

On the Heels of *ägöčäk* <*ehau':cakä*> in the Old Turkic-Khotanese Glossary

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Abstract: The so-called ‘Turkish-Khotanese word-list’ is a list of about a hundred Old Turkic words in *Brāhmī* script, some of them with Khotanese translations. Many of the entries were provided with brief etymological notes by its first editor Harold Bailey, which were corrected and expanded by later linguists. A couple of words remain unexplained. This paper will discuss the body part *ehau':cakä*. Bailey compared it with Turkish *ökçe* ‘heel’ but this was rejected by later authors on phonetic grounds. Bailey’s proposal will be revisited and other connections will be investigated.

Keywords: Old Turkic, Turkic languages, etymology, body part terms, *ökçe*

Özet: *Türkçe-Hotanca kelime listesi'ndeki ägöčäk <ehau':cakä> sözünün peşinde*

‘Türkçe-Hotanca kelime listesi’ olarak bilinen metin, bir kısmı Hotanca çevirileri olan, *Brahmi* alfabesiyle yazılmış yaklaşık yüz Eski Türkçe kelimedenden oluşan bir listedir. Kelimelerin çoğuna ilk editörü Harold Bailey tarafından kısa etimolojik notlar verildi ve sonraki dilbilimciler tarafından düzeltmeler yapıldı. Açıklanamayan birkaç kelime kaldı. Bu yazıda vücut parçası *ehau':cakä* tartışılacaktır. Bailey bunu Türkçe *ökçe* sözü ile karşılaştırmış, ancak bu fikir sonraki uzmanlar tarafından fonetik nedenlerle reddedilmiştir.

Bailey’nin önerisi yeniden gözden geçirilecek ve *ehau':cakä* kelimesinin diğer olası bağlantıları araştırılacaktır.

Anahtar sözcükler: Eski Türkçe, Türk dilleri, etimoloji, vücudun bölümleri, *ökçe* sözü

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To Prof. András Róna-Tas at 90

1. The Old Turkic-Khotanese glossary

The so-called ‘Turkish-Khotanese word-list’¹ is a list of about a hundred Old Turkic words in southern Brāhmī script, compressed in as few as 19 lines directly following an excerpt in Khotanese of the medical text Siddhasāra. The manuscript was found in Dunhuang, and was estimated to date from the 10th century. Only a part of the Turkic words is glossed in Khotanese.

Its discoverer Sir Harold Bailey was the first to work on the text. He recognised that the material was Turkic and identified most of the words. Bailey published his transcription with concise etymological comparisons in 1944.² He later published a slightly different transcription (1956: 81-82), updated again in 1969, and some new etymological proposals and a facsimile of the relevant lines (1973). Several of the Khotanese items are included in Bailey’s dictionary (1979). Other colleagues that worked on the list as a whole are Hovdhaugen (1971), Clauson (1973), Emmerick & Róna-Tas (1992), and Róna-Tas (1993). Individual words are referred to or discussed elsewhere, as by Erdal (2004) and by Röhrborn in the installments of his *Uigurisches Wörterbuch*. Emmerick & Róna-Tas managed to reinterpret some ‘Khotanese glosses’ as (parts of) Turkic words.³

The Turkic vocabulary mostly consists of terms related to archery equipment, the horse’s harness, and anatomical terms. Although the names of many body parts may have been collected as hippological terminology, most of the terms equally apply to other mammals including humans. Some terms are specific to horses (*bakañok* ‘frog of a horse’s hoof’, if this is the correct translation), while others pertain to ruminants, thus excluding horses (the

¹ The term ‘Turkic’ was not yet in use in Bailey’s time. Erdal (2004) calls it the ‘hippological glossary’.

² Bailey made his transcription some years earlier in Paris, where the manuscript is kept as P 2892 in the *Fonds Pelliot chinois*.

³ Based on this work the entries *tākā*, *drūysi*, *drrūkā* in Bailey’s Khotanese dictionary should be struck. For details see Emmerick & Róna-Tas.

stomach names *kärgök* and *sarkaňak*). As noted by several editors of the list, the most basic terms in each semantic category, such as 'bow', 'arrow', 'saddle', 'head', 'ear', 'mane', 'tail', 'hoof' are generally not included, suggesting it was compiled by or for an advanced learner or translator.

