Beinecke MS 408

1 Introduction

In Section 2, some basic analyses are presented. First, in Section 2.1, glyph frequencies are counted. In Section 2.2, then, entropy is calculated.

In Section 3, mainly to promote easier readability and comparability, a transcription of the manuscript is provided, based on a transliteration by Takahashi (1999). Takahashi's transliteration is obtained in an automatically capitalized version of the *European* or *Extensible Voynich Alphabet* (EVA) using the *Interlinear Transcription Archive Extractor* by Schwerdtfeger (2004).[1] It is then converted back into glyphs using a font by Bettencourt (2019).

Using the manuscript's reproduction in Clemens (2016) and the scans provided by Yale University's Beinecke Rare Book and Manuscript Library (2004), Takahashi's transliteration is compared with what I am able to make out of the manuscript. Glyphs that I interpret in another way than Takahashi are printed in orange, showing my interpretation. When a glyph has been deleted *without replacement*, this is indicated by $\cancel{x}$. Removed spaces are marked with ⌢ and added spaces are indicated by ⌣. For the sake of simplicity, places where the writing is interrupted by illustrations are also marked by spaces. Especially the recognition of spaces in running text is sometimes very difficult; therefore, my adjustments in this – just as in any other – regard should be taken with a certain amount of caution. In total, I made changes in 167 places of Takahashi's transliteration.

Each transcription line is preceded by a locator in square brackets, informing the reader about the element a line is part of (i.e., paragraph, title, or label) and assigning the line a number. For example, a line located at [P2, 9] is part of the page's second paragraph (P2) and is counted as the overall ninth line (9) on this page.

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[1] Schwerdtfeger (2004) builds on an online archive of Voynich transcriptions maintained by Jorge Stolfi (1998). For a general overview of transcription efforts, see Zandbergen (2023).

2 Analysis

2.1 Glyph Frequencies

Based on a transliteration by Takahashi (see Section 1), a first basic analysis of frequencies can be performed, by simply counting each Latin letter of the transliteration. This results in Table 1, listing all letters that are used.

Letter	Glyph	Count
o	o	25,468
e	c	20,070
h	ɕ	17,856
y	9	17,655
a	ɑ	14,281
c	ꞇ	13,314
d	8	12,973
i	ı	11,660
l	ꝗ	10,518
k	lſ	9,996
r	ʔ	7,456
n	ɔ	6,141
t	ſſ	5,968
q	†	5,423
S	ꞔ	4,501
s	ƨ	2,886
p	ꝑ	1,406
m	ꝭ	1,116
T	ſ̶ſ̶	976
K	l̶ſ̶	938
f	ꝓ	425
P	ꝑ̶	224
g	ꝭ̇	96
F	ꝓ̶	80
I	ᴛ	72
x	ϰ	35
v	ʌ	9
z	ɩꝑ	2

Table 1: Letter frequencies in Takahashi's transliteration.

Determining what counts as *one* glyph, though, is in some cases an interpretative act. It seems straightforward to assume that ꞇ and ɕ are one glyph (i.e., ꞇɕ). Likewise, ꞔ and ɕ could be interpreted as another glyph (i.e., ꞔɕ). Additionally, one *might* interpret instances of ꞇſſɕ, ꞇlſɕ, ꞇꝑɕ, or ꞇꝓɕ as representing ꞇɕ (or ꞔɕ), on the one hand, and ſſ, lſ, ꝑ, or ꝓ, on the other. Concerning those "gallows" characters, as they have come to be called, it is not clear whether ſſ and lſ or ꝑ and ꝓ are variations of the same glyphs, only diverging in one small loop (as Tiltman 1967 seems to have interpreted them). In the following, the four gallows will be treated as distinct glyphs, as has become customary. Accordingly, Table 2 gives frequencies for several ꞇ combinations, taking into account four forms of "pedestalled gallows". The table also includes three instances that bear some resemblance to Latin abbreviations (also see D'Imperio 1978, p. 95).

Furthermore, while there are instances of a single ı, it is not clear whether instances like ıı and ııı or combinations with ɔ like ıɔ or ııɔ represent separate glyphs. Table 3 gives frequencies for several of those ı combinations. Assuming there are three glyphs ı,

Glyph	Count
ꞓƈ	11,008
ꝺƈ	4,501
ꞓꝥƈ	950
ꞓƥƈ	906
ꞓꝓƈ	216
ꞓꝼƈ	74
ꞓ	143
ꞓo	9
ꞓ9	7

Table 2: Glyph frequencies in Takahashi's transliteration for several ꞓ combinations.

ιʋ, and ιιʋ, it is of course difficult to determine when there actually is a ιʋ or a ιιʋ.

Glyph	Count
ι	590
ιι	195
ιιι	10
ʋ	148
ιʋ	1,752
ιιʋ	4,076
ιιιʋ	154
ιιιιʋ	2

Table 3: Glyph frequencies in Takahashi's transliteration for several ι combinations.

This being said, I tentatively stipulate a set of 22 glyphs. Table 4 gives frequencies for those glyphs. They are counted as follows:

- The glyphs ɑ, 8, c, ȣ, ꞇ, ꝙ, ꝩ, o, ϯ, ʔ, ƨ, ʌ, ⲁ, and 9 are simply counted as before. Hence, frequencies are identical with Table 1.
- The glyph ꝺƈ is counted every time ꝺ and ƈ appear consecutively.
- The glyph ꞓƈ is counted every time ꞓ and ƈ appear consecutively, as well as in cases where there is ꝧ, ᵽ, ꝕ, or ꝿ between them.
- The glyph ꝥ is counted every time ꝥ or ꝧ appears.
- The glyph ƥ is counted every time ƥ, ᵽ, or ꟼ appears.
- The glyph ꝓ is counted every time ꝓ or ꝕ appears.
- The glyph ꝼ is counted every time ꝼ or ꝿ appears.
- The glyph ιʋ is counted every time ι and ʋ appear consecutively without there being a preceding second ι.
- The glyph ιιʋ is counted every time ι, ι, and ʋ appear consecutively.
- The glyph ι is counted every time it is not part of ιʋ or ιιʋ as well as in instances of ꞇ.

