook on the left into a wedge, and by the elongation of the right-hand down-stroke. The forms of Ne. MS. 1049, *Sâ*., *Ghâ*., and some of those in the Ne. I. agree. Among the latter, Nos. 1-12 show instead of the wedge mostly a triangle. But the wedge occurs occasionally in Nos. 6, 7, 9, 12, seems to be constant in No. 14, and is used with one exception in No. 15. In this latter exceptional case we have the form with the opened wedge (viii, 48, below the line), which is found once also in No. 6, once in No. 11, and throughout in No. 13, as well as in *Sâ*. and U. B. (viii, 57). It survives to this day in the Devanâgarî of Râgputânâ. Gu. Ku. differs with respect to the left limb, which is represented by a loop, either a modification of the ancient curve, or a cursive transformation of the triangle.

ha does not show any very important changes. It deserves to be

noted that Gu. Ku. again presents a more advanced form than the contemporary and later alphabets, and that Ne. I. Nos. 1-3, as usually, agree with Gu. Ku. The projection below the base-line which is found in Sâ. and U. B., and remains constant in modern Devanâgarî, has probably been caused by the writer's adding the curve separately, as they do still, and beginning it at the right-hand end.

C. MEDIAL VOWELS.

â shows a down-stroke, sometimes wedge-shaped, and usually less than half as long as the akshara, to the right side of which it is invariably attached. This form agrees closely with those of all the alphabets of our table, excepting Gu. and *Ghâ.*, where the â-stroke frequently goes upwards, and is sometimes connected with the left-hand down-stroke of the aksharas. Among the Ne. I., Nos. 1-3 only show the forms of Gu. The origin of the down-strokes denoting â seems to be that the end of the old horizontal â-stroke was defined, as in other cases, by a wedge or a line, and that in course of time this originally unessential part came to be considered as the really important sign. The desire for regularising the appearance of the letters further led to its prolongation as far as the lower end of the aksharas. In connexion with *ga* the â is represented in H. P., as in most old alphabets, by an up-stroke attached to the middle bar of the letter. This practice is an archaic feature, and owing to the circumstance that since the earliest times the â-stroke was inserted in the middle of this letter. Ne. MS. 1049 shows in this respect an innovation (ii, 52), as the â is connected with the wedge at the end of the upper bar by a curve turning upwards. The same form is common in the *Râshtrakûta* and other inscriptions in connexion with *ta* and *na* (vii, 51), and occurs even in Devanâgarî paper MSS.

i shows the characteristic prolongation of the curve over the top of the akshara towards the left, until it reaches the level of the lower end of the akshara. In Gu., with which Ne. I. No. 1 fully agrees, the tail of the curve does not go down so far. In the Ne. I. Nos. 2-11 the long-tailed sign appears together with the short-tailed one. Nos. 12-15 fully agree with H. P. and the other alphabets of our table.

î, which appears only once, stands still above its akshara with the

curve to the right. The other alphabets, with the exception of Gu., show the form with the tail prolonged to the level of the end of the akshara. Among the Ne. I., Nos. 1-11 show the H. P. form constantly, Nos. 12-15 have the long-tailed one also.

u is usually marked by a short straight down-stroke, defined at the end by a minute wedge, but occasionally by the curve below the akshara, common in modern Devanāgarī. The former sign is archaic and the representative of the longer straight stroke, used in Gu. It is retained in all the alphabets of our table and in the modern Sārādā to the present day, though its use becomes gradually more and more circumscribed by the greater frequency with which the curve is employed. In this respect it is interesting to note that the earlier Ne. I. use the curve very rarely, while Nos. 13-15 have it in the great majority of cases.

û has three forms, two of which (i, 58 and 59) are traceable in other alphabets, while that in i, 57, an exact representation of the independent û, is, I believe, not known on inscriptions. All the numerous varieties observable in the cognate alphabets go back to combinations of two straight strokes or two curves. That of U. B. deserves to be noted on account of its similarity to the modern Devanāgarī form.

ri shows the usual form which is always used in the Gupta inscriptions and remains constant in all the cognate alphabets.

e, ai, o, and au offer no peculiarities, except that the *prishthamâtrâ* is used more frequently than superscribed *mâtrâ*. The *virâma* (i, 65) is remarkable, as it exactly agrees with that still used in the modern alphabets. Among the Ne. I., Nos. 4-15 have it too, as well as the other form observable in *Ghâ.* and *Sâ.*, where a stroke over the top and at the right side of the letter is used. Nos. 1-3 indicate the absence of the vowel by the size of the consonant, which in such cases is made half as big as those which are to be pronounced with a. This practice, which is the usual one in Gu. and earlier alphabets, is still remembered in India. For a vowelless consonant, e.g. m is even at present frequently called by the *Pandits* *ardha-makâra*. In Ne. MS. 1049 and other ancient documents small-sized letters are sometimes used in combination with the stroke marking the *virâma*.

