
The Bathing Pages of the VM

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Abstract

In an earlier preprint, the hypothesis has been stated that the Voynich manuscript (VM) is written in Persian language in a special alphabet that is similar to the Pahlavi and Mandaic alphabets. Here, the so-called bathing pages of the VM are considered from which additional support for the predominance of Persian vocabulary in the VM is derived. In order to reduce the effect of subjectivity in the translation, we consider only the single words that caption many of the illustrations on the bathing pages, and which are shown here to have consistent and meaningful translations in most cases. Although many details remain to be discussed, the question of the characterisation of the VM as a natural-language text can now be considered as solved.

1 Introduction

The Voynich manuscript (VM) remains an enigma due to the lack of unambiguously identifiable references to any social context that could be considered as its origin. It has, nevertheless, been tried to characterise the VM, and among the various attempts there are three groups of theories that regard the VM as

- random gibberish, a meaningless hoax, a product of automatic writing, which is to say that attempts at deciphering the text are futile,
- a virtually unbreakable cipher that requires more research from the cryptographic community, or
- a possibly meaningful text that is, however, not connected in any known way to the strands of history that can be traced from our vantage point, and that may be all what is left from a culture and language that no longer exist.

The first two options, i.e. meaninglessness or indecipherability, are supported so far merely by the negative evidence from our inability to read the text. For the third option to be proven, a location in history needs to be described at which a text as the VM could have had a purpose for being produced. The three options are not mutually exclusive, as also a largely automatically written text can be encoded because it was considered as dangerous for some reason, or a remote cultural context could be deliberately used in order to disguise a text. Finally, there is even the possibility that the VM was not produced for a purpose, but rather out of boredom or for practice, although in this case a justification of the cost of the vellum would be required. This is obviously a mere speculation that requires to be developed and evidenced in order to be considered worth further discussion.

In the next sections, we will present such evidence based on a hypothesis that we have proposed earlier [H], i.e. we propose a provenance of the VM from within a historical society and a language environment and a potential purpose of the manuscript.

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At the first glance, however, a characterisation of the VM seems easy²: More than half of the VM pages presents single plants and serve thus obviously a similar purpose as a herbal, book describing plants, medical and otherwise, as they were widely in use before the end of the 17th century. In addition, the "jars" pages (f99-f102) appears to give a more systematic overview over shapes and properties of leaves, stems and roots. The "recipe" pages towards the end of the VM (f103-f116) are believed³ to teach the pharmaceutical skills that are needed to process the plants into ointments and elixirs. The "bathing" pages (f75-f84) might lecture about body hygiene, and the "stars" pages, finally, could provide the bit of astrological knowledge that completes the basic education of a physician before modern eras. The VM could thus be considered as the textbook for a late-medieval introductory pharmacy course. It may lack detail and precision in the subsidiary subjects, and also the ambiguity of the plant drawings is conspicuous in comparison to the higher standards of many other medieval or early modern works, such that this characterisation of the VM is not impossible, but also not immediately convincing.

An interesting observation can be made on the VM bathing pages for which we do not know of any similar representations⁴. In particular the representation of nudity is unique for the time. The pictures are neither particularly erotically appealing to the viewer nor obviously allegoric or scientific or in any other way suggestive of something beyond the body as such. Nudity appears to be uncoerced normality and neither an idealised (such as in depictions of the garden of Eden) nor an enforced state (such as in hell). The idea of pudency does not seem to exist for the author: The female figures are enjoying themselves in many of the pictures and appear neither ashamed nor beguiling. Men are absent on the bathing pictures, although they are not generally absent on other pages of the VM, see e.g. f70v3 (p130⁵) or f86r2 (p157). The body posture of the females is without pretence as implied by the bathing environment. The eyes are never sternly cast down or averted, instead the figures are gazing in a forward direction or towards each other. Breasts are never covered nor particularly accentuated in the drawing, vulvae are neither veiled nor exposed. The interaction between the figures can be physical, and intimate touch is not avoided, see e.g. f79r (p143), but this is not shown as a dominant behaviour. We don't know of many actually existing or at least imagined societies where such observations would be possible in principle, at least not from before the French revolution and after Hesiod's Golden Age.

One may argue that such an environment could have existed in an uncommon religious community, but the absence of any obviously religious imagery⁶ or symbolism is clearly a counterargument, and the many figures that are shown rule out any religion that discourages imagery as such. The possibility that a secret community aimed at escaping identification by avoiding any specific symbolism, cannot be excluded in general, but, compared to other hermetic or obscurantist manuscripts, the VM appears to present its account quite openly and naively, such that even this option is also unlikely.

We will concentrate here on the bathing pages f75r to f84v (p135-p154), because they contain what appear to be *figure labels* or *captions*. Under the natural language hypothesis for the VM, these captions can be expected to have a relationship with the picture such that translations would be easily justifiable. Often these caption appear to be lists of words rather than a more complex language structure, so that we can work based essentially only on the vocabulary and will not have to make assumptions on grammar, style and context at this stage. In this way, we believe to be able to reduce the subjectivity of the translation that has been objected to our previous preprint [H].

2 The pages f57v, f58, f66r, f85 and f86 (p155-p158), incl. the famous rosettes page, cannot be classified as easily.

3 We have the dissenting view that the "recipe" pages rather contain advice for beauty care and social conduct.

4 Miniature paintings from Mogul India show bathing females in a somewhat similar setting, however, in a much more erotic tone and of considerably higher quality.

5 The page numbers that are given in addition to the folio count refer to the copy of the VM available at archive.org.

6 An exception can be found on f79v (p144) where a figure holds a crucifix in her hand, but because this seems to be the only reference and because the figure is nude, a Christian origin is not immediately implied.

Such caption words are quite frequent in the respective pages, and we can find more than 100 examples, i.e. a number at which the hypothesis implied by the proposed transcription is statistically significant⁷. The fact that we also observe generally a high level of consistency between several words in one caption and between words and captions leads to an even higher level of significance.

We are going to use here the following convention: Any letters or words from the VM will be denoted by "V", e.g. for a letter "o" as occurring in the the VM we will write "V-o". The symbols used to express the VM letters are listed in Table 1. For Persian words "P-a" for the Persian letter *alif*, or for Turkish T-a. More conventions are described in Section 3.4.

Finally, note that most of the figures shown here are processed by changing colour curves in order to let the background appear white where possible and to obtain brighter colours. In order to focus on the caption, intruding letter part from the main text were sometimes removed, which is not a problem as unprocessed images of the VM are widely available for comparison.

2 Transcription and translation from Persian

2.1 The Abjad writing system

From the length of the words in the VM and the correlations between neighbouring letters, it can be inferred that the Voynichese script is an abjad writing system, i.e. vowels are usually implied and not written explicitly. The abjad writing system needs fewer symbols, but using just consonants leads to a higher degree of homonymy, e.g. "BD" in English language would not indicate differences between words like *bad, bade, bed, bead, bid, bide, bod, bode, bud*. In order to reduce this ambiguity, certain symbols, which are called *mater lectionis*, are chosen to assume the role of a vowel in order to facilitate reading, For example, the biblical king *David* is represented by the triplet "DVD" in abjad, but may be written also as "DVYD", where now only the first vowel is omitted. The symbol "Y" usually denotes the voiced palatal fricative consonant, but, if used as a *mater lectionis*, it is understood to denote the (front unrounded) vowel *ee*, such that the word *David* can be distinguish from other readings of "DVD".

An abjad writing system is less robust against typos, i.e. the probability that a random replacement of a letter by another one or the swap of two letter yields an existing words is higher than in English language. In this way, the chance of reading errors, e.g. due to a wrong transliteration, is also higher. Therefore, in comparison to, say, English, a larger number of meaningful translations needs to be presented in order to evidence a particular transcription (or even the possibility of any transcription). In the appendix, we discuss the statistical aspects of such evidence.

2.2 The transliteration

The transliteration table used is essentially the same as in the previous preprint paper [H], which was obtained starting from the letter frequency and developed by comparing shape to the Pahlavi and Mandaic alphabets. A few of the correspondences between the Voynich script and Persian letters needs to be made clear, while the summary of the relation between is listed in Table 1.

1. The letter V-4 which was taken as a secondary form of P-m (*mem*), is now read as P-k (or rather P-q, i.e. *kāf*, rather than *kāf-tāzī*, but it is conceivable that two letters are interchangeable [J]). This ambiguity is not unexpected as the Pahlavi alphabet, that preceded the current Persian alphabet, does not distinguish between *koph* and *mem*, such that only one letter koph-mem existed in Pahlavi. For P-m the VM has the letter V-M, which we did not

⁷ This includes only the frequent letter, see Table 1 for a few letter that may still be ambiguous.

find to be used in places where P-*k* is required in a word in the VM. The letter V-*K* is then left for the letter *kāf-tāzī*.

2. The letter V-*r* is now also covering both the letters P-*r* and P-*w*, if the waw is used as a consonant. The earlier V-*w* is now preferably read as P-*l* (which was not included in the previous transliteration table), but this cannot be made more strict at the moment, because of frequent difficulty of telling the letter P-*r* and P-*w* apart.
3. The letter V-*c* is now read always as P-*w* (waw). This is a good match also based on the (inverted) shape of the letter, whereas previously it was tentatively transliterated into P-*ain*, but this is hardly supported by the vocabulary.
4. The letter P-*ain* is apparently ignored by VM. Interestingly, P-*ain*, was already considered by Meninski [M] as having no corresponding sound in the European languages and represented by him in its original form as P-*ain*.
5. The letter V-*S* which was exclusively used for P-*shīn* is now used also for P-*sīn*. The other s-sound (P-*sā*) may correspond to V-*cc* which cannot be distinguished from a double letter V-*c*. Although doubling is usually indicated in Persian by *madda* [J1], which is ignored in the V script, there are, nevertheless, a few cases of double P-*waw*, namely with one as a consonant and one as a vowel. However, triples “ccc” are usually written clearly in the VM either as “cc c” or as “c cc”, such that the reading is unambiguous.
6. Persian letters that we did not include in the transliteration table are likely to be subsumed under letters with a similar sound or are represented by one of the rare V letters (see f57v), here more work is necessary before a safe translation of the VM can be completed. In spite of these modification, we find that the larger part of the transliteration table is still unchanged, although the tentative translation in the preprint [H] needs to be corrected in many words.

2.3 The dictionary

The procedure that we have followed here is comparatively simple. Using the transliteration table in its current form, words from the VM were looked up in the dictionary [J], which required search for all relevant letter combinations. If more than one combination fitted the V word then we have included several variants. It will require further study to find out whether the author of the text the VM might have been aware of the ambiguities. It is obvious, however, from the visual form of the V text that the author had a preference for alliterations or perhaps also for the juxtaposition of words with a similar visual shape, although with a usually dissimilar meaning, as we can say now. As we have concentrated on the ‘image captions’ in the VM, we are avoiding additional ambiguity that could though the rich (although largely regular) grammar of the Persian language, because single words or short phrases near an image will often occur in the dictionary forms. We also took into account the option that the word is a composition of two words in the dictionary form, which obviously does not always lead to a result, even if the likelihood for a string of letter to be decomposable into components is clearly higher in abjad writing systems than, for example, in English language.

The dictionary [J] was used here because it is apparently the oldest of its kind that has a good coverage of the literary language, back to Firdausi, spanning thus the century in which the VM is believed to originate. More recent bilingual dictionaries may be more comprehensive, but prefer vocabulary that is reflect the rapid changes of the Persian language from the end of the 19th century. Also the definitions of some of the words in Johnson’s dictionary are more appealing in the present context than the word-to-word translation in other dictionaries. The earlier (1829) version of Johnson’s dictionary has been used here a few times (as indicated) because it contains some

expressions which are omitted in the 1852 [J] version. It should be noted that the VM is not strongly modelled on the literary Persian language which we conclude from the absence of VM phrases among those examples that given in the dictionary [J] under many keywords.

