On the phonetic value of the Tibetan characters ꗼ and ꧁ and the equivalent characters in the hPhags.pa alphabet

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IT is one of the curses of Central Asiatic linguistic research that no language of this meeting-place of nations can be studied without reference to the history of its neighbours and predecessors, which often belong to entirely different linguistic families. It is therefore only persons of singular erudition, or, like ourselves, of that hardihood which is bred of ignorance, who venture to dogmatize on any really difficult question of Central Asiatic phonetics or lexicography.

In the course of the study of the history of the Mongol language, on which we are at present engaged, we were recently confronted by the problem of the exact phonetic value of that character of the hPhags.pa alphabet which corresponds to the Tibetan ꧁, and this in its turn raised the problem of the phonetic value of ꗼ. As the problem in isolation seemed practically insoluble, we felt compelled to sally out into the unfamiliar fields of Tibetan and Chinese phonetics. To the experts in those subjects we hasten to express our apologies for any mistakes which we may unwittingly have committed, urging in self-defence that we would never have trespassed if we had not been compelled to.

The evidence which is marshalled and discussed in this paper falls into four classes :—

(1) The prehistory of the Tibetan character ꧁.

(2) The purely Tibetan evidence, especially the statements of the native grammarians and the modern practice.

(3) The early (? eighth to tenth centuries A.D.) transcriptions in Tibetan characters of Chinese Buddhist religious texts of which three specimens have been published in recent years by one of ourselves in collaboration with Dr. F. W. Thomas.

(4) The hPhags.pa texts in the Mongol and Chinese languages.

(1) THE PREHISTORY OF ঽ

The earlier European students of Tibetan recognized the derivation of the Tibetan alphabet from an Indian prototype and produced various theories more or less correct regarding its history and evolution, but as far as we are aware it was reserved to Dr. A. H. Francke and the late Dr. A. F. R. Hoernle to tell the whole story and to clear up the doubtful points. Dr. Francke's work is contained in his article " The Tibetan Alphabet " in vol. xi, p. 266 ff., of *Epigraphia Indica* ; Dr. Hoernle's in his Introduction to the *Manuscript Remains of Buddhist Literature found in Eastern Turkestan*, published under his editorship in 1916 by the Oxford University Press.

These two scholars are not in agreement on some points and on these we accept the conclusions of Dr. Hoernle, who had the advantage of following Dr. Francke and having access to some evidence not available to his predecessor.

For the purposes of our present inquiry the salient points are the following. The Tibetan alphabet was invented by the great Tibetan scholar Thonmi Sambhota on the basis of that Central Asiatic derivative of the Indian Gupta alphabet, which was used in the Khotan district in the sixth and seventh centuries A.D. to write the local contemporary Iranian dialect which is known *inter alia nomina* as " Khotanese " in English scientific works and as " Nordarisch " in German.

The Khotanese alphabet, whether under the influence of the descendants (especially Soghdian) of the Aramaic alphabet which were current in Central Asia before the arrival of the Indian scripts, or for genuine phonetic reasons, or perhaps even simply for the sake of simplicity, had dropped the old Indian characters for initial *i, u, e, o* and wrote those vowels with the initial character for *a* supplemented by the attachment of the vowel signs which were used to indicate the attachment of such vowels to an initial or medial consonant.

Thonmi Sambhota accepted this principle for the alphabet

invented by him, and the character for *a* ཨ is one of the
twenty-four characters taken direct from the Khotanese
alphabet.

To these twenty-four characters, which were common to
the Khotanese and Indian alphabets, Thonmi Sambhoṭa
added six new characters to represent sounds not hitherto
written. Three of these, *ts, tsh, dz*, are derived direct from the
characters *c, ch, j* by the addition of a diacritic mark, and
there can be no doubt regarding their phonetic value. *Z*,
a reversed *j*, is as easily explicable and its value is certain.
Ż is less easily explicable since it was created by adding a
diacritical mark to the dental nasal *n*, but its value (the
sound of the French *j* in *jour* and *jardin*) is quite certain.

There remains འ. Hoernle is no doubt right in suggesting
that the form of this character is derived from the curved line
which was probably first used in the Khotanese alphabet
to represent *ā*, and was subsequently attached also to
characters bearing other vowel signs to indicate a lengthening
of the vowel.

To sum up its early history, འ was invented by Thonmi
Sambhoṭa to represent a sound which did not exist, or, at
any rate, was not represented graphically, in the Indian
languages or Khotanese, and which was sufficiently weak and
indistinctive in nature to justify its representation by an
adapted long vowel sign. At the same time the sound was of
such a nature that it could not correctly, or at any rate
conveniently, be represented by the existing character ཨ,
possibly, of course, because the latter character had been
given a value which was not necessarily absolutely identical
with the value which it had possessed in Khotanese and the
Indian dialects.