D. CONJUNCT CONSONANTS.

Some groups, those with k and g, have already been noticed above. Among the remaining ones the following only require some remarks:—

1. In groups ending with ya the last stroke of that letter is occasionally drawn up as far as the top of the akshara (i, 69). This peculiarity, a result of the tendency to equalise the length of the strokes, occurs in the Ne. I. Nos. 4-15, while Nos. 1-3 do not know it. It is constant in *Sâ.*, in the modern Devanāgarī, and some other literary alphabets.

2. The groups beginning with ra (i, 72-73) show besides the superscribed wedge, which is common to H. P., Ne. MS. 1049, and many inscriptions, cases in which the ra is inserted into the left-hand down-stroke of letters. This practice explains the curious forms of *Sâ.* where the ra at first sight seems to be denoted by a small line on the left (iii, 72). In reality, however, the projecting side-stroke marks the top of the ma.

3. In the group sh/ta the ta is placed on its side (compare the corresponding signs of *Sâ.*, *Ghâ.*, Ne. I. 15, and *Sâ.*, and my remarks on ña). It may be added that in the Ne. I. tha is also placed sideways in combination with sa ञ, and then retains its elliptical form. This form of the group has given rise to the modern Devanāgarī form which looks like s̐a.

4. Some groups, finally, like spra and sma (i, 76, 77), show a beginning of the method of combination, used in the later alphabets, according to which the consonants of a group are placed side by side instead of the one below the other. It is sometimes, but rarely, observable in the older inscriptions.

IV.

If we sum up the results of the preceding examination of the characters of the H. P., it is in the first place evident that they present to us a perfectly developed literary alphabet, formed according to well-defined principles which were forced on the writer by his writing materials, pen, ink, and narrow palm-leaves, or suggested by the requirements of order and regularity. The narrow leaves, on which not

merely a few sentences but longer compositions had to be written, required the use of signs of moderate size, the shortening of sprawling horizontal strokes and the abandonment or reduction of tails, and the turning or compressing of the lower portions of compound letters. The use of the pen made it convenient to form the right-hand down-strokes separately, and naturally led to their prolongation beyond the body of the letter, and it likewise suggested the formation of curves to the left instead of to the right. If the MSS. were to be easily readable, it was necessary to mark the lines and to define the ends of the strokes. A slight pressure on the pen at the beginning of the down-strokes produced a thickening at their tops, which in combination with the old serif led to the formation of the wedges. The wedges once being adopted, the sense for regularity and an artistic feeling caused them to be used at the ends of horizontal and vertical strokes.

Secondly, the close agreement of the much later Nepālese MSS. and of numerous inscriptions from all parts of India with the forms of H. P., shows that this alphabet was not exclusively cultivated by the Buddhists or peculiar to Northern India, but enjoyed a widespread popularity down to the end of the ninth century, and perhaps later. At present it survives only in the Sāradā of Kasmīr, which probably branched off in early times. For though fully agreeing in principle, it shows numerous differences in details, and has had, as stated above, a separate existence at least since the times of Avantivarman¹.

Thirdly, the relation of the H. P. alphabet to those used in the Nepālese inscriptions proves distinctly that the epigraphic characters did not keep pace with those used for literary purposes, but remained for a long time more archaic, and were gradually modified by the influence of the letters employed for purposes of every-day life. Considering the great importance of this point, it will not be superfluous to present the facts, revealed by the preceding analysis, in a tabular view, and to give a full statement of the manner in which the final conclusions are reached. The tabular abstract of the facts may be arranged as on the opposite page.

¹ The earliest longer document in Sāradā letters is an unpublished inscription of one Dharmānka, dated in the year 68 (of the Lokakāla), during the reign of 'king' Diddā or 991-2 A.D. It was found by Dr. Leitner in Srīnagar. The stone is at present in the Lahore Museum.

