

Equine coat colors in Indo-Iranian

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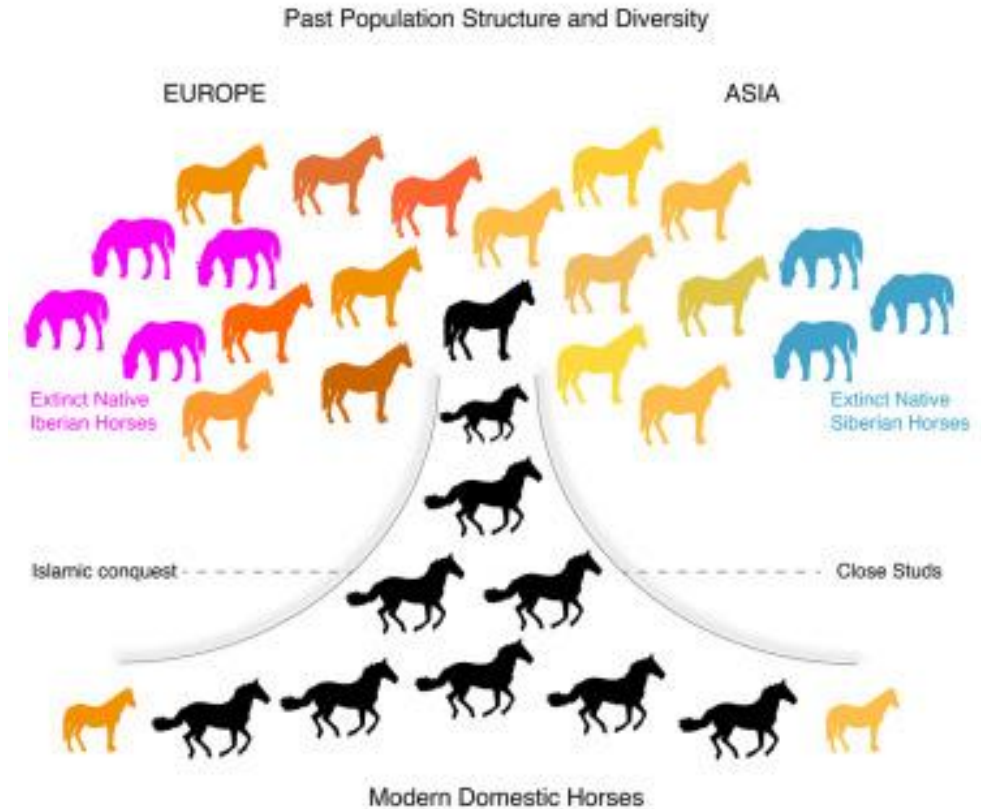
Moscow, March 24, 2023



**Universiteit
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Horse domestication

According to recent genetic studies (Fages et al. 2019, Librado et al. 2021), all modern domesticated breeds descend from the Sintashta horses.

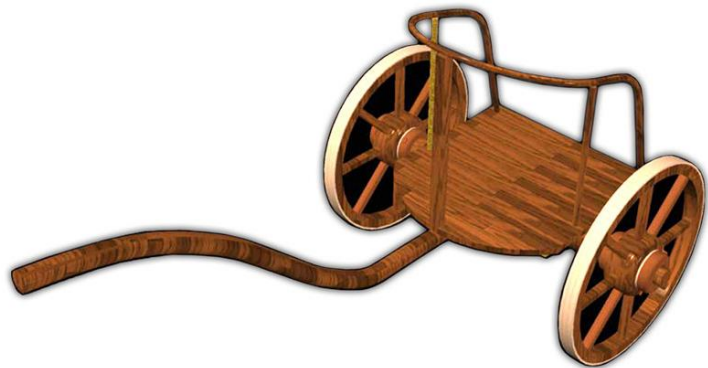


A. Fages et al., Tracking Five Millennia of Horse Management with Extensive Ancient Genome Time Series. *Cell* 177/6 (2019), 1419-1435.