(2) The Tibetan Evidence

In considering this aspect of the question we cannot do
better than consult the mnemonic verses (*ślokas*) in which
Thonmi Sambhoṭa himself laid down the rules of spelling and

grammar and their commentaries, more particularly since these have recently been edited and translated with copious notes by that distinguished Tibetan scholar M. Jacques Bacot. (" Une Grammaire Tibétaine du Tibétain Classique— Les Ślokas Grammaticaux de Thonmi Sambhoṭa avec leurs Commentaires." Traduits du Tibétain et annotés par Jacques Bacot, Ministère de l'Instruction et des Beaux Arts. Annales du Musée Guimet. *Bibliothèque d' Études*, tome xxxvii, Paris, Geuthner, 1928.)

Before considering this evidence, however, it is necessary to mention one value of the character, which is the most primitive but yet is not used in writing pure Tibetan words and is therefore not mentioned in the Ślokas. Tibetan contains no long vowels, and no provision, therefore, is made for their representation. In writing Sanskrit and other Indian words containing long vowels, however, འ is used as a subscript letter in its original function, that is to indicate the presence of a long vowel. Thus, while *a, i, u*, etc., are written ཨ, ཨི, ཨུ, *ā, ī, ū*, etc., are ཨཱ, ཨཱི, ཨཱུ, and so on.

Coming now to Tibetan itself, it is first necessary to recall the fact that Tibetan is a monosyllabic language, that the centre of each monosyllable is the radical, and that (leaving out the question of superscript and subscript letters as irrelevant to the present discussion) that radical may be preceded by one of five prefixes, and must, at any rate theoretically, be followed by one, or sometimes two, of ten suffixes. འ may fulfil each of these three functions, i.e. it may be a radical, a prefix, or a suffix. The suffix is an important feature of the language, since the form of the post-positions which indicate the cases of nouns and other shades of meaning in many cases depends on the identity of the suffix of the monosyllable to which they are attached.

As there is reason to believe that the exact phonetic value of འ varies to some extent according as it is used as a radical, prefix, or suffix, it is necessary to consider the three cases separately.

As a preliminary to this consideration we must quote what the commentary on the Ślokas has to say on the subject of pronunciation, using M. Bacot's translation (pp. 47–8) :—

" Si on applique aux lettres simples les trois élements de la phonation, localization, articulation et effort, nous aurons :

" 1. (Localization.) K, kh, g, ṅ, འ, h, and ঙ viennent de la gorge

ঞ, ঙ viennent du palais . . . .

ཟ, ঙ viennent des lèvres . . . .

" 2. (Articulation.) Les gutturales et les labiales sont articulées par leur propre organe émetteur. Les palatales sont articulées par le milieu de la langue.

" 3. (Intensité.) Quant à l'effort, de l'effort externe ou interne (expiration et inspiration), l'expiration, qui ressemble à la propulsion d'un sons au dehors, est le plus intense.

" C'est pourquoi [various letters including] འ . . . ঙ et les quatres voyelles, demandant un effort de propulsion au dehors, sont appelées *sonores*.

" [Various other letters] ne demandant pas une propulsion au dehors, sont appelées *sourdes*.

" . . . . . ঙ et les quatre voyelles, demandant un grand souffle, sont appelées *très vivantes*. En dehors de ces lettres-ci, toutes les autres lettres sont *peu vivantes*.

" Les inspirées devant être prononcées après que le gosier s'est ouvert, à l'exception de ঙ, sont appelées *très vivantes à gosier ouvert*. Quant à ঙ, qui se prononce avec le gosier fermé, il est dit fermé.

" Un phonème préfixé par *g* est émis du palais. Un phonème préfixé par *d* est émis avec un amollissement de la pointe de

la langue. Un phonème préfixé par *b* ou *m* est prononcé avec occlusion des lèvres et principalement par le nez. Un phonème préfixé par ཨ est émis du fond de la gorge."

It will be observed that nothing is said about suffixes here. On this subject the following passage (Bacot, pp. 44-5), of which the first sentence is part of a *śloka*, while the remainder is commentary, is in point :—

" . . . . sans l'adjonction de l'un des dix suffixes il sera impossible de mettre (un) mot en relation avec les autres mots.

.   .   .   .   .   .

