

The Diseases of the Indo-European Peoples

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Languages and Migrations in Prehistoric Europe

What do we understand with the term *disease*?

- *Disease*: (human) infectious, viral, and bacterial diseases
- *Conditions/human difficulties*: psoriasis, obesity, rickets, arthritis ...



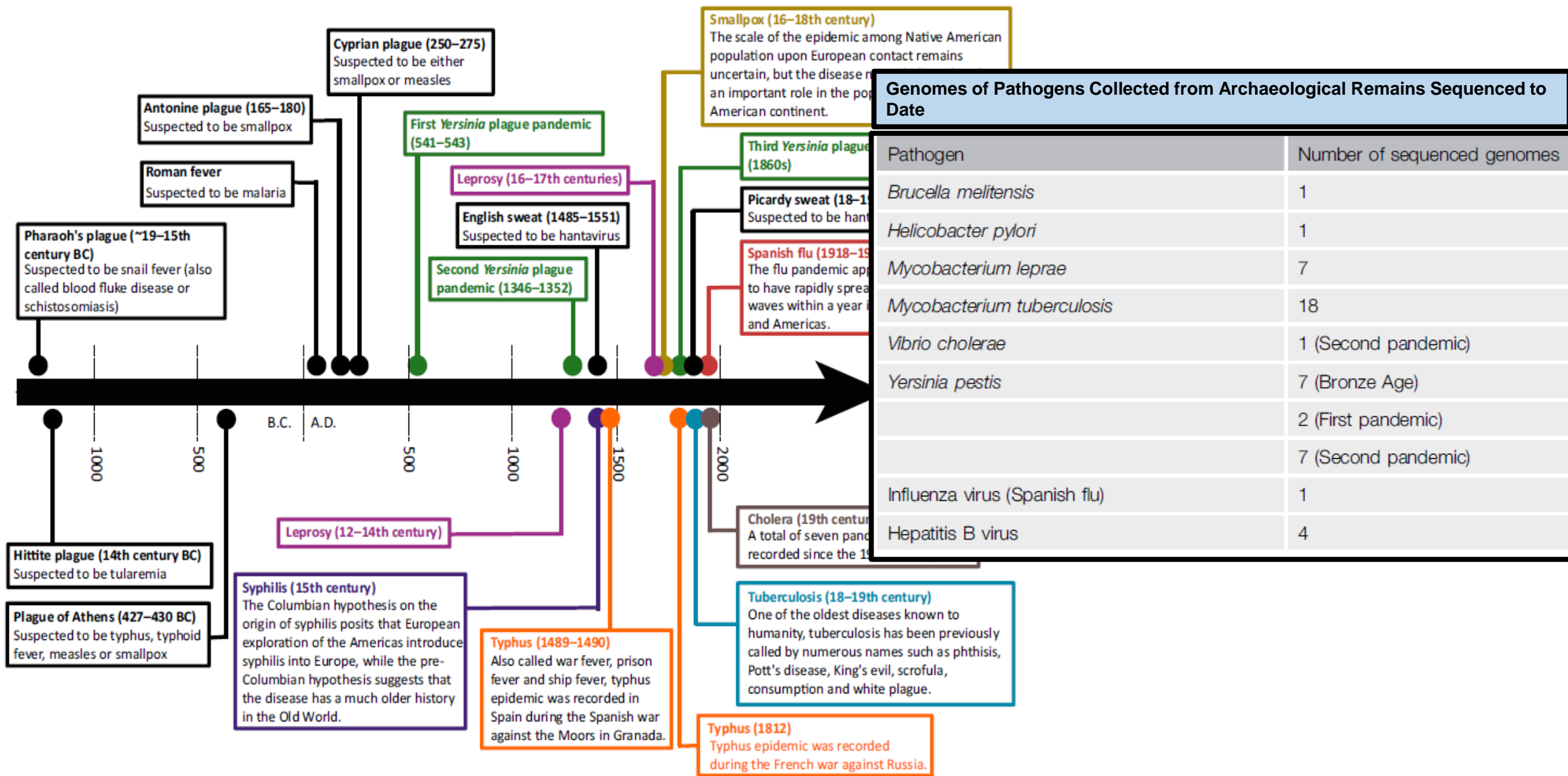
Miasmatic theory of disease: obsolete medical theory from Greek *miasma* 'pollution, bad air'

bacterium



virus





leprosy



- Gk. ἀλφός/*alphós* 'dull-white leprosy' (non contagious), cf. Gk. λεύκη 'leprosy'
- Gk. κελεφός (1x, gloss.) semitic loanword, see Syrian *qalāfā* 'cortex, squama, putamen', *qalāfānā* 'lepra'

- Skt. *da(r)drū-* 'leprosy', cf. OE *teter* 'tetter', OHG *zitaroh* 'id.' (PGm. **tetru-*)
- (Goth. *gund* 'gangrene', OE/OHG *gund* 'pus' (PGm. **gunda-* 'pus, decaying skin')
: Gk. κανθύλη 'abscess, tumor')

Av. *paēsa-* 'leprosy'

Skt. *puru-pésá-* 'leprous'

maybe connected with Skt. *piṃśāti* 'to cut, carve',
Lat. *pingō* 'to stich with a needle, paint'

Gk. λέπρα, cf. Lat.
leprosia

SCr. *gùba* 'mushroom, tree-
fungus, amadou, leprosy, snout,
**gòba* 'tree-fungus'

OIr. *clamh*, *leprosus*, *sámthros*,
bolgach, *lobhar*, *clamtrusca*

Arm. *bor-ot* 'leprous' and later *bor*
'leprosy'.