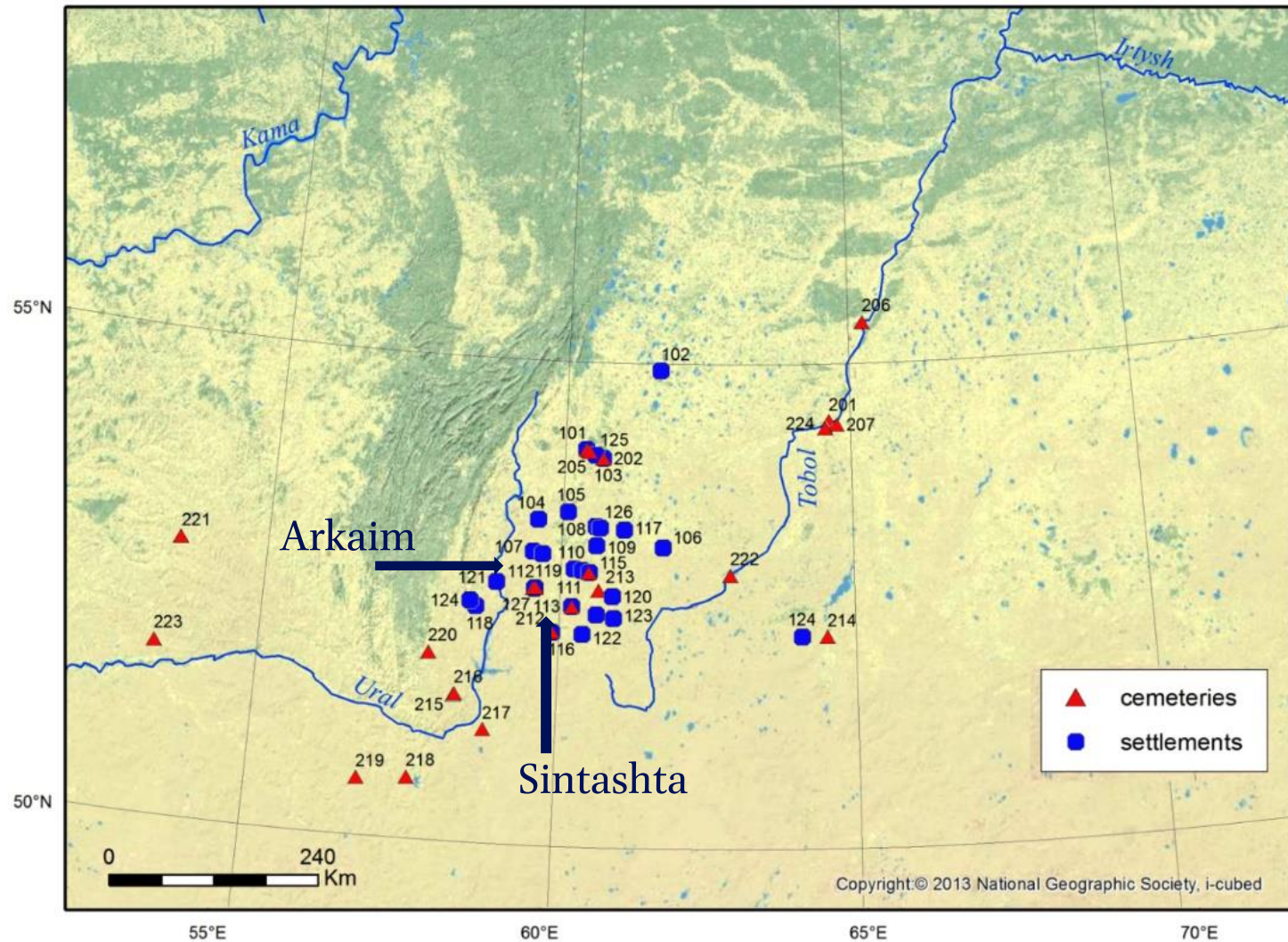
P. Librado et al., The origins and spread of domestic horses from the Western Eurasian steppes, *Nature* 598 (2021): 634-640.

The Sintashta-culture

- Southern Trans-Urals
- many fortified settlements, all built 2100-1900 BC
- the first battle chariot in the world
- homeland of the modern horse
- most likely, Proto-Indo-Iranians