Glyph	Count	Percent
o	25,468	15.636
c	20,070	12.322
9	17,655	10.839
a	14,281	8.768
cc	13,154	8.076
8	12,973	7.965
ǁ°	10,934	6.713
ꝗ	10,518	6.458
ʔ	7,456	4.578
ǀǁ°	6,944	4.263
†	5,423	3.329
ƈc	4,501	2.763
\\ϑ	4,232	2.598
ƨ	2,886	1.772
\ϑ	1,752	1.076
ǂ°	1,630	1.001
\	1,240	0.761
ȣ	1,116	0.685
†°	505	0.310
ȝ	96	0.059
ϰ	35	0.021
∧	9	<0.001
	162,878	

Table 4: Glyph frequencies in Takahashi's transliteration

2.2 Entropy

Next, we take a look at the manuscript's entropy. To this end, we utilize the conceptualization of entropy by Shannon (1948). As shown in (1), the entropy H of a

$$H(X) = -\sum_{i=1}^{n} P\left(x_i\right) \log P\left(x_i\right) \tag{1}$$

3 Transcription

Folio 1, Recto

[P1, 1]
fachys ykal ar ataiin shol shory cthres y kor sholdy
[P1, 2]
sory ckhar or y kair chtaiin shar are cthar cthar dan
[P1, 3]
syaiir sheky or ykaiin shod cthoary cthes daraiin sy
[P1, 4]
doiin oteey oteos roloty cthiar daiin okaiin or okan
[P1, 5]
dair,y chear cthaiin cphar cfhaiin
[T1, 6]
ydaraishy

[P2, 7]
ɣ odar ƈ,y shol cphoy oydar sh*,s cfhoaiin shodary
[P2, 8]
yshey shody okchoy otchol chocthy oschy dain chor kos
[P2, 9]
daiin shos cfhol shody
[T2, 10]
dain os teody

[P3, 11]
ɣ ydain cphesaiin ol,s cphey ytain shoshy cphodales
[P3, 12]
oksho kshoy otairin oteol okan shodain sckhey daiin
[P3, 13]
shoy ckhey kodaiin cphy cphodaiils cthey she oldain d
[P3, 14]
dain oiin chol odaiin chodain chdy okain dan cthy kod
[P3, 15]
daiin shckhey ckhor chor shey kol chol chol kor chal
[P3, 16]
sho chol shodan kshy kchy dor chodaiin sho kchom
[P3, 17]
ycho tchey chekain sheo pshol dydyd cthy daicthy
[P3, 18]
yto shol she kodshey cphealy dasain dain ckhyds
[P3, 19]
dchar shcthaiin okaiir,chey rchy potol cthols daocta
[P3, 20]
shok chor chey dain ckhey
[T3, 21]
otol daiiin

[P4, 22]
cpho shaiin shokcheey chol tshodeesy shey pydeey chy ro dar
[P4, 23]
*doin chol dain cthal dar shear kaiin dar shey cthar
[P4, 24]
cho*o kaiin shoaiin okol daiin far cthol daiin ctholdar
[P4, 25]
ycheey okay oky daiin okchey kokaiin ofchol kadchy dal
[P4, 26]
dcheo shody koshey cthy okchey keey keey dal chtor
[P4, 27]
cho chol chok choty chotey
[T4, 28]
dchaiin

Folio 1, Verso

[P1, 1]
kchsy chadaiin ol oltchey char cphar am
[P1, 2]
yteey char or ochy dcho lkody okodar chody
[P1, 3]
do ckhy ckho ckhy shy dksheey cthy kotchody dal
[P1, 4]
dol chokeo dair dam sochey chokody

[P2, 5]
potoy shol dair cphoal dar chey tody otoaiin shoshy
[P2, 6]
choky chol cthol shol okal dolchey chodo lol chy cthy
[P2, 7]
fo ol choees cheol dol cthey ykol dol dolo ykol do lchody
[P2, 8]
okol⌒shol kol kechy chol ky chol cthol chody chol daiin
[P2, 9]
shor okol chol dol ky dar shol dchor otcho dar shody
[P2, 10]
taor chotchey dal chody schody pol chodar

Folio 2, Recto

[P1, 1]
kydainy ypchol daiin otchal ypchaiin ctholsy
[P1, 2]
dorchory chkar s shor cthy cth
[P1, 3]
qotaiin cthey y chor chy ydy chaiin
[P1, 4]
chaindy chtod dy cphy dals chokaiin d
[P1, 5]
otochor al shodaiin chol dan ytchaiin dan
[P1, 6]
saiin daind dkol sor ytoldy dchol dchy cthy
[P1, 7]
shor cthy daiiny chol dan

[L1, 8]
ytoaile*
[L2, 9]
***an

[P2, 10]
kydain shaiin qoy s shol fodan yksh olsheey daiildy
[P2, 11]
dlssho kol sheey qokey ykody so chol yky dain dairol
[P2, 12]
qoky cholaiin shol sheky daiin cthey keol saiin saiin
[P2, 13]
ychain dal chy dalor shan dan olsaiin sheey cthor
[P2, 14]
okol chy chor cthor yor an chan saiin chety chyky sal
[P2, 15]
sho ykeey chey daiin chcthy

Folio 2, Verso

[P1, 1]
kooiin cheo pchor otaiin o dain chor dair shty
[P1, 2]
kcho kchy sho shol qotcho loeees qoty chor daiin
[P1, 3]
otchy chor lshy chol chody chodain chcthy daiin
[P1, 4]
sho cholo cheor chodaiin

[P2, 5]
kchor shy daiiin chckhoy s shey dor chol daiin
[P2, 6]
dor chol chor chol keol chy chty daiin otchor chan
[P2, 7]
daiin chotchey qoteeey chokeos chees chr cheaiin
[P2, 8]
chokoishe chor cheol chol dolody

Folio 3, Recto

[P1, 1]
tsheos qopal chol cthol daimm
[P1, 2]
ycheor chor dam qotcham cham
[P1, 3]
ochor qocheor chol daiin cthy
[P1, 4]
schey chor chal cham cham cho
[P1, 5]
qokol chololy s cham cthol
[P1, 6]
ychtaiin chor cthom otal⁀dam
[P1, 7]
otchol qodaiin chom shom damo
[P1, 8]
ysheor chor chol oky damo
[P1, 9]
sho *or sheoldam otchody ol
[P1, 10]
ydas chol cthom

[P2, 11]
pcheol shol sols sheol shey
[P2, 12]
okadaiin qokchor qoschodam octhy
[P2, 13]
qokeey qot shey qokody qokshey cheody
[P2, 14]
chor qodair okeey qokeey

[P3, 15]
tsheoarom shor or chor olchsy chom otchom oporar
[P3, 16]
oteol chol s cheol ekshy qokeom qokol daiin soleed
[P3, 17]
soeom okeom yteody qokeeo⁀dal sam

[P4, 18]
pcheoldom shodaiin qopchor qopol opchol qoty otolom
[P4, 19]
otchor ol cheor qoeor dair qoteol qosaiin chor cthy
[P4, 20]
ycheor chol odaiin chol s aiin okolor am

Folio 3, Verso

[P1, 1]
koaiin cphor qotoy sha ckhol ykoaiin s oly
[P1, 2]
daiidy qotchol okchor okor olytol dol dar
[P1, 3]
okom chol shol seees chom cheeykam okai
[P1, 4]
qodar chs chy kcheol okal do⁀r chear een
[P1, 5]
ychear otchal chor char ckhy
[P1, 6]
or cheor kor chodaly chom

