YENISSEIAN HOMELAND AND MIGRATIONS[1]

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Several strategies which may serve to localise the homeland of a given language group and to reconstruct hypothetical trajectories of prehistorical migrations of this language entity and its successors in space and time can be listed as follows: (a) The analysis of historical documents of neighbouring languages with longer literary and historical traditions; (b) the determination of both close and distant genetic relationships within and outside the studied language group, indicating the language family and the macro-family of the subject language group; (c) an estimation of the absolute chronology of divergence within the language family and macro-family based on both the relative chronology of phonetic changes when contrasted with borrowings as well as a recalibrated glottochronology; (d) The study of mutual interference with neighbouring languages in the past and in the present; (e) an analysis of toponyms, especially outside the area of historical settlement of the studied language entity; (f) an analysis of myths and legends attesting to old neighbours and migrations; (g) linguistic palaeontology based on the geographical distribution of plant and animal species for which terms can be reconstructed in the proto-language; (h) linguistic archaeology, confronting the lexicon of the material culture with results of archaeological research. In the present contribution, with the exception of some comments, points (d), (g) and (h) are deferred, since they would require monographic studies.

ad (a): The testimony of Chinese historical annals

Pulleyblank (1962: 242-265) has collected serious arguments identifying so-called Xiōngnú glosses in the Han and later texts as Yenisseian. His arguments were further developed by Vovin (2000: 2003). They both interpret a brief poem about the war between two Xiōngnú chieftains, Liu Yao and Shi Le, for the rule of North China in 329 AD, written in the Chinese characters in the tribal language *Jié*, as Yenisseian. This passage was included in the historical text 晉書 *Jin shu* 'History of [the dynasty] Jin' (280-420 AD). Pulleyblank and Vovin also agree that the *Jié* language was probably closer to Kott than to Ket (Pulleyblank 1962: 264; Vovin 2000: 98-102). It is attractive to identify the ethnonym 羯 *Jié* 'people subject to the Xiōngnú, castrated ram' < Late Middle Chinese **kiat* < Early Middle Chinese **kɨat* (Pulleyblank 1991: 154) = Late Han Chinese (Schuessler 2007: 312), besides Old Northwest Chinese (400 AD) **kat* (ibid.), Old Chinese **krat* (ibid.) or **kat* (Schuessler 2009: 231), with the Yenisseian word **keʔt* 'man, person' > Ket & Yugh *keʔt*; Kott *hit*; Assan *hit*; Arin: *ḱit*, *qit*; Pumpokol *kit* (Starostin 1995: 236; Werner 1: 421), serving as the self-designation of Kets (Vovin 2000: 91-92; Pulleyblank 1962: 246 mistakenly

connected the ethnonym with Arin *kes*; Pumpokol *kit* 'stone', both regular reflexes of Yenisseian **čiʔs* 'stone'; cf. Starostin 1995: 217-18). If some Yenisseian tribes formed a part of the Xiōngnú tribal union, this would imply that they lived on the steppes at that time.

ad (b) & (c): Internal and external genealogical classification in chronological perspective

The traditional model of classification of the Yenisseian language family follows Kostjakov 1979 and Verner 1997: 172:
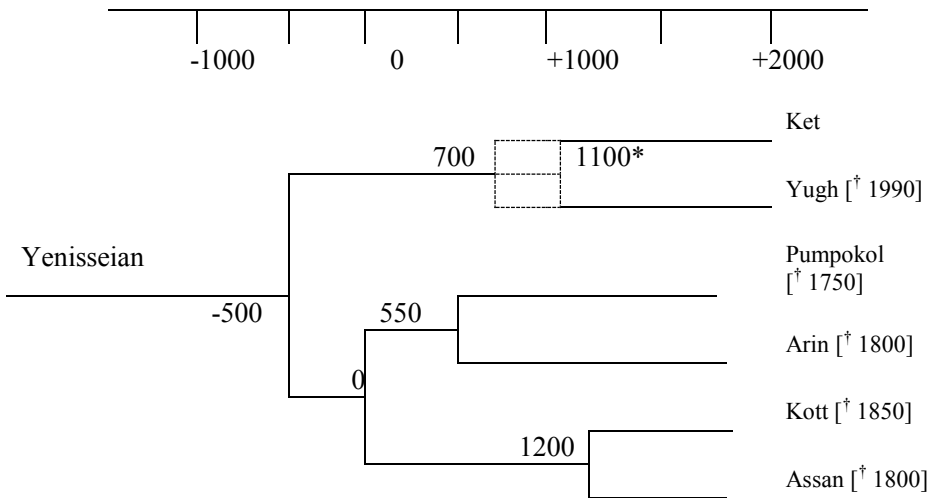

Figure 1: Classification of the Yenisseian language family (Note: Dating after
<http://en.wikipedia.org/wiki/Yenisseian_languages#pulle02>, but 1100* after
Verner).

In the most recent classification model (George Starostin 2014, p.c.), based on recalibrated glottochronology, the position of Pumpokol is closer to the Ket-Yugh branch than to the Kott-Arin branch, in contrast to Verner's model above:
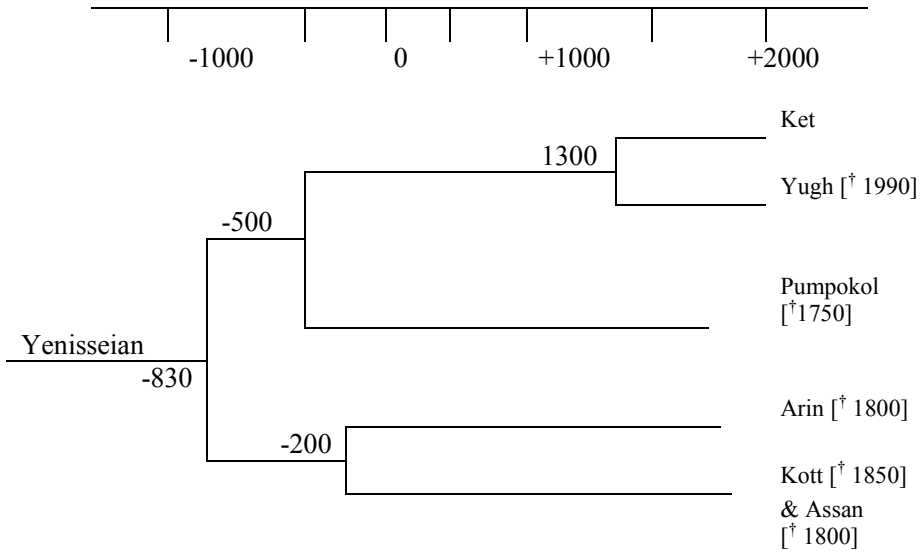
Figure 2: Classification of the Yenisseian language family according to George Starostin (2014, p.c.)

In terms of distant relationship, the Yenisseian language family has been connected with various hypothetical relatives. The series of bilateral comparisons proposed by Karl Bouda (viz. Yenisseian with Basque, North Caucasian, Burushaski and 'Sino-Tibetan') was more or less confirmed after the partial reconstruction of proto-languages and the formulation of the most probable sets of regular sound correspondences between them by Sergei Starostin and his followers, especially his son George Starostin, John Bengtson and others. Similarly, after bilateral comparisons of Na-Dene with 'Sino-Tibetan' by Sapir, Shafer and Swadesh, Na-Dene with North Caucasian by Nikolaev and Nadene with Yenisseian by Vajda, Na-Dene also came to be included as a member of a vast Sino-Caucasian macrophylum (cf. Blažek & Bengtson 1995, Bengtson 2010). The first preliminary model of classification of this macro-phylum based on recalibrated glottochronology was realised by George Starostin (2010, p.c.), who confirmed the so-called Karasuk hypothesis about a closer relationship between Yenisseian and Burushaski languages, formulated by George van Driem[2] (2001: 1186-1201) and supported by John Bengtson (2010), although the chronological level of the Karasuk culture (1500-800 BC) does not correspond with the hypothetical Yenisseian-Burushaski unity. On the other hand, the time and area of the culture widespread from the Upper Yenissei to the Aral sea (Mallory, EIEC 325-326) may be connected with ancestors of Yenisseian before their break up (cf. van Driem 2001: 1203).
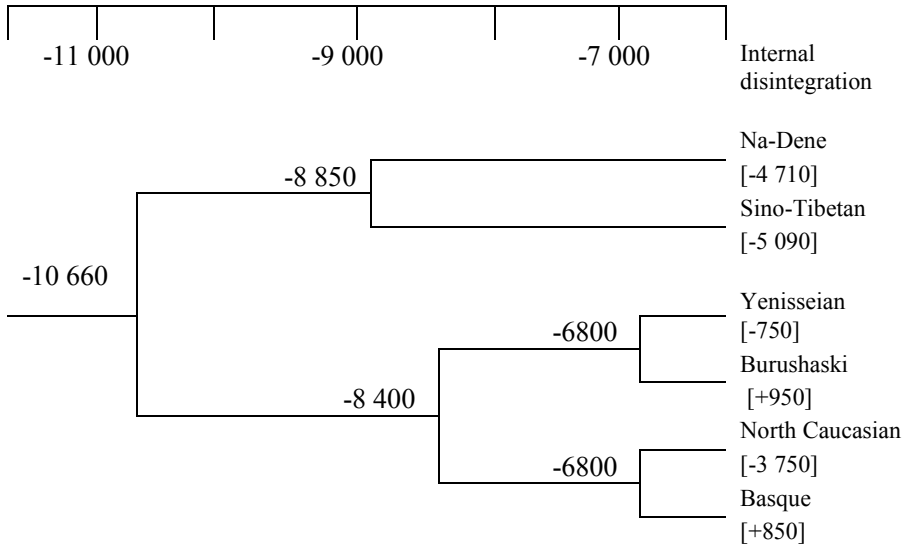
Figure 3

ad (e): The historical territory of the Yenisseian languages

The historical extent of speakers of the Yenisseian languages as described in the last three centuries is limited to the basin of the Yenissei (Yenissei-Angara-Selenga 5539 km) from the Kureika river (888 km) in the north near the Arctic circle to the city of Sajanogorsk in the south at around 53°N latitude. The eastern border of the southeasternmost tribe Kott was at about 99°E longitude. The western border of Kets was near 84°E longitude.