Reconstruction of the Sintashta chariot



Indo-Iranian harnessing and chariot terminology

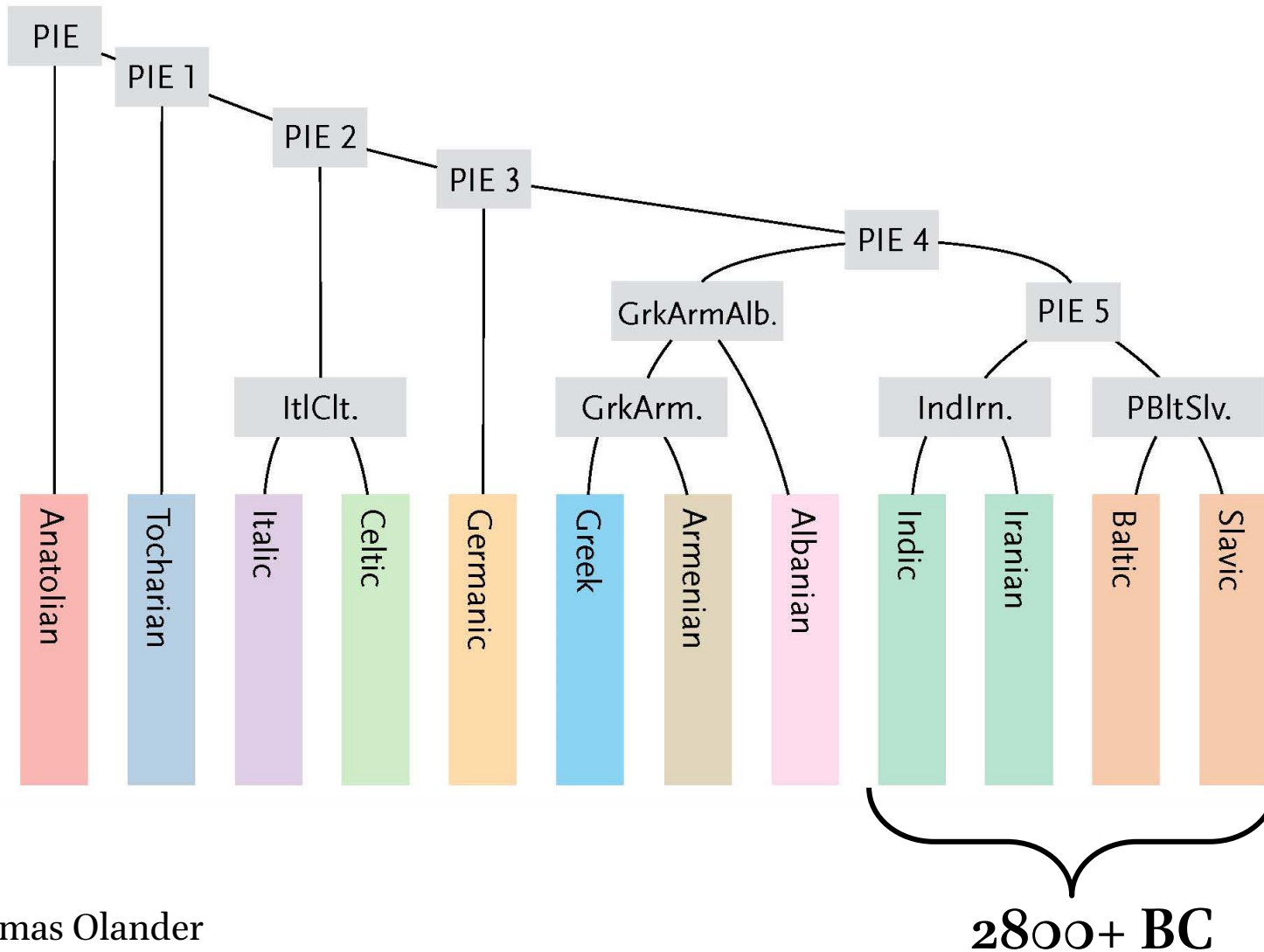
- ‘Chariot’: **HratHa-* (Skt. *rátha-*, YAv. *raθa-*, Khot. *rraha-*, etc.)
- ‘Charioteer’: **HratH-iH-* (Skt. *rathī-*, OAv. *raiθī-*)
- ‘Chariot-fighter’, lit. ‘standing on the chariot’: **HratHai-štaH-* (Skt. *rathe-ṣṭhā-*, YAv. *raθaē-štā-*)
- ‘To drive a chariot’: PIIr. **HiaH-* (Skt. *yā-* ‘to drive’, Av. *yāman-* ‘course’)
- ‘Unharnessing of horses, resting place’: PIIr. **Haua-saHana-* (Skt. *avasāna-*, OAv. *auuaṅhāna-*)

- ‘Bridle, halter’: PIIr. **HraćanaH-* (Skt. *raśanā-* ‘cord, bridle’, MP (Pahl.) *lsn /rasan/* ‘rope’, Arm. *erasan* ‘bridle’, an Iranian loanword)
- ‘Yoking cord’: PIIr. **Hiauktra-* (Skt. *yóktra-* ‘thong, yoking cord’, YAv. *°yaoxədra-* ‘halter, bridle’)
- ‘Bridle’: PIIr. **Hab^hi-d^haHana-* (Skt. *abhidhānī-* ‘horse-halter’, YAv. *zaraniio.aiβiḍāna-* ‘with a golden bridle’, Sogd. *βδ”nh, βyδ’n* ‘bridle’, Khot. *byāna-* ‘id.’, etc.)