Often the entries in Ref. [J] are similar the Redhouse dictionary [R] which we have used for comparison (1890 edition), but from which we did not obtain more insight so far. In a few cases we also compared to the Meninski dictionary [M] that was known to both Johnson⁸ and Redhouse.


2.4 Representation of the translations in Chapter 4

Our suggestion is that the text of the VM can be translated by an existing dictionary if an appropriate transliteration is used. We do not assume scrambling of letters, irregularities, misspellings or scribe errors when following this scheme.

In some cases the thus obtained translated counterpart to a word from the VM is immediately convincing, essentially because of a good correspondence with a nearby picture. (See e.g. the case of the *āb-shang*, a name of a type of bathing vessel, which can be derived without ambiguity from the caption of a drawing of a lady in a bathing vessel, see VM f83v and details in below in Section 2.12).

In other cases, words that can be identified with no less ambiguity, stand for more generic terms such that a single example is contributing less to the evidence. Nevertheless, the amount of words translated here by a reproducible procedure into meaningful English captions is appears to be sufficient to prove that the VM is written in Persian language.

The text parts from the VM are copied in as images, while in the translation an intermediate Voynichese alphabet is used. We give also a transliteration of the Persian words into Latin letter (CAPITALS) based on the Persian words in Johnson's dictionary [J] as well as the translation of the words given in this dictionary. More specifically, we will give the following information:

- (1) An image extracted from the VM (most image containing several words). Remember that the included images are processed, so it will be necessary refer to better copies of the VM in order to verify the all claims that are put forward here. 
- (2) Each word separately in letters from the VM using our mnemonic Voynichese-like alphabet preceded by a bullet point, e.g. • oty.
- (3) The corresponding Persian letters transcribed to Latin capitals, e.g. (ATY).
- (4) The pronunciation in Persian in italics, e.g. *aty*, according to the dictionary [J].
- (5) The translation into English, e.g. "Coming", incl. page number in the dictionary, e.g. [J20] for page 20 in Ref. [J], where the information for items (3), (4), and (5) can be found.

In combination, this will look like this



• oty (ATY) *aty*: "Coming." [J20]

To add a bit of explanation on this example, we found that the Voynich letter "o" (V-o) always corresponds to Persian *alif* (P-a), see Table 1. The letter *alif* can be a vowel or a consonant and can merge with the next letter, so the pronunciation may differ from an "ah" sound. Due to the reliable

⁸ The entry "kāmūs" in Johnson's dictionary [J945] reports on the historical aspects: "Name of an Arabic lexicon, compiled by Firozabadi, who lived in the fourteenth century, contemporary with Tamerlane who made him a present of 5000 ducats, as a reward for his industry and learning. This dictionary was translated into Latin by Giggeus, and published at Milan, A.D. 1632."

⁹ An exception to this rule may be an unvocalised P-*alif* that carries *hamsa*, for which apparently V-cc is used, t.b.c.

correspondence of V-*o* to the written P-*a* (*alif*), we can simply use the dictionary forms and will not have to discuss the pronunciation.

The middle letter in the above example is either one of the two Persian *t*-sounds, *tā'i karashat* [J295] or *ta'i hutti* [J809], with no apparent preference for either, so that we will write T to indicate the spelling and *t* for the pronunciation in both cases in order to denote the respective Persian letter P-*t*. Because we always include the page number in Johnson's dictionary (1852), the actual Persian script is easily identifiable, but will not be required here, especially as the VM does not distinguish between the two Persian letters. Also it should be considered that at least in historical Persian certain letters of similar sounds are often interchangeable [J]. The word from the present example can be found on page 20 of the dictionary, where the reader can find out that the second letter is the *tā'i karashat*, which, as we have said, will not be of further interest here.

The last character of the triplet is given as a “y” in our version of the V script (V-*y*), although the original shape of this letter in the VM is perhaps more similar to a descending figure “9”. We have chosen the “y” (V-*y*) symbol because it is similar to the figure “9”, but it also makes this letter readable as the Persian letter *yā* (P-*y*) that it appears to represent in most cases. Due to the small number of distinguishable letters in the VM¹⁰, not every V-letter can uniquely correspond to a P-letter, as we have seen already before for the V-*t*. The V-*y* may stand also for the Persian letters *ghayn* or *gāf*, and possibly also for *kāf* which said to be often confounded with *gāf* [J1035].

Note that, just as V-*o* always corresponds to P-*a* (*alif*), V-8 always to P-*n* (*nūn*), and V-*c* to P-*w* (*wāw*, which represents the vowels “*o*” and “*oo*” as well as the fricatives “*v*” and “*w*” in Persian). The letter V-*w* is often considered different from V-*c*, but seems to be merely an initial form of V-*c* with a leading stroke that is in many cases visibly added to the V-*c* shape. It is not clear yet whether the distinction between vowel and consonant in P-*w* is reflected in the use of V-*c* and V-*w*.

Other correspondences are, nevertheless, obvious from the symbol, such as V-B, V-M, V-t, V-d, whereas for more complex relations, such as V-P, which represents P-P and P-F, and V-r, which might as well be P-*w*, etc., Table 1 is to be consulted which contains the full set of relationships on which we rely here.




















In many cases we have added also alternative readings as well as a few remarks if it seemed suitable. In addition, we have often added an attempt at a translation (in ***cursive bold***), which, however, has merely an illustrative purpose at this stage, as more about the VM needs to be found out before a more reliable translation becomes possible. Nevertheless, we believe that the Persian hypothesis is the currently more promising attempt in this direction, although it may turn out that, e.g. another Iranian language is a more likely candidate.

Grammatical information from Johnson's dictionary has been ignored here, unless it is important for translation. Likewise, we have omitted most of the information on the Persian pronunciation.

Obviously, the transition from (1) to (2) in the above process can suffer from readability issues, but the VM was quite carefully written and is fairly well preserved, so Voynichese letters were unambiguously identifiable in the text considered here, except in only one or two cases which we will discuss later in Section 2. In addition to ambiguities in reading a letter, there are also the cases of non-unique relationships between Voynichese and Persian letters, which we have mentioned above and which will lead sometimes to several possible transcriptions of the words into Persian script. On top of this the Persian language has a rich repertoire of expressions so that polysemy add another layer of ambiguity. These problems are not uncommon in any translation from one language into another one, but from the comparable Persian script Pahlavi similar ambiguities are known [K].

10 The Voynichese script shares this feature with the ancient Persian Pahlavi script that was in use before Islamisation of Persia and is still in use in Farsi communities in Zoroastrian religious texts. We have earlier point to this connection, but we do not want any longer to imply a relation of the VM and Zoroastrianism.

Table 1: Transliteration table from Voynichese alphabet to Persian alphabet (unprocessed images)






Voynich	V-trsli.	P-translitera.	P-transcript.	Persian lett.	Remarks
	o	A	ā (a)	آ	P-a assumes various vowels: a, i, u. In connection with P-h also as V- <u>co</u> .
	B	B	b	ب	The two subtypes denote apparently the same letter.
	t	T	t, s	ظ ط ث ت	P-s also as ligature cc, see below.
	a	H, Kh, H	j, ch, kh, <u>h</u> , h	ه خ ح چ ج	Most frequently P-h. P-j and P-ch rare. Often denotes implied vowel “a” (m.l.)
	i	A, H, Kh, H	a, kh, <u>h</u> , h	ه خ ح چ ج	Repetitions of V-a near the end of word [either one of the first two strokes]
	ð	A, H, Kh, H	a, kh, <u>h</u> , h	ه خ ح چ ج	Final letter V-a or V-o [the last stroke]
	d	D	d, z	ذ د	P-z is rare, possibly represented rather by the likewise rare c [^] c.
	r	R, W	r, j, w	و ژ ر	P-j is apparently rarely used, and has not been verified here.
	S	S, Sh	s, sh	ش س	P-s also as ligature cc (but from Pahlawi expected to be only for <i>sād</i>)
	cc	Y, S	ī, s, z	ض, ص, ي	Ligature V-cc can also denote also (unvocalised) <i>hamsa</i> ^أ , and also P- <i>ww</i> .
	c	W	w	و	Often expressing a vowel (o, u).
	w	W, L	w, l	و, ل	Assumed to be V-c with initial stroke. In VM, often of similar shape as V-r.
	P	P, F	f, p (b)	پ, ف	P-p and P-f are here interchangeable [middle letter]
	K	K	k, q	ق, ك	Possibly used interchangeably (as in Persian). [middle letter]
	M	M	m	م	Could be also a ligature of the frequent initial P-m and P-t. [middle letter]
	4	Q, M, K	q, m, k	ق, م, ك	Almost always followed by V-o; related to <i>mem-qoph</i> in Pahlawi [first letter]
	8	N	n	ن	Apparently the least problematic letter
	y	Y, Gh, G	y, gh, g	گ, غ, ي	Mostly read as P-y
	R	R	r	ذ د	Final letter V-r or ligature V-rt (not clear, but see below Sect. 3.1, f75r, p135)
--	--	ع	ع	ع	No corresponding letter in Latin [M], and in the VM ignored, just as ^س , ^ر etc.

Ligatures (SB, SP, SK etc.) are not included here, see Ref. [H] for details, for dB see f84v, below.

The relations between the representation from (3) via (4) to (5) is entirely taken from the dictionary [J], and will not be further discussed here, but should soon become clear when working with the dictionary (or, in fact, any other one the uses different writing systems). Thus, the current proposal consists in the assignment of Voynichese words (2) to Persian script (3).

2.5 A few frequent words and morphemes

There are a few morphemes that occur frequently either as separate words or bound as part of words on the bathing pages. Some of them are included in the list to which will serve merely as an overview, as the discussion within the context will be given only in Ch. 3. Remember that V-o always stands for the Persian *alif* (P-a), whereas V-a denotes P-h (or P-h or P-kh) or stands for an implied vowel “a” that is not carried by P-*alif*. Check table 1 for the other rules for transcription from Voynichese script.

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 oB (AB) *ab* or *abi*: “Water. ...” [J3] Not unexpected in a text accompanied by pictures of bathing ladies, but occurs also frequently in Persian: “This word is much used in forming compounds, and metaphorical expressions” [J3]. Redhouse [R] lists 67 (!) different meanings for the Persian word P-*ab*, *water* being one of them, in the dictionary of Ottoman Turkish which is known to have had a much higher portion of Persian words than today's Turkish. Some of the compounds are listed in [J3]¹¹, see Sect. 3 below for more examples. Not to confused with *abū* (*father*) which also occurs in compounds, but is not often seen in the considered pages.
- 
 oM (AM) *am*: “I am.” [J152] Cognate with the same word in English. Because the VM does not represent doubling of letters (*madda*), the words P-*amm* (*intending*) [J152] or P-*imm* (*mother*) [J152] and a few more are to be considered as well.
- 
 w (W) *wa*: “And. ...” [J1348] This is the letter *wāw* (P-w) that is introduced into Persian from a Semitic language¹². This letter is one of the few that occur as a separate words in the VM¹³ is thus an important characteristic for the language to be deciphered. Nevertheless, it may also be prepended to a word. This letter V-w is often hardly distinguishable from V-r (corresponding to P-r, i.e. *re* or *rā* [J602]) which in turn is often interchangeable with P-*lām*. Here a more examples  (all from f136v) of various degrees of “r”-ness.
- 
 ot (AT) *et*: “Flesh.” [M49]. This is usually a separate word, but can also occur in compounds. It is as such not included in the dictionary [J], but Meniniski [M] has it, which implies that that word is Turkish, as confirmed by Redhouse [R]. It will need to be confirmed whether the translation is possible and whether the occurrence of any other Turkish words can be confirmed, which would have interesting implications on the

11 [J3] means Ref. [J] page 3, but the entry extends actually also into page 4 of the Arabic-numbered pages of Johnson's dictionary.