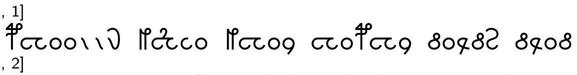
[P2, 7]
tchor otcham chor cfham s
[P2, 8]
ykchy kchom chor chckhol oka
[P2, 9]
ytcheear okeol cthodoaly chor cthy
[P2, 10]
ochor daiin qokshol daiim chol okary
[P2, 11]
sho shockho ckhy tchor chodaiin chom
[P2, 12]
osh chodair ytchy tchor kcham s
[P2, 13]
shar shkaiin qokchy yty cthal chky
[P2, 14]
dain sheam yteam

Folio 4, Recto

[P1, 1]
kodalchy chpady sheol ol sheey qotey doiin chor ytoy
[P1, 2]
dchor chol shol cthol shtchy chaiin *s choraiin chom
[P1, 3]
otchol chol chy chaiin qotaiin daiin shain
[P1, 4]
qotchol chy yty daiin okaiin cthy

[P2, 5]
pydaiin qotchy dy tydy
[P2, 6]
chor shytchy dy tcheey
[P2, 7]
qotaiin cthol daiin cthom
[P2, 8]
shor shol shol cthy cpholdy
[P2, 9]
daiin cthochy tchy koraiin
[P2, 10]
odal shor shyshol cphaiin
[P2, 11]
qotchoiin sheyr qoty
[P2, 12]
soiin chaiin chaiin
[P2, 13]
daiin cthey

Folio 4, Verso

[P1, 1]

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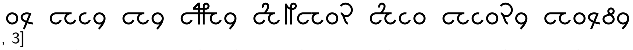
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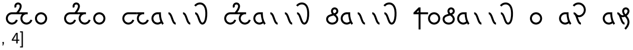
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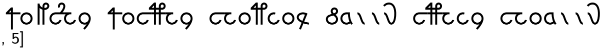
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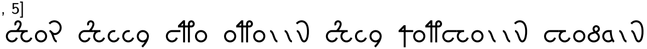
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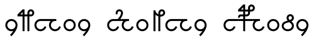

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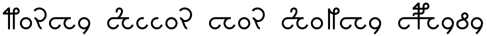
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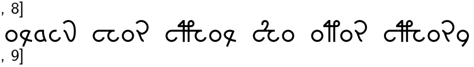
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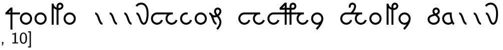
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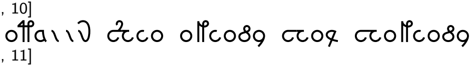
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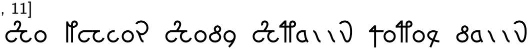
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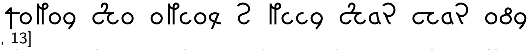
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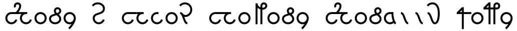
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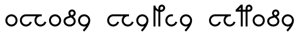


Folio 5, Recto

[P1, 1]
kshody fchoy chkoy oaiin oar olsy chody dkshy dy
[P1, 2]
ochey okey qokaiin sho ckhoy cthey chey oka*or otol
[P1, 3]
qoaiin otain chy daiin oteeen cho cthy otchy qotcho dy
[P1, 4]
otain sheody chan s cheor chocthy

[P2, 5]
tshy shody qoaiin cholols sho qotcheo daiin shodaiin
[P2, 6]
sho cheor chey qoeeey qoykeeey qoeor cthy shotshy dy
[P2, 7]
qotoeey keey cheo kchy shody

Folio 5, Verso

[P1, 1]
kocheor chor ytchey pshod chols chodaiin ytoiiin daiin
[P1, 2]
dchol shy chol otaiin dain cthor chots ychopordg
[P1, 3]
fotcho ytor daiin daiin otchor daiin fo darchor do
[P1, 4]
fotor shees otol ykoiin shol daiin cthor okchy taiin
[P1, 5]
shokeeol chor cheotol otchol daiin dal chol chotaiin
[P1, 6]
otol chol dairodg

Folio 6, Recto

[P1, 1]
foar y shol cholor cphol chor checkh chopchol okcham
[P1, 2]
daiin chckhy chor chor kar cthy cthor chotols
[P1, 3]
poeear kshor choky os cheoeees ykeor ytaiin dar
[P1, 4]
dar cho s sheor chocthy otcham yair chy
[P1, 5]
tar okoiin shees ytaly cthaiin odam
[P1, 6]
or al daiin ckham okom cthaiin ydaiin
[P1, 7]
daiin qodaiin cho s chol okaiin s
[P1, 8]
ychol ckhor pchar sheo ckhaiin
[P1, 9]
dar sheol skaiiodar otaiin chory
[P1, 10]
tchor ctheod chy shor odshe od
[P1, 11]
ychar olchad ol chokaiin
[P1, 12]
or shol cthom chor cthy
[P1, 13]
qocthol yodaiin cthy
[P1, 14]
ysho taiin y kaiim

Folio 6, Verso

[P1, 1]
koar y sar cheekar poar shor chafchy s chear char otchy
[P1, 2]
oees chor chckhy poekchar cheas odaiiin kchey chor chaiin
[P1, 3]
poair ckhy chol oochockhy chekchoy ckhy okol rychos
[P1, 4]
y shckhy ytchoy sos y⁀dady dchy dey okody ytody
[P1, 5]
dair sha chodam dam okor oty doldom

[P2, 6]
tchody shocthol chocthey s
[P2, 7]
ychos ychol daiin cthol dol
[P2, 8]
ychor chor okchey pokom
[P2, 9]
oeeo dal chor cthom s
[P2, 10]
pokchod ychear kchdy
[P2, 11]
lor char otam cthom dy
[P2, 12]
ytchos shy pokam cthy
[P2, 13]
yodaiin cthy s chor oees or
[P2, 14]
pokor chol cthol tchalody
[P2, 15]
chockhy s os chy sain or
[P2, 16]
ochy cthar cthar cthy
[P2, 17]
y chaiir ckhal cthodam dy
[P2, 18]
ytcho⁀cthol ches cthor
[P2, 19]
ocholy kchos chy dor
[P2, 20]
dchor choldar okol daiin
[P2, 21]
ycheor chor octham

Folio 7, Recto

[P1, 1]
fchodaiin shopchey qko shey qoos sheey charochy
[P1, 2]
dcheey keor shor dold dchey kchey otchy cheody
[P1, 3]
oeeees cheodaiin sheey ytcheey qotchy chald
[P1, 4]
qokcho cho lochey daiin ychey kchos odaiin
[P1, 5]
oaiir otaiin