Earlier stages of domestication?

- The Sintashta horses are from 2000 BC on, but domestication / breeding must have started much earlier.
- Where could that happen?

Indo-Slavic: common horse vocabulary?



Axel Palmér, PhD project on the Indo-Slavic hypothesis.

Thomas Olander

Indo-Slavic: common horse vocabulary?

- Skt. *súrā*- ‘alcoholic drink, small beer (made of rice)’
~ YAv. *hurā*- ‘fermented mare’s milk, kumis’, Khotanese *hurā*- ‘id.’, Middle Persian *hur* ‘id.’
~ Old Prussian *sulo* ‘curdled milk’, Lith. *sulà* ‘birch sap’, Latv. *piena sula* ‘whey’

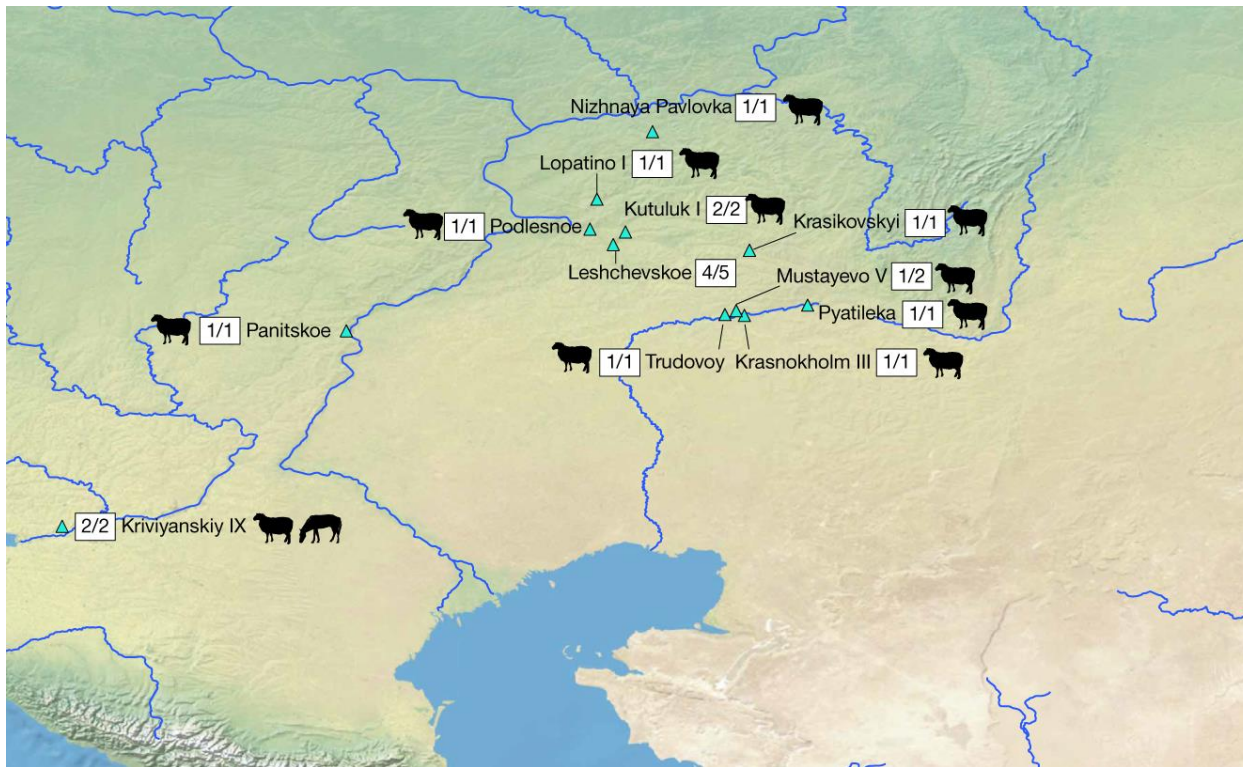
Probably, < **sul-eh*₂- (~ PIr. **x*^v*ar*- ‘to eat, drink’, cf. N 30 *dahmō hurqam x*^v*araiti maδō aspiia.paiianhō* ‘If a pious man drinks kumis, wine of mare’s milk’, a *figura etymologica*?)