" Exemples pour illustrer la pensée exprimée par le maitre dans la règle ci-dessus :

ཨdiཨ ; deཨ ; bdeཨ ; kaཨ.ba ; khaཨ.baཨm.ro ; ṅaཨ

" Bien que dans ces exemples les lettres simples ne puissent pas ne pas être suivies de suffixes, les *Lotsavas*, qui vinrent après (Thonmi Sambhoṭa) et traduisirent la Parole et les Commentaires, supprimèrent la plupart des lettres ཨ qui auraient été trop nombreuses. (*Note*. La suppression du suffixe eut lieu longtemps après Thonmi Sambhoṭa, vers le Xe. siècle. Les manuscrits de Touen-houang l'ont encore le plus souvent. On y rencontre des formes telles que *bka*ཨ*s* ; *bca*ཨ*s*.) Bien que, sauf quelques ཨ exceptés par nécessité comme dans *dga*ཨ ; ཨ*da*ཨ (i.e. to distinguish these words from *dag* ; ཨ*ad*), les ཨ ne figurent plus aujourd'hui comme suffixes par abréviation pour économiser la place ; conformément à ce qui à été expliqué plus haut de la détermination pars le sens, des cas et des particules . . ., sans un suffixe quelconque on ne peut chercher à employer aucun mot. (*Note* : Ou ' (*Le maitre*) *n'a pas voulu qu'on employât aucun mot* '. Il serait important de pouvoir déterminer le sens exact de ཨ*dod*. S'il s'applique au maitre comme au *śloka*, cela voudrait dire que le rôle flexionnel des suffixes serait artificiel.) "

So far as the use of ཨ as a radical is concerned, the meaning of the passages quoted above is pretty clear. The commentator clearly regards ཨ as a sign indicating a smooth

vocalic ingress, that is as implying that the vowel attached to
it is to be pronounced without the slight initial movement in
the throat which is known as a glottal stop, while ཨ represents
the glottal stop, an audible opening of the throat (Thonmi
Sambhoṭa's " gosier fermé "), similar presumably to that
represented by the Arabic آ (*hamza*).

We refrain from discussing here whether this glottal stop
existed, and was represented by the ancestor of ཨ, in the
Indian dialects and Khotanese, partly because we do not feel
competent to do so and partly because such a discussion would
not be strictly relevant to our subject.

It is also pretty clear that in the commentator's view, the
rôle of འ as a suffix, whether a final suffix, as in *ka*འ, or a
penultimate suffix, as in *ba*འ*m*, was conventional rather than
phonetic, i.e. that it had no phonetic value but was merely
intended to indicate the position of the vowel in the mono-
syllable and, where final, to call attention to the fact that the
syllable was an open one and therefore required the attach-
ment of those postpositions appropriate to monosyllables of
this form.

The meaning of the description of the phonetic value of འ
as a prefix is less clear, but the best explanation seems to
be that monosyllables carrying this prefix are to be pronounced
as if preceded by a very short vowel, like the Hebrew *shᵉva*,
presumably, since འ and not ཨ is employed, without glottal
stop, i.e. འ*da* is to be pronounced ᵉ*da*, and so on.

The description, since it specifically mentions nasalization
in the case of prefixed *b* and *m*, must be taken to exclude
any such element in the case of འ. At the same time, *in
practice*, it will be found very difficult to pronounce this
sound without some of the breath escaping through the nose
and giving a nasal element to it, particularly if the mono-
syllable in which it occurs is in the middle, and not at the
beginning of the sentence, and if care is taken to avoid
introducing the glottal stop.   This fact will be found of
significance later.

To make the account complete, it should be added that འ
may be attached as a prefix only to the following radicals :
kh, g, ch, j, th, d, ph, b, tsh, dz (whether in their simple form
or, where permissible, when compounded with subscript
letters, e.g. *khy, khr*, etc.), but to no others.

So much for the grammatical theories of the early Tibetan
grammarians themselves. For modern practice we have
consulted H. A. Jäschke's *Tibetan Grammar* (London,
Trübner and Co., 1883) and C. A. Bell's *Manual of Colloquial
Tibetan* (Calcutta, Baptist Mission Press, 1905).

These bear out what has been stated above. According to
Jäschke (section 4), the distinction between འ and ཨ as
radicals, while it has disappeared in Western Tibet, is still
strictly preserved in Eastern Tibet, so much so that in the
case of ཨོ and ༀ the effort to avoid the glottal stop produces
a sound which resembles *wo* or *wu*, as the case may be. This
information is repeated by Bell.