12 Semitic loanwords are frequent in Pahlawi texts, i.e. in many cases they predate the Persian islamisation.

13 Another letter that can occur separately is V-o corresponding to P-o, which is “(singly) either the remote vocative. Ho! hark ye! or the interjection of contempt, Fy! pho!” [J3]. It is possible in addition to this that a letter occurs as a separate word if it is used as a number which is possible in Persian as well as in many other languages.

provenance of the VM. It seems, however, possible that V-ot represent here the female second person singular pronoun.

dc8y (DWNY) *duni*: “Baseness, inferiority.” [J588] In Meninski’s dictionary [M1131, col. 2196] we find in addition also *humilitas* as a translation for this word that occurs frequently in the VM, and which we will translate with humility.

- 8ar (NHR) *nahr* or *nahar*: “A river, stream, flowing canal. ...” [J1342]
8ar (NR) *nar*: “Male, masculine. ...” [J1308]

The two possible readings differ in whether the letter V-*a* is transcribed into a P-*h* or whether it is seen as representing the vowel “*a*” (mater lectionis) that is not carried by an P-*alif*. As we cannot exclude either options, the expression remains ambiguous without context. The meaning *river* can also a medical significance, e.g. “The aorta or the great artery, called in Arabic (NHR ALBDN) *nahru’l badan*, The river of the body.” [J139]

- *otloq* and *atloq* correspond to two different words similar to (AMM) *imm*: mother [J152]. Following the rule that V-*o* is P-*ā*, and V-*a* is a mater lectionis, and that the *madda* (doubling of a letter) is ignored in the VM, we find, respectively, oMot (AMAT) *ummāt*: “Mothers, dams.” [J153] and

oMat (AMT) *amat*: “Handmaid, female slaves ...” [J154]

Note that the first letter in the second word is somewhat ambiguous and could in principle be a V-*o* or a V-*a* (compare to the third letter in the same word (V-*a*) and to the first letter or third letter of the first word (V-*o*)), but as a first letter V-*a* can also represent (short) P-*a*. To illustrate the level of ambiguity of the language that we are dealing with, consider that it is in theoretically possible for either one to have also the following translations:

(AMAT) *āmāt*: “High, unequal places.” [J153]

(AMAεT) *imā’at*: “The act of causing to flow.” [J154]

or be a compound such as formed by

oM (AM) *am*: “I am ...” [J152]

and one of the following

ot (ATT) *att*: “Overcoming in an argument, convincing by proof, gaining a cause. ...” [J17]

ot (AεTT) *a’att*, “Long, tall (man).” [J117] Let’s assume this applies also to women.

ot (AT) *et*: Flesh. [M49] See above.

which shows that the number of combinations is large such that the context provided by other words and by the pictures is very useful.

- The suffix V-*y* (here also the connector to the previous letter is shown) is frequent also in Persian (P-*y*), where it has many grammatical functions (nine distinguishable ones, to be specific [J1409-1410]), such as forming genitives, second person singular (*thou*), verbal nouns etc. As we are unable to specify its role in most cases, we will simply assume that any final “*y*” are not an obstacle to a good match.

- **40** This ligature occurs frequently in many part of the VM, but is unfortunately not yet clear, it may correspond to the a P-k sound or to P-m. This ambiguity may actually be in favour of our hypothesis as we can relate the letter V-4 to the Pahlawi letter *mem-koph*. Also the vocabulary does not speak against either option. Assuming V-4 to be P-k (specifically *kāfi tāzī*) we can read V-4o as P-ka (K), which ‘is an inseparable adverb of similitude prefixed to Arabic nouns or particles (never to pronouns), signifying, “As, like, so. As soon as. Because of, for.”’ [J988] For the P-m option, we can translate V-4o as P-mā [J1076] meaning "those who [are]", in addition to many other stems beginning with P-mā. Whether sequences of words beginning with V-4o reflect a tendency towards alliteration or whether these genitive construction, or whether V-4o is an indicator of numericals is unsolved, but irrelevant for the considered pages.

3 Caption texts from VM f75r-f84v (p135-p154)

We will omit the pages f76v (p138), f78v, f79r, f79v (p142-p144), f80v (p146), and f81r (p147) not containing any obvious figure captions. At page f76r (p137), which is a pure text page, we will have a look at set of letters, a *headline* next to the text. In total we will restrict ourselves to 14 pages, will ignore the main text and study merely single words or short phrases that are clearly associated with the images. Here, we will also leave out f75r (p135), because the caption on the page does not consist of a collection of single words, and a translation requires more clarity on the subject matter of the VM which we will discuss here only briefly in the end, while concentrating on the Persian language hypothesis.

We will give the main meanings of the entries from the dictionary [J], and will also list a number of alternative translations below the selected translation, in order to show that in most cases a safe translation cannot be made for the isolated word, which is one of the reasons for the difficulties presented by the VM.



3.1 f75v (p136)

The illustration in the upper part of the page appears to present a series of negative attributes. A total of 20 properties are listed (including a few repetitions), for all of which we can identify a fitting adjective, solely based on Table 1 and the dictionary [J]. Although in many cases, a different translation could be chosen as well, the possibility of a complete assignment of adjectives with a coherent meaning cannot be expected by chance, and is thus evidence for a match between the language of the VM and the classical Persian language. We start from the left and consider the two words in each section one after the other. We were unable to identify a particular order among the words.

- oBdy: **angry**

(ABD) *abad*: "Being angry and unsociable." [J8]

(ABD) *abd*: "Being wild and ungovernable (a beast)." [J8]

(ABDY_Y) *abadīy*: "Eternal. For ever and ever." [J9]

The last option may seem to be a better fit, but the first and second (which are from the same entry) are possible as well as the P-y suffix turns them into adjectives.

- warat: **malicious**

(WHRT) *waharat*: "Harbouring malice in the heart. ..." [J1358] Note that the first letter V-*a* stands of the consonant P-*h*, while the second is taken for a mater lectionis.

- 8oBat: **conceited (proud)**

(NABKhT) *nābikhat*: "A speaker, especially on high and abstruse subjects. Proud. Misfortune. ..." [J1288]

- 8arot: **arrogant (proud)**

(N_εRT) *nu εrat* or *nu εarat*: "An affair to which one gives attention. Pride, arrogance." [J1322]

(NHRT) *nahrāt*: "An invitation. Spoliation, rapine." [J1343]

(NHRT) *nahrat*: "The first day of the new moon; also the last." [J1304]

8a (NH) *na*: "no, not, neither not yet. ..." [J1341] + rot (RAT) *rāt*: "Seeing. Thinking." [J603]

- 8at8y: **smelling badly**

(NTN) *natn*, "A smelling badly. Stink, funk." [J1301]

- 8atd8: **garrulous**

nat (NTT) *natt*: "Extending, stretching. Tying fast. Travelling (over a country). Raving, doting, talking nonsense." [J1319]

d8 (DN) *dan*: "Shouts and cries of joy. Going with a gay and joyous air." [J581]

The translation by parts is suggested by the break between the two components which is quite obvious in the script. Thus, a combination with V-8a (i.e. negation) rendered unlikely.

- 8atBar: **unlearned (smattering)**

8a (NA) *nā*: not [J1287/88] Second letter would need to be V-*o* for this to match well.

tBar (TBKhR) *tabakhur*: Penetrating in the depths (of science). Being profoundly learned. Abounding, rolling in riches, ..." [J303]

Bar (BHR) *buhr*: Shortness of breath, asthma, breathing hard from overload. [J261]

● 4oBat: **gluttonous**

(KA~B) *ka'ab*: "A being filled with wine." [J943] with female ending.

(KA^ʾB) *kāb*: "Devouring (meat). Drinking (water or wine)." [J943]

(KAAB) *ka'ab*: "Drinking much, being filled with drink. Being full (of wine)." [J943]

(MBH^ʾT) *mubahhit*: Who or what astonishes, confounds, or distracts. [J1089]

(MA^ʾBAT) *ma'bāt*: "(fem. of ma'ba') Abominable. ..." [J1077] Second should be V-o.

The first three options converge to an acceptable translation. The suffix can be a female ending. reading the first letter as P-m, we get:

● 8ty: **hateful**

(NTYH) *nat'ih*: "(Game) coming in front of one. Butted by a ram, killed with the blow. Hateful, detestable, despicable. (A horse) having two circular spots on his forehead (a blemish)." [J1320] Final letter P-h is silent, so the word matches the V pronunciation.

(NTYY) *natīy*: "Distant (place)." [J1320] Also possible, if in the sense of *distancing herself*.

(NTGh) *natgh*: "Disgracing, dishonouring. Slandering, accusing falsely." [J1301]

● ory: **burping**

(ARGh) *ārugh*: "A belch, ructation." [J60]

(ARKK) *arakk*: "Weak, silly. Worthless. One who neglects his wife and friends, and is despised by them in return." [J61] Reading V-y as P-k is not regular, although could be possible due to the shape of the letter.

In other contexts V-ory may be read instead P-ary (*yes, indeed*).

● oMy: **untaught**

(OMMY) *ummīy*: "An idiot, who can neither read nor write (as he came from his mother's (umm) womb)." [J160]

(AMY) *āmī*: "Handmaidens." [J160] This fits as well, and will be used for the same V word in other contexts.

(AKY) *aky*: "A loathing of food through disease." [J139]

● tSy: **impudent**

(TSY^ع) *tasī^ع*: "Impudent. Desirous, greedy." [J817]

(TSY) *tas'*: "Having the stomach oppressed with any thing fat. Being ashamed, blushing." [J817]

● 8ary: **fluviatic**

(NHRYY) *nahrīy*: "Fluviatic, belonging to a river." [J1343] See the remark in Sect. 2.5.

(NRY) *narī*: "Penis. Virility, masculinity. The masculine gender. ..." [J1309]

(NKhRY) *nakhirī*: "A first-born child." [J1306]

(NHR) *nīhr*: "Industrious, intelligent, expert, skilful, knowing, experienced." [J1304]

This term could refer to a discharge (1st option), or to mixed-gender traits.

- 8at: **talkative**

natt (NTT) *natt*: "Extending, stretching. Tying fast. Travelling (over a country). Raving, doting, talking nonsense." [J1319]

This was used already above as part of the expression under *garrulous*.

- 8at8y: Also this item seems to be repeated, see above. It seems unlikely that it here refers to a different meaning than above.

- 4oMc8: **sorrowful**

4oMc8 (MA^ʔKWM) *ma'kūm*: "(Ground) eaten bare. Sad, sorrowful. One who conceals his grief." [J1081] The last letter is obviously a problem. It is taken here for a P-*m*.

(MA^ʔMWN) *ma'mun*: "Rendered secure, preserved. Freed from, exempted. Firm, constant. ..." [J1082] It is unlikely that P-*m* is rendered by two different V letters in the same word.

(MALWN) *mālūn*: "Rich, monied." [J1082]

4oM (KAM) *kām*: "Desire, wish. Design, intention, pursuit. ..." [J992]

c8 (WN) *wan*: "Like, resembling. Pure. Sincere. ..." [J1377]

c8 (WNN) *wann*: "Weakness, languor, fatigue, labour. ..." [J1377]

Mc8 (MWN) *mawn*: "Furnishing with necessities; maintaining, feeding. ..." [J1276]

This entry is the least clear in this list, mainly because the ambiguity of the first letter.

- rBat: **obscure** (or **spoiled?**)

(RBT) *rabat*: "Being obscure and unintelligible (speech). Obscurity, unintelligibility." [J609] The V-*a* is needed here to differentiate from (RBT) *rabt*: Educating. [J609]

(RBBT) *rubbat*: "Abundance of the comforts of life, affluence. Inspissated juice." [J609]

- yBc8y: **fraudulent**

(GhBN) *ghabn*: "Laying up in a secret store (grain or provisions) against a scarcity. Cheating, gulling (in a sale), imposing upon one. Doubling up and sewing part of a garment to render it shorter. Forgetting. Passing over. Mistaking. Being negligent, forgetful. Being ignorant. Deceit, fraud." [J890]

(GhBN) *ghaban*: "Being weak in mind, liable to deception. Being negligent, forgetting. Mistaking, erring. Imposing upon, cheating, deceiving. Weakness. Forgetfulness. Weakness of mind, defect of judgment." [J890]

The V-*c* is not accounted for by the dictionary entries, but could appear due to suffix P-*y*.