⇒ Indo-Slavic mare milking, docile horses?

G. Kroonen, Supplementary information to P. Librado et al., The origins and spread of domestic horses from the Western Eurasian steppes, *Nature* 598 (2021): 634-640.

Palaeoproteomics: Drinking horse milk in Yamnaya?

“Notably, we identified *Equus* milk peptides from the protein BLGI in 2 of 17 Early Bronze Age individuals, both from the southwestern site of Krivyanskiy 9 (3305 to 2633 calibrated years BC).” [Dental calculus]



Wilkin, S., Ventresca Miller, A., Fernandes, R. *et al.* Dairying enabled Early Bronze Age Yamnaya steppe expansions. *Nature* 598 (2021), 629–633.

Horse domestication and colors

- One of the few characteristics that distinguishes all domestic animals from their wild progenitors is **coat color variation**.
- Librado et al. 2021: chestnut coat coloration has evolved under positive selection from early domestication stages.



Przewalski's horses in Mongolia

Genetics / Archaeology → Linguistics

Prediction:

- No common equine coat colors in PIE
- Possibly, a few common equine coat colors in Indo-Slavic
- More elaborate coat color vocabulary in Indo-Iranian

Challenges

- Color terms are not self-evident: Modern English focuses almost exclusively on hue, while other languages may emphasize tone or saturation instead.
- Often argued that the old IE lgg. were more concerned with brightness (bright vs. dark) than hue.
- “Pure” chromonyms like *dun*, *chestnut* are not to be expected at the early stages of breeding.
- In the old texts it is often hard to decide which exactly color is intended.

Corpus + criteria

- Early Vedic (the Ṛgveda and the Atharvaveda)
- Avestan, Old Persian
- Old Iranian personal names (including the *Nebenüberlieferung*)

- Criteria:
 - Both Skt. and Iranian
 - Or Skt. / Iranian + elsewhere

G. Kroonen's table of 9 Indo-Iranian equine coat chromonyms

Proto-Indo-Iranian	Sanskrit	Avestan	Indo-Iranian other	IE other
* <i>b^hab^hru-</i>	<i>babhrú-</i> 'reddish brown, brown'		Mit. <i>b/papru-nnu</i> 'epithet of horses'	
* <i>b^hrad^hna-</i>	<i>bradhna-</i> 'pale red, ruddy, bay'			CS <i>bronъ</i> 'white, greyish (of horses)'
* <i>Haruša-</i>	<i>aruśa-</i> 'reddish, white'	<i>auruša-</i> 'white'		OHG <i>elo</i> 'sallow'
* <i>j^hari-</i>	<i>hári-</i> 'yellowish, bay'	<i>zairi-</i> 'yellow'		
* <i>kadru-</i>	<i>kádru-</i> 'reddish brown'	<i>kadrva.aspa-</i> (placename)		
* <i>palHuša-</i>	<i>paruśa-</i> 'grey(-brown)'	<i>pouruša-</i> 'grey'		E <i>fallow</i>
* <i>parita-</i>	<i>palitá-</i> 'grey'		Mit. <i>p/baritta-nnu</i> 'grey (of horses)'	
* <i>pingara-</i>	<i>piṅgalá-</i> 'reddish'		Mit. <i>p/binkara-nnu</i> 'reddish (of horses)'	
* <i>prśant-</i>	<i>pṛśant-</i> 'dappled'	<i>paršaṭ.gauu-</i> (proper name)		

G. Kroonen, Supplementary information to P. Librado et al., The origins and spread of domestic horses from the Western Eurasian steppes, *Nature* 598 (2021), p. 39.

PIIr. **j^harHi-* (1)

- Skt. *harí-* adj. 'yellowish, tawny (Sun, Soma)', m. 'brown horse'
- ~ YAv. *zairi-* adj. 'yellow, golden (metal)', BUT: Elam.-Iran. **zari̇aspa-* PN, also Arm. *Zarasp*, etc.
- When *harí-* refers to a horse, Geldner translates it with *Falbe*.
- Jamison and Brereton translate *harí-* with 'fallow bay', which is their own coinage (probably, a conflation of German *Falbe* and English *bay*).