[P2, 6]
ksholoshey qotoees chkoldy otchor choaiin
[P2, 7]
dshoy cthol chol otchol dain shody shol chotchy
[P2, 8]
okchey deeeese choty qokchy shol keey choty dain
[P2, 9]
qokechy olchoiin chol cphey shckhey chochy kchod
[P2, 10]
schain chor daiin chckhey

Folio 7, Verso

[P1, 1]
polyshy shey tchody qopchy otshol dy⌒daiin tshodody
[P1, 2]
chochy cthy daiin qoky chcphey daiin cthol cthy cthd
[P1, 3]
qokchy dykchy chkeey kshy ky ty dor cheey ol⌒cheol⌒dy
[P1, 4]
choteeen oeear choschy dain sho⌒kshy shol deees⌒dol
[P1, 5]
dchodaiin qotchy cheey tcheey

[P2, 6]
kchor sheod sheodaiin shodaiin oksho⌒lshol dair qos
[P2, 7]
oksho⌒deeen chor⌒cheor odaiin shotch* dol dol dor aiin
[P2, 8]
qoteeeo rcho⌒cheeody qotchey tey okchor daiin
[P2, 9]
sho keeo daiir chokchy dor deol dy dol daiin

Folio 8, Recto

[P1, 1]
pshol chor otshal chopy cphol chody shy cfhodar shor

[P1, 2]
tchty sh kcheals sho okche do dchy dain al

[P1, 3]
chodar shy ry chodaiin shokchy chor dy

[P1, 4]
qotor chor chor sheey dchol shesed chofchy dam

[P1, 5]
okchey do r cheeey dy ky scho chky ekooaiin cho taiin

[P1, 6]
tosh ekcheey koltoldy shy choety cheeody sol

[P1, 7]
choto kchoan choor dain

[T1, 8]
dcho daiin

[P2, 9]
tchoep sho pcheey pchey ofchey dsheey shol‿daiin shor

[P2, 10]
daiin cheey teeodan dy cheocthy oksheo dol dairm

[P2, 11]
shol cheodaiin daiin do ykchody chok choty otariin

[P2, 12]
qoechodaiin shotokody chotol

[T2, 13]
okokchodm

[P3, 14]
ctho cthey shol chofydy sho chey kshey lody cholal

[P3, 15]
dchey cthol chol chey kchs chy cthodaiin dol daiiirchy cthy

[P3, 16]
ychey kchokchy chsey kchy scheaiin cthaichar cthy dar

[P3, 17]
chol dchy qokar chl aiin chean eky char chaiin

[P3, 18]
okar cphaiin chaiin el daiin chor cha rchealcham

[P3, 19]
sair cheain cphol dar shol kaiin shol kaiin daikam

[P3, 20]
or chokesey shey okal chal

[T3, 21]
schol sair

Folio 8, Verso

[P1, 1]
cthod soocth sol shol okol chol opcheaiin opydaiin saiin
[P1, 2]
shcthal sar chor sheaiin shor chykchy otaiin ety
[P1, 3]
qody cheal sy chory chear shol chaiin shaiin dolar
[P1, 4]
dshol shol dal chean cthar shealy daiin chary
[P1, 5]
chol chol dar okchar ekaiin cthol dar
[P1, 6]
daiin cthan ytchy chey kaiin dain ar
[P1, 7]
sho kchol dar shey cthar chotain ry
[P1, 8]
okchol ksh chol chol chol cthaiin dain
[P1, 9]
shol orchl chokchy chol cthor chaiin
[P1, 10]
scharchy oeesody kchey pchy cpharom
[P1, 11]
sorain

[P2, 12]
pchar cho rol dal shear chchotaiin chal daiin
[P2, 13]
kchor otchar oky chokain keoky otorchy satar
[P2, 14]
shor okol lokaiin shol kol char cthey tchy ckham
[P2, 15]
or chol cheen cheky chor chean char cheeky chor ry
[P2, 16]
chor chear chear oteey dchor chodey cho raiin
[P2, 17]
dain chear daiin

Folio 9, Recto

[P1, 1]
tydlo choly cthor orchey s shy odaiin sary shor cthy
[P1, 2]
oykeey chol ytaiin okchody toeoky okoiin dy or chaiin
[P1, 3]
toiin cphy qotod otaiin cthy okor chey cthod ram
[P1, 4]
yshy chokcho chcthod shor shaiin otar dor ytol dayty
[P1, 5]
daiin chor sor cthy chokoiin shol dsholdy otchol ot dy

[P2, 6]
pshoain cthyaiin okaiir cfhodoral shar sy shydal chdy
[P2, 7]
or chol chytchy tchol ytor qotol chyky chodar aiin
[P2, 8]
qotcho qokchy cthey koraiin okain d dal s olsho cthy
[P2, 9]
ocho cthy choetoy chodykchy saiin dchy daiin
[T1, 10]
ytchas oraiin chkor

Folio 9, Verso

[P1, 1]
fochor oposody opy shor daiin qopchypcho qofol shol cfhol daiin
[P1, 2]
dchor qoaiin chkaiin cthor chol chor cphol dy oty qokaiin dy
[P1, 3]
ykey chor ykaiin daiin cthy otaiin oky oeees daiin
[P1, 4]
ytey tchy kaiin cthor otol oty toldy

[P2, 5]
pchor ypcheey qotor ypchy olcfholy te ar chty daiiin
[P2, 6]
odol choy ksheody chody dain otchy ctheod yko
[P2, 7]
qochol chol cthey daiin otal dor daim
[P2, 8]
soiin daiin qokcho sokyd daly
[P2, 9]
daiin chy tor chyty dary ytoldy
[P2, 10]
oty kchol chol chy kyty
[P2, 11]
ychor chshoty oky kaiin
[P2, 12]
chkaiin cthy chor

Folio 10, Recto

[P1, 1]
pchocthy shor octhody chorchy pchodol chopchal ypch kom
[P1, 2]
dchey cthoor char chty os chair otytchol oky daiin ctyd
[P1, 3]
qotor otchy daiin chocthy qotchy chol or yty dy dy
[P1, 4]
sor chaiin chcthy ctho ckhy or aiin chtchor doiir ody
[P1, 5]
qokchy qotchol chol cthy

[P2, 6]
ychsor cthy chor cthaiin qoctholy dy chy taiin shy
[P2, 7]
dchy qokchol ykchaiin yty daiin cth dain dair am
[P2, 8]
qotchor chor otol chol cholor chol daiin dar
[P2, 9]
oykchor shor chor chy kaiiin dy chodaiin
[P2, 10]
oqotor otor cphy cthor osain ytoiin
[P2, 11]
rotcho shor qoty qotor cthy d otar
[P2, 12]
rodaiin daiin qotchy qotor

Folio 10, Verso

[P1, 1]
paiin daiin sheo pcheey qoky daiin ckhor okydy sain
[P1, 2]
dain daiin cthy chckhor choiin qok chodaiin ckhy daiin
[P1, 3]
dsho ykey tchol olky chol dy