*'brown animal', 'spotted' > leprosy
loan from Iran. **bor* 'leprosy'?
only preserved in Sogd. *βr'wk'* /*βarūkə*/ 'leprous'
Maybe related to **bor* 'spotted'

Arm. *uruk* 'leprous'

Iran. **vorūk-* through an intermediary
**wuruk*

Arm. *pisak* 'spotted, leprous', cf.
Pers. *pīs* 'leprous, dirty'

SCr. *kràsta* 'scab(s), leprosy'

Ancient DNA study reveals HLA susceptibility locus for leprosy in medieval Europeans

Ben Krause-Kyora^{1,2}, Marcel Nutsua¹, Lisa Boehme¹, Federica Pierini³, Dorthe Dangvard Pedersen⁴, Sabin-Christin Kornell¹, Dmitriy Drichel⁵, Marion Bonazzi¹, Lena Möbus¹, Peter Tarp⁴, Julian Susat¹, Esther Bosse¹, Beatrix Willburger⁶, Alexander H. Schmidt⁶, Jürgen Sauter⁶, Andre Franke¹, Michael Wittig¹, Amke Caliebe⁷, Michael Nothnagel⁵, Stefan Schreiber^{1,8}, Jesper L. Boldsen⁴, Tobias L. Lenz³ & Almut Nebel¹

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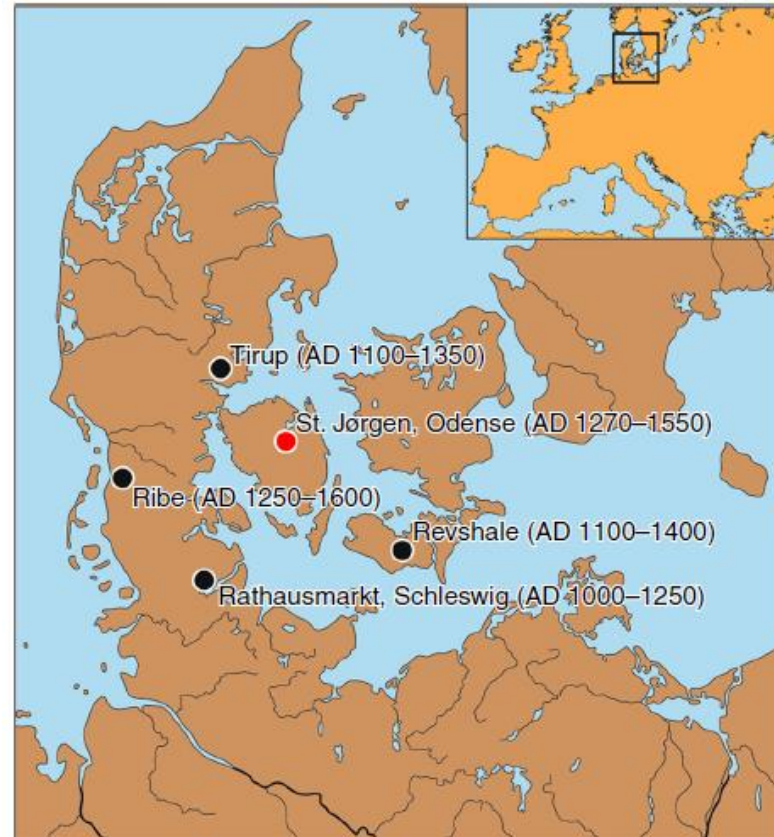


Fig. 1 Origin of medieval samples. Geographic location of the medieval cemeteries in southern Denmark and northern Germany from where the specimens in this study were obtained. Dates in parentheses indicate the time span of active use as cemeteries. Red dot marks the cemetery with LL-positive samples. LL: lepromatous leprosy. The software CorelDRAW was used to create the map (designed by B.K.-K.)