Bay vs. Sorrel/Chestnut

- Bay (= *G. Falbe*) is characterized by a reddish-brown body color with a black point coloration of the mane, tail, ear edges, and lower legs.
- Sorrel or chestnut (= *G. Fuchs*) is a reddish coat color in a horse lacking any black.



PIIr. **j^h*arHi- (2)

RV 8.32.29 *ihá tyā sadhamādyā, hārī hīraṇyakeśyā | voḥām abhí práyo hitám ||*

‘Hierher sollen dich deine beiden Kumpane, die goldmähnigen Falben fahren zum bereiteten Opferschmaus.’ (Geldner)

‘Hither let these two feasting companions, the pair of fallow bays with golden manes, convey (you) to the pleasure set out (for you).’ (J&B)

→ *hāri-* is a chestnut, not a bay horse!

PIIr. **Haruša-*

- Skt. *aruṣá-* ‘reddish, ruddy, glowing, fire-colored (Agni, bull, horse, smoke, Soma)’ (RV+)
- Sometimes *aruṣá-* next to *harí-* (about Soma), e.g., RV 9.111.1 *dhárā sutásya rocate, punānó aruṣó háriḥ* ‘In the stream of pressed (juice) he shines ruddy and tawny as he is being purified’.
- BUT: YAv. *auruša-* ‘white (sheep, horse, arm, Tištriia)’, YAv. *aurušāspa-* ‘with white horses’; BMP *’lws /arus/* ‘white’, Oss. *urs /ors* ‘white’, Sarm. Ἄορσοί, Ἄλανορσοί (Ptol., Strabo), name of a Sarmatian tribe (lit. ‘the White Alans’)
- For ‘red’ vs. ‘white’, cf. also Skt. *śukrá-* ‘bright, white’ vs. Ir. **t^suxra-* ‘red’

PIIr. **Haruša*- : etymology

- Cf. OHG *elo* 'light brown, fallow (esp. of sheep)' (< **elwa*-).
- Possibly, derived from the word for 'red deer', PIE **h₁el*-.
- PIIr. **Haru-ša*- next to PIIr. **Haru-na*- (Skt. *aruṇá*- 'brown, ruddy (wolf, eagle, Soma)')

PIIr. **paruša-*

- Skt. *paruṣá-* ‘grey-brown (kine, wool), dirty-colored’, *páruṣṇī-* f., also name of a river, **not about horses**
- YAv. *pouruša-* ‘grey (of hair)”; *paouruša.gaona-* ‘grey-colored’ (F 104); *pouruśaspa-* N. of Zarathustra’s father (= ‘with grey ~ old horses’? Cf. Zarathustra ‘with old camels’)

PIIr. **paruša-* : etymology

~ PIE **poluo-*

- equine coat color in Balto-Slavic: Lith. *paĩvas* ‘mouse-colored (horse)’; Russ. *polovój* ‘pale yellow (dog, horse)’
- Lat. *pullus* ‘drab-colored’, **not about horses**
- PGm. **falu-*: OE *fealu* ‘yellow, pale, dull (waves, shields, roads, wood and flames)’, but 2x in the Beowulf: *fealwe mearas* ‘dun’, *æppel-fealu* ‘dapple-dun’ (Fjord Ponies?, see Neville); OHG *falo* ‘pale, yellowish’ (2x **about horses**); OIc. *fqlr* ‘grey, faded’

PIIr. **paruša-* probably contains a suffix *-ša-*, cf. PIIr. **Haru-ša-*, although the suffix is rare.



A Fjord Pony

Jennifer Neville, Hrothgar's horses: feral or thoroughbred? *Anglo-Saxon England* 35 (2006), 131-157.

**pelu-*: equine coat color of IE date?

- BSl. (Lith. *paĩvas*) and Latin *pullus* : no laryngeal → PIE **poluo-*
- PIIr. **paruša-* < **pelu-* + *-so-*
- In Iranian, also without the *-so-*-suffix: Khwar. *prw* /*paru-*/ ‘grey (hair)’ and the Pamir words for ‘mouse, rat’: Munj. *pory*, Yi. *pary*, Yazg. *purg* (< **paruka-*); W. *pyrk* (< **pāruka-*)
- Gr. πέλεια ‘wild pigeon’ < **pelu-* ?
- The root is wide-spread, cf. also Skt. *palitá-* ‘grey (hair, smoke)’, Gr. πολίός ‘whitish-grey (hair)’