[P2, 4]
qokchykor shoiin daiin qokchey shckhey ykor dain
[P2, 5]
sho yteey daiin qokchy qokor chol daiin qotchyty
[P2, 6]
shoiin chor shckhey qoky qokoiin qotol choraiin
[P2, 7]
qotol chyty chol chety daiin dain chcthan

Folio 11, Recto

[P1, 1]
tshol schoal cfhy shfydaiin cthy shey tchody shoyty
[P1, 2]
socthody qodor y kshy daiin ytchy ytchoky kchol daiin
[P1, 3]
qoty chol cthy dor ykychy choty dain chaiin daiin ded
[P1, 4]
dchol chy kchy dy daiin

[P2, 5]
tchol shor shor dky *cthy daiin cthy dy chodl daiin
[P2, 6]
odl ds y otol chaiin ykchor dair chody cthy s daiin
[P2, 7]
qotchy okchol cthy dy

Folio 11, Verso

[P1, 1]
poldchody shcphy shordy qoty shol cphar dan y
[P1, 2]
shol dy chckhy shcthy daiin dam ykchy dain dchy
[P1, 3]
otchor dy kchy tchy dar qokchd oky chol dy dy
[P1, 4]
qokchor chololer chyky dchy qoky ctho tchey tan
[P1, 5]
soydy qoteey qot‿chor dy ddy cthor shy arm
[P1, 6]
ycheor ksho dor cthey schold

Folio 12

Folio 12 is missing from the manuscript.

Folio 13, Recto

[P1, 1]
torshor opchy shol dy qopchy shol opchor dypchy dchg
[P1, 2]
dchol chol dol shkchy ydal shy ykchy qot‿ey daiin s y
[P1, 3]
s y dchor shaiin oeees ykor chor ytshy ykchy kchy dar
[P1, 4]
qodchy ytchy otchor

[P2, 5]
shorodo shy tshy kchol dpchy qopchy otchol cfhol dy
[P2, 6]
tchor dor daiin qotchol okchy okchor oiin chckhy d
[P2, 7]
dchy qoky chol dy qokey d oldy okchor doaiin
[P2, 8]
shochy qokchy torchy kchty s okchey daiin
[P2, 9]
oldy shey chol doiin ykoly okchal daldy
[P2, 10]
sotchy kchy okorory

Folio 13, Verso

[P1, 1]
koair chtoiin otchy kchod otol otchy octhos
[P1, 2]
oko qokol chodal otchol cphol choty
[P1, 3]
qokchy qokod chy otchy cthody
[P1, 4]
ols chey okos oaiin okshy qocky
[P1, 5]
qoky daiin

[P2, 6]
foldaiin olcphy shol dy oty shor qotyd dairo d
[P2, 7]
dain okal chy qokchory dchy koky daiin shon
[P2, 8]
otchy daiin y dain ykol okchy okald d ytaiin
[P2, 9]
tchtod okal cthor ytal y cho tol sho qocthy
[P2, 10]
y ol chy kchey kchor dal

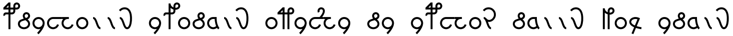
Folio 14, Recto

[P1, 1]
pchodaiin chopol shoiin daiin dain
[P1, 2]
o ykeey soiiin chok qokchy da okol
[P1, 3]
ydaiin olchy kchor daiin olol
[P1, 4]
ochkchor kol shy daiin dorody
[P1, 5]
qokchol dar dalo qotolo
[P1, 6]
ychol oir okor choor octhy
[P1, 7]
otcho dain chcthy

[P2, 8]
soshy fchol shor cheor ykaiin s
[P2, 9]
sody chody otchody qotchy koiin sy shoty dy
[P2, 10]
qotchor chod shoty chody dol dy dy okchy dy
[P2, 11]
dchokchy schol dy shey dar qoty ykeey ky
[P2, 12]
oeeen chey keor chey tchy ky chodalg
[P2, 13]
sodaiin chy kchy kchy ykeody

Folio 14, Verso

[P1, 1]



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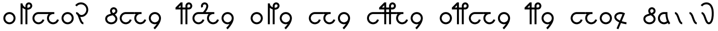

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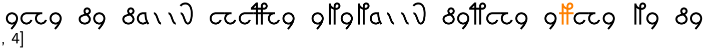

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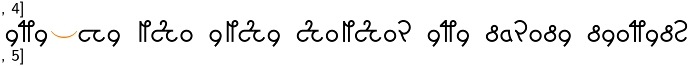

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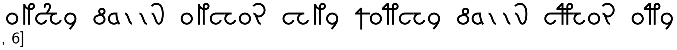

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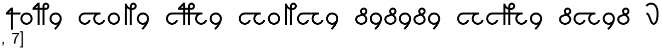

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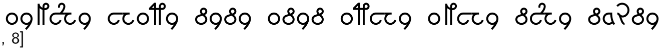

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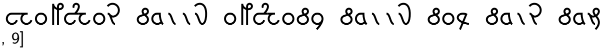

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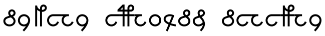


Folio 15, Recto

[P1, 1]
tshor shey tchaly shy chtols shey daiin
[P1, 2]
otchor qokchor oly okor shy koly
[P1, 3]
qokaiin qotchy tydy daiin chol cthy
[P1, 4]
scheaiin chodaiin chl sol ckhaiin sal
[P1, 5]
qotchy r shor cthy daiin cthy dy
[P1, 6]
dchy kokaiin chdy saiin okear
[P1, 7]
daiin shkaiin cthy sho keocthy
[P1, 8]
shocthy tol kaiin s dain ctholy
[P1, 9]
octhain qokaiin chos odaiin cthl s y
[P1, 10]
ychain chckhey okshy saiiin dolchds
[P1, 11]
okaiin otaiin chl sy chor chorors
[P1, 12]
qotor shor tcheor chy cthaiin shan
[P1, 13]
ykshol dor sheey cthy dain sky shor shoty
[P1, 14]
otcho kchy chol daiin cthar ytol dor dom
[P1, 15]
qotchor chaiin chy kol‿daky

Folio 15, Verso

[P1, 1]
poror orshy choiin dtchan opchor dy
[P1, 2]
*chor or oro r aiin cthy tain dar
[P1, 3]
cthor daiin fokor okeor okaiin
[P1, 4]
doiin choky shol foky fotchod
[P1, 5]
otchor chor chor ytchor cthy s
[P1, 6]
fotchey choty kaiin otchy r aiin
[P1, 7]
eoy choiin sho s chy s chy tor ols
[P1, 8]
ytchor chor ol oiin oty shol daiin
[P1, 9]
otcholocthol chol chol chody kan
[P1, 10]
sor chor cthoiin cthy fokaiin
[P1, 11]
soloiin cheor chol daiin cthy
[P1, 12]
daiin cthor chol chor