Although some of the listed words are sparsely documented or unknown in other early Turkic sources, most of them could be identified. In spite of the efforts of the illustrious colleagues mentioned above, a few unexplained items remain. In attempting to interpret these, several obstacles are encountered. In some cases it is disputed which Brāhmī characters are actually written or where the word boundaries are. Some words have Khotanese equivalents that are themselves unexplained; most do not have a Khotanese equivalent at all. Several Turkic words are not otherwise attested within Turkic or beyond. On the other hand, because the notation is relatively precise and the list is thematically organised, the meaning of most of the non-glossed items can be established.

In these pages we will take a closer look at the entry <ehau':cakä>, one of the items which do not have a Khotanese gloss and seem to lack a parallel in any other Old Turkic sources.

2. Previous opinions on *ehau':cakä*

The word <ehau':cakä> appears as № 72 in Bailey (1944). In the list it is preceded by *yoda* (= *yota*) 'thigh'⁴ and *bakaňok* 'frog of a horse's hoof'⁵ and followed by *öpkä* 'lungs' and *yüräk* 'heart', suggesting it most likely denotes either a part of the lower leg (lower hind leg if it refers to a quadruped) or an internal organ.

Based on its position in the list, Bailey interpreted <ehau':cakä> as 'heel', comparing it to the modern word *ökčä*, which is found in most modern central Turkic languages, i.e. those

⁴ In modern languages, *yota* is also found in other meanings: Tuva *čoda*, Yakut *soto* 'shin', Altay *d'odo* 'shin; knee', Kirgiz *žoto žilik* 'tibia', Altay of Kosh Agach *d'odo* 'pastern'.

⁵ The meaning 'frog of the hoof' for *bakaňok* is also recorded by Kāšgarī. It is unclear whether and how this word is related to various modern words for 'ankle', 'wrist' or 'knucklebone (used in games)', not restricted to horses. Extant forms include Kirgiz *baqay* 'pastern (small bone above the hoof of horses and horned livestock)', *baqpayaq* 'part of the leg above the hoof (between fetlock and hoof)', Turkmen *bakan* 'ankle', Khakas *maxayax*, *maxpayax*, *pağayax* 'ankle', Tuva *makpalčik* 'knucklebone'.

of the Southeastern (Chaghatay/Karluq), Northwestern (Kipchak) and Southwestern (Oghuz) subgroups. Modern forms include Modern Uyghur *ökčä*, Kirgiz *ökčö*, Kazak, Karakalpak, and Nogay *ökše*, Halicz Karaim *ekce*, Tatar *ükčä*, Bashkir *üksä*, and Turkmen *ökje*. It is recorded in the meaning ‘heel’, in the sense of the back part of the human foot, the back of footwear, and the back part of the sole of footwear. It can also denote the corresponding area in the hind leg of animals known as the hock.⁶

This word appears in literary Chaghatay and in Middle Kipchak sources in the shape *ökčä*, but is not noted in earlier sources such as Kāšgarī’s *Dīwān Luġāt at-Turk*. There does not seem to be a convincing or generally accepted etymology for *ökčä*.

The similarity between *ökčä* and <*ehau*:*cakä*> seems to be sufficient to investigate the relationship between the two, although they correspond far from perfectly. Bailey did not provide an Old Turkic reading for the Brāhmī notation or attempt to reconstruct an intermediate form to bridge the gap between the two forms.

Mostly for phonetic reasons, all later editors of the list rejected the connection between <*ehau*:*cakä*> and *ökčä*, and with it also abandoned Bailey’s translation ‘heel’. Hovdhaugen (№ 61) classifies <*ehau*:*cakä*> as ‘unidentified’. Clauson (1973: 41, 43) briefly entertains an alternative interpretation based on the verb *ekä*- ‘to file’ (which he reads *ége*-), but then rejects it. He goes on to propose another interpretation ‘lock of hair’, assuming a ‘muddle’ of the word *küžäk* of that meaning, documented by Kāšgarī for the Arghu dialect. This half-hearted explanation was understandably not accepted by later authors, and the word returned to ‘unsolved’ status. Emmerick & Róna-Tas (№ 73) did suggest that the form could represent *eyö(n)čäk* and be derived from or related to *eyin* ‘shoulder’ which is also featured in the Old Turkic-Khotanese glossary, and otherwise well-documented as *ägin* ~ *äjin*. The problems with this suggestion are the unexplained *-ö-* and the loss of the *-n-*.