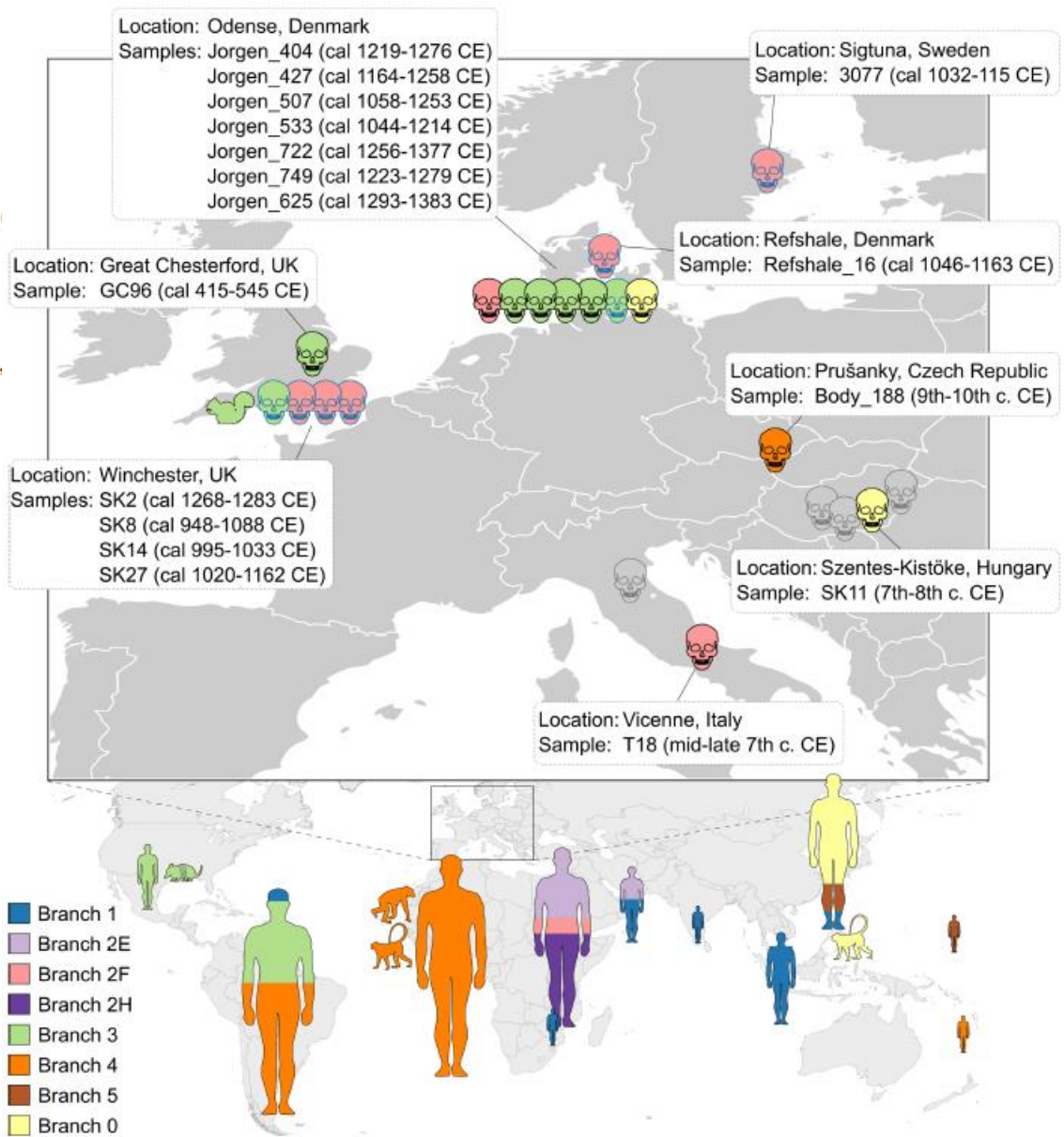
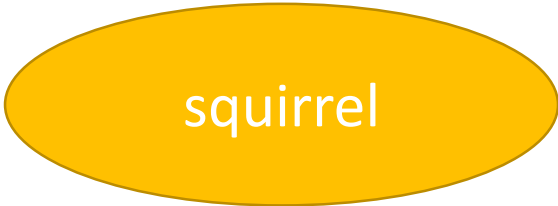
Ancient genomes reveal a high diversity of *Mycobacterium leprae* in medieval Europe

Verena J. Schuenemann^{1,2,3}, Charlotte Avanzi⁴, Ben Krause-Kyora^{5,6}, Alexander Seitz⁷, Alexander Herbig⁶, Sarah Inskip⁸, Marion Bonazzi⁵, Ella Reiter¹, Christian Urban¹, Dorte Dangvard Pedersen⁹, G. Michael Taylor¹⁰, Pushpendra Sin Graham R. Stewart¹⁰, Petr Velemínský¹², Jakub Likovsky^{13†}, Antónia Marcsik¹⁴, Erika Molnár¹⁴, György Pálfi¹⁴, Valentina Mariotti^{15,16}, Alessandro Riga¹⁷, M. Giovanna Belcastro^{15,16}, Jesper L. Boldsen⁹, Almut Nebel⁵, Simon Mays¹⁸, Helen D. Donoghue¹⁹, Sonia Zakrzewski²⁰, Andrej Benjak⁴, Kay Nieselt^{7*}, Stewart T. Cole⁴, Johannes Krause^{1,2,6*}

PLOS Pathogens | <https://doi.org/10.1371/journal.ppat.1006997> May 10, 2018

Fig 1. Worldwide distribution of the ancient and modern *M. leprae* strains analyzed in this study. Skulls represent strains from osteological specimens dated to the Medieval Period. Human silhouettes represent modern strains, sized to scale according to the number of samples, ranging from 1 (e.g. India) to 36 (South America). Animal silhouettes represent strains from the red squirrel, the nine-banded armadillo, and naturally infected nonhuman primates (a chimpanzee from Sierra Leone, a sooty mangabey from West Africa, and a cynomolgus macaque from The Philippines). Skulls outlined in black are the new *M. leprae* genomes reconstructed in this study, while skulls outlined in blue represent previously sequenced ancient genomes. Grey skulls are leprosy samples from this study that did not yield sufficient sequence for whole-genome analysis. The main *M. leprae* lineages, represented by branches (see Fig 2) are color-coded.