Folio 16, Recto

[P1, 1]
pocheody qopchey sykaiin opchy dor ychy daiin dy chor orom
[P1, 2]
ychykchy otly kol shor ody otody qoy oeesordy
[P1, 3]
ydor sheal okchy qoy koiin choky ykair
[T1, 4]
dainod ychealod

[P2, 5]
tchor chor chs ykch shocthy opchy ty ky
[P2, 6]
oshaiin dyky oeees deeeod aiin dtoaiin
[P2, 7]
daiin dalchy dyky schy saiin doal qoky
[P2, 8]
shotchy ydain yky shody otol daiin
[P2, 9]
saiin ytaiin

[P3, 10]
toror dalydal opchy fchol ypchoefy okal
[P3, 11]
sokchy qokol choty‿okchy cthy chy kchy
[P3, 12]
dychokchy shcthy shtshy sho tchokyd
[P3, 13]
qokchor dl dy shey

Folio 16, Verso

[P1, 1]
pchraiin otchor chpchol chpchey s pchocty
[P1, 2]
ytchor y ky chokchy qokchocthor shory
[P1, 3]
ykchy dy choy qoty chy kchy koshect
[P1, 4]
dchol chcthody cthod chotol dal
[P1, 5]
ytchy chyty chor chol ytchy dan
[P1, 6]
sor chkor oty chkor chol dairin

[P2, 7]
pchocthy chypchy qotchy chcfhey sy
[P2, 8]
daiin chol y daiin chcthy qotchar chor sholo
[P2, 9]
dshy okaiin okaiin chol chor cthor ty chody
[P2, 10]
qokchy chydy ykchy chcthy otain cthor cthy
[P2, 11]
okytaiin chkchy saiin
[P2, 12]
daiin yky otor chody
[P2, 13]
sokar oaorar

Folio 17, Recto

[P1, 1]
pshody daram ydarchom opydy ypod chop otchy dody oldckhy
[P1, 2]
ydair choky okshy qodar cthody dor otchol qodcthy ods
[P1, 3]
chol or chy qodam okor chor okchom

[P2, 4]
tchom shol qokol qor olaiin opydg som ypchy ypaim
[P2, 5]
ychekchy cthy chor shor cthor cthaldy dair cthey qody
[P2, 6]
tsho qofcho qokcheor chckhy

[P3, 7]
ksheo qokchy choldshy ihepchy dshe opchordy
[P3, 8]
dchchy dychear schar ykchy
[P3, 9]
soy chctho o dar chypcham
[P3, 10]
dar chear dsheor dain y mol
[P3, 11]
otchol cthar okaiin chol daiiin
[P3, 12]
ychody chotom

Folio 17, Verso

[P1, 1]
pchodol chor fchy opydaiin odaldy

[P1, 2]
ycheey keeor cthodal okol odaiin okal

[P1, 3]
oldaim odaiin okal oldaiin chockhol olol

[P1, 4]
kchor fchol cphol olcheol okeeey

[P1, 5]
ychol chol dolcheey tchol dar ckhy

[P1, 6]
oekor or okaiin or otaiin d

[P1, 7]
sor chkeey poiis cheor os s aiin

[P1, 8]
qokeey kchar ol dy choldaiin sy

[P1, 9]
ycheol shol kchol choltaiin ol

[P1, 10]
oytor okeor okar okol doiiram

[P1, 11]
qokcheo qokoiir ctheol chol

[P1, 12]
oy choy koaiin chcthy ol chor

[P1, 13]
ykeor chol chol cthol chkor sheol

[P1, 14]
olo r okeeol chodaiin okeol tchory

[P1, 15]
ychor cthy cheeky cheo otor oteol

[P1, 16]
okcheol chol okeol cthol otcheolom

[P1, 17]
qoain sar she dol qopchaiin cthor

[P1, 18]
otor cheeor ol chol dor chr or eees

[P1, 19]
dain chey qoaiin cthor chol chom

[P1, 20]
ykeey okeey cheor chol sho ydaiin

[P1, 21]
oal sheor sholor or shecthy cpheor daiin

[P1, 22]
qokeee dar chey keeor cheeol ctheey cthy

[P1, 23]
chkeey okeor shar okeom

Folio 18, Recto

[P1, 1]
pdrairdy darodef yoar ykchol dar o m chckhy ockhor dal
[P1, 2]
otshol qokchol chykchy okchal daiin dy chol diiin
[P1, 3]
qokchor chor chckhy orchey qokchol dy ytchar g
[P1, 4]
chor cthor okeor ykchol okain

[P2, 5]
tchor shor cthaiin cthol chlol chom
[P2, 6]
ychy kchor dair ytol chcthy dar dar dal
[P2, 7]
oshor shaiin cthy sholdy doldy doldaiin
[P2, 8]
qokchor ckhol olody okaldy dary
[P2, 9]
chol chcthal okshal chykald
[P2, 10]
dar shor qokchol ol ydaiin
[P2, 11]
sotchaiin chokchy chcthol chor g
[P2, 12]
ychair cthol daiin qokchy cthy
[P2, 13]
or shaiin cthar cthal okal dar
[T1, 14]
ychekchy kchaiin

Folio 18, Verso

[P1, 1]
told shor ytshy otchdal dchal dchy ytdm

[P1, 2]
qoeees or oaiin shy* okshy qokchy qokchy s g

[P1, 3]
or shy qoky qoky chkchy qokshy qokam

[P1, 4]
qotchy qokay qokchy ykcho ydl dar

[P1, 5]
x ⌒ychoees ykchy qol kchy qotchol daiir om

[P1, 6]
qotor chor otchy qokeees chy s ar ykar

[P1, 7]
ychol dor chod qokol daiin qokol dar dy

[P1, 8]
tolol sh cthoy daror ddy ytor ykam

[P1, 9]
okchor qotchy qokchy ytol doky dy

[P1, 10]
yko dshy dair ykol dom

Folio 19, Recto

[P1, 1]
pchor qodchy qotshy dy tchy qotchy qoky daiin dchydy
[P1, 2]
dshy chor y tchy chol dytchy chordy daiin dyty s choy
[P1, 3]
oscheor shy tdaiin chol dor yky
[P1, 4]
qokorar daiin chckhy shy kchor
[P1, 5]
otchy tchy qoky daiin r
[P1, 6]
y shor shy daiin otytchy daiin
[P1, 7]
qokcho ky cthar dor chan dar
[P1, 8]
or chor daky dal chor dorl shy
[P1, 9]
qotchor dy dor y tchykchy shdaiin
[P1, 10]
daiin cthor chol ykchor chordy
[P1, 11]
qotchy qolody choldy cthyd
[P1, 12]
ykchor chor daiin daiinol
[P1, 13]
osocthor ytchor