Taking into account the testimony of toponyms, especially hydronyms, the eastern border more or less remained as it was, whereas the southern border of the Yenisseian dialect continuum in the Yenissei basin should be shifted to the basins of the rivers Abakan in Khakasya and Bolšoi Yenissei in North Tuva (Dul'zon 1959: 97; 1963: 289-95), i.e. to around 52°N latitude. The evidence which can be gleaned from hydronyms informs us that traces of populations speaking the Yenisseian languages appear predominantly in the southern part of the western Siberian lowlands, where the northern border lay approximately at 58°E longitude, with the exception of the Yenissei basin, where the northernmost border of the Yenisseian hydronyms was identified along the Kureika river at ca. 67°30', and the basin of the river Tym (950 km), the right tributary of Ob, around the 60th latitude. The westernmost border of the area of the Yenisseian hydronyms could be the *Iset'* river (606 km long), the left (i.e. western) tributary

of the Tobol river, which itself is the left tributary of the Irtyš. The Iseť empties in the Tobol at ca. 67°E longitude and its spring is located near 60°E longitude. The hydronym can be derived etymologilly from the compound *is-set[3] 'fish-river'. The border in the south or the southwest will be discussed below in Section 3.

ad (e): Traces of Yenisseian hydronyms to the west of their historical settlement

It was Radloff (1884: 188-89) who first mentioned: 'Was mich aber vor allem veranlasst, ... , ist der umstand, dass die namen der flüsse im quellgebiete des Tom nirgends tatarische, sondern ihre namen tragen, zu drei vierteilen aus *sas*, *säs* endigen, was im Jenissei-ostjakischen «fluss, bach» bedeutet. Es lässt sich eine ganze reihe von flussnamen aus dem Jenissei-ostjakischen erklären, z.b.: *Päisäs* (windfluss) = JenO *bei* «wind» und *säs* «fluss», *Kamsas* (Pfeilfluss) = *cham* «pfeil», *Amsas* (mutterfluss) = *am* «mutter», *Sinsäs* (schmutzfluss) = *sine* «schmutz», *Paisas* (cederfluss) = *fai* «ceder».'

Later Duľzon (1959a: 98-111) and Maloletko (2000: 111-153) collected and determined as Yenisseian more than 400 hydronyms from areas outside the historical settlement of the Yenisseian tribes. The following illustrative examples, reduced to ca. 80 samples, are chosen from the western part of this territory, from the basin of the Ob & Irtyš. Almost all are characterised by specific hydrological components:

(a) Yenisseian *ses* 'river' > Ket *śēś*, pl. South *śaś*[4], Kureika *śa:śi*[4], Yugh *ses*, pl. *sa:*[h]*s*; Kott *šēt*, pl. *šati* 'river, brook'; *šētōk* (-*g*), pl. *šētōkŋ*, *šētōgan* 'brook'; Assan *šet* 'river (fluvius)', 'brook (amnis)'; Arin *sat* 'river (fluvius)'; Pumpokol *tataŋ* 'river (fluvius)', 'brook (amnis)' (Duľzon 1961: 179; Toporov 1967: 313; Starostin 1995: 271; Werner 2: 191: *set* / *tet*).

(b) Yenisseian *xur₁* 'water' > Ket *ūĺ* id.; *uĺij*[6] 'vapour above the water', Yugh *ur*; *urfï*[5] 'dew'; Kott *ūl*; Assan *ul*; Arin *kul*; Pumpokol *ul* (Starostin 1995: 298; Werner 2: 378: *(k)uʎ / *(k)uʎə*).

These historically documented appellatives, most frequently forming hydronyms, reflect variants which appear outside the Yenisseian territory too (*E = a/e/i*):

(aa) *sEs/*śEś* (Yugh & Ket).

(ab) *sEt* (Arin).

(ac) *šEt* (Kott & Assan).

(ad) *tEt* (Pumpokol).

(ae) Duľzon (1963: 291) and Maloletko (2000: 152-54) have added the variant *tEs*, attested, for example, in the following hydronyms: Bak*tas* → Tym; Kaj*tes* → Elbagan lake → Ob; Kan*tas*, Keľ*tas*, Ken*tas* → Mras-Su; Ku*tis* → Šiš → Irtyš; Taj*tas* → Uj → Irtyš; Ten*tis* → Irtyš; U*tis* → Demjanka → Irtyš; etc.

(ba) *ur* (Yugh).

(bb) *ul* (Ket, Kott, Assan, Pumpokol).

(bc) *kul* (Arin).

Irtyš basin: Ar*zes*, A*sɨs*, A*ses*-Igan (cf. Khanty *jogan* 'river'), Bajan*zas*,
    Balan*zas*, En*cɨs*, Im*cɨs*, I*sɨs*, Ka*čɨs*, Kain*sas*, Kaj*čes*, Kɨn*zas*, Kɨp*sɨs*, *Šiš*,
    Taj*sas*, U*sɨs*;
    Tobol (1660 km): I*seť*, *Tet* (lake);
    Išim (2450 km): Čal*dat* (lake on the steppe in the neighbourhood of the
    Ishim), *Ir*,
Ratsi*det*, Sa*zat*;
    Tara (806 km; cf. Yug *taʰ:r*, Kott *tʰeʔär* 'otter'; cf. Werner 3: 49);
    Om (724 km): Ičin*dat*.

Ob basin: I*žet*, Jara*ur*, Pok*ur*, Se*uľ*, *Šiš*-Joga;
    Vakh (964 km): Pan*ur*, Pɨ*seś*-Jogan, *Ses*-Jogan;
    Tym (950 km): Kogo*zes* / Kogu*zes*, Puľ*sec*, Tol*zes*;
    Vasyugan (1082 km): *Kuľ*-če,
            Čižapka (512 km): *Tom*-ka
    Keť (1621 km): Čou*zet*, Kagi*zet*, Keľ-*Tom*, Ki*dat*, Ongu*zet*, Simu*zet*,
            Tet (lake);
    Čulym (1799 km): Ajga*dat*, Alba*tat*ka, An*dat*, Argu*tat*, Baran*dat*ka,
            Bi*ťat*ka, Čego*dat*, *Čet*, Čiľ-*Koľ*, Čin*dat*, I*det* / E*det*, *Īr*,
            Ki*tat*, Komu*dat*, Kubi*tat*, Ribi*tat* / Irbi*tat*, Sul*zat*,
            Tep*ťat*ka;
    Tom (871 km; cf. Pumpokol *tōm* 'river'): Kiči-On*zas*, Kuŋ*zas*, Sɨ*zes*,
            Šan*zas*, Ulu-On*zas*, *Zas*;
            Kondoma (392 km): Pa*zas*;
            Mras-Su (338 km): Ak*sas*, Čau*zas*, Kam*zas*-gol, Pov*zas* /
            Pouk*zas*, Ram*zas*, Sɨ*zes* / Si*zes*, Taen*zas*;
    Čumyš (644 km): Tog*ul*, Ači*kuľ*, *Tom'*-Čumyš.

ad (e): Traces of Yenisseian substrate southwest of their recent settlement

Ču r. 1067 km: Kirgiz Čüj, Kazakh *Šū*

Konkašpaev (1963: 126) found no etymology: 'The sense is not clear'. It is possible to connect this etymon with Yenisseian *čəʔ* 'salt' > Ket *tʌʔ* 'salt',

*tʌɣet*⁵ 'to salt', Yug *čʌʔ* 'salt', *čʌgit*⁵ 'to salt'; Kott *ši-nčēt*, pl. *-čētaŋ* 'salt'; Assan *či-nǯet* (М., Кл.), *tinǯet* (Сл., Срсл.), *šinčet* (Кл.) 'salt'; Pumpokol *če* (Срсл., Кл.) is most likely a Yug form (Starostin 1995: 216; Werner 2: 301: **t'əʔ < *t'əgə*). This 'salt' solution may be supported by the fact that the river empties into the salt lake *Ašču-köl*, lit. 'salty lake' (Konkašpaev 1963: 25), and during floods links the salt lake Issyk-Kul ('warming lake'), earlier called *Tuz-köl*⁴, i.e. 'salty lake' in Kirgyz (Bičurin III: 50-51), via old river bed Ketmaldy, also known as Buugan. Besides the 'salty lakes', we also find *Ašču-su* 'salty river' and *Ašči-özek* 'salty rivulet' in Kazakhstan (Konkašpaev 1963: 26) and Russian hydronyms such as *Soljanka*, belonging to the river emptying into the lake Žaksy-Alakol, northeast of the Kostanajskaja oblasť.

Interesting are Chinese transcriptions of the names of the river Ču known from the annals of the period Tang (Bičurin III: 195, 180):

素葉 *sù*⁵ *yè*⁶ < Late Middle Chinese **suǎ\` *jiap* < Early Middle Chinese **sɔ^h *jiap* (Pulleyblank 1991: 295, 364). These forms correspond to the Iranian name *Sūyāb* of the river Ču and the city of the same name, today Tokmak. The name probably means 'canal (= *āb*) on the Ču river' (Minorsky apud Bosworth). Cf. Sogdian *''p, 'p, 'b /āp/* 'water' (Gharib 1995: 8), Manichaean Middle Persian *'b /āb/* 'water'. The first component probably represents an adaptation of the hydronym of the type Kirghiz *Čüj*.

碎栗 *suì*⁷ *lì*⁸ < Late Middle Chinese **suaj\` *lit* < Early Middle Chinese **swəj^h *lit* (Pulleyblank 1991: 297 & 190). The first component probably again represents an adaptation of the hydronym of the type Kirgyz *Čüj*, whereas the second member may reflect an Iranian word **hrautah-* 'river': Old Persian *r-u-t-/rautah-/*, Sogdian *rwt /rōt/* 'river', Manichaean Middle Persian *rwd*, Buddhistic Middle Persian *lwt /rōd/* 'river, canal' (Cheung 2007: 140-41).

葉河 *yè hé*⁹ < Late Middle Chinese **jiap *xha* < Early Middle Chinese **jiap *ɣa* (Pulleyblank 1991: 364 & 122), which is likely to represent a tautological Iranian-Chinese compound meaning 'water-river'.

External relations: Burushaski Hunza & Nagar *ṣáo* 'oversalted'.

Esil r., 1818/2450 km

The upper stream of the river *Išim*, the left tributary of the Irtyš / Ertis. On the basis of the Yenisseian materiál, tyhis form may be derived etymologically from Ket *iśl*⁵ 'whirlpool' (Starostin 1995: 196: **ʔis- (~x-)*; Werner 2: 432: * *is-* 'to whirl' & **u·l'* 'water').