Dharmendra. Leprosy in ancient Indian medicine. International Journal of Leprosy. 1947; 15:424–30.



Gk. ἰλεός '(epidemic icterus)' (Hipp.),
ἥπατιτις *'belonging to the liver', 'hepatitis'
(dysentery' Gal.18.1.145)

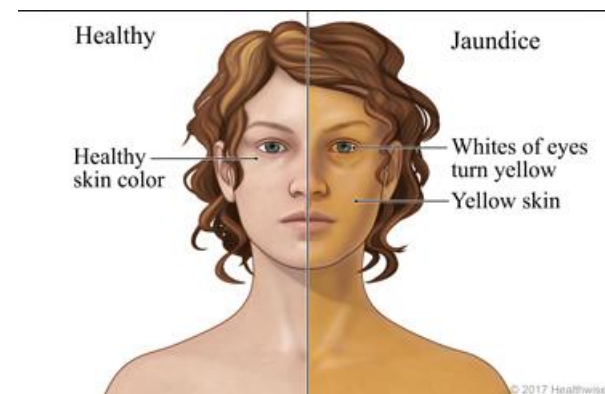
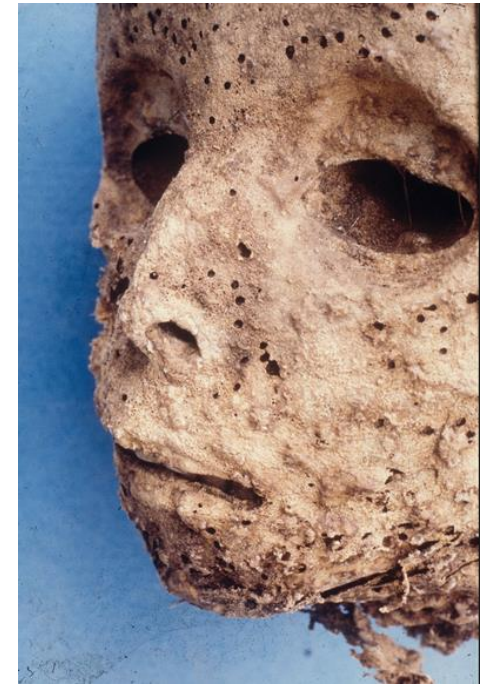
Hittite
ḫāḫhallieške/a- 'to become green/yellow',
ḫaḫlimma- 'jaundice' (OS)
see (GIŠ) *ḫāḫhall-* 'greenery, verdure'

...

Arm. *dalunkn*
see *dalar* 'green, fresh'

Toch. *tute* (adj.) 'yellow', *tucepi*
yetsentse 'for [cases of] jaundice'
halimak 'jaundice'
kamāl 'id.'