Folio 19, Verso

[P1, 1]
pochaiin cthor chpcheos opchey py kchy
[P1, 2]
qokchy kchol sor qokchor ykchy darom
[P1, 3]
otchy chol daiin qotol ytol daiiin
[P1, 4]
ytch chcthy qotol daiin daiin
[P1, 5]
qotchy qoteey daiin doty qot
[P1, 6]
ychoy kchor cthol chocthy s
[P1, 7]
ycho r chaiin cthor

[P2, 8]
toy tchey qo dchol qokchs dom
[P2, 9]
ychor oky chor ytol chol oky ddor
[P2, 10]
daiin chor daiin yokor y okchan
[P2, 11]
qotol dor okchor daiin cthor otam
[P2, 12]
otch okchodshy daiin or otaiin dair
[P2, 13]
yees ykchol oty ytor ytar ytchor ytaiin
[T1, 14]
otcholcheaiin cthol

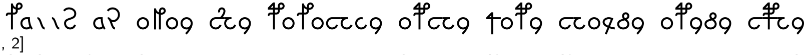
Folio 20, Recto

[P1, 1]
tdchody chofy cheey qokchol qokoeey dchor choiin
[P1, 2]
chodey ckhey chokol odaiir qokchy ckhody chodchy
[P1, 3]
qokeey cho chodaiin sho qochy chey kcheodal daral
[P1, 4]
ochol ol⁀keey okolchey

[P2, 5]
fchockhy chotaiin cfy cheeen ofchey shosaiin r
[P2, 6]
choees otchor qokol cheey daiin chy choiin daiin
[P2, 7]
ocholshod daiin chokeol chol dol shol okaiin
[P2, 8]
schodain cheo r cheody

[P3, 9]
pchodees shody qokchey qotchey qocfhy chotoldy
[P3, 10]
ochoaiin chor sody pchodaiin chekody choty dchy koy
[P3, 11]
dchod qokeeody ykchy qokshey dchaiin cholody
[P3, 12]
shoiin cheody okchey okchy kchy qokeey daiin dar
[P3, 13]
ochaiin chor chor cheey kchey

Folio 20, Verso

[P1, 1]

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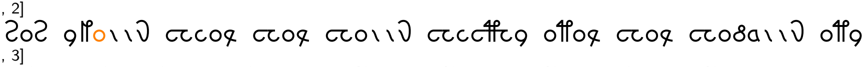
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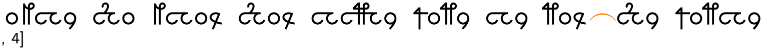
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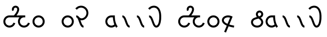

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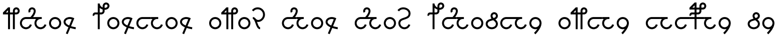
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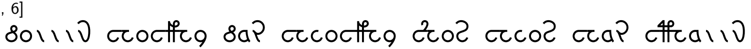
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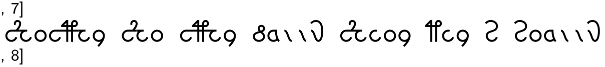
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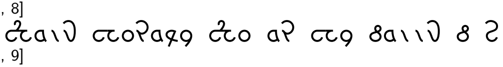
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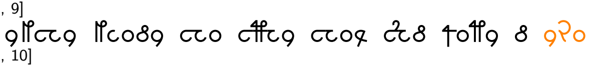
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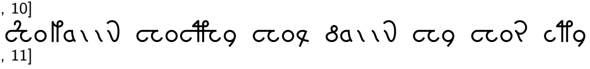
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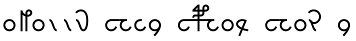

Folio 21, Recto

[P1, 1]
pchor oeeockhy ofycheey ypcheey qopcheeody otaiin chan
[P1, 2]
saiin chcphy oky sheaiin qotchol oteos sheey cthy daiin
[P1, 3]
qotol shy ol cheor chy qokcheey cheey keey dy

[P2, 4]
pchofychy daiin cthain otolosheey qocthey tolchory
[P2, 5]
ykeey daiin chosy qokoiin otol chol qotcheol okeoaiin
[P2, 6]
dchor y kolyky chol kol qokeol cholol qoteeol dody
[P2, 7]
shosor cheor chokeody cho cthor shy

[P3, 8]
fchokshy otor sheol ocphal opsheos cthodaiin oty
[P3, 9]
okaiin sho tshaiin chkaiin shcthey cthody cthy s
[P3, 10]
totchy keor chy ky qotaiin qotchol ty ctheey otaiin
[P3, 11]
shol chol shol tchol chcthy otyky shey yteol shody
[P3, 12]
ykeey chor sheey ysheol chor chol daiin chkaiin

Folio 21, Verso

[P1, 1]
toldshy chopchy qopshey shckhol odaiin shey ckholy

[P1, 2]
oeeesoy qokchy chody qotchy qokchy choty tchol daiin

[P1, 3]
qotol keeees chotchy tcho choty chor qotol daiin dal

[P1, 4]
sho chodaiin choty chol daiin daiin chty chtol

[P1, 5]
osho deey ctho l sho cthy daiin dait oky

[P1, 6]
sho tsho chotshol chol todaiin daiin

[P1, 7]
ykcho lchol cholchaiin okchy s sheaiin

[P1, 8]
cho l kchochaiin

Folio 22, Recto

[P1, 1]
pol olshy fcholy shol dpchy oty okoly daiin opchy s ocphy
[P1, 2]
ol oiin shol o kor qokchol daiin otaiin cthor dain ckhydom
[P1, 3]
qokol dykaiin okchy daiin cthol ctholo dar shain

[P2, 4]
pchaiin ofchy daiin cfhy doroiin ypchol sy schor daiin
[P2, 5]
ol daiin qokchy dar daiin chor oldor oky y choldchy
[P2, 6]
y chokshchy ctheeen

[P3, 7]
kchol shol dsheor shko chdoly ytaiin ol okchy cphal
[P3, 8]
dchor oty daiin ctholy qoky chotaiin chocthy doiiin dchor
[P3, 9]
odaiin dain cthy ctheor oraiino

[P4, 10]
kchol chor daiin cthoiin dchor chey qokol dy opchol oldam
[P4, 11]
doiin yckhody qokchy oky otoldy yty dol or dchchy daiin
[P4, 12]
odchaiin cthy okchy kchy dchol daiin ydaiin
[P4, 13]
dchor dydain qockhy ykolokain

Folio 22, Verso

[P1, 1]
pysaiinor ofchar oky tchy otdy sor shy qod
[P1, 2]
daiin ykaiin qotchy kchy ytchyd dshor ychy
[P1, 3]
qoky kchorl otchy cthy otchyky ytchol otam
[P1, 4]
otchaiin shoty qoky saiin odaiin ytaiin
[P1, 5]
dor ykcheor daiin