Jäschke says nothing of འ as a suffix. Bell (section 5)
says " འ [as a suffix] is not itself pronounced but lengthens
the sound of the vowel preceding it. No vowel except the
indirect *a* precedes it, e.g. ནམ་ཁའ = *nam.khā* ".

According to both Jäschke (section 8) and Bell (sections 22
and 26) prefixed འ is normally not pronounced, but in some
cases has a nasal value, particularly in compound expressions
of which the first member ends in an open vowel, e.g.
dge.འdun, often pronounced *gen-dun*. In some cases, too,
prefixed འ apparently alters the tone of the word.

To sum up the Tibetan evidence, therefore, the primary
phonetic value of འ as a radical is the smooth vocalic ingress,
as opposed to ༀ which represents the glottal stop or *hamza*.
As a suffix it is a mere conventional scription with a
reminiscence of its original function (also preserved when it is
used in non-Tibetan words as a subscript) of lengthening
the vowel. As a prefix it was originally probably a very short
vowel, which has since disappeared, and in some cases it has
a slight nasal value. This evidence seems to justify the usual

British system of transliterating ৭ as ẖ, i.e. a silent h like the h in the French word *heure*, and ও as ', the usual sign for *hamza*, as against the continental system of using ' for ৭ and leaving ও untransliterated.

(3) The Sino-Tibetan Evidence

The texts which we have consulted in this part of our paper are the two texts of Chinese Buddhist works in Tibetan transcription published by Thomas and Clauson (" A Chinese Buddhist Text in Tibetan Writing," *JRAS.*, 1926, p. 508 ff.; " A Second Chinese Buddhist Text in Tibetan Characters," *JRAS.*, 1927, p. 281 ff.) and the Chinese Buddhist text with interlinear Tibetan transcription published by Thomas, Miyamoto, and Clauson (" A Chinese Mahāyāna Catechism in Tibetan and Chinese Characters," *JRAS.*, 1929, p. 37 ff.). These texts were discovered at Tunhuang by Sir Aurel Stein and date presumably from about the eighth to tenth centuries. The second of them contains forms which seem to indicate that it is somewhat earlier than the other two.

As these texts date from so early a period they should contain valuable evidence regarding both Tibetan and Chinese phonetics, if used with proper discretion. Unfortunately, the value of this evidence is to some extent impaired by the fact that the Tibetan transcription is by no means systematic or scientific and in some cases frankly careless. This is very much to be regretted.

The rules of Tibetan orthography do not, of course, apply to these transcriptions. ৭ is the only letter employed as a prefix, and as such is prefixed to several letters to which it could not grammatically be prefixed in Tibetan. It is also used as a radical, but hardly ever as a suffix. It is, however, used comparatively frequently as the character bearing the second vowel of a diphthong (a usage also occurring in certain circumstances in Tibetan). ও is used freely as a radical, but as in Tibetan is never used internally in diphthongs.

In considering the question of Chinese phonetics we are

now fortunate in being able to consult the works of
Professor Bernhard Karlgren. This scholar has pointed out
in the Introduction (p. 20) to his *Analytic Dictionary of Chinese*
(Paris, Geuthner, 1923) that in Ancient Chinese, i.e. the
language of the sixth century A.D., precisely the same
distinction as in Tibetan existed between the smooth
vocalic ingress known to the Chinese themselves as 喩 *ü*
and the glottal stop known to the Chinese as 影 *jing*, indicated
by Karlgren by means of a raised dot placed before the vowel.

These two series are distinguished carefully by Karlgren in
his *Analytic Dictionary*, and it is exceedingly interesting to
find that in the overwhelming majority of cases the distinction
between the use of ᠊ᠣᡍ and ᡆ corresponds to Karlgren's con-
clusions regarding the phonetic value of the Chinese sign.

In the following tables the first column contains the Chinese
character, the second the number of its group in Karlgren's
Dictionary, the third the transcription of the character in the
texts under review, the fourth the text (numbered I, II, or
III as the case may be) or texts in which it occurs, and the
fifth Karlgren's " Ancient Chinese " phonetic value.