- otBSy: **withered**

(ATTBAS) *ittibās*: "Being dried." [J17]

- oMoty: **pimply** (or **depressed?**)

(AMT) *amt*: "Determining (by measure, manner, or time). Intending purposing. Guessing, conjecturing. Being depressed. Being steep and high. Weakness. A proper regulation for living. Curvature. A distortion about the month. A fold, a wrinkle in a garment. Inequality in ground. High, prominent ground. A small hill. A protuberance." [J154]

(AMAT) *imāt* and *umūt*: pl. of protuberance. Protuberances of the skin are specifically mentioned. [J154]

(AMT) *amat*: "Handmaids, female slaves" [J153]

(AMMT) *immat*, "Grace, favour, benevolence." [j154]

(AKA^ʾT) *ikā'at*, "Making vomit." [J132]

The coherency of the word-level translations is remarkable, and in order to relate the words to the picture, we note it is possible that the drawing shows a kidney (in place of the gallbladder). As the source of bile, it was considered in antique and medieval medicine to be responsible for properties like the ones listed here. Although this seems consistent with other parts of the VM, we cannot exclude other options already at this point, such as representation of waters as washing off any such negative traits, or of bathing as a frivolous activity that leads anyone engaged in it into peril.



In the lower part of the same page on the left side we can see another group of 19 females in a pool. There are 18 words in three groups: six single words above the picture, three single words on the right, and a text of nine words on the lower left, which we propose to group in two sets of nine words each, the first one beginning with V-*oMat* (*mothers*) and the second one with V-*oBc8y* (*fathers*), as detailed below.

- *oMat*: **mother**

(AMMHT) *ummahat*: "A mother, (applied to rational beings)." [J160] \

(AMT) *amat*: "A female servant, a handmaid. ..." [J154]

- *oPat*: **misfortune**

(AFTT) *afatt*: "Flat-nosed." [J130] or *aftah*, "Broad-nosed." [J130]

(A~FT) *āfat*: "A misfortune, calamity. ..." [J125]

(AFFT) *uffat*: "A poltroon, coward. Poor: filthy." [J125]

- *yMc8y*: **fortunate**

(YMN) *aymun*: "The right hand, side, or part. Strength, power. Blessing, felicity, plenty. Happy, prosperous, fortunate. Beginning of the day." [J1418]

- oBccy: **nimble**

(ABS) *abs*: "Being nimble, brisk, sprightly." [J12]

(ABSε) *absa ε*: "One whose lip is full of blood and ready to burst." [J7]

- tot: **obeying**

(TAT) *tat*: "Long, tall. Strong. Courageous. Quarrelsome. A libidinous and noisy stallion." [J809]

(TA^ˆT) *ta'at*: "Being even, level. A soft (ground or bed). A treading, trampling." [J809]

(TAT) *tāt*: "Persians; so called by a tribe who inhabit between Hamadān and Kurdistān." [J809]

(TAT) *tāt*: "Until (I see) thee, till (I give) to thee." [J296]

(TAεT) *tā εat*: "Obeying, submitting to. Obedience, obsequiousness. ..." [J809]

- otot: **obedience** (i.e. with previous: paying obedience)

(ATAεT) *itā εat*: "Obeying. Obedience, submission, surrender, subjection." [J107]

(ATTAT) *attāt*: "Loud-voiced, clamorous, noisy." [J107]

(ATAT) *atāt*: "Pomp, grandeur." [J17]

The three words on the middle-left of the picture:

- oMc8y: **steady**

(AMWN) *amūn*: "Firm, steady, not apt to trip." [J160] See also p139 below for this word.

- oMccy: **true**

(AMYGhY) *āmeghī*: "True, sincere, unfeigned." [J161] It is not clear how the last three letters of this Persian word would be rendered in V-script.

(AMYGh) *āmegh*: "Copulation. Truth. Mixture." [J161]

This words illuminates the distinction between V-cc and V-y, namely the V-y is generally used (but can also represent P-gh), while the V-cc implies the "ee" sound, i.e. P-y, (but can also mean P-sād).

- 4oMc8y: **firm**

(MA^ˆMUN) *ma'mun*: "Rendered secure, preserved. Freed from, exempted. Firm, constant. ..." [J1082]

The second group of nine words remains ambiguous because of the letter V-4 on the lower left. We just mention the first word:

- oBc8y (ABWN) *abūn*: fathers [J16]

and in the penultimate line two phrases that are seen to be related by swapping out just one letter:

- wotSc8y: **and you [are] praised**

Sc8y (SWN) *sawan*: "Praise." [J724]

Sc8y (SWN) *sawn*: "Swagging, pendulousness of belly." [J724]

The first letter in this word and in the following corresponds to P-w "and" [J1348] and we assume V-ot to represent the female second person pronoun, which in Persian occurs as an affix [J17], but exists in the Semitic languages.

- wotBc8y: **and you** [are] **excelling**

Bc8y (BWN) bawn: "Excelling." [J259]

Bc8y (BWN) *bawn* or *būn*: "A portion, share. Bun, Foundation, root, origin. End, limit. Intestines of sheep or cattle not cleaned. The womb. The heavens." [J259]

The second figure on f75v contrast the first one by presenting largely characteristics that were seen as positive, not unlike the *praise of the wife of noble character* (Proverbs 31:10-31). It needs to be revisited for a translation of the words that we did not attempt here, and obviously also for an interpretation.

2 3.2 f76r (p137) Text page

3 On the left, we see the letters "w 8 4 w o t B r w" arranged vertically, one letter below the other. It seems possible to group them into three words of three letters each: At least the break after the first word can be justified by the increased distance between the letters, which can be said to a lesser extent also for the second break, and it interesting that there is also a space before the last single letter, see below.

- 2 • w84 (WNK) *wank*: "A residence (among relations)." [J1377]

(WNM) *wanm*: "Muting (a fly)." [J1377] Reading V-4 as P-*m* seems less preferable.

- (W NM) *w nam*: "And" + "Moisture. Dew. Tears." [J1333]

- 8 • wot (WAAT) *wa't*: "Visiting. Exciting, stirring up. Being excited or stirred up. Battle, combat. Perturbation, agitation." [J1351] The entry also states that this is a verbal noun of a verb of the same spelling, therefore this word can be a verb as well.

(WAAT) *wāt*: "A letter, word. A fur-garment." [J1349]

11 For the last three-letter group, there are again several potential translations, such as

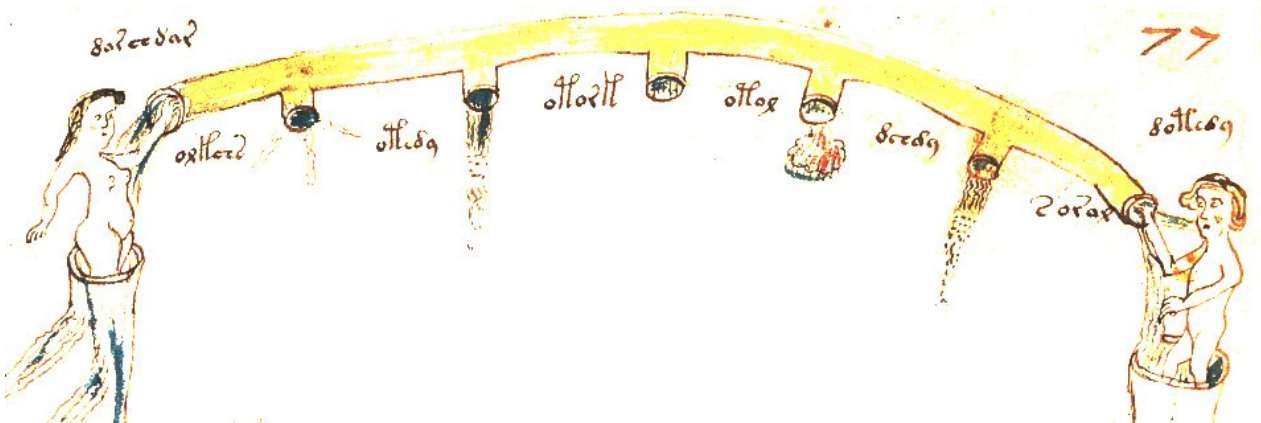
- 2 • Br w (BRW^o) *buru'*: "Creating, Recovering from sickness, being healed. Being, free, safe, out of danger. Being free, clear, exempt." [J233]

However, the space before the last letter quite unambiguously indicates the idiomatic form:

(BR W) *bar u*: "Upon, on, above, him, her, or it. [J233]

- 2 Thus, the sideways headline could be translated by "**Visiting a place to recover from sickness**", while other possible translations are obvious.

3.3 f77r (p139) Arteries and veins



On this page we can find ten single words (or short phrases) that describe the drawings. In the top part we have eight of them, listed here from left to right.

- 8arS8ar: **practical and skilful**

8arS (NRSh) *narsh*: “A taking of any thing in the hand (to eat).” [J1309] Implied by picture.

(NHR) *nihr*: Industrious, intelligent, expert, skilful, knowing, experienced. [J1304] See also P-*nihrīr*.

(SNR) *sanar*: Obstinacy, stubbornness [J718].

(NHR) throat [J1304]

(Sh) her, his etc.

- otBSw: **gentle**

(BSWε) *basū*: Quiet, gentle (she-camel when milking). [J239]

(BSWε) *busū*, Becoming accustomed, habituated, familiar. [J239]

- oMc8y: **steady**

(AMWN) *amūn*: “Firm, steady, not apt to trip.” [J160]

- oMorB: **I’m exercised.**

oM (AM) *am*: “I am ...” [J152]

orB (ARB) *arab*: “Being accustomed, exercised.” [J53]

- oMot: **the act of causing to flow.**

oMot (AMT) *amat*: “Handmaid, female slaves ...” [J154]

oMot (AMAT) *ummāt*: “Mothers, dams.” [J153]

oMot (AMAT) *āmāt*: “High, unequal places” [J153]

oMot (AMAεT) *imā’at*: “The act of causing to flow.” [J154]

- 8S8y: **grown up**

(NSh^ʔ) *nash'*: "Growing, increasing; growing up, being educated (amongst others). Creating. Rising, being high (as a cloud). A high cloud, or one beginning to gather, A young camel. Youth. Young women." [J1313] The V-8y considered a grammatical affix. There is also the meaning *phlebotomy* for the similar P-*nush*, but if the translation as *grown-up* is correct then the reddish flux shown near this word could refer to menarche.

• worat: *timid*

(WRξT) *war ξat*: "Being timid, afraid, cautious, especially in doubtful points, fearing to do any thing unlawful or sinful. Being moderate, pious, modest, temperate, continent, Being weak, small, slender." [J1362]

This is not an exact match, because for the V-o we would expect a P-*alif*, however, the similar *wābit* (*Weak, timid, cowardly* [J1349]) spells with a P-*alif*, such that this deviation seems minor.

• 8oMc8y: *unripe*

Mc8y (MUNξ) *mūni ξ*: Ripe [J1276] + negation P-*nā*. This could be seen as a description of the child-like figure on the right of the previous picture, or to explain the previous item.



Middle left:

• oMS8y: *I'm beautiful.*

oM: see above.

oM (AMM) *ūmm*: "A mother. ..." [J152] Many Persian idiomatic expressions start with *ūmm*, so that an alternative translation would be *mother of beauty*, meaning *an example of beauty*.

S8y (SNG) *shang*: "Beautiful, delicate, handsome. Amorously playful. Lively, graceful. Lazy ..." [J766]

Below on the bottom left, and in correspondence with the previous image, we find a word (or phrase) also starting with V-oM, such that it is likely to be formed in a similar way.