Irtyš r., 4 248 km

Old Turkic *Ärtis* (Tekin 1968: 329) or *Ertis*, firstly attested in the Orkhon inscriptions of Tonyukuk¹⁰ (730-731 AD) and of Kultegin¹¹ (732 AD), Kāšɣari *Ärtis*¹², Tatar *Irteš*, Kazakh *Ertis*, Middle Mongolian *Ärdiš* (*Secret History*, §§ 207, 264) or *Ärdis* (*ibid.*, § 198), *Ertič* (Kirakos, *History of the Armenians*,

written 1241-65), Written Mongolian *Ercis* (Lessing 1960, 320), Kalmuck *Ersᵊs* (Ramstedt 1935: 127), and Modern Chinese 额尔齐斯河 *É'ĕrqísī hé*. In the first approximation, it is natural to attempt to etymologise the hydronym as being Turkic. With respect to the oldest vocalisation *Ärtis ~ Ertis*, it is possible to think about derivation from the verb attested in Old Turkic *är*[13], 'to reach, come to, arrive' (Tekin 1968: 328), Old Uyghur *är-* 'vorübergehen, ankommen', Turkish *är, ir* 'erreichen, erlangen' etc. (Räsänen 1969: 46). But there is no appropriate suffix *-tis*[14] in Turkic languages which could form the whole hydronym. The same may be said, if in the first component is identified with the Turkic root **ir/*ïr-*, attested in **ïrmak* "river", **ïran* 'flowing', **iren* 'water', **irim* 'bay' etc. (Sevortjan 1974: 664-65). Already Ramstedt (1907: 4), followed by Donner (1916-20: 5), formulated a hypothesis about the role of the Yenisseian word 'river' attested in Ket *śēś*, Kott *šēt* 'river, brook' in formation of the hydronym *Irtyš*. This idea was accepted by Duľzon (1959a: 98, 105; 1963: 290, mentioning the Pumpokol counterpart *Irdet*) and Werner (3: 45, 52). However, the component **-tis* does not agree with any of the variants (Aa-Ad), adduced in Section §2, only with (Ae). The first component may be of Turkic origin (**är-* 'to reach, come to' or **ir-/*ïr-* *?*'to flow'). Such a hybrid Turkic-Yenisseian compound would of course be conceivable, but it is possible to find a more credible internal Yenisseian etymology in Ket *ɛr' / jɛr'*, pl. *e·r'eŋ / e·r'iŋ* 'reed' (Werner 1, 240). In this case, the meaning of the form would be 'reedy river'. In terms of semantic typology, we find a parallel in the distant 105 km long Reedy River located in South Carolina.

The Chinese name of the Irtyš from the Táng annals (cf. Bičurin I, 347; III, 43, 180, 191) was written as 僕固振水, i.e. in modern Pīnyīn transcription *pú*[15] *gù*[16] *zhèn*[17] *shuǐ*[18] < Early Middle Chinese **bawk *kɔʰ *tʂinˋ *ɕwi'* (Pulleyblank) = **buk *kò *ćin *świ* (Starostin), where the sign 水 referred to the Chinese word for 'water, river', used to designate all rivers on Chinese maps (Bičurin III, Appendix 8).

Kang a.

The area along the middle stream of the river Syr-Darya in southern Kazakhstan, known already from the Orkhon inscriptions (Murzaev 1964: 6, inc. *Kanga-Darya*, one of the dry riverbeds of the Amu-Darya, emptying into the Sarykamyš depression on the border between Uzbekistan and Turkmenistan). It is tempting to add the Chinese name 康[19]居[20] *Kangju*, belonging to an ancient nomadic tribal federation of unknown multi-ethnic and linguistic origin and the area which they dominated in Central Asia, namely the Talas basin, Tashkent and Sogdiana. The name is explicable as 'home of Kang' or 'home of peace', but based on the report of the Chinese traveller and diplomat Zhang Qian, who visited the area around 128 BC, about 80,000 to 90,000 skilled archers would be a rather

improbable interpretation. Unrelated to the issue of the linguistic affiliation of the *Kang* tribes, the name is probably inherited from older times. Related terms may be found in Yenisseian such as **Kaŋ* 'the river (Kan)' > Kott *kaŋ*; Assan *kaŋ*; Arin *xaŋ*; Dulson (1969: 24); Starostin (1995: 243); Werner (1: 409). The hydronym can be etymologically derived from Yenisseian **kāŋ-* (~ *g-*) 'hunting path' > South Ket *kaŋ*[4], North Ket *ka:ŋə*[4]; pl. *kāŋen*[1], Yug *ka:ʰŋ*, pl. *kaŋin*[1] « Weg des großen Winternomadisierens »; Werner (1: 409); Starostin (1995: 235).

External cognates: Burushaski Yasin, Hunza, Nagir *gan* 'road'.

Note: Rivers were the only means of transport on the taiga. On the steppes or deserts, river valleys, shores or beds represent natural roads too. Comparable examples from the perspective of semantic typology can be found in Afroasiatic languages, e.g. East Cushitic: Oromo Macha *laga* 'river», *lage* 'valley'; Somali *laag* 'water-channel', Bayso *lága* 'river bank' vs. North Cushitic: Beja *lagi* 'path, pathway, beaten track' (Roper), 'road' (Reinisch); South Cushitic: Qwadza *lagalako* 'path, road'; Central Chadic: Wamdiu *làgu*, Margi *lagn*, West Margi *lakù*, Kilba *laakù* 'road' (Blažek 2006: 405-06).

Selety r., 407 km; Selety-Tengiz l., 777 km[2]

The river *Selety* empties in the lake *Selety-Tengiz*. There was also a village *Selety-Buguly* in the Kzyltuskij region of northern Kazakhstan, where both the preceding hydronyms can be found as well. Sultaňjaev (1980: 115-16), in summarising these data, rejected the etymology of Konkašpaev (1959: 95), who had explained *Selety* as deriving from Mongolian *čulun*[21] 'stone'. Later Konkašpaev (1963: 102) observed: 'The sense was not clarified'. Sultaňjaev (*op.cit.*) offered his own solution which assumed an original meaning of 'deer river' or 'deer lake'. He sought support for the identification of the second component of the place name in *Selety-Buguly* with Kazakh *buγu* 'deer' (cf. Räsänen 1969: 86, who also mentioned Written Mongolian *buγu* 'male deer'). Sultaňjaev's second argument is based on the toponym *Sögety* from the eastern part of the Zailijskij ('Transilian') Alatau, designating a mountain, valley and spring, which was etymologised by Konkašpaev (1962: 241) as deriving from Mongolian (Khalkha) *sogot* pl. 'female marals'. Written Mongolian *soγut*, pl. from *soγu* 'female deer or maral' (Lessing 1960: 724). Sultaňjaev speculated about transformation of *Sögety* into *Selety* in the process of borrowing. But later Konkašpaev (1963: 103) came to prefer another etymology of *Sögety*, explaining the derivation in terms of Turkic **següt* 'willow' > Old Uyghur *sögüt*, Uzbek *sögät*, Sary-Yughur *sögüt*, *segɨt* etc. (Räsänen 1969: 429; ĖST[6] 313). Sultaňjaev's solution is apparently wrong concerning the *ad hoc* substitution *g* → *l*. Yet his idea about the tautological compound *Selety-Buguly*, where both components bear the same meaning 'deer', is tantalising. Instead of Mongolian *soγut* 'female deer', it would be preferable to seek a source of the first

component in Yenisseian *sēr₁e 'deer' > Ket śɛĺ⁴ (South), Kureika śɛ:ĺi⁴, pl.
śɛʔn, Yugh sɛ:ʰr, pl. sɛʔn, Kott šeli, gen. šelā, pl. šetn 'wild animal'; Arin sin
(M., Сл. Кл.,) 'deer (cervus)'; Pumpokol ssálat (Miller) 'deer (rangifer)'
(Duľzon 1961: 175; Xelimskij 1986: 210; Starostin 1995: 272: the plural form
*seʔn < *sēr₁-n?, to which Arin sin belongs too; Werner (2: 183): *seʔəʎə, pl.
*seʔn), especially with respect to Pumpokol sálat (see Blažek 1995).

Šet r., l., s.

In compound hydronyms of Kazakhstan, the form šet appears in six river names,
one lake name and in the name of one spring:

(a) Rivers: Šet-Bakanas (the second component, unexplainable through Turkic, resembles
Arin b'úqon 'mouth' < *bV- 'my' + *qɔŋ 'mouth, face'; cf. Starostin (1995: 244) and
Werner (2: 108); in the final -as the Ket derivational suffix -as may be identified; Werner
(1, 61); Šet-Irgiz; cf. Kazakh yrɣy- 'to jump', Tatar yrɣy- 'to pour, stream'; cf. Sevortjan
(1974: 662); Šet-Kajindy; cf. Kazakh kajyn 'birch'; cf. Räsänen (1969: 218); Šet-Karasu,
Šet-Merke (could Merke be motivated by the Mongolian ethnonym Mergid 'Merkits'?);
Šet-Terekty; cf. Kazakh teräk 'alder'; cf. Räsänen (1969: 475); Šet-Ulasty (cf. Written
Mongolian ulijasu(n), Kalmuck ulāsṇ, Urdus ulāsu, Buryat uljāha 'poplar'; cf. Räsänen
(1969: 513).

(b) Lake: Šetkara; cf. Common Turkic *kara 'black'; cf. Räsänen (1969: 235).

(c) Spring: Šetkuduk (Šetküdyk) (cf. Kazakh kuduk 'water well' cf. Räsänen (1969: 296-
97). In šet, Konkašpaev (1963: 128) saw Kazakh šet 'edge, border, periphery'; cf.
Räsänen (1969: 106): Turkic *čät. It is improbable that a word with this meaning would
be so frequent in toponyms. More obvious would be a component bearing a more
'hydronymical' meaning. A good candidate is Common Yenisseian *ses 'river',
especially with respect to the form *šet, common to Kott, Assan and Arin: Ket śēś, pl.
South śaš⁴, Kureika śa:śi⁴, Yugh ses, pl. sa:ʰs; Kott šēt, pl. šati 'river, brook'; šētōk (-g),
pl. šētōkŋ, šētōgan 'brook'; Assan šet 'river (fluvius)', 'brook (amnis)'; Arin sat 'river
(fluvius)'; Pumpokol tataŋ 'river (fluvius)', 'brook (amnis)'; Duľzon (1961: 179);
Toporov (1967: 313); Starostin (1995: 271); Werner (2: 191): *set / *tet.