LETTERS.	GUPTA FORM.	TRANSITIONAL FORM.	FORM OF H. P.
Initial a, ā	Ne. I. Nos. 1-10, 12	Nos. 11	Nos. 13-15
" i	" " 1-12	" "	" 13-15
" u	" " 1-12	" "	" 15
" e	" " 1-8, 10, 12	" "	" 13-15
ka	" " 1	" 2-12	" 12-15
kha	" "	" 1	" 7-15
ga	" "	" 1-3	" 1-15
gha	" " 1	" 15	" 13
ṇa	" " 1-2	" "	" 3-15
ṭa	" " 1-9	" 3-15	" "
ṣa	" " 1-15	" "	" "
ga	" "	" 1-4	" 4-15
ṇa	" "	" 1-2	" 3-15
ta	" " 1	" "	" 1-15
na	" " 1, 3	" 2, 4-12, 14-15	" 13
ta	" " 1-15	" "	" 1-15
tha	" " 1-3	" 2, 4, 6-7, 10, 12, 13, 15	" "
da	" " 1-3, 5-6	" "	" 4, 7-15
dha	" " 1, 5-6	" 12, 14-15	" 13
na	" " 1-15	" "	" 14-15
pa	" " 1-2, 4-5, 8, 12	" 3-11, 15	" 12-15
pha	" "	" 11-12	" "
bha	" " 1-6, 10-11	" 7-15	" 7-15
ma	" " 1-15	" "	" 1-15
ya	" " 1-12	" "	" 13-15
ra	" " 1-2	" 3-15	" "
la	" " 1-3	" 4-12, 14-15	" 7, 11-15
va	" " 1-4, 8, 11	" 4-12, 14-15	" 6-15
sa	" " 1-15	" "	" 1-15
sha	" " 1-12	" "	" 11, 13-15
sa	" "	" "	" 1-15
ha	" " 1-3	" "	" 4-15
Medial ā	" " 1-3	" "	" 4-15
i	" " 1-11	" "	" 2-15
Virāma	" " 1-3	" "	" 4-15

¹ Nos. 13 and 15 show an older form.

If we had no historical information regarding the age of the Horiuzi palm-leaves, every palaeographer, I believe, would draw from the above facts the inference that they belonged to the beginning of the eighth century A. D. For it is undeniable that their alphabet is nearly identical with the characters of Ne. I., Nos. 13-15, which were written between 749-50 and 759-60 A. D., and that the earlier documents of the Nepāl series apparently show, how the H. P. alphabet was gradually evolved in the course of about four centuries from the Gupta characters. This conclusion would be strengthened by the circumstance that the *Ghālrapāthan* inscription of Samvat 746, which mostly shows characters, standing midway between the Gupta and H. P. alphabets, cannot be older than the end of the seventh century, and that there is no inscription showing letters similar to *Ghā*, which can be referred to an earlier time. It would further be corroborated by the close resemblance of the *Dasāvātāra* fragment, of the Deogarh pillar inscription, of the Morbī plate, and of the oldest Nepālese MSS. of the Cambridge collection with our palm-leaves, as none of these documents can be placed earlier than the second half of the eighth century, and some of them clearly belong to the ninth century. In short, on the supposition that the characters of the inscriptions permit us to trace the gradual transformation of the Indian alphabets, the arguments for assigning the Horiuzi MS. to the beginning of the eighth century would be as strong as possible. As we, however, know from external evidence that this document is at the least two hundred years older, it is evident that there must be some radical fault in the argumentation. The facts with respect to the age of the inscriptions being indisputable, the fault must lie in the tacit assumption that the inscriptions give us a correct view of the development of the Indian alphabets. This being once recognised, the case is plain enough. Starting from the two facts that we have on the one hand a MS. of the first half of the sixth century A. D., showing an alphabet with far advanced forms, and on the other hand a series of inscriptions, extending over the period from the fourth to the eighth century, the characters of which gradually change and in their latest development closely agree with those of the MS., the inevitable conclusion is that the changes in the epigraphic characters are due to the influence of the literary alphabet. In other words, the masons who incised the inscriptions, or the writers who wrote the originals from which the masons copied, tried

to make the characters archaic, but succumbed at last to the influence of the literary alphabet which they used in every-day life. In some cases the old forms disappeared sooner, in others later, and the natural conclusion was, as it is always in such struggles, that the antique types went out altogether.