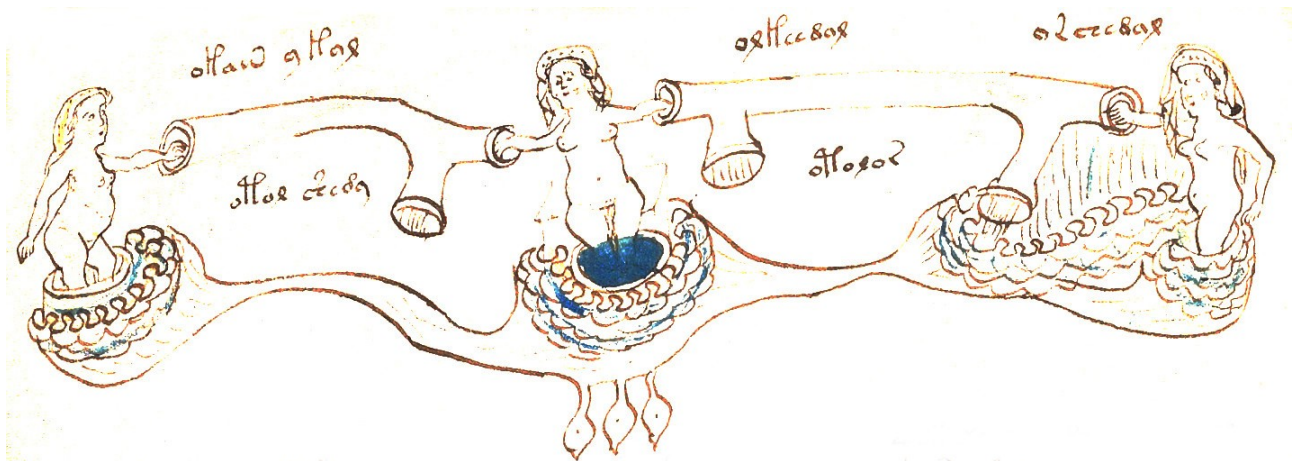
• oMotauð o: *I'm skillfull.*

oM: see above.

otauð (ATHA^ʔ) *it-hā'*: Being skilful, clever at any work or business. [J110]

o (A) *ā*: "Ho! hark ye! ..." [J3] The single V-o at the end of the phrase could also be a question particle [J3], in the sense: *Am I [also] clever?* In this case, however, the V-o would rather be expected in front of the expression.

3.4 f77v (p140) Soap bubbles



Three words on top

- oBaið yBat: **emptying waste**

oB (AB) *ab*: water (+ plural ending “ha”)

oBaið (ABA) *abā*’: “Refusing rejecting, abominating. Inducing one to dislike and refuse. Aversion, disgust. Disobedience, stubbornness. A strangury.” [J4]

oBaið (ABH) *abha*: Emptying [J16]

yBat (YBAT) *yabāt*: Waste, desolate, uncultivated. [J1412]

- otBcc8at: *She’s brilliant.*

(ATBIN) *ātbin*: Eloquent. A skilful performer. Most felicitous. Name of Farīdūn's father. [J17] + (AT) female ending

(ATBYYNAN) *itbi’nān*, Being still and quiet, reposing, resting. Tranquillity. [J108]

- orSc8at: *She’s a foolish woman.* (possibly, because water arrives near her, but at a different pipe)

or (AR) *arr*: “Driving on, stimulating, impelling, urging; driving off. Voiding thin excrement. Dropping, falling (dung). ...” [J51]

Sc8at (ShWNT) *shawnat*: “A foolish woman.” [J770]

orS (ARSh) *arsh*: gift etc. [J59]

(WNAT) *wanāt*: “Torpid, languid (woman), slow in rising or sitting. Mild, gentle, tame (female). A pearl.” [J1377]

The two words below both start with V-oMot:

- oMot: **flow below**

oMot (AMAT) *ummāt*: “Mothers, dams.” [J153]

(AMAεT) *imā εat*, The act of causing to flow.

dc8y (DWN) *duna*: “Below, under, ...” [J588]

(DWNY) *dunI*: “Baseness, inferiority.” [J588] Meninski [M1131,2196] also adds *humilitas* as a translation.

(DWNY) *dunI*: “Negligence.” [J588] or “lewdness” [R270], among others.

- oMotor:

oMot (AMAT) *ummāt*: "Mothers, dams." [J153]

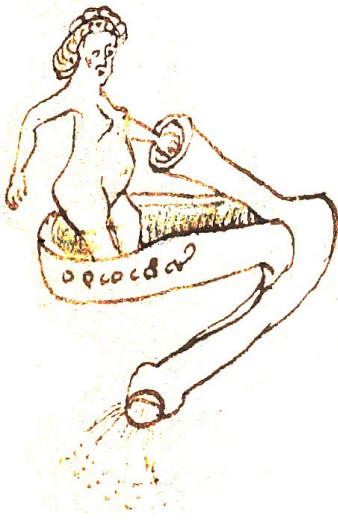
or (ARR) *arr*: "Driving on, stimulating, impelling, urging; driving off. Voiding thin excrement. Dropping, falling (dung). Kindling, lighting fire. Resounding, shouting in triumph (particularly an insolent fellow at the gaming-board). Thrusting in the branch mentioned below. A twig rubbed with salt and thrust into the matrix of a she-camel to excite a desire for the male. Coitus." [J51]

In the centre of the page on the left

• woworat

ra'ra'at: "Turning the eyes. Looking stedfastly at. Shining, flashing (a cloud or vapour). Wagging her tail (a hind). Viewing (herself) in a glass (a woman). Twinkling with (her) eyes (a woman). Calling a sheep by saying ar ar."

رورور



ra'ra'at, "A woman who twinkles her eyes."

lālā: anemone, waterlily [J1054]

wārihat: Spacious (house). [J1350] +wā in front

lā walad: Without offspring, childless.

wālā: Exalted in dignity or in mind, eminent, respectable, high, sublime, majestic, grave. Power. A friend. Friendship A kind of silken stuff. [J1352]

(RT) *rat*: Naked. Hut, Hollow, empty. Poor, indigent. All. Paper.

lālā: "Incomparable. The anemone. The water-lily. The chief servant, intrusted with the education of his master's sons: a

major-domo. A slave. Babbling, prating. A grain resembling sesame. A certain plant brought from the neighbourhood of Mecca. Shining, resplendent." [J1054]

wah: pressing, squeezing, thumping. [J1377]

The word below (on the side of the 'bathtub') is less clearly written, but is likely to be read:

• otcoc8ar

wāw: "The name of the letter waw. The colour of water." [J1353]

(ATWA⁸) *atwā*: "Ropes of single twists. Destroying, wasting ..." [J20] + V-c as dimunitiv

atwāran: "Occasionally." [J110]

The coalescence of the last two letters occurs also on the next page in a similar way.

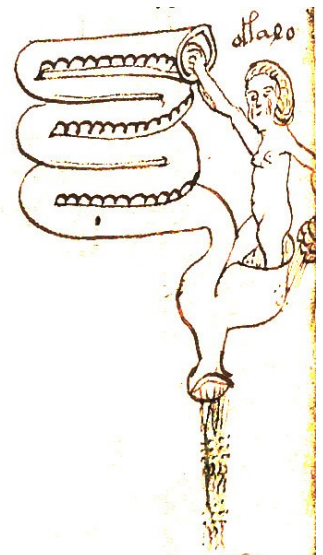
centre right

• oBato

abata or *abita*: "(The day) was hot."

ab (AB) water

(HTTA⁸) *hattā*: "(fem. of ahatt) (A she-camel) patient of labour and travelling well.: [J1394]

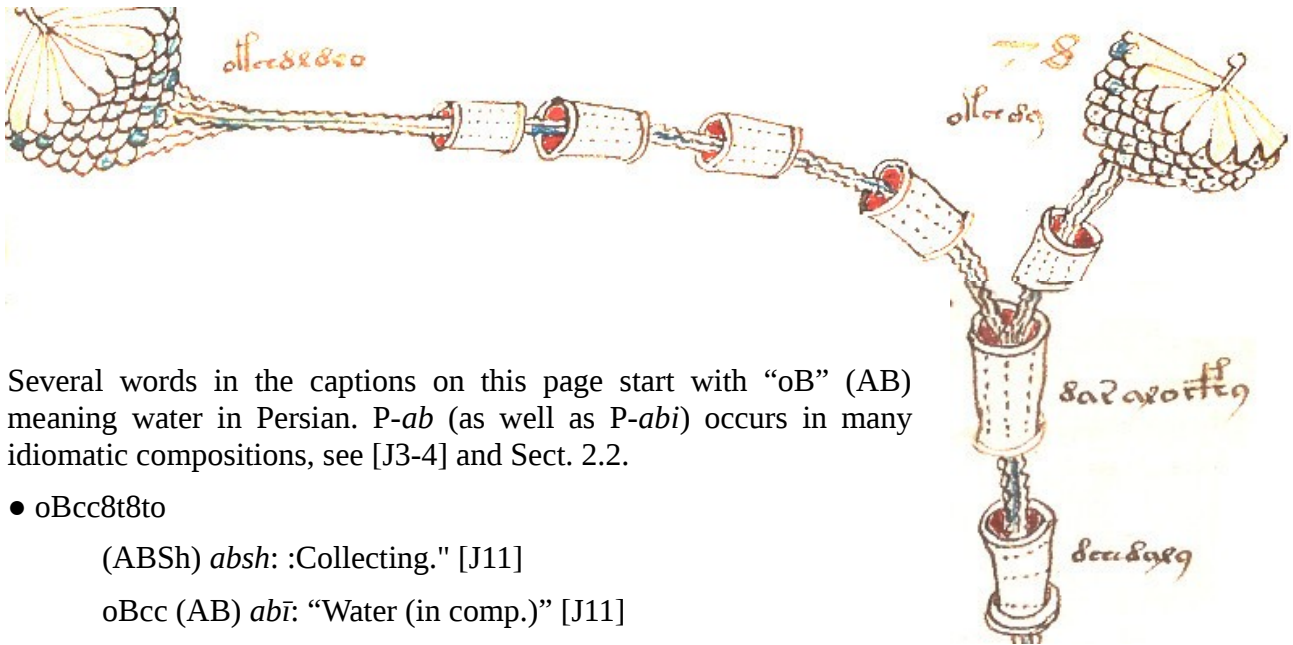


(HT[◌]) *Hata'*: "Being bent. Eating (meat). A fissure, rent, tear, crevice." [J1383]

(ABBHT) *ubbahat*: "Magnificence, grandeur, glory; beauty, grace, elegance." [J16]

(ABT) *ibat*: "Being contracted. Blushing. Disgrace, shame, ignominy." [J6]

3.5 f78r (p141)



Several words in the captions on this page start with “oB” (AB) meaning water in Persian. P-*ab* (as well as P-*abi*) occurs in many idiomatic compositions, see [J3-4] and Sect. 2.2.

- oBcc8t8to

(ABSh) *absh*: "Collecting." [J11]

oBcc (AB) *abī*: "Water (in comp.)" [J11]

8t8t (NTNT) *natnat*: "Tall, long." [J1320]

The third letter can also be a V-S, which can be taken as a particle that “signifies, His, her, it, to him, her, it (when affixed to a noun, pronoun, verb, or particle)” [J730]. So also in this case composition with P-*ab* (*water*) are not impossible.