Taškent ca. 2,309,200 inhabitants (2012)

The name of the biggest city of Central Asia has been, undoubtedly correctly,
interpreted as 'stony city', cf. Old Turkic (Orkhon) taš, Old & Modern Uighur,
Kirghiz taš, Uzbek tɔš, Kazakh tas, Turkmen dāš etc. 'stone' (Räsänen 1969:
466) & Old Uyghur känt, Middle Turkic känd, känt, Kazakh kent 'city', Uzbek
(arch.) kent 'town, small city, big village', etc. (Räsänen 1969: 252; EST₄ 44) <
Sogdian knδ(h), qnθ, knδ(δ) /kand/t/ or /kanθ/ (Gharib 1995: 150), cf. also
Khotanese kanthā- 'city', Zoroastrian Pahlavi Samar-kand ~ Μαράκανδα
[Plutarch], further New Persian kand 'village', Pashto kandai 'ward', Ossetic
Iron känt 'building' (Bailey 1979: 51). Already in the middle of the 2nd century
AD in Sakaland Ptolemy [VI, 13.2] recorded Λίθινος Πύργος, 'Stone Tower';

Marquart (1901: 155); Humbach and Ziegler (1998: 176-77). The annals of Chinese dynasties of Suí and Táng mention the possession named 石*Shí* or 赭時 *Zhěshí* with a capital of the same name since the 5th century AD (Bičurin II: 242, 243, 264, 313). The name 石 *Shí*[22] means 'stone' in Chinese, while the name 赭時 *Zhěshí*[23], recorded by the Buddhist monk and pilgrim 玄奘 Xuánzàng (602/603? – 664 AD), corresponds to the non-Turkic and non-Chinese name *Čāč*[24] or *Šāš*[25] of the city and the area surrounding it, known from pre-Islamic and early Islamic times, including the *Šāhnāmeh* of Firdausi, written some time between 977 and 1010. It is quite natural to expect the meaning 'stone' for the place name *Čāč* or *Šāš* too. It was Pulleyblank (1962: 248) who first connected this name with the Yenisseian word 'stone', reconstructed as **čɨʔs* > Ket *tiʔś*, pl. *tʌʔŋ / tʌŋa:n³*, Yugh *čiʔs*, pl. *čʌʔŋ*; *čʌŋa:n³* 'rock'; Kott *šīs̆*, pl. *šeŋ* 'Stein'; *šiŋeäŋ*, pl. *šiŋeäkŋ* 'rock'; Assan *šiš*; Arin *kes* 'stone'; Pumpokol *kit* 'stone'; the form *čɨs* ascribed to Pumpokol in *Sravniteľnyj slovaŕ* and by Julius von Klaproth is in reality the Yugh form (Starostin 1995: 217-18): In the plural the *Ablaut* proto-form **čəʔ-ŋ* is reconstructible, which may indicate the suffixed nature of the element **-s* in the singular, where Werner (2: 312) adduces **t'iʔs*. Werner separates the Arin and Pumpokol reflexes *kes* and *kit* in spite of their complete regularity.

External cognates: Burushaski: Yasin *ćiṣ*, Hunza *ćhiṣ*, Nagar *ćhiṣ* 'mountain'; cf. also Dardic: Shina *ćhĩṣ̃* id. (Blažek and Bengtson 1995: 28).

ad (f): Mythology as an historical source

Anučin (1914: 4) recorded the Ket myth about ancient migrations northwards sert into motion under pressure from two tribes of invaders coming from the south, first *Týstad*, 'mountain people' or 'stony people', and later *Kiliki*. Vajda thinks that *Týstad* came from mountains, whence 'stony people', and were perhaps of Indo-European and maybe even Iranian origin, whilst *Kiliki* are identified with ancestors of the Siberian *Kirghiz* tribes.

Pulleyblank (2002: 99) collected Chinese transriptions of the ethnonym *Kirghiz*, known from the Orkhon inscriptions as *Qïrqïz*:

鬲昆 *Gekun* < EMC **kɛʳjk kwən* (2nd cent. BC.; *Shiji* 110, *Hanshu* 94a).

堅昆 *Jiankun* < EMC **kɛn kwən* (1st cent. BC onward; *Hanshu* 70).

契骨 *Qigu* < EMC **kʰɛt kwət* (6th cent. AD; *Zhoushu* 50).

纥骨 *Hegu* < EMC **ɣət kwət* (6th cent. AD; *Suishu* 84).

結骨 *Jiegu* < EMC **kɛt kwət* (6-8th cent. AD; *Tongdian* 200, *Book of Táng* 194b, and *Táng Huiyao* 100).

Earlier Pulleyblank (1962: 123, 240) had proposed a deeper reconstruction **Qïrqur*, later corrected to **Qïrqïr* (Pulleyblank 2002: 101).

The reconstruction **Qïrqïr* based on the Chinese records perfectly agrees with the projection of the ethnonym *Qïrqïz* back into Proto-Turkic **Qïrqïŕ*. The

ethnonym *Kiliki* (or *Kilik*, if <-i> is the Russian plural) appearing in the Ket myth mediated by Anučin can reflect the form **Qïrq, which in* Turkic languages means 'forty', without the final **-ïŕ*, which can be interpreted as the plural suffix.

ad (d): Lexical interference with other language entities

There is only a limited number of studies mapping the mutual lexical interference between Yenisseian and neighbouring languages. Aside from the comprehensive article by Karl Bouda (1957). collecting loans from various neighbouring languages as well as from Iranian, only two authors have focused on bilateral contact with one neighbouring language entity: Xelimskij (1982a) for Uralic (Ob-Ugric & Samoyedic) and Timomina (1985; 2004) for Turkic, although not all her examples are valid.[26] Serious detailed studies of mutual borrowings of Yenisseian and not just from contemporary neighbouring languages present the field with a big challenge for the future.

ad (g) & (h): Linguistic archaeology and palaeontology

These approaches are very fruitful in their results, but represent complex undertakings. In the present study, the Yenisseian zoonym 'horse' and its traces in time and space are discussed as an illustrative example of the potential for linguistic archaeology in the historical study of Yenisseian languages. For the Yenisseian proto-language it is possible to reconstruct the designation 'horse' in the form reconstructed by Starostin (1995: 240) as **kuʔs* and by Werner (1: 457) as **kuʔt / *kuʔs*.

The reflexes appear in all five historically attested Yenisseian languages: Ket *kuʔś*, pl. *kuśn*[5] 'cow', Yugh *kuʔs*, pl. *kusn*[5] 'horse'; Kott *huš*, pl. *hučan*; Assan *penguš* (М., Сл., Кл.), *pen-kuš* (Кл.) 'mare'; *huš* (М., Сл., Кл.), *hïš* (Кл.) 'steed'; Arin *kus* (Стр.) 'steed'; *qus* (М., Сл., Кл.) id.; *quše* (М., Сл., Кл.) 'mare'; *pinü-kuče* (Лоск.) 'mare'; Pumpokol *kut* (Сл.) 'steed, mare', (Сл., Кл.) 'horse'; while the recorded *kus* (Кл.) 'horse' is in reality the Yugh form.

Pulleyblank (1962: 245-46), followed by Vovin (2000: 91), judged that the Xiōngnú gloss 駃騠 'a superior type of horse of the northern barbarians' [Xu Guang (352-425 AD), *Shiji*], in modern Pīnyīn transcription *jué tí = chüeh-t'i* (Pulleyblank) < Late Middle Chinese **kjyat thiaj* < Early Middle Chinese **kwɛt dɛj* (Pulleyblank 1991: 168, 305) = Middle Chinese **kwet-dei* < **kwet-deĥ* (Pulleyblank 1962: 245-46) = Later Hàn **kuet dei* (Schuessler 2007: 326; 2009: 227, #20-3), probably reflecting the original form **kuti* or **küti* 'horse', resembling the Pumpokol form *kut*, could be of Yenisseian origin.

Gamkrelidze & Ivanov (1984: 561, fn. 1) noticed at least a formal similarity of the Yenisseian root for 'horse' with its Indo-European counterpart **H₁ek̂u̯os*. It is an attractive hypothesis, but offers no explanation for the first syllable in Indo-European, and as such remains merely speculative. A promising solution

was offered already offered by Naert (1958: 137-38) some sixteen years before the publication of the compendium by Gamkrelidze & Ivanov: In Kott, there is a compound *ig-huš* 'stallion', consisting of *ig* 'male' & *huš* 'horse', analogically *feŋ-hučeä* 'mare', where *feŋ* = 'female'. The same compound 'stallion' in Ket was modified as ^{y}*èk-k^{w}òn*, where the second component was borrowed from Russian *koň* 'horse'. The meaning of Ket *kuʔś*, the etymological counterpart of Kott *huš*, was shifted to 'cow'. The Proto-Yenisseian compound **ʔiʔχ-kuʔs* 'stallion', where the first component is reconstructed on the basis of Ket *ī̄*, pl. *i:n* / *iɣəń*^{5} 'male deer'; *ikś* 'male, male deer', Yugh *iʔk / iksi*^{5} 'male, male deer'; Kott *ig* 'male', *eg* 'goat' (= ?'he-goat'); Assan *eg* 'male'; Arin *au* 'wild goat; male' (Starostin 1995: 196; Werner 2: 433: **iʔk / *igə*), suggestively corresponds to Indo-European **H₁ek̂u̯os* "horse (stallion)". However, this conclusion begs crucial spatial and chronological questions: Where and when was this adaptation realised?

The preceding arguments lead to the conclusion that the Yenisseians still lived in the steppe region of Central Asia including Kazakhstan in the first centuries of the Christian era and certainly earlier. Northern Kazakhstan, particularly the area of the Botai[27] culture, was probably the place where the wild horse (Przewalsky-horse, i.e. *Equus ferus przevalskii* Poljakoff) had already been domesticated by the middle of the 4th millennium BC; cf. Bökönyi (1994: 116); Becker (1994: 169); Anthony (1994: 194); Outram (2009: 1332-35). The creators of this culture were totally specialised in breeding horses, with an astonishing 133.000 horse bones found here in the early 1990s. The traces of fats from horse milk on pottery from Botai represent the strongest proof of domestication. The hypothesis that the people who domesticated the horse in Northern Kazakhstan were the ancestors or the relatives of Yenisseians, is legitimate, although unproven.