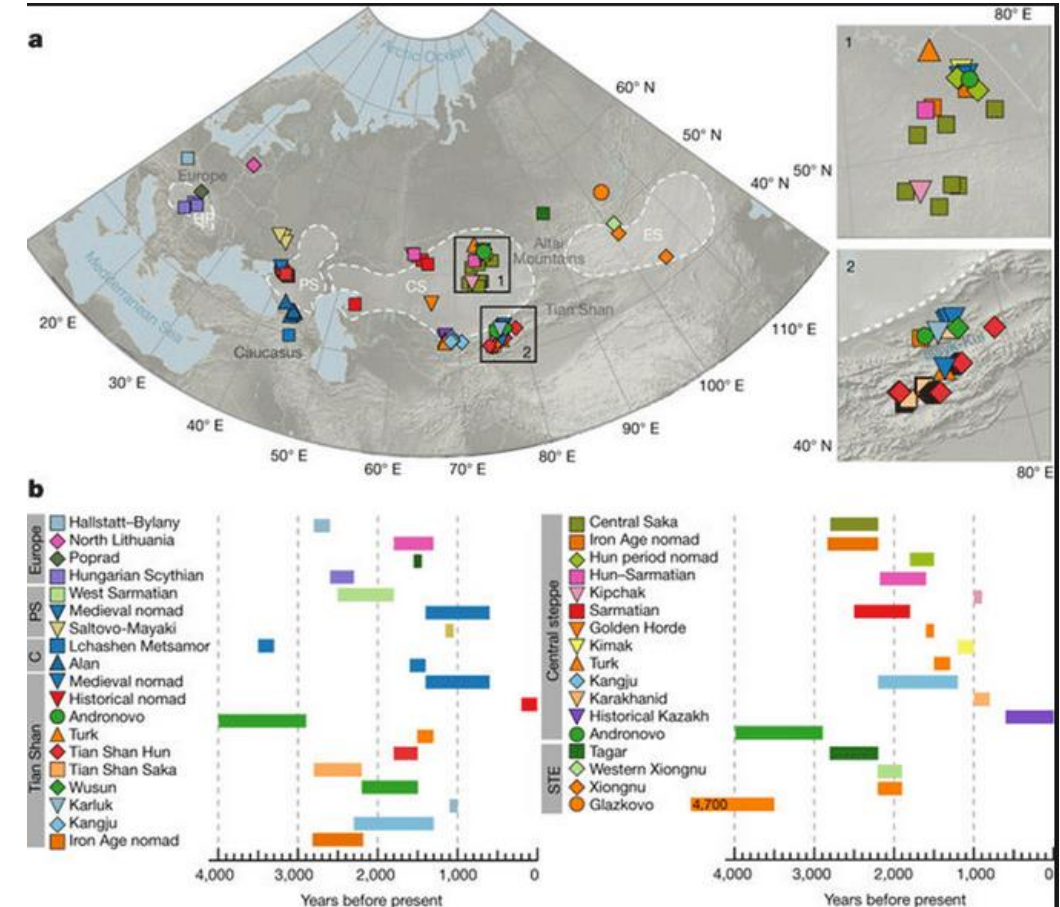
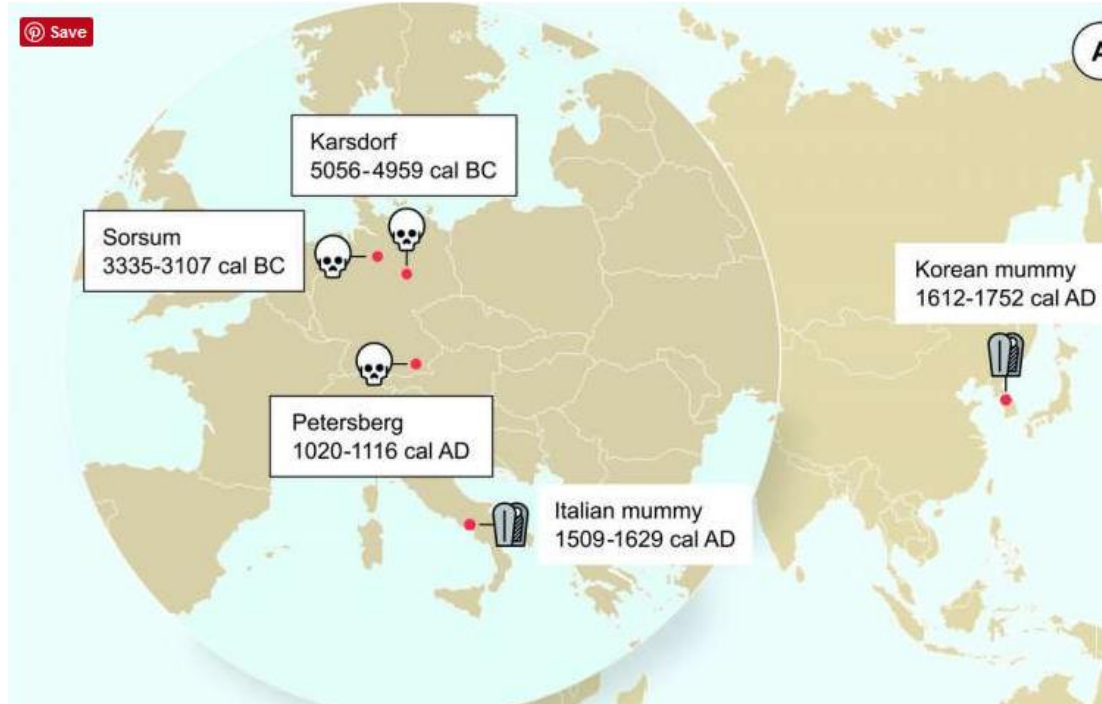
Hepatitis B