- oBS8y

(AB) + (SNN) *shann*: "Pouring out gently. Pouring (water into wine). Sending forth (marauding parties) in all directions. An old, dried up, small leathern bottle." [J765]

This reading would be in analogy to the previous one, but it is as well possible to consider:

oBS (ABSh) *absh*: "Collecting." [J11]

8y (NY) *nay*: "A Pipe. ..." [J1344]



- 8ar atoSKy

(NHR) *nahar*: A river.

at (HT[◌]) *hit'*: The remains of water.

oSPy (AShK) *ashk*: A tear. A drop. [J98]

• 8Sc8aty

(NS) *nas*: A vein, a sinew. [J1311]

(NSh) *nash*: Shade, a shady place. The shadow of a lofty cap. [J1314]

nush: Alike, resembling, equal. Phlebotomy. A wild pine-tree. [J1314]

(NS~~h~~Sh) *nashsh*: Driving gently. Mixing. A weight of twenty dirhems, or drachmas.

(NS^h) *nash* ^ʔ: Growing, increasing; growing up, being educated (amongst others). Creating. Rising, being high (as a cloud). A high cloud, or one beginning to gather. A young camel. Youths. Young women. [J1314]

(WNAT) *wanāt*: Torpid, languid (woman), slow in rising or sitting. Mild, gentle, tame (female). A pearl. [J1377]

Alternatively we could as well decompose into:

(NSWN) *nisūn*: "Women, the female sex." [J1313] Spelled with a P-*sīn*.

(ATYY) *atīy*: Foreign, outlandish, unlooked-for. An unexpected overflow of water. Bribes. [J20/21]

The following three words below the upper pool in the middle of the page belong together:

• oMaro (AMRA) *āmarā*: Wine.

also "giving longer time" [J160]

• 8tary (NTR) *natar*: "Corruption, perdition, loss, ruin." [J1301]

This word contains (to the right is a magnification from the picture above) one of the few cases of problematic letters, namely what appears to be a contraction of V-*a* and V-*r* or of V-*c* and V-*r*. Although we can not exclude that the it denotes an unknown letter that does not occur otherwise in the VM. There is also the possibility that our assumption of the V-*i* strokes needs to be revised, i.e. that these strokes are necessarily follow an V-*a*, but may also follow a V-*c*. In this case there is the interesting translation options (reading the letter as composed of V-*c* (P-*w*) and V-*r* (P-*l*), the latter being clearly a possible reading):



(NTWL) *natūl*: "Warm water medicinally prepared, and poured from a vessel slowly over the head; an embrocation." [J1320]

(NTWL) *Nutūl*: "Pouring forth an embrocation." [J1320]

Whether the bather in the picture are indeed rubbing liquid over their bodies is not certain, but it is a possible interpretation of the image.

• orory (AWARY) *āwārī*: Idleness, vagrancy. [J182]

(AWAR) *uwār*: Warmth, heat (of the sun, fire, or thirst). Smoke. Flame. The south wind. [J182]

We are unable to decide whether here *wine* is recommended as an *embrocation* to produce *warmth* or whether the reader is warned that *wine* leads to *ruin* due to *idleness*, or both.



• oBarat: **Vapours**

(ABKhRT) *abkhirat*: Vapours, exhalations. [J8]

oB (AB) *ab*: "Water. ..." [J3]

arat (HRT) *harat*: "Being broad, wide (corners of the mouth). Being burst (a woman)." [J1388]

(ABHR) *abhar*: "The back. ..." [J16] First V-*a* as mater lectionis, and female suffix V-*at*, which seems to match the figure of a pull with mutually back-patting ladies. The final V-*at*, which is a bit apart from the first four letters, may rather be could also be

(HT^ʿ) *hat*': "Striking. ..." [J1383]

hata': "Being bent. ..." [J1383]

3.6 f80r (p145) Caliper page



On the left side in the middle of the page is an interesting picture which shows something akin to an eye exam performed by a lady with an outstretched arm. The patient is holding a tool in her hand. Although a pair of tweezers would fit better to the situation, the tool appears more like a caliper of a type that was in contemporary use for measurement. It is also not clear whether the patient lady is wearing a transparent skirt or is rather using some kind of a walking frame.

The picture with this on the uppermost margin of this page (see above), and the vellum is at havoc, but all letters in the keywords are decipherable. There are again ten words in the figure, while the other figure on the page done have captions.

- oroty: **well-fed**

(ARAξT) *irā* ξat: "Being redundant. Having food in abundance. Growing strong (corn). Increasing, multiplying (camels)." [J52]

- otS8y: **fiery**

(ATSh) *ātish*: "Fire. Sulphur. Digestive heat. Rage. Desire, appetite, love. Joviality, mirthfulness. A courageous man. The devil. A lover. Light, lustre, beauty. Rank, dignity, value. Dearness, scarcity." [J18] (with "ny" instead of "y" as adjective ending, but compare.: P-*ātishīn* (*fiery*). [J19])

- oBaty: **coy**

(ABT) *ibat*:"Being contracted. Blushing. Disgrace, shame, ignominy." [J6]

- oBoto: **never-failing well**

(AB + ATA^ʿ) *ab itā*': "water" + "Producing, bringing forth copiously, shooting out buds, yielding fruit. Bringing forth young. ..." [J17] See Sect. 2.2.; it is interesting that in the

previous word a stroke connects the V-B and the following V-a, but here no stroke is drawn between the V-B and the following letter.

- oBary **fecund**

(ABAR) *ībār*, "Fecundating, rendering prolific (spoken of palm-trees and sown fields)" [J5]

- oPor: **plump** and/or **sprightly**

(AFR) *afr* or *afar*: "Becoming fat and sprightly after having been worn with fatigue (a camel)." [J127] Not clear, as second V-o remains unaccounted for.

- otBy: **skillful**

(ATBε) *atba ε*: "More or most natural, skilful." [J108]

- oMat dc8y: **humble servant**

oMat (AMT) *amat*: "A female servant, a handmaid. ..." [J154]

duni (DWNȲ) *dūnī*: "Baseness, inferiority." [J588] See Sect. 2.2.

- oBar **versatile**

(ABHAR) *ibhār*: "Producing something wonderful. Becoming rich after having been poor. Being scorched by the noon-day sun. Being changeable, versatile, at one time easy and mild, at another cross-grained and perverse. Marrying a lady, slender, beautiful, and delicate." [J16]

- oBaīð **wonderful**

(ABAA) *abā'*: "Strange, wonderful." [J4] Other translations are possibly, but do not seem to fit. The last stroke is a bit sloppy, so it could be V-oBað, which, however, does not occur elsewhere)

f80v (p146, pangolin page) and f81r (p147, lungs page), omitted here, do not contain any captions.

3.7 f81v (p148) The stomach page

This page contains a single phrase of two words next to a pool where 16 ladies are bathing, all facing in the same direction, few show agitated gesturing, some appear to scratch their own butt or the butt of the person in front of them. We are listing a few possibilities here, but it is not easy to decide about the theme from only two words.

- oMaīð otBat:

oMaīð (AMHA^ʕ) *imhā'*: "Grinding or sharpening (a sword, lancet, or knife). Making (milk) thin and watery. Finding water when digging a well. ..." [J160] also: oblivion, finding water etc. [J160]

(AMA^ʕ) *imā'*: "Handmaids, females, slaves." [J153] Third letter is unlikely V-o.

(AM~A^ʕ) *im'ā'*: "Handmaids, female slaves." [J153] Third letter is unlikely V-o.

(AMKhA^ʕ) *imkhā'*: "Being free, clear of. Excusing one's self." [J156]

(AMHĀH) *imhāh*: "Being thread-bare." [J156] This would require more strokes.

- otBat (ATBBT) *atibbat*: "Physicians." [J108] Penultimate letter as mater lectionis.

(ATBKĤT) *atbakh*: "Very foolish, extremely stupid." [J108]

In the lower part of the image there are again bathing ladies, all but one with a word next to them, two more words are next to two waterfalls, there are eleven ladies and a total of twelve words.

Next to what can be seen as waterfalls, we have two words starting with *V-nar*, i.e. river or channel, in particular:

- 8arot: (NHR + AT) *nahr* + *et*: ***The river of the flesh***

8ar (NHR) *nahr* or *nahar*: "A river, stream, flowing canal." [J1342]

ot (AT) *et*: Flesh. [M49]

ot (AT) female suffix.

(NHR) *nihr*: "Industrious, intelligent, expert, skilful, knowing, experienced." [J1304]

- 8arary: (NHR + ARY) *nahr* + *ary*: ***The river of the world***

ary (A~RY) *arī*: "Purus, mundus" [M107], i.e. *pure, clean*. (compare Meninski's German translation), but in analogy to the previous expression we prefer: *river of the world (mundus)*.

(HRY) *harī*: "A field watered by the rain." [J1390]

(KhRY) *khari*: "Stupidity, the property of an ass."

khiri: "Name of a yellow flower. Unlucky, inauspicious. ..." [J519]

(HRY^w) *hirīy*, "Belonging to the pudendum muliebre." [J476]

The two expressions *ary* and *et* seem to be missing from the dictionaries [C] and [J], but are found in the Meninski's thesaurus [M], which implies that they are Turkish, but there is also an interesting alternative in Meninski:

ary (ARGh) *argh*: "Canalis, aquae ductus" [M103], i.e. a *channel, water pipeline, or aqueduct*, including also (inferred from Meninski's German translation) *mine drainage*, which could perhaps in the present context even refer to a *qanat*. Nevertheless, we prefer the previous translation.

The remaining words are next to the ladies. Half of them start with *oB*, which we know already as *water*. The first subset of four words denotes the ladies above the upper edge of the oddly shaped grotto-style pool.

- oBor: ***The water of shame***

(ABAR) *ābār*: "Wells. ..." [J5]

or (AR) *ār*, "Reproach, disgrace, shame." [J51]

This word could be read also: oBar, i.e.: ar (HRR) *harr*: "Abhorning, detesting. ..." [J1387]

- oBat: ***Beauty***

oBat (AB^wHT) *ubbahat*: Magnificence, grandeur, glory; beauty, grace, elegance. [J16]

ot (AT) *et*: Flesh. [M49]

It is not clear whether this word is assigned to the streams on its left or to the female figure on its right.

- oBat8y: ***The water of tarrying***

atny (ATN) *atn*: "Standing, stopping, tarrying. ..." [J20]

Third letter could possibly be a V-o.

• oBair a8y: ***The wells of obscene talk***

oBair (ABA~R) *ab'ār*: "Wells." [J5] Compare above and note that the dictionary [J] gives two spellings for "Wells", so that we do not have assume unorthographical writing, but could rather conjecture a difference in meaning between the two variants.

a8y (KhNY) *khanī*: Obscene talk. [J539]

This refers to a lady in a smaller basin and next to another one which could represent outlets of a well, the fresh water being indicated by a shade of blue rather than green. There are six more words below the pool, which may indicate the moral effects of bathing in these wicked waters:

• worort: ***in company with vain women***

wā: again

(RA^ˆRA^ˆ) *rara'*: "A woman who twinkles her eyes."

(RT) *rat*: "Naked. Hut, Hollow, empty. Poor, indigent. All. Paper. [J611]

(W) *wa*: And. Too, also. As, whilst, yet. With, in company with, together. By (in swearing). Whilst. Then. There. Or. For, but, although. Perhaps. Many, often. [J1350]

(RA^ˆRA^ˆT) *ra'ra'at*: "Turning the eyes. Looking stedfastly at. Shining, flashing (a cloud or vapour). Wagging her tail (a hind). Viewing (herself) in a glass (a woman). Twinkling with (her) eyes (a woman). ..." [J604]

This is not a good match: The first V-o is ignored (an emphasis may be implied, due to the need to distinguish from the more frequent *and*), and another P-ā (with madda) is added.

A similar word appears also on the left margin of f77v (140), but here with an V-a added, i.e. V-*wororat*, although the third letter there is less obviously a V-r, and could be a V-c.