The correctness of this view is supported by the analogies observable in the history of writing among most other nations, and by a not inconsiderable number of phenomena in Indian inscriptions which are inexplicable on the supposition that the epigraphic characters kept pace with the literary ones. Whether we turn to the Greek, the Roman, or the Semitic alphabets, or even to those of our own times, the tendency to use archaic characters and forms for epigraphic documents is everywhere apparent, and in no case is it possible to trace the development of the literary alphabets with the help of the epigraphic characters. As the discoveries of papyri made of late years in Egypt show, even the ancient Greeks as well as the Arabs possessed already in very early times fully developed literary alphabets which differed considerably from those used in their inscriptions. As regards the facts in Indian inscriptions which bear on this point, they fall chiefly under three heads,—the occasional use of modern-looking characters for the signatures or attestations in royal grants, the main portion of which is written in an archaic alphabet; the occasional occurrence of a mixture of alphabets in one and the same inscription; and of retrograde steps in one and the same series of documents. The modern-looking signatures occur first on the Gurgara grants, some of which have been mentioned above¹, viz. on the plates of Dadda Prasāntarāga, dated (Saka)-Samvat 380 (458-9 A. D.), (Saka)-Samvat 385 (463-4 A. D.), Sakasamvat 400 (478-9 A. D.), Sakasamvat 415 (493 A. D.), as well as in those of Gayabhata, dated Samvat 456 (706 A. D.) and Samvat 486 (736 A. D.). The letters obtainable from the third and fourth grants have been given in table vi, col. viii. The first (where, as well as in the second, the attestations show a mixture of modern-looking and archaic characters) furnishes likewise the H. P. form of ka², and the sixth yields forms of ga and bha which exactly agree with those of Sā³.

¹ See p. 72, and note 5.

² The first alone has it in the word *dinakara*, while the second shows the ancient dagger-shaped letter.

³ See Fleet and Burgess, *Old Pali, Sanskrit and Kanarese Inscriptions*, plate 272.

The same practice is observable in the grant of the Râshtrakûta king Govinda IV of Broach¹, dated Sakasamvat 749 (827-8 A.D.), where the attestation exhibits characters closely resembling those of Sâ., while the grant itself is written in an alphabet similar to that of Dadda Prasântarâga's plates. A mixed alphabet, or rather a sporadic occurrence of modern-looking signs among archaic ones, is found, as I have pointed out, Ind. Ant. IX, 62, in the third grant of Dadda Prasântarâga, where in the first line the word vâsakât looks like nâsakât, owing to the employment of the cursive va instead of the archaic triangle. The same peculiarity is observable on the fourth unpublished grant from Bagumrâ, but the fifth (Ind. Ant. XIII, 116) has according to the facsimile a real na, quite different from the character on the two earlier documents. On a re-examination of the three inscriptions I find still another trace of the influence of the literary alphabet in the formation of the letter ka, which, here and there, shows the prolonged right-hand down-stroke, while in other respects it resembles the form of Gu. Ku. A second case of the sporadic introduction of advanced forms among archaic ones occurs in the grant of Silāditya II, dated Sam. 252, where the H. P. form of ka and the Devanāgarī va appear several times, though mostly the ancient letters are used². A third case, which belongs to much later times, has been pointed out in the remarks on the grant of Bhīmadeva of Anhilvād, dated Vikramasamvat 1086 (1029-30 A.D.³). It is of particular significance, because the Gaina palm-leaf MSS. of the same or even somewhat earlier times show their peculiar Devanāgarī letters without any change.

The retrograde steps which sometimes are observable in one and the same series of documents are best illustrated by the inscriptions of the Râshtrakûtas, found in the Marâthâ country and in Gugarat. The earliest of the series are the Sâmagadh plates of Dantidurga from the neighbourhood of Kolhâpur, dated Sakasamvat 675 (753-4 A.D.), the characters of which closely resemble the modern Devanāgarī (plate vi, col. vii). Next comes a grant of one Kakka, evidently the scion of

¹ Indian Antiquary, V, 113, and Fleet and Burgess loc. cit., plate 282 (3). In the grant of Govinda's elder brother, Karka, dated Sakasamvat 734 (812-3 A.D.), the sign manual shows the same letters as the remainder of the document.

² Ind. Ant. XI, 305.

³ Ind. Ant. VI, 193 note.