Ancient hepatitis B viruses from the Bronze Age to the Medieval period

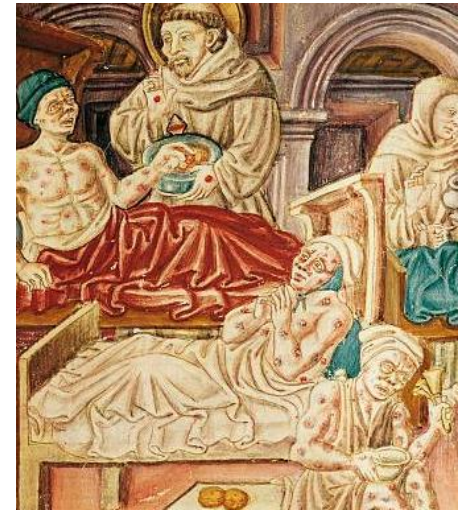
Barbara Mühlemann^{1,29}, Terry C. Jones^{1,2,29}, Peter de Barros Damgaard^{3,29}, Morten E. Allentoft^{3,29}, Irina Shevnina⁴, Andrey Logvin⁴, Emma Usmanova⁵, Irina P. Panyushkina⁶, Bazartseren Boldgiv⁷, Tsevel Bazartseren⁸, Kadicha Tashbaeva⁹, Victor Merz¹⁰, Nina Lau¹¹, Václav Smrčka¹², Dmitry Voyakin¹³, Egor Kitov¹⁴, Andrey Epimakhov¹⁵, Dalia Pokutta¹⁶, Magdolna Vicze¹⁷, T. Douglas Price¹⁸, Vyacheslav Moiseyev¹⁹, Anders J. Hansen³, Ludovic Orlando^{3,20}, Simon Rasmussen²¹, Martin Sikora³, Lasse Vinner³, Albert D. M. E. Osterhaus²², Derek J. Smith¹, Dieter Glebe^{23,24}, Ron A. M. Fouchier²⁵, Christian Drosten^{2,26}, Karl-Göran Sjögren¹⁸, Kristian Kristiansen¹⁸ & Eske Willerslev^{3,27,28*}

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OIr. *bléfed* 'bubonic plague'

plague



Gk. *λοιμός* 'plague (deadly epidemic)', **loi-mó-* 'polluting substances'

PIr. **rai-ma-* 'polluted matter': MPers. *rēm* 'dirt connected with corpses and impurity', Av. 'polluted substances', derivatives of a root *rai-* (Milizia 2015)

Arm. *xoil* 'tumor, swelling', 'a plague?'

Lat. *pestis* 'pest, death, pestilence' (Pl.+) < **per-(k)sitis* 'very thirst(y)' (WH 296)?

cf. YAv. *kapastiš* 'name of an illness' (AIW 1904: 436)

Ved. *kṣíti-* 'destruction, languishing' (AV+), *ti-* abstract

: Gk. *φθίσις* (Ind. *KṣAY³* 'to destroy, kill'?)

OCS *morъ*, Ru. *mor* 'death, plague' (PSlav. **morъ*)

Lith. *māras* 'plague, death' (*o*-stem derivative of *miṛti*, cf. Letv. *miṛt* 'die') (EDB² 305, LEW² 409) (PBalto-Slav. **moros*)

IE **mor-o-* 'death' to **mer-* 'to disappear, die' (LIV² 439), cf. Ved. *pra'mará-* m. 'death' (RV+) to *MAR* 'to die' (EWAia II 318)

Toch. B *ñytse*(E-C) ~ *ñtse*(C-L) 'danger; plague, distress'

Toch. A *ñtse* (borrowing from Toch. A, Adams 2013: 291)

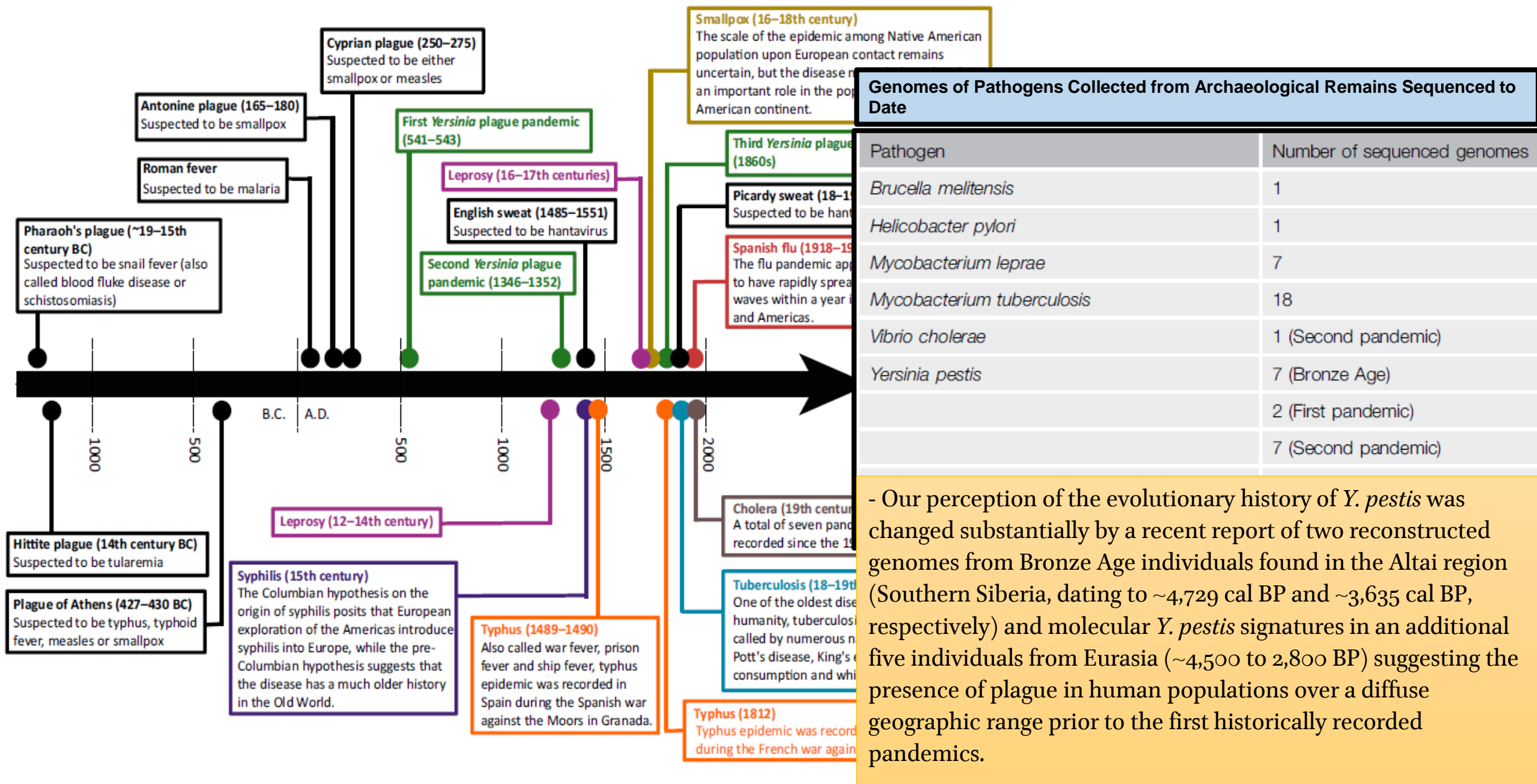
Possible IE cognates:

Goth. *neip* (nt.) 'ill-will, envy', Oeng. *níp* (nt.) 'enmity, hate, combat', OHG *níd(h)* 'enmity, hate, combative fury, etc.' (Pgerm. **npa-*)

Oir. *níth* (gen. *nítho*) 'combat, combative fury' (< **nítu-*), Welsh *nwyd* 'passion'

Hit. *henkan-* 'death, deadly disease, plague' (*n*-stem; OH/MH/NH)

hinkan- forms **-enK-* > *-inK-*: *henkan-* → *hinkan-*



Early Divergent Strains of *Yersinia pestis* in Eurasia 5,000 Years Ago

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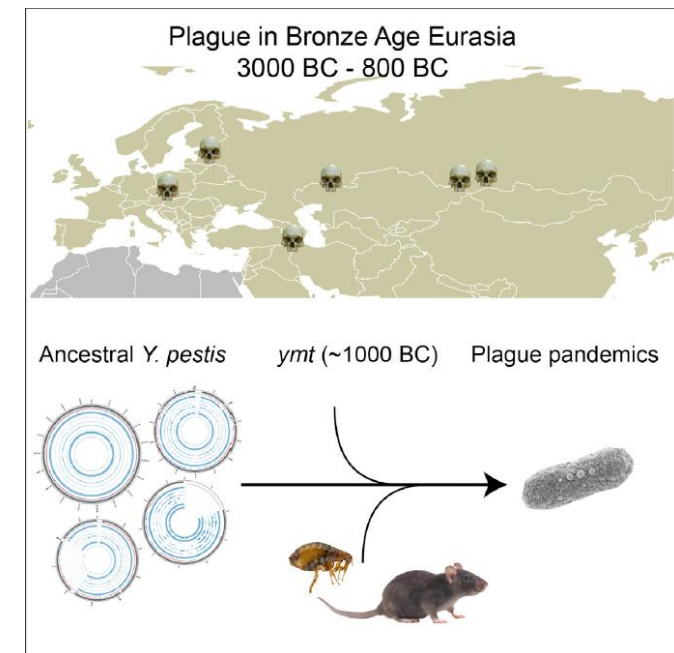
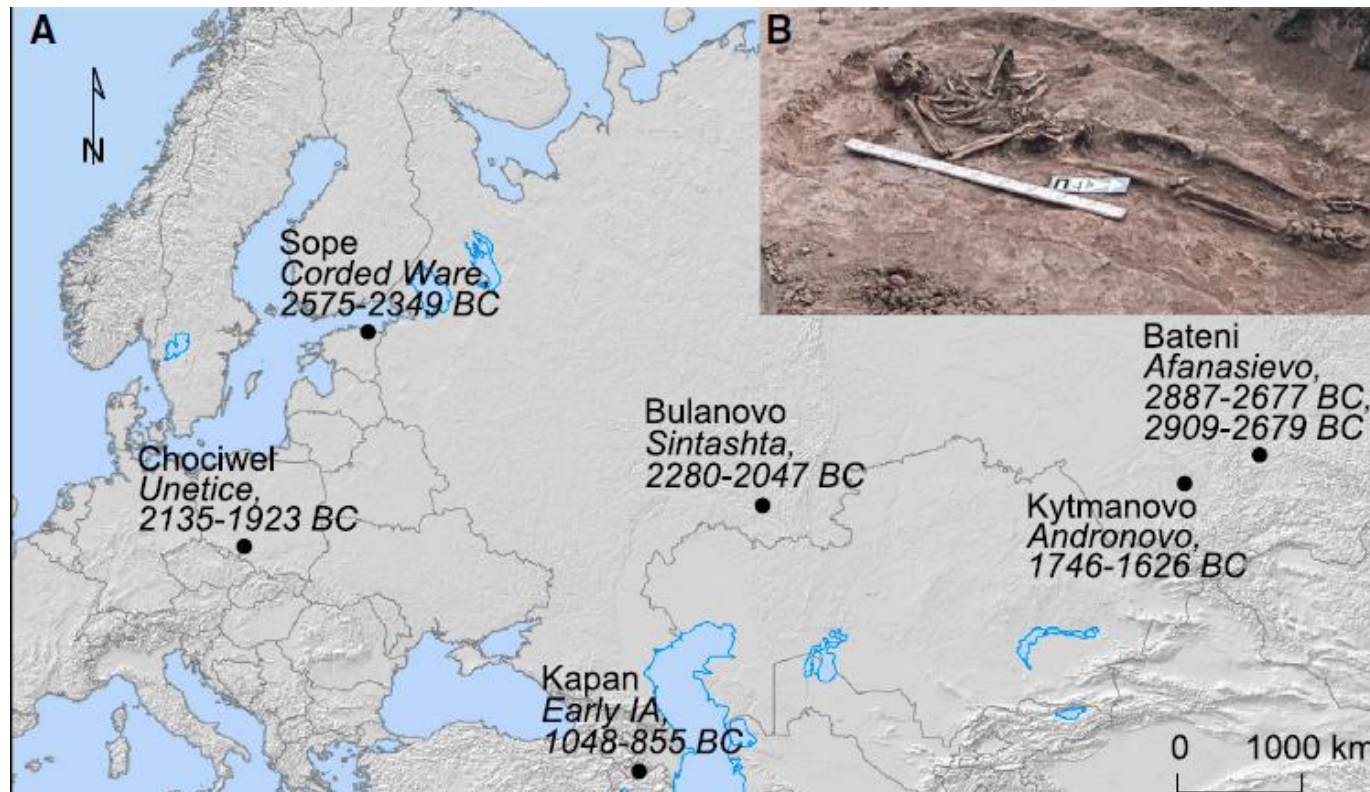
Cell 163, 571–582, October 22, 2015 ©2015 The Authors