Table I. Cases in which ᠊ᠣᡍ *represents a Glottal Stop in Ancient
Chinese.*

阿	414	'a, 'an	I	·â
		'a, 'an, 'ar	II	
惡	209	'aŋ	I, III	·âk
		ḫ'aŋ (sic !)	II	
愛	3	'e, 'iḥi	III	·âi
一	175	'i, 'ir	I, II, III	·i̯ĕt
意	203	'i	I, II, III	·i
於	1323	'i, 'u	I, II, III	·i̯ʷo, ·u̯o
依	185	'i	III	·ệi
億	203	'iŋ	I	·i̯ək
益	197	'iḥu	III	·i̯ăk
音	277	'im	II	·i̯əm
陰	274	'im	III	·i̯əm

因	273	'in	II, III	·i̯ĕn
應	287	'iṅ	I, II	·i̯əng
泝	1317	'o	III	·uo
溫	1316	'on	III	·u̯ən
畏	1310	'u	III	·ʷe̯i
溫	(1316)	'un	III	·u̯ən
		ḫun (sic!)	III	

Total seventeen cases, of which one belongs also to
Table IV ('un/ḫun).

*Table II.   Cases in which ঙ represents a Smooth Vocalic
Ingress in Ancient Chinese.*

| 藥 | 568 | 'ag | III | i̯ak |
| 免 | 1132 | 'en | III | i̯ĕt' |

(? for 逸)

叉	249	'iḫu	II	ji̯ə̯u
有	251	'iḫu, 'eḫu	I, II, III	ji̯ə̯u
由	253	'iḫu	III	i̯ə̯u
引	271	'in	III	i̯ən

Total six cases, of which one is uncertain ('en). It is perhaps
significant that four others come from III, which is one of the
later texts. There is also the possibility in these cases of a
confusion between the very similar characters ঙ ' and ཡ *y*.

*Table III.   Cases in which ཝ represents a Smooth Vocalic
Ingress in Ancient Chinese.*

以	182	{ ḫi { (ye, yi	III I, II)	i
圍	1308	ḫu	I	jʷe̯i
違	1308	ḫu	III	jʷe̯i
爲	1313	ḫu	I, II, III	jʷe̯i
謂	1309	ḫu	III	jʷe̯i
云	291	{ ḫun { (ḫu, hun	I, III I)	ji̯u̯ən

Total six cases, of which two have alternative
transcriptions.

Table IV. Case in which ᡆ represents a Glottal Stop in Ancient Chinese.

滋   *ḥun* cf. *'un* in Table I.

The form 向, 137, *ḥon*, III, *χi̯ang* is totally irregular and possibly an error of transcription. Cases in which *ḥ* is used medially to carry the second vowel of a diphthong are frequent. Examples are :—

| 照 | 1181 | *ciḥu* | II | *t'śi̯äu* |
| 大 | 952 | $\begin{cases} dcḥi \\ de \end{cases}$ | I
II, III | *d'âi* |

The only examples which we have found in these texts of *ḥ* as a suffix are such alternative readings as *haḥ* for *ha* 何, and *ḥgiḥ* for *gi*, *ḥgi* 娑, and the reading *ḥdaḥ* for 川.

As stated above, *ḥ* is the only character which is used as a prefix in these texts, and as such it is exceedingly common. As the value to be attributed to it in this position is a question of very great difficulty, we give below a list of all the words in which it occurs. The list is in rough alphabetical order, but the words are arranged in groups according to the phonetic value of the initial consonants in Ancient Chinese as shown in Karlgren's *Dictionary*. To facilitate discussion these groups are numbered.

1. 惡	209	$\begin{cases} ḥ'ag \\ 'ag \end{cases}$	II I, III	·âk
2. 煩	227	*ḥban*	II	*b'i̯wɒn*
菩	756	$\begin{cases} ḥbu \\ bu \end{cases}$	II I, II	*b'uo*
復	54	*ḥbug*	I	*b'i̯uk*
分	29	$\begin{cases} ḥbun \\ pun,\ phun \end{cases}$	I I, III	$\begin{cases} b'i̯uən \\ pi̯uən \end{cases}$
佛	47	$\begin{cases} ḥbur \\ bur \\ phur \end{cases}$	II I III	*b'i̯uət*
比	714	*ḥbyi*	II	*b'ji* ·