a branch of the family settled in Southern Gugarat, which is dated Sakasamvat 679 (757-8 A.D.), and exhibits archaic characters of the type which the kings of Valabhî used after Sam. 300 of the era of their plates¹. To the same period belongs the Dasâvatâra fragment, written in the alphabet of H. P. Then we have two grants of Govinda III, the son of Dantidurga's cousin, both dated in Sakasamvat 730 (808-9 A.D.), and showing an alphabet very similar to that of Dantidurga's grant, but in some respects slightly more archaic². These are followed by the Baroda plates of Karka II, dated Sakasamvat 734 (812-3 A.D.), and the Kâvî plates of Govinda IV, dated Sakasamvat 749 (827-8 A.D.), both with archaic letters, resembling those of the Gurgara and Valabhî sâsanas. All the following documents, the earliest of which is an unpublished grant of Dhruva II of Broach, dated Sakasamvat 757 or 835 A.D., while the oldest published is the Bagumrâ grant of Dhruva III of Broach, dated Sakasamvat 789 (June 6, 867 A.D.)³, again show an alphabet still more closely allied to the modern Devanāgarī than that of the grants of Dantidurga and of Govinda III. The backward and forward jumps are in this case so enormous, that even the warmest advocate of the theory which evolves the literary from the epigraphic alphabets must become puzzled (see Burnell, Elem. S. Ind. Pal. p. 54, note 3).

The bearing of these three sets of facts is plain. They clearly illustrate the truth of the maxim that the inscriptions are not safe guides for the investigation of the history of the Indian alphabet, but that in the development of the letters they lag behind the literary documents.

Another result deducible from the analysis of the H. P. alphabet is, that it is probably more ancient than the precursor of the modern Devanāgarī, found in U. B. and Sâ., though the former documents date a little earlier than the H. P. palm-leaves. The reason for this supposition is that U. B. and Sâ. both show characteristics belonging to the system followed in H. P., and inexplicable on the general principles prevailing in Sâ. and U. B. The triangles in the left limbs of kha, ga,

¹ Dr. Bhagvānlâl, Journ. Bomb. Br. R. As. Soc. XVI, Article viii.

² The Râdhanpur and the Van-Dindori plates, Ind. Ant. VI, 59, and Ind. Ant. XI, 156. The most prominent among the archaic features of these grants is that the tops of the letters are mostly left open.

³ Ind. Ant. XII, 179.

and sa, the opened-up triangles in bha and sa, and the straight line to the left of the down-stroke in ra are, as has been shown above, all remnants of wedges. The employment of wedges is one of the principles regulating the letters of H. P., but they are meaningless in an alphabet like that of U. B.—Sâ., which in general employs only straight or curved lines. If we, therefore, find in U. B.—Sâ. forms which are based on the principles prevailing in the H. P., the inevitable inference is that U. B.—Sâ. has been modified by the influence of H. P. This conclusion is, of course, of great importance for the determination of the age of the alphabet with the wedges. As U. B. belongs to the end of the fifth century, it seems not unreasonable to assume that the H. P. characters existed in the fourth century, and perhaps earlier. How far they go back must for the present be left undetermined. But I believe that a fuller investigation of the inscriptions of the Gupta kings, which will only be possible when Mr. Fleet's exact facsimiles have been published, will make its existence during the reign of that dynasty very probable.

These remarks will, I hope, suffice to show that the discovery of the Horiuzi palm-leaves is, indeed, an event of the highest importance for the Indian palaeographer. I am persuaded that this importance will be brought out still more clearly, when, in a general survey of the history of the Indian alphabets, the principles adopted above have been fully worked out and applied also to the writing of Southern India, and if it is shown that in the South too the apparent gradual transformation of the epigraphic characters is not the cause of the development of the modern literary characters, but the result of their existence. The materials, requisite for such a task, are at present not at my command; and if I had them, I should be afraid of abusing the hospitality which the editor of this volume has offered me, by extending these remarks to an unreasonable length. I, however, cannot refrain from pointing out, that according to Dr. Burnell, the Southern alphabets were developed after the year 1000 A.D.¹, while two passages of Hiouen Thsang, *Mémoires* I, 72 and II, 119, point to the existence of separate literary alphabets in the South about the year 600 A.D. In the second passage the pilgrim says that 'the language and writing of the *Dravida* country are "a little"

¹ Elem. S. Ind. Pal. p. 14.

different from those of Central India.' The word 'little' must here not be taken in too literal a sense, because it applies both to the language—an ancient *Dravidian* dialect—and to the alphabet. If the alphabet differed only half as much from those used in the North as the language must have done, it is evident that the remark cannot apply to the characters of the Pallava inscriptions, but refers to a precursor of the modern Telugu or of the Grantha. Among the Southern inscriptions those of the *Râshtrakûta* kings (see e.g. the facsimile, *Ind. Ant.* XI, pp. 126–27) furnish abundant proof that many of the characteristic forms of the Kânarese and Telugu alphabets existed in the eighth century. Even a lately-discovered inscription from Gugarat, the above-mentioned grant of Dhruva II of Broach, shows in the attestation Kânarese letters (ka, kha, da, dha, ra) mixed with older forms.

G. BÜHLER.