(ART) *arit*, "A reddish colour, like to the fruit and roots of the tree ..." [J59] Meaning "mature" or "ripe" as in the form: (ARTA^ˆ) *arta'*. "Becoming marriageable (a maid)." [J59]

• otBa By: ***playing the fool***

(ATBK^h) *atbath*: "Very foolish, extremely stupid." [J108]

(BYY) *bayy*: "Imitating, mimicking. A mean, wretched, abject man." [J263]

In this case, the split is implied by the space in the caption. Johnson's dictionary contains many over-explained items like these ones, although the words are likely to have a more general meaning. The alternative reading of the second part as (BY) *bī* or *be*: "Without." [J263] would be unlikely here as the particle P-*bī* is usually a prefix.

• woBoty: ***foreign intellect***

(WABA) *wābā*: Intellect, understanding. [J1349]

(TY) *tī*, Empty, vacant. [J400]

(TY) *tī*, She. This. [J400]

(WA^ˆB) *wa'b*: Being contracted together. Blushing, being ashamed. A blush, modesty. Strong, well-formed (horse-hoof). A large camel. A capacious drinking-cup. [J1349]

(WA^ˆB) *wa'ab*: Being angry. [J1349]

(ATYY) *atīy*: Foreign, outlandish, unlooked-for. An unexpected overflow of water. Bribes. [J20/21]

● 8otot: **non-obedience**

(TAεT) *tā εat*: "Obeying, submitting to. Obedience, obsequiousness." [J809]; "Na or ni at the beginning of a word implies negation." [J1287]

(NAT) *natt*: Extending, stretching. Tying fast. Travelling (over a country). Raving, doting, talking nonsense. [J1319]

8ot (NAT) *nāt*, "Men." [J1288]

ot (AT) *et* (or possibly *at*): Flesh. [M49]

● otaiḏ: **negligent**

(ATTAA) *itti'ā'*: Taking warning. Receiving a promise. [J17]

(ATKhKhAKh or ATKhAKh) *itkhākh*: Leaving dough to become sour. [J18]

(ATHAH) *it-hāh*: "Throwing. Letting fall." [J108]

(ATHA^ʔ) *it-hā'*: "Being skilful, clever at any work or business." [J110]

● oBccor: **acting prematurely**

(ABSAR) *ibsār*: "Doing or asking any thing prematurely or unseasonably. Bearing dates in the stage called *busr* (a palm-tree). Taking the scab off a sore before it is healed. Mixing unripe with ripe dates in order to press the juice from them. Being out at sea (a ship). Digging in ground seized by force." [J11] This is one of the cases where we read V-cc as P-sin, which (also in parallel to its reading as P-y) would be supported by the Pahlavi transliteration.

While some of the translations appear reasonable, there are obviously also a few doubtful attempts. Especially the decompositions are questionable unless implied by the distance between the parts as, for example, in V-otBa *By*, or for words that start with the suggestive compound V-oB (P-ab).

3.9 f82v (p150): The rainbow page



In the picture on the top of this page we find four words starting with:

- oMcS8y (AAMWSNY) *āmūsni*: "A woman who has a husband in common with another." [J160]. This is a perfect match, apart from the fact that the P-ā has a madda (doubling), which is, however, generally ignored in the VM. The entry [J160] includes also the variant *amūsni*, but as we have V-o) rather than V-a, it seems that the VM prefers the former. Also as composition of V-oM and

wasni or *wusni*. Two women married to one husband: a rival wife. [J1365]

washni, Red, rouge used as a cosmetic. [J1366] Related to the red cap?

• oMc8y

oM (AM) *am*: I'm

(WNG) *wang* (or *wing*): "Empty, empty-handed, poor, destitute. Echo, noise. Ugly." [J1377]

(WNY) *wany*: "Leaving off, ceasing. Tucking up (the sleeve)." [J1377]

(WNY) *wany* or *wunīy* (with *madda*): "Being sluggish, dull, heavy, ..." [J1377] Same entry.

(AMWN) *amūn*: "Firm, steady, not apt to trip." [J160]

(AMUDN) *āmudan*: "To prepare, to fashion. To cause to be made. To adorn. To be adorned. To mix. To be mixed. To fill." [J160]

• 8auð oMy

8auð (NAH) *nāh*: "Noxious exhalations from the ground." [J1297]

8auð (NAH) *nāh*: "Abstinent, averse, refraining from." [1297]

8auð (NAKhε) *nākhi ε*: "Knowing, intelligent,." [J1289]

oMy (A~MY) *āmī*: "Handmaidens." [J160]

oMy (AMMY) *ummīy*: "An idiot, who can neither read nor write (as he came from his mother's (*umm*) womb)." [J160]

nakhām: "One who breathes hard, who sighs from the bottom of his heart. A miser. ..." [J1304]

• oMc8at (AMWMT) *umūmat*: "The being a mother; maternity." [J160] This is the only case in this paper where we assume a "typo" in the VM, by taking the V-8 to be an P-*m*, but it should be considered that the two letters¹⁴ are interchangeable in Persian [J1076]. If this does not seem permissible, it is possible to consider a translation as *firmness* based on

(AMWN) *amūn*: "Firm, steady, not apt to trip." [J160]

The small picture on the middle left show bow-like tube and the word



• oBatSy (AB ATSh) *āb ātish*, with *ātish*: "Fire. Sulphur. Digestive heat. Rage. Desire, appetite, love. Joviality, mirthfulness. A courageous man. The devil. A lover. Light, lustre, beauty. Rank, dignity, value. Dearness, scarcity." [J18] In a compound with P-*ab* (*water*, see Sect. 2.2), this can refer to *wine* or *boiling water* [J3], but here other meanings should be considered as well.

In obvious correspondence, the picture on the right uses the a variant pronounced P-*abi* (*water* in comp.), which has the same meaning in in Persian and is as frequent as *Pab*.

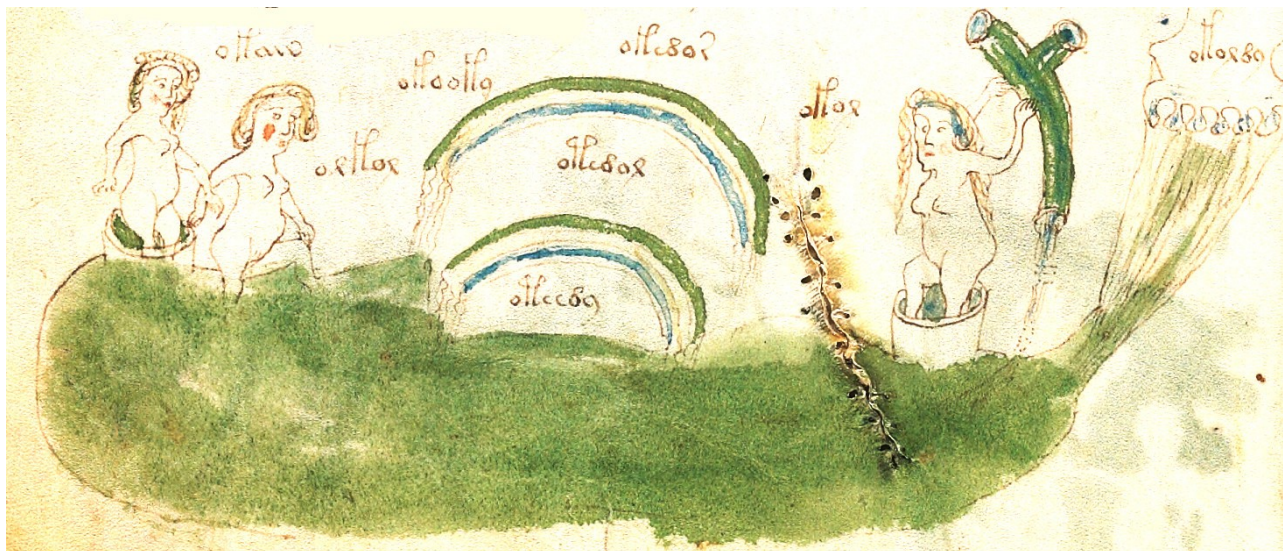
• oBy oṭBccny (AB ATBYN) *ātbin*: "Eloquent. A skilful performer. Most felicitous. ..." [J17]

The word V-*oBy* is less obviously related to the figure than the second, because it is written on the same line as the main text, but the quill appears to be different than in the main text, such that both of the words can be considered as a caption, independently of the content of the phrase.



14 Regularly before P-*b*, just as, to add a loosely connected example, in the spelling of *symphony* in various languages.

It may be speculated that the pair illustrates the polarity between attractiveness through beauty, and heated desire, and through skill and eloquence. Apparently, either can be achieved by an appropriate balneological cure or rather both aspect can be represented within the bathing schema such that it comes to mind in the everyday pastime of bathing.



The picture on the bottom of this page contains eight words:

- oBaīð (ABHA) *abha'*: "Projecting tents. Extensive countries. Cavities of breasts. Wombs.. ..." [J16]

(ABHY~) *abha'*: "More or most beautiful." [J16] Spelling differs, but pronunciation matches.

(ABAA) *abā'*: "Strange, wonderful." [J4]

(ABHĀ) *ibha'*: "Being broken off." [J8]

- otBot: carnal union

ot (AT) *et*: flesh.

Bot (BAT) *bāt*: "A place of repose, an inn. Coitus." [J201]

(ASBAT) *asbāt*: "Fools, sluggards." [J21]

isbāt, "Hardly quitting one (disease)." [J21]

- oBcoBy (ABWAB) *abwāb*: "Gates, doors. Chapters. Conjugations. Dues, fees, taxes. Points, principles." [J15]

The third letter is not clearly readable, it could possibly be V-a or V-o instead of V-c.

- oBc8or (AB WNAR?)

ABU is father (also metaphorcially), NAR is either pomegranate or hell.

- oMc8at: See above on same page.

(AMU) *amu*, A tumour, swelling, inflation.

(AMWN) *amūn*: "Firm, steady, not apt to trip." [J160]

(WNAT) *wanāt*: "Torpid, languid (woman), slow in rising or sitting. Mild, gentle, tame (female). A pearl." [J1377]

- oMcc8y [J1377] *amīnī*: "Security. Trust. ..." [J161]

- oMot (mothers). The second letter may be an V-B, it is not clear whether the visible quill trace suggests a V-M, or whether loop that distinguishes between the V-B and the V-M has been removed by the scribe in order to correct a writing error. Otherwise: The water of the flesh (?)

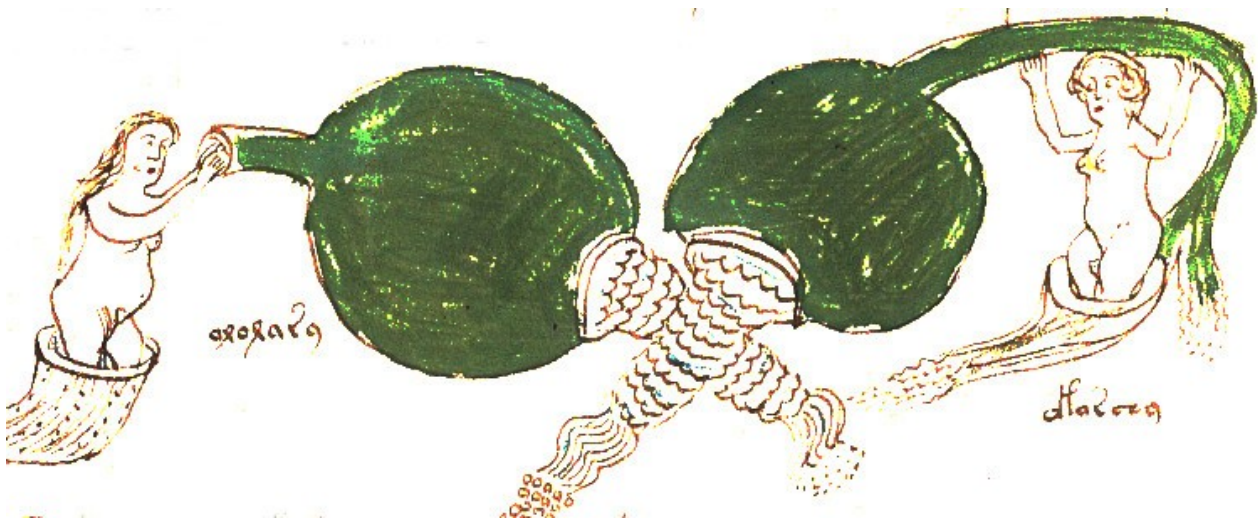
- oBot8y (ATN) *atn*: "Standing, stopping, tarrying. Bringing forth a child with the feet foremost (a woman). Coming forth in that manner (a child). ..." [J20] prefixed by P-ab (water).