The resemblance of Yenisseian **ʔiʔχ-kuʔs* 'stallion' to Indo-European **H₁ek̂u̯os* '(domesticated) horse' is obvious and readily explicable as the result of borrowing. If the Indo-European term cannot be transparently derived from IE **ṓk̂u-* 'swift' = **HoHk̂u-*, while the Yenisseian compound 'stallion' = 'male-horse' is quite understandable, the vector of borrowing should be oriented from Yenisseian to Indo-European. To accept this logical conclusion, it is necessary to solve two serious problems, viz. the geographical distance of Northern Kazakhstan from a hypothetical Indo-European homeland, and the chronological distance between the break up of Indo-European, dated to the first half of the 5th millennium BC, and diversification of Yenisseian, dated by various scholars to the 1st millennium BC. Even if the people behind the Botai culture were early Yenisseians, the Indo-European break up preceded them by one millennium. The only solution would therefore be a spread of knowledge together with the term, representing a novel cultural discovery. It could have been mediated by a small group of qualified horsemen or by a segment of a tribe which was later

integrated into the dominant population, much as the spread of metallurgy was not accompanied by massive migrations, metal names being common to several branches of Indo-European representing most probably the result of mutual borrowing rather than common heritage.

With respect to the chronological discrepancy, there are several hypothetical answers. The assumption that the present dating of horse breeding in Kazakhstan will be shifted to the deeper past would, pending future excavations, perhaps bem too optimistic. A cultural term present in a group of related languages need not have been borrowed before their break up, but may also have been borrowed afterwards. The spreading of the cultural terms connected with Christianity is well-attested in Germanic and Slavic languages already after their diversification. The question remains whether or not the domesticated horse may have been more mobile than the first horse riders.

Conclusion

Our search for the traces of the early Yenisseians leads us to the steppe zone of Central Asia, especially to Kazakhstan and probably also to Uzbekistan. This early Yenisseian homeland must have been significantly closer to the home of Burushaski, the closest relative of the Common Yenisseian proto-language, than was the distance of the Northern Ket from the Kureika river and the Kott from the Abakan river in the 18th century. The break up of the Yenisseian unity was realised in this steppe area. During the first millennium BC, the Yenisseian dialect continuum first split up into a western and eastern segment. Western Yenisseians, the ancestors of the Ket, Yugh and Pumpokol[28], proceeded northwards along the course of the Irtyš and Ob and went on to the mid stream of the Yenissei, whilst the Eastern Yenisseians, the ancestors of the Kott, Assans and Arin, moved through the basin of the upper Ob to the basin of the upper Yenissei. These migrations from the forest steppe zone to the taiga were probably caused by a domino effect, primarily perhaps caused by the pressure of the Persian Empire in Central Asia; cf. Herodotus' description[29] of the battle between the Persian king Cyrus and Tomyris, the queen of the Massagets, one of the Saka tribes, around 530 BC. The mobilisation of the Saka tribes probably also led to the movement of other Iranian tribes of Central Asia and consequently of their eastern neighbours, the early Turkic continuum. The spreading of Central Asiatic Iranian and Turkic tribes to the north is therefore probably what caused the migrations of Yenisseians. And probably under their pressure the Samoyed left their homeland[30] and moved to the north. The ancestors of Selkup along the Ob and the ancestors of the Northern Samoyed along the Yenissei (Blažek 2013).

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Acknowledgements

Notes

1. Abbreviations used in this paper: a. area, c. city, l. lake, r. river, s. spring.

2. The first who connected Burushaski & Yenisseian languages was Hyde Clark in 1869, published 1870, as van Driem has demonstrated (2001: 186).

3. cf. Ket *īś* 'meat, fish', Yug *īs* 'meat, fish'; Kott *īči*, pl. *īčaŋ*; acc. *ič* ''meat'; Arin *is* 'meat' < Yenisseian **ʔise* (Starostin 1995: 194) & Kott *šēt*, pl. *šati* 'river, brook'; Assan *šet* 'river, brook'; Arin *sat* 'river' < Yenisseian **ses* (Starostin 1995: 271).

4. *Тузкюль,* на тюркском языке соляное озеро; лежит в 300 ли от Или на западе; в длину от востока к западу содержит 400, в ширину от юга к северу 200 ли. Со всех сторон впадает в него множество речек. По истории династии Тхан в повествовании о Ван Фан-и: в седьмой луне расположился лагерем при реке *Йе-хэ.* Судов не было, а река покрылась льдом. В повествовании о тукюесцах сказано: Су-дин-фан, преследуя Хэлу, пришел к *Суй-йе-шуй,* и овладел его народом. По исследованию, *Суй-йе-шуй* находится от Или-гола на западе. Ныне от Или на западе самое большое озеро есть Тузкюль, и, без сомнения, оно названо *Суй-йе-шуй.* Ван Фан-и, разбив Янькюйево войско при реке Или, преследовал его до реки *Йе-хэ,* Эта река Йе-хэ есть другое название озера Суй-йе-шуй, и, без всякого сомнения, есть озеро *Тузкюлъ.* Сие озеро ныне еще называется по-тюркски *Иссы-кюль,* горячее озеро, по-монг. *Тэмурту-нор,* железное озеро. (Bičurin III: 50-51).

5. Modern Chinese (Beijing) 素 *sù* 'white, undyed, silk; white; in its original state, plain' < Late Middle Chinese **suə̀* < Early Middle Chinese **sɔʰ* (Pulleyblank 1991: 295) = Modern (Beijing) *sù* < Middle Chinese **sò* < Post-Classical Chinese **sə̀* < Eastern and Western Hàn Chinese **sāh* < Classical Old Chinese **sāh* < Pre-Classical Old Chinese **sās* (~ **sāks*) (Starostin, DB).

6. Modern (Beijing) Chinese 葉 *yè* 'leaves, foliage, generation' < Late & Early Middle Chinese **jiap* (Pulleyblank 1991: 364) = Middle Chinese **jep* < Post-Classical Chinese **zhap* < Eastern Hàn Chinese **zhap* < Western Hàn Chinese **lhap* < Classical Old Chinese **lhap* < Pre-Classical Old Chinese **lhap* (Starostin, DB).

7. Modern Chinese (Beijing) 碎 *suì* 'to break; splinter, broken piece' < Late Middle Chinese **suaj`* < Early Middle Chinese **swəjʰ* (Pulleyblank 1991: 297) = Middle Chinese **sòj* < Late & Middle Post-Classical Chinese **shwə̀j* < Early Post-Classical amnd Hàn Chinese **shwə̄j* < Classical Old Chinese **shwə̄ć* < Pre-Classical Old Chinese **shūts* (Starostin, DB).

8. Modern (Beijing) Chinese 栗 *lì* 'chestnut *Castanea mollissima*' < Late & Early Middle Chinese **lit* (Pulleyblank 1991: 190) = Middle Chinese **lit* < Post-Classical Chinese

lhjit < Eastern and Western Hàn Chinese **rhjət* < Classical and Pre-Classical Old Chinese **rhit* (Starostin, DB).

9. Modern (Beijing) Chinese 河 *hé* 'river; the Yellow River' < Late Middle Chinese **xha* < Early Middle Chinese **ɣa* (Pulleyblank 1991: 122) = Middle Chinese **ɣâ* < Post-Classical Chinese **ɣā* < Eastern Han Chinese **ɣā̀* < Western Hàn Chinese **ɣāj* < Classic and Pre-Classical Old Chinese **ghāj* (Starostin, DB).

10. §35 *Ertis ügüzig : kečigsizin : kečdimiz* 'We crossed without the ford the Irtysh river'. Tonyukuk inscription; §37-38 *Ertis ügüzig : keče keltimiz* 'Went across the Irtysh river without the ford' (cf. Amanžolov 2003: 183). The inscription dated to 730-731 AD was found in *Tsagaa Ovoo* district in northwest from Bayan-Zurh mountain, in 65 km southeast from Ulaanbaatar.
<http://irq.kaznpu.kz/?lang=e&mod=1&tid=1&oid=17&m=1>

11 . *ol jïlqa : Türügeš... toɣa : Ertis ügüzüg : keče : yorïdïmïz* 'In that year we marched to Turgesh … crossing over the Irtysh river'. Kultegin inscription, §37, 732 AD. The inscription was found on the left bank of the Orkhon, 45 km north of ancient Karakorum, 400 km southwest of Ulaanbaatar.
<http://irq.kaznpu.kz/?lang=e&mod=1&tid=1&oid=15&m=1>.

12. Pelliot (1959: 299): The same obtains in the case of the Irtysh, called in the *Secret History*, *Ärdiš* (§§ 207, 264) or *Ärdis* (§ 198; the latter form representing a misreading of the transcribers; the ancient Mongolian script did not distinguish between -s and -š), *Yeh-êrh-ti-shih* (*Ardiš*) in YS, I, *s. a.* 1206 and 1208; 122, 1 *b*; *Yeh-li-ti-shih* in YS, 22, 1 a; *Yeh-êrh-ti-shih* in the *Shêng-wu ch'inchêng lu* (47 a); cf. *Ärtis* in Kāšɣari (misread «*Artiš*» by Brockelmann); *Ertič* in Kirakos (Patkanov, *Istoriya Mongolov,* u, 82). But the Mongol name is *Ärčis* in « Sanang Setsen » (cf. Schmidt, *Gesch. der Ost-Mongolen,* 211, 412), or more probably *Ärǰis* as in the Chinese translation of that work (*Mêng-ku yüan-liu chien-chêng,* 6, 22 b). <http://dsr.nii.ac.jp/toyobunko/III-2-F-c-104/V-1/page-hr/0315.html.en>

13. I am grateful to Michal Schwarz (p.c.) for this solution and for the introduction to the data of the Orkhon inscriptions.

14. Hypothetically it would be possible to construct a compound suffix consisting of the deverbal adjectival suffix **-ti*, plus the collective suffix **-s* (cf. Serebrennikov & Gadžieva 1979: 229-30 and Kononov 1980: 145-46 respectively), but this highly speculative conjecture lacks support in concrete language facts.

15. Modern (Beijing) Chinese 僕 *pú* 'servant; groom; hide, conceal' < Late Middle Chinese **pəwk* < Early Middle Chinese **bawk* (Pulleyblank 1991: 243) = Middle Chinese **buk* < Late Post-Classical Chinese **bwōk* < Middle & Early Post-Classical Chinese **bōk* < Eastern an Western Hàn Chinese **bōk* < Classical & Pre-Classical Old Chinese **bōk* (Starostin, DB).

16. Modern (Beijing) Chinese 固 *gù* 'secure, make sure; strong, firm' < Late Middle Chinese **kuǯ`* < Early Middle Chinese **kɔ^h* (Pulleyblank 1991: 243) = Middle Chinese **kò* < Post-Classical Chinese **kằ* < Han Chinese **kāh* < Classial Old Chinese **kāh* < Pre-Classical Old Chinese **kā(ʔ)s* (Starostin, DB).