Although Clauson was aware of the Old Turkic-Khotanese glossary and exchanged ideas about it with Bailey, he chose to exclude its materials from his etymological dictionary, only to return to the topic in his article. Neither Räsänen nor Sevortjan mentions

⁶ The hock in quadrupeds is that what is perceived by non-anatomists as the ‘backward pointing knee’ of the hind leg, but in fact it represents the same structure in mammal anatomy as the human heel.

<ehau':cakä>. Räsänen's dictionary (1969) pre-dates all publications on the matter except Bailey's. Sevortjan's first volume (1974) was also too early to consider the articles of Hovdhaugen and Clauson.

3. Reading *ehau':cakä* today

A realistic reading of <ehau':cakä> is *eyöčäk*, as given by Emmerick & Róna-Tas, or *ägöčäk*, as read by Hovdhaugen. This would correspond to a more conventional Old Turkic notation *ägüčäk* if the word were to be found in a text in Uyghur script, or *ägöčäk*, if we want the transcription to reflect that the Brāhmī script suggests *ö* rather than *ü*.

The reading as a front-vocalic word is based on the initial <e> and on etymological considerations. In the Old Turkic-Khotanese glossary, the <h>, the <k> and the <au> are found in front- and back-vocalic words alike. The initial *e-* in the Brāhmī spelling of this document should not necessarily be viewed as a reflection of Old Turkic closed *e*, which contrasts with open *ä*.⁷ The list also contains item such as *eyin* 'shoulder', *eŋ* 'face (jaw?)', and *et* 'flesh', all of which are typically attested with *ä-* in Old Uyghur and associated with short **ä* in Proto Turkic. Also noteworthy is the notation of *ešün*, which Bailey (№ 58) correctly identified with the word otherwise documented as *öšün* 'shoulder, upper arm', which suggests that *eyöčäk* could perhaps also be read as *öyöčäk*.⁸

The form *ägöčäk* would not have resulted in the modern form *ökčä* by means of any established sound laws. In their discussion of Central Turkic **ökčä* 'heel', both Räsänen (1969: 370a, 44a) and Sevortjan (1974: 520) mention another modern word for 'heel' found in a number of Siberian Turkic languages, where it took on the regional form **ääčäk* due to the loss of intervocalic *-g-* common in these languages. Räsänen just lists the modern forms of **ökčä* and **ääčäk* without attempting to explain the irregular correspondence. Sevortjan posits an intermediate form **öyjek*. Whatever one may think of the origin of **ökčä*, the Siberian form **ääčäk* is a

⁷ In Old Uyghur texts written in (northern) Brāhmī script we typically find the notation <eya> for actual closed *e*, <oya> or <yo> for *ö*, <uya> or <yu> for *ü*.

⁸ There are some words in which the original vowel sequence *ä-ü* was assimilated into *ö-ü* in Chagatay and Kipchak languages, notably *ätük* 'boots' and *ärük* 'stone fruit'. *öšün* does not follow this pattern.

phonetically flawless descendant of the Old Turkic form *ägöčäk* <*ehau':cakä*>.

Relatives of the regional form **ääčäk* are found with the meaning ‘heel (of the foot or of footwear)’ in languages of the Tuva (Sayan) group of ‘*d*-Turkic’ languages, the Khakas (Abakan) group of ‘*z*-Turkic’ languages, and the Altay group of ‘*y*-Turkic’ languages. Recorded forms include Tuva *eežek*; Khakas *ejek*, Kacha *eäjäk*, Koibal *ääčäk*, *eečäk*, Kyzyl *ääžäk*, Sagay *ečäk*, Shor *eček*; Altay *enček*, Chalkan *enčik*, Kumandy *eeček* (after D’ayım), *enjek* (after Verbickij), *enček* (after Radloff). The nasal consonant in most of the forms from the Altay group suggests that the word was perhaps associated with **ägin* ‘shoulder’, as suggested by Emmerick & Róna-Tas’s emended form *eyö(n)čäk*. Further Kumandy forms *d’eginjek* (after Radloff) and *d’egiček* (after Verbickij) ‘heel’ may also belong here in spite of the irregular retention of intervocalic –*g*- and the presence of an initial consonant (from **y*-).