(ISNY) *isnīy*: Relating to two. [J23] Spelled with trebly-dotted P-sA.

(ABAT) *ābāt*: "The armpits." [J5] [+ nY]

Finally, it should be remarked that the page does not actually show rainbows.

3.10 f83v (p152)



The chiasma represented in this picture can have various meanings, but it is interesting that "The crossing of nerve fibres ... was probably first identified by Persian physician "Esmail Jorjani", who appears to be Zayn al-Din Gorgani (1042–1137)." [en.wikipedia.org/wiki/Optic_chiasm]

We consider first the two single words below the main figure on this page, and then the two words next to the picture on the bottom right.

ototary: **Receiving the promise to be cleansed**

(ATTAA[◌]) *itti'a*: Taking warning. Receiving a promise. [J17]

(TKhR) *takhur*, see entry *ittahur*: "Becoming purified, cleansed. Being pure, abstaining from vice or sin. Purification, cleansing, sanctifying, washing (with water)." [J110] and entry *tatakhur* [J350].

Alternatively, we can group the letters differently, for the part V-otot see above on f75v (p136).

otot (ATAT) *attat*: "Loud-voiced, clamorous, noisy." [J107]

otot (ATAT) *atāt*. "Pomp, grandeur." [J17]

(ATAεT) *itA εat*: "Obeying. Obedience, submission, surrender, subjection. Bearing ripe fruit (a tree), and putting it within the gatherer's reach, Lying open (a field) for pasture." [J107]

ary (HRY) *hari*: "A field watered by the rain. [j1390]

ary (ARY) *ary*: "Making honey (a bee). Driving the clouds (wind). Pouring forth rain (a cloud). Being burnt at the bottom (a kettle), and leaving something sticking there. Remaining in the stall (cattle). Feeding in the same stall and being familiar (cattle). Bearing malice. Honey. Whatever adheres to the sides of the hive. A copious fall of rain. Whatever sticks to the bottom of the pot. Whatever falls from the hand or mouth when eating. A viscous kind of dew." [J64]

(THR) *tahr*: "Throwing out a mote (the eye). Casting away a green film (a fountain). Driving away. Extirpating the foreskin (a circumciser). Lying with." [J813]

The first letter is not unambiguous, it could be as well V-a or even V-y, but as it differs from the second V-a in this word we had to read V-o here.

• oBarSy: **The true water**

oB (AB) *ab*: water [J12]

arSy (ARShY) *ārishī*: "True, real, significant." [J59]

On the same page, f83v (p152), the small image on the bottom on the right contains two words:

• oBSny: **Bathtub**

(ABSNG) *āb-shang*: "The bathing vessel described under *āb-zan*" [J12]



For *āb-zan*, the Arabic version of the same word, we find: "(Casting water) A particular kind of bathing-vessel made of copper or iron, the full length of the human body, filled with warm water medicinally prepared, in which the patient sits or lies down. The bason of a fountain. Imparting tranquility of mind, consoling, consolatory, (imperative) console, appease." [J11]

It is also possible that the word is simply a composition of *āb* (water) and *shang* (beautiful), without an intended reference to this specific bathtub.

• oBauð: **sluice**

It is likely that also this word is a composition with P-ab (water) and, e.g.,

au (KhA) *kha*, "The shoulder. A sewer, sink." [J501]

which would point to the drain from the *bathing vessel*. that can be seen as a kind of *sluice*. The match is acceptable, because V-a can be P-kh. Whether the number of strokes after the V-a indicates also a plural (*sinks*), is not clear, but unlikely since plurals with P-ha were not frequent for inanimate objects. There are also other option for the translation, such as:

(ABξA^ʿ) *ib ξaʿ*: "Lending. Exciting to the commission of sin. Impregnating." [J12]

(ABHY) *abhaʿ*: "More or most beautiful. Extensive countries. Cavities of breasts. Wombs." [J12]

The second option would assume that the VM follows pronunciation, rather than (Persian) spelling, in which case the first option would be preferred. As we have not seen enough examples where this distinction would matter, we do not want to make a decision here. It would be necessary to translate more of the text in order to answer the interesting question whether the VM approves the balneological therapy or emphasises the need for decency and protection against infection which are know to have formed a problem in late medieval bathing, such that bathing had been abandoned altogether in some cultures of the time.

3.11 f84r (p153)



Among the three pictures on this page, two have a caption. The top one shows 13 words in some correspondence with twelve showering ladies, and the bottom picture has 7 words, see below.

We will go through the words from left to right, noticing that some start with V-*oM* (*I am*), and some with V-*oB* (*water*), both of which we have encounter also elsewhere.

ototat

otot (ATTAT) *attat*: Loud-voiced, clamorous, noisy. [J107],

otot (ATAT) *atāt*: Pomp, grandeur. [J17]

at (HT) *hatt*: "Relating (any thing) readily and with propriety. Tearing (the garments). Breaking, dashing to pieces. Pouring out. Laying or throwing down, deposing from any dignity; causing to lose rank or reputation. Drawing, stripping off (the leaves of a branch). Drawing out the thread in spinning (a woman). A fracture." [J1383]

at (HT) *hat'*: "Striking. Time; an hour, especially of the night. Being bent. Eating (meat). A fissure, rent, tear, crevice."

Below the arches:

or dcBar

or (AR) If. Reproach, disgrace, shame. [J51]

dubal: "Insincere, unfaithful."

dābir: "A follower." [J549] The second letter could be V-*o*, i.e. P-*ā*.

In the same 'arch' lower than other words in the picture we have also the single word:

- y8y (GhNYY) *ghanīy*: "Rich, wealthy. Independent, able to dispense with."

(YNY) *yanīy*: "Ripe (fruit)." [J1418]

- oBc8y (ABWN) *abūn*: fathers [J16] (?)

- toty (TAT) *tāt*: "Long, tall. Strong. Courageous. Quarrelsome. A libidinous and noisy stallion." [J809]

- 8aur (NAHAR) *nāhār*: "Unknown, incognito, strange. Fasting, eating nothing." [J1297] The latter group could be V-*8aur* (P-*nā āhār*), but also in this case the spelling V-*8aur* is corresponds to a variant in [J]. Note that either one is different from V-*nar* (*river*) and V-*nair* (*refrain from*), i.e. even small differences in the V-script are meaningful in Persian language.

- ot dy (ATTDAε) *ittidā* ε: "Being quiet, mild, and placid. Complaining of one limb, whilst the rest of the body is in good health. Resting." [J18] The form ending in P-y would be the corresponding adjective.

(DεYY) *da* εīy: "A spurious child, bastard. An adopted son. One about whose pedigree suspicion is entertained." [J573]

[DGh] *dagh*: "Mark, stigma. Bald. One whose beard, mustachios, eye-brows, and eye-lashes have been cut off. Ground where nothing grows." [J573]

The expression seems to consist of two parts in the V script.

- oMc8y: ***I'm of a sluggish disposition.*** (with next?)

oM (AM) *am*: I'm

(WNG) *wang* or *wing*: "Empty, empty-handed, poor, destitute. Echo, noise. Ugly." [J1377]

(WNY) *wany* or *wunīy* (with *madda*): "Being sluggish, dull, heavy, slothful, listless." [J1377]

(AMWN) *amūn*: "Firm, steady, not apt to trip." [J160]

- tBot (TBAAT) *taba'ut*: "Lying on one's breast. Being in easy and affluent circumstances. Disliking, loathing." [J2302]

(TBA^ʔT) *tab'at*: "Nature, disposition (good or bad)." [J811]

- oBotdy ab: water (?) For V-otdy see above. Not clear.

- oMoty

(AMT) *amt*: "Determining (by measure, manner, or time). Intending purposing. Guessing, conjecturing. Being depressed. Being steep and high. Weakness. A proper regulation for living. Curvature. A distortion about the month. A fold, a wrinkle in a garment. Inequality in ground. High, prominent ground. A small hill. A protuberance." [j154]

(AMT) *amat*: "Handmaids, female slaves" [J153]

(AMAT) *ummāt* (mothers)

(AMMT) *immat*, "Grace, favour, benevolence." [J154]

And, finally, for this picture, on the far right:

- 8dc8y (DUNYY) not [J1287] + being humble [J588]



Between the uncaptioned middle picture and the bottom picture (see below) is a single word:

oMaty (AMHTY) which could be an adjective or abstract term related to P-*umm* (mother) or P-*ama'* (handmaid), see Sect. 2.2.

The second captioned picture on the bottom left of this page has a line of seven words above a depiction of

eleven ladies bathing. One of the women has seems to have some prominence and a circular object is being shown around. although it is not not clear whether by the chief lady or by the handmaiden behind her in which case the object might be a tool for serving the chief lady. The headline is a set of words that connects to a line of the main text, but appears to be written with a different quill, so we consider these seven words also as a caption. Some of the words occur repeatedly in the captions.

- dcy: (DWYY) *dawīy*: “Any thing, any person. ...” [J588]
- 8ar: *nahl*: Reproaching reviling, lean, thin [J1305]
nahr: River [J1342/43]
nīhr: "Industrious, intelligent, expert, skilful, knowing, experienced." [J1304]
- dcy: any person
- 8aīḏ (NH^u) *nāhh*: "A stimulating, urging onward." [J1304] The double letter is the *hā'i huttī*.
 also: *is now over*. (see above)
- aūḏ: *hā*: "Her, to, of, from, or by her." [J1379]
hā'a: “He was handsome and of a respectable appearance.” [J1379]
hā: "A good man. A shrill-voiced woman." [J459]
kha: "The shoulder. A sewer, sink." [J501]
- dc8y: *duni*: "Baseness, inferiority. [J588] Related to P-dawn meaning also *vile* or *little*.
duni: "A long swift vessel. Negligence. [J588]
- orot (ARA^T) *irā'āt*: “Showing, exhibiting.” [J51] Can also mean *many* or *lots of food*

We can put this together into a sentence such as:

Any experienced person, any person who is urging her, shows baseness.

Given the ambiguities of the translation, the connection between the words is speculative and beyond the scope of this paper. For this reason we exclude also the final bathing page f84r (p153) as its captions seem to be descriptions in full sentences.

4 Conclusion

The vocabulary discussed above is large related to Arabic (or other Semitic) stems, such that we cannot rule out completely a Semitic language. Persian which has incorporated contain many Semitic roots, partly already before Islamisation, and in fact all roots mentioned here are from a dictionary of Persian. Also there are clearly elements that are characteristic for Persian, not only quite a few Indo-Germanic roots that are, however, only of statistical value because of the ambiguity of many translations, but also

The large number of meaningful words does, however, confirm without much doubt that the VM is written in a natural language, be it Persian, Hebrew, Arabic or Osman Turkic, the latter containing a large faction of Persian words.

The world depicted in the VM is not easily localisable in one the cultures that are well known to the West, and by the presumed age of the manuscript it is not unlikely that this culture is not any more existent. Similarly, the evidence presented here that the VM is written in Persian requires further

elaboration. Although the vocabulary is largely Persian and Arabic, as it is characteristic for Persian, the same is true also for Ottoman Turkish, where up to 88% Persian vocabulary was used (although perhaps less at the supposed time of origin of vellum on which the VM is written), and a similar prevalence is likely for many regions that were then under the Persian cultural influence including parts of India. In addition, the sociolect in which the text of the VM has been conceived, may have had developed its own characteristics, which we will discuss in a forthcoming paper.

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