PIIr. **b^hrad^hna-*

- Skt. *bradhná-* ‘pale red, ruddy, coppery (Sun, Soma)’, N. of a sun-horse, sun
- PSlav. **bronъ*: CS *bronъ* ‘λευκός, ψαρός (of horses)’, ORuss. *bronii, bronyi* ‘white (of horses), grey, dun’, OCz. *broný* ‘white (of horses)’
- < **b^hrod^hno-*? Then, no further cognates.
- Or, rather, a Slavic LW from Iranian (even though the Iranian cognates are unknown). NB: **-dn-* > **-n-* in Iranian (e.g., OAv. *būna-* ‘ground, bottom, depth’ < PIIr. **b^hud^hna-*).
- < **b^hl̥nd^hno-* and related to the Balto-Slavic and Germanic words for ‘become murky, dim; blend’, cf. Goth. *blinds* ‘blind’, Lith. *blandùs* ‘dim, cloudy’.
- Sun-horse in Skt. vs. ‘white’ in Iranian? Cf. Skt. *aruśá-* ‘reddish, fire-colored’ vs. YAv. *auruša-* ‘white’.

PIIr. **ćuaita-*

- Skt. *śvetá-* ‘white, bright’, often about horses, especially, the snake-killing horse of Pedu; cf. also *śvetāśva-* m. ‘white horse’ (ŚāṅkhŚS)
- YAv. *spaēt-it-a-* ‘white’: *ahmiia vāše vazānte caθbarō auruuantō spaētita hamagaonāṅhō* (Yt 10.125) ‘four white coursers of the same color will pull at his (= Miθra’s) chariot’
- *-it-* is a typical, productive suffix of color adjectives in Indo-Iranian, cf. Skt. *pal-it-á-* ‘pale’, *ás-it-a-* ‘black’, *hár-it-a-* ‘yellow’, *róh-it-(a-)* ‘red’, etc.

PIIr. **ćiaHua-* (1)

- Skt. *śyāvā-* is usually translated ‘dark-brown, brown, dark-colored, dark, dusky’ ~ YAv. *siiāuuaršan-* PN (= ‘with grey/black stallions’), Sogd. š’w ‘black’, Oss. *sau* ‘id.’ (but Khot. *śāva-* ‘copper; copper-colored, red’)
- RV 3.55.11bc *táyor anyád rócate kṛṣṇám anyát | śyāvī ca yád áruṣī ca svásārau.*

[Night and Dawn have assumed wondrous forms.] ‘One of them shines; the other is black; **the dusky one** and the ruddy one are sisters.’ (Jamison and Brereton)

Black and bay / chestnut?



PIIr. **ćiaHua-* (2)

RV 10.68.11ab. *abhí śyāvám ná kṛśanebhir áśvaṃ, nákṣatrebhiḥ pitáro dyām apimśan*

‘Die Väter schmückten den Himmel mit den Gestirnen aus wie einen **Rappen** mit Perlen.’
(Geldner)

‘Like **a dusky** horse with pearls, the Fathers ornamented the heaven with stars.’ (J&B)

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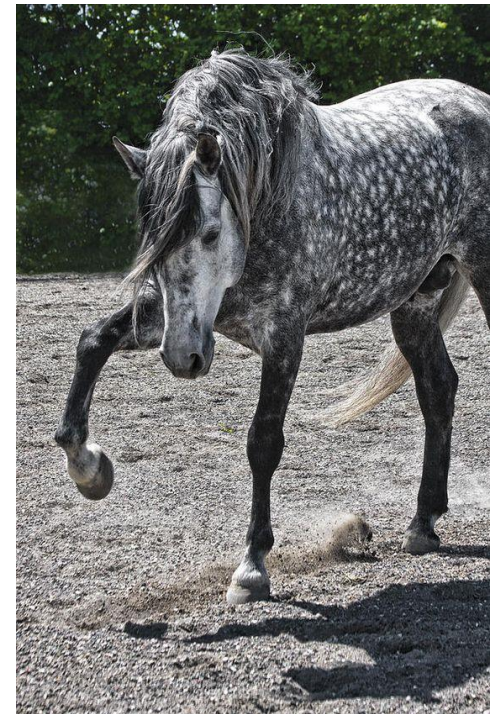
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(Geldner)

‘Like **a dusky** horse with pearls, the Fathers ornamented the heaven with stars.’ (J&B)

→ Skt. *śyāvá-* ‘dark-grey’, ‘dapple grey’