17. Modern (Beijing) Chinese 振 *zhèn* 'to shake, rouse, alarm; to marshal' > Late Middle Chinese **tʂin`* < Early Middle Chinese **tɕin^h* (Pulleyblank 1991: 402) < Middle Chinese **ćìn* < Post-Classical Chinese **ćìn* < Eastern Hàn Chinese **ćənh* < Western Hàn Chinese **tənh* < Classical Old Chinese **tənh* < Pre-Classical Old Chinese **tərs* (Starostin, DB).

18. Modern (Beijing) Chinese 水 *shuĭ* 'water, river' < Late Middle Chinese *ʂyj`* < Early Middle Chinese *ɕwi'* (Pulleyblank 1991: 290) = Middle Chinese *śwí* < Late Post-Classical Chinese *ćwí* < Middle & Early Post-Classical Chinese *ćwíj* < Eastern Han Chinese *ćwə́j* < Western Han Chinese *twə́j* < Early Post-Classical Chinese *twə́j* < Classic Old Chinese *twə́j* < Pre-Classical Old Chinese *tujʔ* (Starostin, DB).

19. 康 *kāng* 'to be at ease, have peace of mind; be prosperous, healthy; tranquility, peace; prosperity' < Late & Early Middle Chinese *kʰāŋ* (Pulleyblank 1991: 171) = Middle Chinese *khâŋ* < Old Hàn to Pre-Classical Chinese *khāŋ* (Starostin, DB).

20. 居 *jū* 'to stay at, remain, dwell; part' < Late Middle Chinese *kiə̌/*kyə̌* < Early Middle Chinese *kiə̌* (Pulleyblank 1991: 162) = Middle Chinese *kö* < Post-Classical Chinese *ko* < Han-Pre-Classical Chinese *ka* (Starostin, DB).

21. The real Mongolian forms are as follows: Middle Mongolian *čilao'un* (*Secret History*) ~ *čʻila'un* (ḥPhags-pa), Written Mongolian *čilaɣun* 'stone, rock', Written Oirat *čiloun*, Kalmuck *tšolūn*, Aga Buryat *šulūŋ*, Khalkha *tšulū*, Urdus, Kharchin *tčilū*, Khamnigan *čilō*, Shira-Yughur *čelū*, Daghur *t'šolō* (Poppe 1955: 68, 112; Schwarz and Blažek 2013: 191, 200).

22. Modern (Beijing) Chinese 石 *shí* 'stone, rock» < Late Middle Chinese *ʂhiajk* < Early Middle Chinese *dziajk* (Pulleyblank 1991: 283) = Middle Chinese *ʒek* < Post-Classical Chinese *ʒjek* < Eastern Hàn Chinese *ʒiak* < Western Hàn Chinese *diak* < Classical & Pre-Classical Old Chinese *diak* (Starostin; DB).

23. Consisting of these components: Modern (Beijing) Chinese 赭 *zhě* 'reddish-brown; burnt ochre' < Late Middle Chinese *tʂia`* < Early Middle Chinese *tɕia'* (Pulleyblank 1991: 42) = Middle Chinese *ćá* < Post-Classical Chinese *ćá* < Eastern Hàn Chinese *ćá́* < Western Hàn Chinese *tiá* < Classical Old Chinese *tiá* < Pre-Classical Old Chinese *tiaʔ* (Starostin, DB), and Modern Beijing Chinese 時 *shí* 'season, time' < Late Middle Chinese *ʂhi* < Early Middle Chinese *dzi/*dzi* (Pulleyblank 1991: 282) = Middle Chinese *ʒi* < Post-Classical Chinese *ʒ(h)i* < Eastern Hàn Chinese *ʒ(h)ə* < Western Hàn Chinese *d(h)ə* < Classical and Pre-Classical Old Chinese *d(h)ə* (Starostin; DB).

24. Sogdian *c'c* /Čāč/, *c'c(y)ny* /čač(ē)nē/ 'from Čāč, i.e. Tashkent' (Gharib 1995: 122).

25. In the inscription on the Kaʿba-ye Zardošt at Naqš-e Rostam of the Sassanian king Šāhpuhr I (*imperabat* 240/242-270/272 AD), the toponym appears recorded in the Greek transcription as Τσατσηνῆς and in Parthian as *šʼšs[tn?]* /Čāčestān/ (Tremblay 2004: 127). Following Gershevits, Livshits (2007: 179) thinks that Čāč originally designated the Aral sea and that only later the name was shifted to the Tashkent oasis. He derives Čāč from hypothetical Iranian *čāiča-*, reconstructed after the Avestan lake called Čaēčista- [Yašt 9.18, 22]).

26. Her idea (Timomina 2004: 137) about a Turkic origin for Yenisseian *kuʔs* 'horse', only in Ket (but not in Yugh) 'cow', is based on an accidental similarity with a counterpart in only one Turkic language, Sary Yughur, where the forms *kus* 'horned cattle', and *kʲus* 'yak, bull, cow', are attested. However, this form is not primary, the relatives provide contrary testimony, cf. Old Uyghur & Karakhanid *öküz*, Uyghur *öküz*, *höküz*, Uzbek *hokiz*, Kazakh *ögiz*, Tatar *ugĭz*, Yakut *oɣus*, Chuvash *vъ"gъ"r*, Old Bulgarian > Hungarian *ökör*, all from proto-Turkic *öküŕ* 'ox' (Räsänen 1969: 370; Sevortjan 1974: 521-23), related to Mongolian *φüker* "ox" and Tungusic *puKur / *puKun* "cow" (EDAL 1168-69).

27. The archaeological site is located on the Imam-Burluk River, a tributary of the Išim/Esil River in northern Kazakhstan. The Eneolitic culture called at this locality flourished in the time period between 3700 and 3100 BC according to our current knowledge.

28. On the basis of the common areal isogloss *s > *t Xelimskij (1982b: 124) judges that the ancestors of Pumpokol probably lived for a certain time between the Ob-Ugrians and the Samoyeds, and that their languages formed a specific West Siberian *Sprachbund.* Let us mention that the biggest density of Pumpokol-like hydronyms in –*tet,* outside of their historical settlement on the west bank of the Yenissei in front of the mouth of the Angara, appears to have lain in the basin of the Čulym, the tributary of the upper Ob.

29. [I, 201] ὡς δὲ τῷ Κύρῳ καὶ τοῦτο τὸ ἔθνος κατέργαστο, ἐπεθύμησε Μασσαγέτας ὑπ᾽ ἑωυτῷ ποιήσασθαι. τὸ δὲ ἔθνος τοῦτο καὶ μέγα λέγεται εἶναι καὶ ἄλκιμον, οἰκημένον δὲ πρὸς ἠῶ τε καὶ ἡλίου ἀνατολάς, πέρην τοῦ Ἀράξεω ποταμοῦ, ἀντίον δὲ Ἰσσηδόνων ἀνδρῶν. εἰσὶ δὲ οἵτινες καὶ Σκυθικὸν λέγουσι τοῦτο τὸ ἔθνος εἶναι. 'When this nation [= Babylonians] also had been subdued by Cyrus, he had a desire to bring the Massagetai into subjection to himself. This nation is reputed to be both great and warlike, and to dwell towards the East and the sunrising, beyond the river Araxes [= Volga] and over against the Issedonians: and some also say that this nation is of Scythian race.' [I, 204] τὰ μὲν δὴ πρὸς ἑσπέρην τῆς θαλάσσης ταύτης τῆς Κασπίης καλεομένης ὁ Καύκασος ἀπέργει, τὰ δὲ πρὸς ἠῶ τε καὶ ἥλιον ἀνατέλλοντα πεδίον ἐκδέκεται πλῆθος ἄπειρον ἐς ἄποψιν. τοῦ ὦν δὴ πεδίου τούτου τοῦ μεγάλου οὐκ ἐλαχίστην μοῖραν μετέχουσι οἱ Μασσαγέται, ἐπ᾽ οὓς ὁ Κῦρος ἔσχε προθυμίην στρατεύσασθαι. 'On the West then of this Sea which is called Caspian the Caucasus is the boundary, while towards the East and the rising sun a plain succeeds which is of limitless extent to the view. Of this great plain then the Massagetai occupy a large part, against whom Cyrus had become eager to march; ...' *The History of Herodotus,* parallel English/Greek, translation G. C. Macaulay [1890] <http://www.sacred-texts.com/cla/hh/hh1200.htm>

30. The Samoyedic homeland is localised by Xelimskij (1989[2000]: 15-17) in the Southwest Siberian taiga, in the area delimited by a triangle formed by the cities Tomsk, Krasnoyarsk and Eniseisk.

References

Amanžolov, A. S. 2003. *Istorija i teorija drevnetjurkskogo pisma.* Almaty: ZAO Izdateľstvo Mektep.

Anthony, D.W. 1994. 'The Earliest Horseback Riders and Indo-European Origins: New Evidence From The Steppe', pp. 185-195 in *Die Indogermanen und das Pferd. Akten des Internationalen interdisziplinären Kolloquiums* (Berlin, Juli 1992), eds. B. Hänsel & S.Zimmer. Budapest: Archaeolingua 1994.

Anučin, Vasilij I. 1914. *Očerk šamanizma u enisejskix ostjakov.* St. Petersburg: Sbornik Muzeja antropologii i étnografii pri Imperatorskoj Akademii nauk, Tom II, Vypusk 2.

Bailey, Harold W. 1979. *Dictionary of Khotan Saka.* Cambridge: University Press.

Becker, C. 1994. 'Zur Problematik früher Pferdenachweise im östlichen Mittlermeergebiet', pp. 145-177 in *Die Indogermanen und das Pferd. Akten des Internationalen interdisziplinären Kolloquiums* (Berlin, Juli 1992), eds. B. Hänsel & S.Zimmer. Budapest: Archaeolingua 1994.

Bengtson, John D. 2010. '"Dene-Yenisseian" and the Rest of Dene-Caucasian: Part 3: The Burusho-Yenisseian (Karasuk) Hypothesis; Part 4: Burusho-Dene', pp. 1-18 in *Working Papers in Athabaskan Languages 2009. Alaska Native Language Center Working Papers*, No. 8. Fairbanks: Alaskan Native Language Center. <https://aslip.academia.edu/JohnDBengtson>

Bičurin, Nikita Ja. (Iakinf). 1950-1953. *Sobranie svedenij o narodax, obitavšix v Srednej Azii v drevnie vremena*, I-III. Moskva-Leningrad: Izdateľstvo Akademii nauk SSSR (first edition Sankt Petersburg 1851).
<http://www.vostlit.info/Texts/Dokumenty/China/Bicurin/bicurin.htm>

Blažek, Václav. 1995. 'Yenisseian Etymology of the North Kazaxstan Toponym *Selety*?', *Central Asiatic Journal* 39: 9-10.