There is a shorter form in Tofa *ëë* (Rassadin 1971: 184) and Buryat Soyot *ee* (Rassadin 2012: 152), another variety belonging to the Tuva group of languages.⁹

4. The structure of *ägöčäk*

The existence of the shorter Tofa form *ëë* suggests that the Siberian form **ääčäk* as well as Old Turkic *ägöčäk* were derived with the diminutive suffix +*čAk*. Alternatively, Tofa *ëë* and Soyot *ee* may be the result of ‘back-formation’ by removing the suffix from **ääčäk*.

Assuming that *ägöčäk* is a native Turkic word, and there is no indication to the contrary, it can probably be derived etymologically from the verb **äg-* ~ **äj-* ‘to bend’.¹⁰ Although this is not implausible, it would not be a decisive argument to establish its meaning. The implied connotation ‘bendy or curvy body-part’ is

⁹ In spite of the phonetic similarity, Yakut *iäččäx* ‘head of the femur, hip joint; hinge’, with variants *iärčäx*, *iätčäx* recorded by Piekarski (897), and a counterpart in Dolgan *iärčäk*, *iärčik*, is not (at least not directly) related. It is the Mongolic word written *egerčeg* in the Uyghur script, surviving in Khalkha as *eerceg* ‘hip joint’. The expected Yakut development of **ääčäk* would be **iähäx*.

¹⁰ The nasal vowel in the shorter Tofa form *ëë* does not imply the loss of a nasal consonant, cf. also *ëë* ‘master’ from **igä* or *ñiit* ‘youngster’ from **yigit*.

semantically non-specific, as it would be difficult to find a body part that does *not* involve curves or bends.

If **äg-* is the stem, the morphological options are limited. The most likely analysis seems to be *äg-gü-čäk* with the (de)verbal noun *-gU* and diminutive *+čAk*, or possibly *äg-güč-äk* with the deverbal noun *-gUč* and diminutive *+Ak*. The distinction may be ultimately irrelevant as *+čAk* may go back to a compound suffix *+(X)č-Ak* and *-gUč* may be from *-gU-(X)č*. Both solutions involve the presence of a sequence *-gg-* across the morpheme boundary. The modern languages do not preserve any trace of this. If a form in Uyghur script is ever found, it *may* appear as *äggüčäk*, but the Brāhmī spelling does not reflect this.

Alternatively, the base could be a diminutive of a form **ägi* or **äñi* with the rare suffix *-I* (cf. *yapı* ‘horseblanket’ from *yap-* ‘to cover’ which is also in the Old Turkic-Khotanese glossary). To my knowledge this derivation is not documented elsewhere. It would also disagree with the Brāhmī spelling of *ägöčäk*.

The form *ägö(n)čäk* posited by Emmerick & Róna-Tas as an explanation for *ägöčäk* owes its *-n-* to a presumed connection with *ägin* ~ *äñin* ‘shoulder’, but in view of the *-ö-* it is unlikely that *ägöčäk* represents *ägin-čäk*. The *-n-* that does appear in several Altay dialects may indeed be due to a perceived connection to **ägin*, which in South Siberia occurs in various altered and contracted forms.

5. Some notes on *ökčä*

The earliest documentation of *ökčä* seems to be in the early 14th century in Rabgūzī’s *Qiṣaṣ al-anbiyā*.

Both Räsänen (1969: 370a) and Sevortjan (1974: 520) derive *ökčä* from Chaghatay *ök* ‘support, pillar’, a poorly documented word lacking from Old Turkic. The diminutive suffix *+čA* appears to be a Persian suffix adopted by Middle Turkic times. The same explanation is adopted by Stachowski (2019: 272b). Nişanyan (2021: 671) assumes the meaning of **ök* was ‘geri; arka = backward, back’.