~ Lith. *šývas* ‘light grey (horse)’, Russ. *sívyj* ‘grey (horse)’

Cf. OE *hæwe* ‘blue’ (not about horses) < **kieh₇-uo-*



PIIr. **ćiaHua-* (3)

- IIr. **ćiaHua-* and **ćiaHma-* (Skt. *śyāmá-* 'black', YAv. *sāma-* 'black (horse)', etc.) < **kieh₁-* because of Lith. *šėmas*, Latv. *sēms*.
- The same root in **kh₁oi-ro-* 'grey-haired, old' (OIc. *hárr*; Czech *šerý*, Polish *szary* 'grey'), **kh₁ei-ro-* (OIr. *cíar* 'black'), and, possibly, in the word for 'shadow', **sk(e)h₁-i-* (Skt. *chāyā-*, Gr. *σκιά*).
- We have to assume laryngeal metathesis in the zero grade **kh₁iC* > **kih₁C* with concomitant ablaut adaptation: **kh₁eiC* / **kh₁iC* > **kh₁eiC* / **kih₁C* → **kieh₁C* / **kih₁C*.

PIIr. **Hrjra-*

- Skt. *rjrá-* ‘silvery’ (RV), color of the horses of the Wind; its Caland form is *rji-*, cf. *rjīti-* ‘quickly flying, hurrying (of reins, rivers, libations, arrows)’
- ‘(with) silvery / quick horses’: Skt. *rjrá- áśva-*, *rjráśva-* PN ~ YAv. *arəzrāspa-* PN
- Gr. ἀργός ‘shining white; quick’ (< *ἀργ-ρό-ς); Gr. ἀργι-όδων ‘with blindingly white teeth’; Gr. ἀργίπους ‘with quick feet’; Hitt. *ḫarki-* / *ḫargai-* ‘white, bright’; ToA *ārki*, ToB *ārkwī* ‘white’
- The meaning ‘white, silvery’ is primary, but ‘white’ → ‘quick’ late-IE.

Indo-Iranian and Balto-Slavic equine coat colors

(blue: horses+, orange: only horses)

PIIr.	Sanskrit	Iranian	Balto-Slavic	Elsewhere
* <i>paruša-</i>	<i>paruṣá-</i> ‘grey, grey-brown (cows, wool), dirty-colored’	Av. <i>pouruša-</i> ‘grey (of hair)’, <i>pouruśaspa-</i> N. of Zarathustra’s father	Lith. <i>paĩvas</i> ‘mouse-colored (horse)”; Cz. <i>plavý</i> ‘dun (horse)’	OE <i>fealu</i> ‘yellow, pale’ (2x); OHG <i>falo</i> ‘pale, yellowish’ (2x)
* <i>ćiaHua-</i>	<i>śyāvá-</i> ‘dark, grey (a.o., horses)’	YAv. <i>siiāuuaršan-</i> ‘with grey stallions’, Sogd. <i>š’w</i> ‘black’	Lith. <i>šyvas</i> ‘light grey (horse)’, Russ. <i>sívyj</i> ‘grey (horse)’	OE <i>hāwi</i> ‘blue, discolored’ (not of horses)
* <i>b^hrad^hna-</i>	<i>bradhná-</i> ‘red, coppery (horse, Soma)’		CS <i>bronž</i> ‘white (horses)’	
* <i>Haruša-</i>	<i>aruṣá-</i> ‘reddish, glowing (a.o., horses)’	Av. <i>auruša-</i> ‘white’ (horses, sheep, arms)		OHG <i>elo</i> ‘brownish’ (not of horses)
* <i>ḡarHi-</i>	<i>harí-</i> ‘yellow (Sun, Soma)’, ‘chestnut horse’	Av. <i>zairi-</i> ‘yellow (metal)’, * <i>zariśaspa-</i> PN		
* <i>ćuaita-</i>	<i>śvetá-</i> ‘white, bright’	YAv. <i>spaēitita-</i> ‘whitish’		
* <i>Hrjra-</i>	<i>ṛjrá-</i> ‘silvery’ (Wind horses), <i>ṛjráśva-</i> PN	YAv. <i>arəzrāspa-</i> PN		Gr. ἀργός ‘white; quick’ (not of horses)

Conclusions

- PIE **pelu-* possibly referred to the coat color of wild horses ('yellowish')
- The best candidates for Indo-Slavic equine coat colors are words for 'grey' and 'dapple grey'.
- 'Brown' is only found in Indo-Iranian.