Blažek, Václav. 1999. 'Is Indo-European *$*H_1eк̂wo$*- 'horse' really of Indo-European origin?', pp. 21-32 in *Studia Indogermanica Lodziensia* II, eds. P. Stalmaszczyk & K.T. Witczak. Łódź: Wydawnictwo Uniwersytetu Łódzkiego.

Blažek, Václav. 2006. 'Natural Phenomena, Time and Geographical Terminology in Beja Lexicon (Fragment of a Comparative and Etymological Dictionary of Beja)', II, pp. 383-428 in Leonid Kogan *et alii* (eds.) *Babel und Bibel* 3: *Annual of Ancient Near Eastern, Old Testament, and Semitic Studies*. Winona Lake (Indiana): Eisenbrauns.

Blažek, Václav. 2013. 'Uralic migrations', pp. 178-183 in *The Encyclopedia of Global Human Migration* I, ed. by Immanuel Ness & Peter Bellwood. Oxford: Wiley-Blackwell.

Blažek, Václav and Bengtson, John D. 1995. 'Lexica Dene-Caucasica', *Central Asiatic Journal* 39: 11-50 & 161-164.

Bökönyi, S. 1994. 'Das domestizierte Pferd in den asiatischen Steppen', pp. 115-122 in *Die Indogermanen und das Pferd. Akten des Internationalen interdisziplinären Kolloquiums* (Berlin, Juli 1992), eds. B. Hänsel & S.Zimmer. Budapest: Archaeolingua 1994.

Bosworth, C. Edmund. 1990. 'Čāč', pp. 604-605 in *Encyclopaedia Iranica*, Vol. IV, Fasc. 6.

<http://www.iranicaonline.org/articles/cac>

Bosworth, C.Edmund. 2012. Irtish, in *Encyclopaedia of Islam*, Second Edition. Edited by: P. Bearman, Th. Bianquis, C.E. Bosworth, E. van Donzel, W.P. Heinrichs. Brill Online, 2014. Reference. 25 April 2014
<http://referenceworks.brillonline.com/entries/encyclopaedia-of-islam-2/irtish-SIM_8708>

First appeared online: 2012; First Print Edition: isbn: 9789004161214, 1960-2007.

Bosworth, C.Edmund. 2012. Sūyāb, in *Encyclopaedia of Islam*, Second Edition. Edited by: P. Bearman, Th. Bianquis, C.E. Bosworth, E. van Donzel, W.P. Heinrichs. Brill Online, 2014. Reference. 05 May 2014
<http://referenceworks.brillonline.com/entries/encyclopaedia-of-islam-2/irtish-SIM_8708>

First appeared online: 2012; First Print Edition: isbn: 9789004161214, 1960-2007.

Bouda, Karl. 1957. 'Die Sprache der Jenissejer. Genealogische und morphologische Untersuchungen', *Anthropos* 52(1–2): 65–134.

Cheung, Johnny. 2007. *Etymological Dictionary of the Iranian Verb.* Leiden-Boston: Brill.

DB Database of Chinese Characters by Sergei Starostin.

Donner, Kai. 1916-1920. 'Beiträge zur frage nach dem ursprung der Jenissei-ostjaken', *Journal de la Société Finno-Ougrienne* 37(1): 1-21.

van Driem, George. 2001. *Languages of Himalayas*. Leiden-Boston-Brill.

Dulson, Andrei. 1969. 'Eine vorgeschichtliche Sprachgemeinschaft in Zentralasien', *Acta Linguistica Academiae Scientiarum Hungaricae* 19(1-2): 19-37.

Duľzon, Andrei P. 1959a. 'Ketskie toponimy Zapadnoj Sibiri', *Učenye zapiski Tomskogo gosudarstvennogo pedagogičeskogo instituta* 18: 91-111.

Duľzon, Andrei P. 1959b. 'Voprosy ětimologičeskogo analiza russkix toponimov substratnogo proisxoždenija', *Voprosy jazykoznanija* 1959(4): 35-46.

Duľzon, Andrei P. 1961. 'Slovaŕnye materialy XVII v. po ketskim narečijam', *Učenye zapiski Tomskogo gosudarstvennogo pedagogičeskogo instituta*, Tom XIX, vypusk 2 (Lingvističeskie nauki): 152-189.

Duľzon, Andrei P. 1963. 'Ėtničeskij sostav drevnego naselenija Zapadnoj Sibiri po dannym toponimii', pp. 289-295 in *Trudy 25. Meždunarodnogo kongressa vostokovedov*, Tom 3. Moskva: Nauka.

EDAL *An Etymological Dictionary of Altaic Languages* by S. A. Starostin, A. V. Dybo, O. A. Mudrak. Leiden-Boston: Brill 2003.

EIEC *Encyclopedia of Indo-European Culture*, ed. by James P. Mallory & Douglas Q. Adams. London-Chicago: Dearbon 1997.

ĖST₄ *Ėtimologičeskij slovaŕ tjurkskix jazykov* (K-Ķ). Moskva: Jazyki rossijskoj kuľtury 1997.

ĖST₆ *Ėtimologičeskij slovaŕ tjurkskix jazykov* (L-M-N-P-S). Moskva: Vostočnaka literatura RAN 2003.

Gamkrelidze, T.V. & Ivanov, V.V. 1984. *Indoevropejskij jazyk i indoevropejcy*. Tbilisi: Izdateĺstvo Tbilisskogo univerziteta.

Gharib, B. 1995. *Sogdian Dictionary* (*Sogdian-Persian-English*). Tehran: Farhangan.

Humbach, Helmut & Ziegler, Susanne (eds.). 1998. *Geography of Claudius Ptolemaeus*, book 6: *Middle East, Central and North Asia, China*. Wiesbaden: Reichart.

Hyde Clark. 1870. 'Response to Leitner´s verbal presentation (November 23rd, 1869)', *Journal of the Ethnological Society of London*, New Series II: 32-34.

Jettmar, Karl. 1950. 'The Karasuk Culture and its South-Eastern Affinities', *Bulletin of the Museum of Far Eastern Antiquities* 22: 83-126. <http://archiv.ub.uni-heidelberg.de/propylaeumdok/1541/1/Jettmar_The_Karasuk_culture_1950.pdf>

Kirakos Gandzakets'i's. 1986. *History of the Armenians*, translated from Classical Armenian by Robert Bedrosian. New York: Sources of the Armenian Tradition. <https://ia600409.us.archive.org/5/items/KirakosGanjaketsisHistoryOfTheArmenians/Kirakos_Gandzaketsi.pdf> & <http://rbedrosian.com/kgtoc.html>

Konkašpaev, Gali K. 1959. 'Geografičeskie nazvanija mongoľskogo proisxoždenija na territorii Kazaxstana', *Izvestija Akademii nauk Kazašskoj SSR*, Serija filologii i iskusstvovedenija, vypusk 1(2). Alma-Ata.

Konkašpaev, Gali K. 1962. 'Nekotorye maloponjatnye geografičeskie nazvanija v Kazaxstane', *Voprosy geografii Kazaxstana*, vypusk 9. Alma-Ata.

Konkašpaev, Gali K. 1963. *Slovaŕ kazaxskix geografičeskix nazvanij*. Alma-Ata: Izdateľstvo Akademii nauk Kazaxskoj SSR.

Kononov, Andrej N. 1980. *Grammatika jazyka tjurkskix runičeskix pamjatnikov* <VII-IX vv.>. Leingrad: Nauka.

Kostjakov, M.M. 1979. 'Vremja rasxoždenija ketskogo i kottskogo jazykov po dannym leksikostatistiki', pp. 118-127 in *Voprosy stroja enisejskix jazykov*, ed. E.I. Ubrjatova et al. Novosibirsk: Akademija nauk SSSR, Sibirskoe otdelenie.

Lessing, Ferdinand D. et alii. 1960. *Mongolian-English Dictionary*. Berkeley-Los Angeles: University of California Press.

Livshits, V.A. 2007. 'The Leader of the People of Chach in the Sogdian Inscriptions and Coin-Legends', pp. 173-182 in *Iranian Languages and Texts from Iran and Turan: Ronald E. Emmerick Memorial Volume*, eds. Maria Macuch, Mauro Maggi & Werner Sundermann. Wiesbaden: Harrassowitz.

MacKenzie, D.N. 1971. *A Concise Pahlavi Dictionary*. London: Oxford University Press.

Maloletko, A.M. 2000. *Drevnie narody Sibiri*, t. II. *Kety*. Tomsk: Tomskij gosudarstvennyj univerzitet.

Malov, S.E. 1959. *Pamjatniki drevnetjurkskoj pismennosti Mongolii i Kirgizii*. Moskva - Leningrad: Izdatel'stvo AN SSSR.

Marquart, J. 1901. *Ērānšahr nach der Geographie des Ps. Moses Xorenac'i*. Berlin: Weidmann. <http://miscellaneahistorica.wordpress.com/2013/07/31/j-marquartmarkwart-eransahr-nach-der-geographie-de-ps-moses-xorenaci/>

Murzaev, Ė. M. 1964. 'Centraľnoaziatskie toponimičeskie miniatury', pp. 3-13 in *Toponimika Vostoka: Novye issledovanija*. Moskva: Nauka.

Naert, Pierre. 1958. *La situation linguistique de l'ainou*. Lund: Gleerup.

Outram, A.K., Stear, N.A., Bendrey, R., Olsen, S., Kasparov, A., Zaibert, V., Thorpe, N. and Evershed, R. 2009. The Earliest Horse Harnessing and Milking. *Science* 323: 1332-1335.

Pelliot, Paul. 1959. *Notes on Marco Polo*, I. Paris: Librairie Adrien-Maisonneuve, Imprimerie nationale. <http://dsr.nii.ac.jp/toyobunko/III-2-F-c-104/V-1/page-hr/0011.html.en>

Poppe, Nicholas. 1955. *Introduction to Mongolian Comparative Studies*. Helsinki: Mémoires de la Société Finno-Ougrienne 110.