3. 不	37	⎰ ḥbu	III	puǝt
		⎱ pu, phu	I, II	
弗	47	ḥbur	II	pi̯uǝt
方	25	ḥbvaṅ	II	pi̯ʷang
4. 麼	593	ḥba	III	ma
每	607	ḥbe	III	muâi
萬	1295	ḥban, ḥbun	I	mi̯ʷan
未	1303	ḥbar	I	mj̯ʷei̯
牟	640	ḥbu	I, II	mi̯ĕu
無	1289	ḥbu	I, II, III	mi̯u
无	1276	ḥbu	III	mi̯u
聞	609	⎰ ḥbun, ḥbvun	I, II	mi̯uǝn
		⎱ bun	III	
妙	861	ḥbychi, ḥbychu	III	mi̯äu
滅	621	ḥbyer	I, II	mi̯ät
彌	13	ḥbyi, myi	II	mjie̯
蜜	617	ḥbyir	III	mi̯ĕt
5. 往	1298	ḥbvan	II	ji̯ʷang
6. 諸	1187	⎰ ḥcu	II	t'śi̯ʷo
		⎱ (ci, chi	II	
		cu	III)	
7. 陁	1011	ḥda	II	d'â
提	890	⎰ ḥda, ḥde	II	d'iei̯
		⎱ (de, dechi	I)	
達	956	ḥdar	II	d'ât
8. 納	654	ḥdab	III	nâp
那	647	ḥdaḥ	I	nâ
難	651	⎰ ḥdan	II	nân
		⎱ ḥnan	III	
泥	659	ḥde	III	niei̯
惱	653	⎰ ḥdechu	II	nâu
		⎱ ḥde	III	
涅	663	ḥder	III	niet
尼	659	⎰ ḥdi	I	n ji
		⎱ ḥji	II	
能	656	ḥdiṅ	I	nǝng

		ḫheṅ, ḫneṅ, ḫniṅ	II	
		do (sic !), *niṅ*	III	
暖	1343	*ḫdvan*	III	*nuân*
內	654	*ḫdvc*	III	*nuâi*
9. 就	252	{ *ḫdziḫu*	II	*dzʻi̯ǫu*
		{ *dziḫu*	I	
10. 我	679	{ *ḫga*	II, III	*nga*
		{ *ḫgaḫ*	I	
礙	205	{ *ḫge*	III	*ngâi*
		{ *ḫgi*	II	
業	229	*ḫgeb*	I, II	*ngi̯ɐp*
硬	316	*ḫgeḫu*	III	*ngɐng*
嚴	248	*ḫgem*	I, II	*ngi̯ɐm*
言	234	*ḫgen*	I, II, III	*ngi̯ɐn*
眼	312	{ *ḫgen*	I, III	*ngan*
		{ *ḫgvan*	III	
義	204	{ *ḫgi*	III	*ngjię*
		{ *ḫgiḫ*	I	
		{ *gi*	II	
議	204	*ḫgi*	I	*ngjię*
語	1281	{ *ḫgi*	II	*ngi̯wo*
		{ *ḫgu*	III	
逆	660	*ḫgig*	I, III	*ngi̯ɐk*
疑	205	*ḫgiḫ*	I	*ngji*
五	1280	*ḫgo*	II, III	*nguo*
悟	1281	*ḫgo*	III	*nguo*
愚	1325	*ḫgu*	III	*ngi̯u*
願	1344	{ *ḫgvan*	II	*ngi̯ʷɐn*
		{ *wen*	II	
月	1347	*ḫgvar*	II	*ngi̯ʷɐt*
外	775	*ḫgve*	III	*nguâi*
11. 而	10	*ḫgyar*	III	*ńźi*
12. 發	17	{ *ḫhad*	II	*pi̯ʷɐt*
		{ *ḫphad*	II	
		{ *ḫphar*	III	
		{ *phar*	III	

13. 行	156	{ *ḫḫe* { *ḫeṅ*	II III	{ *γʋng* { *γâng*
·降	351	*ḫḫeṅ*	I	*kâng, γâng*
14. 女	675	*ḫji*	I, II	*ni̯ʷo*
15. 丘	406	*ḫkhychu*	II	*k‘i̯eu*
16. 貌	605	{ *ḫmeg* | *ḫyag* | *meg, myag* { *yag*	I I I, II I	*mog*
17. 乃	648	*ḫnchi*	I	*nâi*
栖	945	{ *ḫnog* | *nog* { *log*	I I, II II	*nẓu*
18. 補	49	*ḫphu*	II	*puo*
覆	54	{ *ḫphu* { *phu*	II III	*p‘i̯uk*
非	27	{ *ḫphyi* { *phyi*	II I, II, III	*pj̯ʷei̯*
19. 莊	1264	{ *ḫtsa* { *tsang, tshang*	I I, II	*tṣi̯ang*
20. 王	1298	{ *ḫvaṅ* { *vaṅ*	II II	*ji̯ʷang*

A superficial examination of this list shows that the groups fall into two classes : (1) those in which the prefixed *ḫ*- has no apparent influence on the pronunciation of the radical ; (2) those in which the prefixed *ḫ*- nasalizes the radical.

It will be noticed that in a number of cases two parallel transcriptions occur, one with an initial *ḫ*- and one without it. Of these cases, as might have been expected, the great majority fall in the first class.