Perhaps the Arabic spelling of the Chaghatay word *wk* should be read differently, and connected to Lopnor *öwök* (Fu et al. 4955, 5085), Kirgiz *öböök* (Judaxin 586a), which also mean ‘support’. If this is correct, it is unlikely to be the base of *ökčä*.

Tenišev et al.'s (2001: 289) reconstruction **ögčä* with –g- is perhaps inspired by other words such as *ägsü-* ‘to lack’, *ögsüz* ‘orphan’, *yügsäk* ‘high’. However, these words have lost their preconsonantal –g- in Gagauz and many Anatolian dialects, which has not happened in *ökčä*.

Gülensoy (2011: 656) proposes to analyse *ökčä* as *ük-e-çe* from the verb *ük-* ‘to gather, heap up’. This would require an explanation for the semantic leap. Moreover, the verb is more accurately read *(h)üg-.

In summary, these explanations are not more convincing than an irregular development from *ägöčäk*. Of course it is also possible to view *ökčä* as a monomorphemic stem, in spite of the unusual consonant sequence –kč-.

6. South Siberian **ääčäk* and Central Turkic **ökčä*

The fact that Central Turkic *ökčä* and South Siberian **ääčäk* are in complementary distribution is interesting, but does not constitute sufficient evidence for a shared origin. Whether *ökčä* ultimately represents a garbled development of the same etymon is hard to establish, given the lack of intermediate forms in older sources.

Sevortjan (1974: 520) attempts to connect the Siberian and non-Siberian forms by positing an intermediate form **öyjek*. At first sight this reconstruction looks like a plausible intermediary to bring together the Siberian forms based on **ääčäk*, the central Turkic form *ökčä*, and the form *ägöčäk* in the Khotanese word-list into a single etymon, but this would require some phonetic gymnastics. The preconsonantal –y- should have become a semivowel –w- or –y- in Kipchak languages, and the final –k should have been preserved in Chaghatay, Kipchak and Oghuz languages. The unrounding of the vowel in South Siberia would also be unusual. The form **öyjek* does not bring us any closer to the ultimate origin, Turkic or foreign, even if we assume that **ääčäk*, *ökčä*, and *ägöčäk* are ultimately manifestations of the same etymon.

7. Connection with Mongolic **ösügei* ‘heel’

Apart from equating central Turkic *ökčä* with the South Siberian form **ääčäk*, Räsänen and Sevortjan suggest a connection with Mongolic **ösegei* or **ösügei* ‘heel’ (the Mongolic data do not agree

on the form). This connection is proposed in several publications, generally without discussing any intermediate forms.

Phonetically it would be conceivable that a metathesized Turkic form *öčkä is related to Mongolic *ösegei/ösügei, comparable to the relation between Turkic *äčkü 'goat' (perhaps including its western form *käči) and Mongolic *esige 'kid goat'. The Mongolic -s- (-š- in some languages) seems to have developed because the preconsonantal -č- was considered abnormal. In both words the consonant sequence was also dissolved, although a cluster developed again in several modern Mongolic languages.

Ünal (2017: 23) takes a different route to connect the Turkic and Mongolic forms. He argues that the earlier Mongolic form for 'heel' was *ögese(i). Likewise he assumes that the similarly structured Mongolic *isegei 'felt' goes back to *egese(i) and is cognate to the Oghuz-Bolghar Turkic *käčä 'felt' via an intermediate *äkčä. These comparisons are semantically sound and phonetically possible, but in the case of 'felt' a metathesis in both language families is required.

Perhaps surprisingly, Starostin et al. (2003: 1168, 1039) do not connect öčkä and ösügei to each other, nor to any other Turkic or Mongolic etymon.

8. Other intriguing Turkish heels, ankles and shins

During the preparation of this paper several other words for 'heel' turned up, as well as phonetically similar words for other parts of the leg. Many of these cannot be properly explained. Lest they retreat into the bottom drawer, a selection will be presented here.