Pulleyblank, Edwin G. 1962. The Consonantal System of Old Chinese. *Asia Major* N.S. 9: 58-144, 206-265. < http://www.ihp.sinica.edu.tw/~asiamajor/pdf/1962/1962-58.PDF > & < http://www.ihp.sinica.edu.tw/~asiamajor/pdf/1962/1962-206.pdf >

Pulleyblank, Edwin G. 1991. *Lexicon of Reconstructed Pronunciation in Early Middle Chinese, Late Middle Chinese, and Early Mandarin*. Vancouver: UBC Press.

Pulleyblank, Edwin G. 2002. 'The name of the Kirgiz', pp. 98-108 in *Central Asia and Non-Chinese Peoples of Ancient China*, VIII, 98-108 (first published in 1990).

Radloff Wilhelm. 1884. *Aus Sibirien; lose Blätter aus dem Tagebuche eines reisenden Linguisten*. Leipzig: Weigel.

Ramstedt, Gustav J. 1907. 'Über den ursprung der sog. Jenisej-ostjaken', *Journal de la Société Finno-Ougrienne* 24(2): 1-6.

Ramstedt. Gustav J. 1935. *Kalmückisches Wörterbuch*. Helsinki: Lexica Societatis Fenno-Ugricae III.

Räsänen, Martti. 1969. *Versuch eines etymologischen Wörterbuchs der Türksprachen*. Helsinki: Lexica Societatis Fenno-Ugricae XVII, 1.

Schwarz, Michal & Blažek, Václav. 2013. 'On classification of Mongolian', *Folia Orientalia* 50: 177-214.

Serebrennikov, Boris A. and Gadžieva, Nigeľ Z. 1979. *Sravniteľno-istoričeskaja grammatika tjurkskix jazykov*. Baku: MAARIF.

Sevortjan, Ėrvand V. 1974. *Ėtimologičeskij slovaŕ tjurkskix jazykov (Obščetjurkskie i mežtjurkskie osnovy na glasnye)*. Moskva: Nauka.

Schuessler, Axel. 2007. *ABC Etymological Dictionary*. Honolulu: University of Hawai'i Press.

Schuessler, Axel. 2009. *Minimal Old Chinese and Later Han Chinese. A Companion to Grammata Serica Recensa*. Honolulu: University of Hawai'i Press.

Starostin, Sergei A. 1995. 'Sravnitel'nyj slovar' enisejskix jazykov', pp. 176-316 in *Ketskij sbornik: Lingvistika*, ed. by Sergei Starostin. Moskva: Vostočnaja literatura.

Sultaňjaev, O.A. 1980. 'Spornye ėtimologii nekotoryx toponimov Kokčataevskoj oblasti', pp. 115-117 in *Onomastika Vostoka*, ed. Ė.M. Murzaev, V.A. Nikonov, V.V. Cybuľskij. Moskva: Nauka.

Tekin, Talat. 1968. *A Grammar of Orkhon Turkic*. Bloomington: Indiana University - The Hague: Mouton.

Timomina, Ljudmila G. 1985. 'Kačestvennye slova tjurkskogo proisxoždenija v enisejskix jazykax', pp. 66-74 in *Leksika i grammatika jazykov Sibiri*, red. E.P. Boľdt. Barnaul: Barnauľskij gosudarstvennyj pedagogičeskij institut.

Timomina, Ljudmila G. 2004. 'On distinguishing loanwords from the original Proto-Yenisseic lexicon', pp. 135-142 in *Languages and Prehistory of Central Siberia*, ed. by Edward J. Vajda. Amsterdam-Philadelphia, John Benjamins.

Tremblay, Xavier. 2004. 'La toponymie de la Sogdiane et le traitement de *$*x\theta$* et *$*f\theta$* en iranien', *Studia Iranica* 33: 113-149.

Toporov, Vladimir N. 1967. 'Iz ėtimologii enisejskix jazykov (K voprosu ob odnom rjade sootvetstvij pumpokoľskomu *t*)', *Ėtimologija* 1965: 311-320.

Toporov, Vladimir N. 1968. 'Materialy k sravniteľno-istoričeskoj fonetike enisejskix jazykov. 1. Arinsko-enisejskee sootvetstvija', pp. 277-330 in *Ketskij sbornik: Lingvistika*, ed. by V.V. Ivanov, V.N. Toporov & V.A. Uspenskij. Moskva: Nauka.

Vajda, Edward J. 1998. 'The Kets and Their Language', *Mother Tongue* 4: 4-16.

Vajda, Edward J. 2010a. 'A Siberian Link with Na-Dene Languages', pp. 33-99 in *The Dene–Yenisseian Connection*, ed. by J. Kari and B. Potter. *Anthropological Papers of the University of Alaska*, new series, vol. 5. Fairbanks: University of Alaska Fairbanks, Department of Anthropology.

Vajda, Edward J. 2010b. 'Yenisseian, Na-Dene, and Historical Linguistics', pp. 100-118 in *The Dene–Yenisseian Connection*, ed. by J. Kari and B. Potter. *Anthropological Papers of the University of Alaska*, new series, vol. 5. Fairbanks: University of Alaska Fairbanks, Department of Anthropology.

Vajda, Edward J. 2011. 'Siberian Landscapes in Ket Traditional Culture', pp. 297-314 in *Landscape & Culture in Northern Eurasia,* ed. Peter Jordan. Walnut Creek (CA): Left Coast Press. <http://www.uaf.edu/files/anlc/2011ketlandscape.pdf>

Vovin, Alexander. 2000. 'Did the Xiōngnú speak a Yenisseian language?', *Central Asiatic Journal* 44(1): 87–104.
        <http://s155239215.onlinehome.us/turkic/29Huns/AVovin_XiōngnúLanguageEn.htm>

Vovin, Alexander. 2003. 'Did the Xiōngnú speak a Yenisseian language? Part 2: Vocabulary', pp. 389-394 in A. Sárközi, A. Rákos (eds.), *Altaica Budapestinensia* MMII, *Proceedings of the 45th Permanent International Altaistic Conference*, (Budapest, June 23–28, 2002).

Verner, G. K. 1997. 'Enisejskie jazyki', pp. 169-177 in *Jazyki Mira: Paleoaziatskie jazyki*, ed. by A.P. Volodin et al. Moskva: Indrik.
        <http://www.philology.ru/linguistics4/verner-97.htm>

Werner, Heinrich. 2002. *Vergleichendes Wörterbuch der Jenisej-Sprachen*, 1-3. Wiesbaden: Harrassowitz.

Xelimskij, Evgenij A. 1982a. 'Keto-Uralica', pp. 238-250 in *Ketskij sbornik*, ed. E.A. Alekseenko. Leningrad: Nauka.

Xelimskij, Evgenij A. 1982b. *Drevnejšie vengersko-samodijskie jazykovye kontakty*. Moskva: Nauka.

Xelimskij, Evgenij. 1989[2000]. 'Samodijskaja lingvističeskaja rekonstrukcija i praistorija samodijcev', pp. 13-25 in Xelimskij, Evgenij, *Komparatistika, uralistika. Lekcii i staťi*. Moskva: Jazyki russkoj kuľtury 2000.

Electronic sources

Botai culture <http://en.wikipedia.org/wiki/Botai_culture>
Botai: Early Horse Herders on the Steppes of Northern Kazakhstan
<http://www.carnegiemnh.org/science/default.aspx?id=16610>
Chinese history: Foreign people in and around China
<http://www.chinaknowledge.de/History/Altera/altera.html>
Ethnic groups in Chinese history
<http://en.wikipedia.org/wiki/Ethnic_groups_in_Chinese_history>

Jie people http://en.wikipedia.org/wiki/Jie_people
Kangju <http://en.wikipedia.org/wiki/Kangju>
Outram, Alan: Horse domestication in the Botai Culture, Eneolithic Kazakhstan
<https://humanities.exeter.ac.uk/archaeology/research/projects/title_84579_en.html>
Tiele people <http://en.wikipedia.org/wiki/Tiele_people>
Vajda, Edward: The Ket and Other Yenisseian Peoples
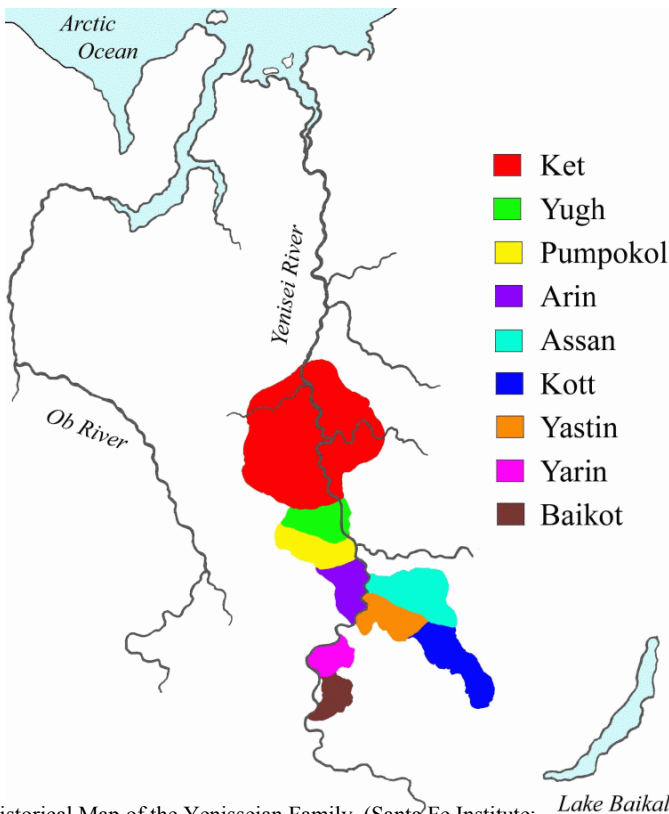<http://pandora.cii.wwu.edu/vajda/ea210/ket.htm>
Yenisseian languages <http://en.wikipedia.org/wiki/Yenisseian_languages#pulle02>
Yenissei Kirghiz <http://en.wikipedia.org/wiki/Yenissei_Kirghiz>

Maps

Figure 4: Historical Map of the Yenisseian Family (Santa Fe Institute:
<http://ehl.santafe.edu/maps34.htm>)

Figure 5: Distribution of Yenisseian languages in the 17th century (hatched) and in the end of 20th century (solid). <http://upload.wikimedia.org/wikipedia/commons/ d/d4/Yenisseian_map_XVII-XX.png><http://en.wikipedia.org/wiki/ Yenisseian_languages>