The groups belonging to the second or nasalizing class, Nos. 4, 8, 10, 11, and 14, are among the largest in the list, and between them form an overwhelming body of evidence in favour of the nasal value of ᱫ as a prefix in certain cases.

It is significant that although the letter *ṅ* is used fairly frequently as a final, the initial guttural nasal denoted with

ng- by Karlgren is invariably represented by *ḫg-*, initial *n̊-*
being unknown in these texts.

The exact value of prefixed *ḫ* in the cases falling in class 1
remains a mystery to us. That it had some value seems to
be proved by the fact that it was used with such freedom ;
on the other hand, that that value was a very slight one seems
equally to be proved by the number of cases in which
alternative forms +*ḫ*- occur. We have considered whether
any question of tones is involved, but there does not seem to
be any evidence to show that this is the case, and all things
considered we are disposed to think that the most reasonable
hypothesis is that in these texts, as in Tibetan, initial *ḫ*-,
when no question of nasalization is involved, represents a very
short initial vowel.

To sum up, the evidence of the Sino-Tibetan texts confirms
the purely Tibetan evidence of the phonetic value of ᩁ.

(4)   THE ḫPHAGS-PA EVIDENCE

There is a gap of several centuries between the Sino-
Tibetan texts discussed above and those in the ḫPhags-pa
alphabet. This alphabet was invented by the famous Tibetan
divine ḫPhags-pa in compliance with the orders of the Mongol
Emperor Kubilai, to form an official alphabet for the
transcription both of Mongol and Chinese, and was intro-
duced by imperial decree in A.D. 1269. Its use was never
popular and few specimens of it now survive, but these
include a copy of what was no doubt the official alphabet
in its proper order, together with the phonetic values of the
various letters represented by Chinese characters.

From this alphabet it appears that the first thirty letters of
the alphabet were simply the letters of the Tibetan alphabet
in their proper order ending with ᩑ *a*. There follow four new
letters, composed of horizontal lines with the vowel signs
for *i, u, e* (closed *e*), and *o* attached. These letters are
apparently inventions of ḫPhags-pa's, possibly under the
influence of the mediæval Indian alphabets with which he
was probably familiar.

Next follow four letters representing (1) apparently the Chinese sound represented by *hs* in the Wade alphabet, (2) χ, (3) *hw* or, possibly, *f*, (4) γ. The last three letters are not independent letters at all, but are the vowel sign for ε (open *e*, distinguished in this alphabet from closed *e*) and the subscript signs for *v* and *y*.

In imitation, no doubt, of Chinese the alphabet is written not horizontally but vertically in columns running from left to right.

The method of writing is strictly syllabic not only in Chinese where, the language being monosyllabic, it might have been expected, but also in Mongol. The letters of each syllable are joined to one another, while a gap is left between each syllable even when two or more form a single word.

While, as stated above, the alphabet was designed primarily for Mongol and Chinese, there also exists in the great hexaglott inscription of Chü Yung Kuan a transcription in this alphabet of a Sanskrit *dhāraṇi*.

It is interesting to find that in this text the letter ꡗ is used in the same way as in Tibetan to represent long vowels, but, the method of writing being vertical, the vowel sign, when the vowel is other than *ā*, is written below the ꡗ and not above the radical; for instance, *śrī*, which in Tibetan would be ཤྲཱི, is written ꡩ.

This convention in writing long vowels has puzzled some earlier scholars who dealt with the Mongol hPhags-pa inscriptions without considering the evidence afforded by this *dhāraṇi*, and did not realize that long and short vowels were distinguished in these inscriptions. It is, however, the case that a number of long vowels are so represented in the Mongol inscriptions, in such words as γ*ān* " Khan ", *ulā* " posthorse ", etc.

Apart from its use as a subscript letter, ꡗ is also used at the beginning of syllables, and the question naturally arises whether there is any difference of phonetic value between

᠊ and ᠊. After carefully considering the evidence, we are definitely of the opinion that there is no such distinction and that both characters alike represent a smooth vocalic ingress. This is exactly what might have been expected, since, as far as we are aware, it has never been suggested that the glottal stop exists in Mongol side by side with the smooth vocalic ingress, while it is commonly held by Chinese scholars that this sound had disappeared in Chinese before the thirteenth century.

The actual use of the two characters differs in the two languages.