[P2, 6]
fshor shy tchor otaiin
[P2, 7]
ychor chor qokchol chory
[P2, 8]
qotchy cthy qokol daiin dam
[P2, 9]
okshor shody chol tchol otaiin daiin
[P2, 10]
qokchy daiin s or ytal
[P2, 11]
sokaiin oty dy
[P2, 12]
ycheky daiin cthy
[P2, 13]
okchain chkoldy shotoly
[P2, 14]
qotchy olshly shol daiin
[P2, 15]
sho cthy chocthy qokchy dory
[T1, 16]
saiinchy daldalol

Folio 23, Recto

[P1, 1]
pydchdom chy fcholdy oty otchol shy opyoiin y yfchy daiin ololdy dal
[P1, 2]
to ar chor daiin chkdain otchy lolchor daiin dam okchol daing
[P1, 3]
dchar ykor ykaiin daiin ctho g

[P2, 4]
qokoldy okaiir ykaiil g qokeey ofchol dain yfchor olfchor otchald
[P2, 5]
ychor qokchol ytom chol dair chol ar ol ol dol dain

[P3, 6]
tshol ykor qokaiin yky dar okol dchey daiidal dam ytcho ldals
[P3, 7]
okar olchar shaiin qokchol dar qokchol dairo r ol daiin alg
[P3, 8]
qokshy char daiir qokaiin olol qoaiin ykchy s diil okchy
[P3, 9]
okol ok shy qokol dy dol dshe qokeees y oly daiin dal
[P3, 10]
qok okaiin chkchy s yteair odal chal dy dar ykain
[P3, 11]
ykyko dalory

Folio 23, Verso

[P1, 1]
podairol odaiiily shoaldy otchol okol ol chcthy qotchar s
[P1, 2]
qoteotor chy okchaldy qokchey dol otchol chal otchg
[P1, 3]
ycho okaiin okeol eees oldaiin okeeor daiin qotcholg
[P1, 4]
okchey dair sholol oldal otchor dar
[P1, 5]
dor chear shor dol oaldary

[P2, 6]
tshol shor shkshy okol daiin otshor olsar
[P2, 7]
otor oiin sho shol qokol daiin sol daiin ylg
[P2, 8]
qokaiin dain qokor okal g dam chor olol dam
[P2, 9]
otshy dal dar oldar ar or qoto l chees g
[P2, 10]
dor chy kshol chol cthol otol oloiir
[P2, 11]
y okaiin doroiin olols oiin ol cheen ols
[P2, 12]
olaiior oloro eeeoly

Folio 24, Recto

[P1, 1]
porory chor opchar she cheol daiin or
[P1, 2]
qotaiin char odain okaickhal oky
[P1, 3]
y cthar cthal okol qotar ckhy
[P1, 4]
or chckhaly cthar eeor chees da
[P1, 5]
qdar cho r chey cthy cthee‿keom
[P1, 6]
oeeeos ctheor otal qocthol qoky
[P1, 7]
q*kar chtar s cheeor cthol qodol
[P1, 8]
ycheor s om qoear daiin qokeol
[P1, 9]
odaiin ckham qodaickhy dol dal
[P1, 10]
q*or cfhar chor s am chotaiin dy
[P1, 11]
sar cheoiees okeer cheeor qokain
[P1, 12]
qokchy qotchy tol tod ckhy
[P1, 13]
oees ol s chey chcth sar
[P1, 14]
qor cheey qod char cthal
[P1, 15]
ockhoees oeees ol dal s
[P1, 16]
sham okeal dal dam dal
[P1, 17]
sshey otam sham cthom oky
[P1, 18]
y cheol chol daiin chol s
[P1, 19]
yol kol chol shom otacphy
[T1, 20]
samchorly

Folio 24, Verso

[P1, 1]
pchodar chocfhey otom shod chcthy otshody octhoraiin okokom
[P1, 2]
ydals ckhor shy cho dchor opol opaiir opchos okchom okcho
[P1, 3]
ocphol odchees oesearees okam chcph
[P1, 4]
ydal sh okol okaiin odaiin dlos
[P1, 5]
oeor oroiin pchar oro

[P2, 6]
pochol chor cfarasr
[P2, 7]
ycheol daid dar olom
[P2, 8]
kochky chcphy shol sain
[P2, 9]
ychol chol or chorom
[P2, 10]
okoeor ckheod choy keol
[P2, 11]
ydaiin cheor qodom okodaiin
[P2, 12]
ksho foar cpho sho qokch ok‿okchal
[P2, 13]
oeeey cheol chol odor sho do opolodal
[P2, 14]
doiir cheeodam sho sho dy
[P2, 15]
dchey kchod dchol ochdy
[P2, 16]
opchol odaiim

Folio 25, Recto

[P1, 1]
pcholdy soshy daiin cky shody daiin ocholdy cfholdy sy
[P1, 2]
otor chor chrky chotchy shair qod sho chy kchy chkain
[P1, 3]
qotchy qotshy cheesees sheeear s chain daiin chain dein
[P1, 4]
dchcthy shocthy ytchey cthor s chan chaiin qotchain
[P1, 5]
qotcheaiin dchain cthain daiin daiin cthain qotaiin
[P1, 6]
okal chotaiin
[T1, 7]
dair otaiir otosy

Folio 25, Verso

[P1, 1]
poeeaiin qoky shy daiin qopchey ofchey qotchor sos

[P1, 2]
dchor cfhor chor daiin s okeeaiin daiin ckhey daiin

[P1, 3]
orcho kchor chol daiin shcthor daiin dshey daiify

[P1, 4]
qokoiin qokcho shol daiin cfhear cfhol daiin chkear

[P1, 5]
dar chokeey dshor dshey qochol dol cho daiin daiin

[P1, 6]
qokcho r ochy qofchy qokoral cho* chain deeaiir s

[P1, 7]
oćo chkey daiiol daiin shckhx orchaiin

Folio 26, Recto

[P1, 1]
psheoky odaiim qoy ofshod chypchey ypchedy ain chofochcphdy
[P1, 2]
dchey daiin adeeody ykecthey chedy ytedy dy checthedy lm
[P1, 3]
oaiin shcthy cthedy oloy ykeedy olchedy dal y sheey raiin r
[P1, 4]
qokedy cheor ytedy qokedy ytedy chekedy daiin odag r aldy
[P1, 5]
*aiin shedy chdy chdy rchy daiin cthedy qokeedy qokedy cthey
[P1, 6]
mchedy qokedy

[P2, 7]
pcho qokedy dam sheo ypchredr r ain shapchedyfchy dalchedy ram
[P2, 8]
daiin shedy qokeedy qoteedam r ok ol ytedy qokchdy qokedy
[P2, 9]
tcheo⁀shy dchdy okedy chcthy r dy dy ykeechy okeedy cheky
[P2, 10]
shere aiin sheor cheody otal

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