Among the divergent dialects of Turkey there are some words that resemble the Siberian forms discussed above, although none of them would represent a regular development of ägöčäk, and some deviate semantically. The most striking in the *Derleme Sözlüğü* are the following: *eşik* 'heel of footwear' (in Eskişehir Province), *encik* 'area between kneecap and hip' (Ordu Province), *ineçik* 'heel' (Tokat Province), *ecük* 'hip or buttocks (kalça)' (İstanbul and Elazığ Provinces).

In spite of their similarity to some of the 'heel' terms, Siberian Tatar (Tyumen) *yencek* 'ankle', Bashkir *yensek*, dialectally *sensek* 'shin', as well as Karachay-Balkar *inçik* 'ankle', Turkmen *i:njik* and Turkish *incik* 'shin' seem to represent an independent word

**(y)inčük*. This may in turn be a medieval contraction of **yilinčük* and be in some way related to or influenced by **yilik* ‘marrow’. The trisyllabic form survives in Kirgiz, Kazak and Siberian Tatar. Neither **(y)inčük* nor **(y)ilinčük* seems to occur in early Turkic sources. It is unclear how the second element of Yakut *sünñüöx-inñiäx* ‘shin (in livestock)’ (Piekarski 1958: 941) fits in. It suggests an earlier **inčigäk* rather than **(y)inčük* or **(y)ilinčük*.

In some Turkic languages where **ökčä* and **ääčäk* became obsolete, the alternative terms are obvious borrowings, such as Persian *pāšna* in Uzbek *pošna* (the body part) and Russian *kabluk* in Yakut *xobuluox* (part of footwear). Elsewhere they were replaced by other old words with different original meanings, such as *topuk* in Turkish (elsewhere used for other bony protrusions, such as ‘ankle’ and ‘kneecap’, etymologically ‘little ball’) and Karachay, Kumyk, and Khalaj *tapan*, Chuvash *tupan* (originally ‘sole’).

Kāšgārī’s *soḡ* ‘heel’ (originally ‘end, behind, back side’) survives in Salar as *ayaḡ soḡi* ‘heel’. Old Uyghur *adək soḡları* is recorded once in the so-called *Ernteseḡen* (‘harvest blessing’). Following its editor Zieme (1975, line 32), it is listed as ‘soles of the feet’ by Laut (2010: 59), but could in the context, a description of the effects of hard farm work, also be interpreted as ‘heels’: *ayaları kaparıp tilänü adək soḡları toḡrulup* ‘their palms develop blisters and burst open and their heels crack ...’, even if it would ruin the symmetry between palms and soles. Western Yugur *azaqtıḡ art* ‘heel’ also literally means ‘back of the foot’.

There are also other words for ‘heel’ of Turkic or indeterminate origin. Kāšgārī’s second word for ‘heel’ *tolarsuḡ* survives in Kipchak with shifted meaning, including Kirgiz *tolorsuk* (Judaxin 746a) ‘small bone that connects the talus and tibia’, Bsk *tularhıḡ* ‘tarsus (in animals)’ (Uraksin 642a) and in reduced form **torsuk* in South Siberia, e.g. Altay *torsuk* ‘area above the heel’ (Baskakov & Toščakova 1947: 154a), Tuva *dorzuk* ‘lower part of the thigh’ (Tenišev 174a).

A medieval word **sogunčak* is used in some Middle Turkic sources, e.g. Muqaddimat al-Adab *sonqunčaq*, *soyunčaq* (Poppe 1938: 279a, 352a), Codex Cumanicus *sowunčaq*, as well as in the Qing Pentaglot as *soḡalčaq*. It survives in a number of modern Kipchak languages (Kirgiz *sogončoḡ*, Halicz Karaim *soḡancık*), as well as Lopnor *sonjoḡ* ‘sole’ (Fu № 3638). Perhaps it originally meant ‘little onion’, but some forms may have been influenced by

soŋ 'end'). **sogunčak* is also the source of the assimilated Teleut form *čoončok*. Teleut *čoonok* ~ *čogonok*, Chalkan *čojak* ~ *š'oož'iq*, Baraba (Siberian Tatar) *cooziq*, Altay *čončoy* may all be further permutations of the same form (cf. Räsänen 113a). *čončoy* at the same time somewhat resembles Mongolic **ǰauǰai* 'heel'.