In the Mongol inscriptions ᠊ is used only at the beginning of words, and never at the beginning of medial syllables. At the beginning of words the special characters referred to above are used for *e-*, *i-*, *o-*, and *u-*. ᠊ is, of course, used for *a-*, and also, in conjunction with the vowel sign *ε*, for *ö-* and *ü*, which are written *εo-* and *εu-*. For some reason which is unknown to us, perhaps to indicate that it is a loan-word, the word *ertini* or *erdini* " jewel " (Sanskrit *ratna*) is written ᠊*ertini* or ᠊*erdini*, although all other words beginning with *e-* are written with the special initial character for that sign.

᠊ is very rare as an initial. It is, in fact, so far as we are aware, only so used on five occasions :—

(1) *ham mεw* (Inscription of A.D. 1314, l. 16) " convent ", a Chinese loan-word.

(2) *hihēn* (Inscription of A.D. 1314, l. 2) " help ", which appears in the form *ihεhεn* in the Chü Yung Kuan Inscription, East Side, l. 1.

(3) *hügεhu* (C.Y.K., East Side, l. 1), a word of uncertain meaning, perhaps equivalent to or connected with the Classical Mongol word *ügei* " not having ", which appears elsewhere in this inscription in the form *ügεe*.

(4) *hugulegsεn* (C.Y.K., West Side, l. 7), probably derived from the Classical Mongol *ügüle-* " to speak, say, mention ".

(5) *hirgenε* (Inscription of A.D. 1321, l. 4) " to the people ", Classical *irgen-e*.

On the other hand, it is exceedingly common at the beginning of medial syllables, where a syllable ending in a vowel is followed by one beginning with a vowel, e.g. *ariḥuε* "pure", *ajuḥue* "he was", *boluḥad* "having been", and many other examples.

In the Chinese inscriptions the practice is somewhat different.

In the first place, the special initial letters *e-*, *i-*, *o-*, *u-* appear not to be used, and in the second place there is, of course, no question of medial syllables. Both ཨ and འ, therefore, are used exclusively as initials. ཨ is used—

(1) To represent *a* in the word 阿 *a*.

(2) In conjunction with the vowel sign for *u* to represent *u-* in such words as : 外, 爲, 位, 謂, 衞, 魏, 韋, 阮, 蔚, all represented by *ue*, modern pronunciation, according to Karlgren, *uei* or *uai*.

(3) In conjunction with the vowel signs for *ε + u* to represent *ü-* in such words as : 獄, 雨, 宇, 禹, 虞, 御, 喻, 于, 余, 魚, *ü*, modern pronunciation *ü*, and 永 *üṅ*, modern pronunciation *yung*.

(4) In conjunction with the subscript sign for *v* to represent *yü-* in such words as : 元, 員, 原, 源, 袁, 阮, *'vεn*, modern pronunciation *üan*; 月, 越, *'vε*, modern pronunciation *üe*; and to represent *w-* in such words as : 王, 往, *'vaṅ*, modern pronunciation *wang*.

འ, on the other hand, is used—

(1) To represent *a-* in such words as : 安 *ḥan*, mod. pron. *an*; 敖 *ḥaw*, mod. pron. *au*; and 惡 *ḥaw*, mod. pron. *o*.

(2) In conjunction with the appropriate vowel signs as the initial of the following words :—

> 焉 *ḥεn* (also *yεn*), mod. pron. *iεn*.
>
> 約 *ḥew*, mod. pron. *üe* or *iau*.
>
> 邑, 依, 意, 懿, *ḥi*, mod. pron. *i*.
>
> 陰, 膺, 飲, *ḥim*, 殷, 印, *ḥin*, mod. pron. *yin*.
>
> 應, 英, *ḥiṅ*, mod. pron. *ying*.
>
> 歐 *ḥiw*, mod. pron. *ou*.

於 *ḫu, ḫü,* mod. pron. *u* or *ü.*

蔚 *ḫue,* mod. pron. *uei* or *ü.*

郁 *ḫü,* mod. pron. *ü.*

雅 *ḫüṅ,* mod. pron. *iuṅ.*

This list does not disclose any logical allocation of the two signs to distinct phonetic usages. ꡖ is not used as the initial of any words beginning with vowels for which separate initial forms are provided. On the other hand, those separate initial forms themselves are not used. ꡢ is used with all the vowels. It will be observed that even in this short list there is one word, 蔚, which is spelt both with initial ꡖ and initial ꡢ, while another word, 焉, is spelt both with initial ꡢ and initial *y.* With more material it seems reasonably clear that it would be proved even more conclusively that in the ḫPhags-pa alphabet the difference between ꡖ and ꡢ is simply one of artificial convention and not of phonetic value, apart from the usage of ꡢ to indicate long vowels.