Western Yugur *zonay* 'heel', only documented by Potanin, but apparently surviving in its Mongolic neighbour Eastern Yugur as *зәһәи* 'heel'. It is vaguely reminiscent of **soŋ* and **sogunčak*, but cannot be connected to them.

Some languages have wholly different words, such as Yakut *tiŋiläx*, *tiliŋäx*, *tigiläx*, *tiläx* (Piekarski 2676), with equivalents in Dolgan.

At first sight the Yakut form looks like the Siberian Tatar forms *tilä* and *tälä* 'heel' (Tumaševa 210a, 206b), which in turn resemble Chuvash *kěle* 'heel; hook, latch'.¹¹ Tatar and Bashkir *kelä* ~ *keläy* occur mostly as 'hook, latch', but *keläy* 'heel' is attested in Tatar dialects.

Modern Uyghur *kalligir*, *kalligi* 'heel (of footwear)' (Nadžip 1968: 636b) has a Persian look about it, but a source form could not be identified.¹² Lopnor has *kalläk* 'heel' (Fu № 1450). The same word shape is attested in Modern Uyghur as 'piece, lump, bump', apparently related to Kirgiz dialect *källäk* 'tree stump' (Mukambaev 478b). In view of the hook motif in Chuvash mentioned earlier, it is perhaps related to Khalaj *källä:k* 'hook' (Doerfer & Tezcan 147b), Kirgiz dialect *kalak* 'wooden hook' (Mukambaev 438a).

In spite of the different vocalism, the Lopnor and Modern Uyghur forms are perhaps related to the Persian form *kullak-i pā* 'ankle' (Hesche 2000: 33) and the shorter form *كلك kullah (kolla)* (Steingass 1045a) 'the heel, the protuberant joint-bone of the foot and leg'. Khorasan Turkic forms borrowed from this include *küllä*, *külläk*, *küllü* 'ankle' (see Hesche).

A widespread Central Asian word for the heel of footwear is seen in Turkmen *apgirt*, Lopnor *aqpurt* (Fu № 90), Modern Uyghur *apqut*, Kirgiz *apkit*.

¹¹ Obviously *t-* and *k-* do not normally correspond, but they are occasionally confused in Chuvash and Bashkir, as in Chuvash *kěle-* 'to want' from **tile-* and Bashkir *terpe*, Chuvash *čērĕp* 'hedgehog' from **kirpi*.

¹² It was not possible to investigate the origins of this word, Iranian or otherwise, at this time.

Turkmen has *sö:bük* ‘heel’, resembling somewhat the Turkish dialect forms *semik* (Kütahya Province) and *şemik* (Isparta, Ankara, Niğde Provinces).

Baraba *aşqaq* ‘heel’ may represent a contamination of **ääčäk* and **ašuk* ‘ankle’ or an extension of the latter.

Closing remarks

In conclusion, the Brāhmī spelling <*ehau*:*cakä*> represents an Old Turkic word with the form *ägöčäk*, related to the South Siberian forms like Tuva *eežek* ‘heel’. In Old Turkic the term may have been applied to the human heel, to the hock of horses and ruminants, or both.

A connection with *ökčä* ‘heel’ in Central Turkic languages is difficult to prove in the absence of intermediate forms that could shed light on the mechanics of how the forms grew apart, although the semantic match is perfect and the forms **ääčäk* and **ökčä* are in complementary distribution.

The proposed connection between **ökčä* and Mongolic **ösegei/ösügei* ‘heel’ seems possible, but any explanation would struggle to include *ägöčäk* in the same story, at least by means of conventional Turkic-Mongolic correspondences.

If *ägöčäk* is a derivation of the verb **äg-* ‘to bend’, the semantic connection is non-specific and the precise derivation is unclear. However, it is unlikely that *ägöčäk* is a loanword. Body part names of foreign origin tend to be easily identified because of their phonetic appearance. Moreover, most of the usual donor languages are well documented. Perhaps the base was an unsegmented stem **ägö*.

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