Yersinia pestis was common across Eurasia in the Bronze Age

The most recent common ancestor of all *Y. pestis* was 5,783 years ago

The *ymt* gene was acquired before 951 cal BC, giving rise to transmission via fleas

Bronze Age *Y. pestis* was not capable of causing bubonic plague



Analysis of 3800-year-old *Yersinia pestis* genomes suggests Bronze Age origin for bubonic plague

Maria A. Spyrou^{1,2}, Rezeda I. Tukhbatova^{1,3}, Chuan-Chao Wang^{1,4}, Aida Andrades Valtueña¹, Aditya K. Lankapalli¹, Vitaly V. Kondrashin⁵, Victor A. Tsybin⁶, Aleksandr Khokhlov⁷, Denise Kühnert^{1,8}, Alexander Herbig¹, Kirsten I. Bos¹ & Johannes Krause^{1,2}

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Y. P. caused diseases prior to the first attested pandemic

abstract

The origin of *Yersinia pestis* and the early stages of its evolution are fundamental subjects of investigation given its high virulence and mortality that resulted from past pandemics. Although the earliest evidence of *Y. pestis* infections in humans has been identified in Late Neolithic/Bronze Age Eurasia (LNBA 5000–3500y BP), these strains lack key genetic components required for flea adaptation, thus making their mode of transmission and disease presentation in humans unclear. Here, we reconstruct ancient *Y. pestis* genomes from individuals associated with the Late Bronze Age period (~3800 BP) in the Samara region of modern-day Russia. We show clear distinctions between our new strains and the LNBA lineage, and suggest that the full ability for flea-mediated transmission causing bubonic plague evolved more than 1000 years earlier than previously suggested. Finally, we propose that several *Y. pestis* lineages were established during the Bronze Age, some of which persist to the present day.

The Stone Age Plague: 1000 years of Persistence in Eurasia

Aida Andrades Valtueña¹, Alissa Mittnik^{1,2}, Felix M. Key¹, Wolfgang Haak^{1,3}, Raili Allmäe⁴, Andrej Belinskij⁵, Mantas Daubaras⁶, Michal Feldman^{1,2}, Rimantas Jankauskas⁷, Ivor Janković^{8,9}, Ken Massy^{10,11}, Mario Novak⁸, Saskia Pfrengle², Sabine Reinhold¹², Mario Šlaus¹³, Maria A. Spyrou^{1,2}, [Anna Szecsenyi-Nagy](#)¹⁴, Mari Tõrv¹⁵, Svend Hansen¹², Kirsten I. Bos^{1,2}, Philipp W. Stockhammer^{1,10}, Alexander Herbig^{1,2*} and Johannes Krause^{1,2*}

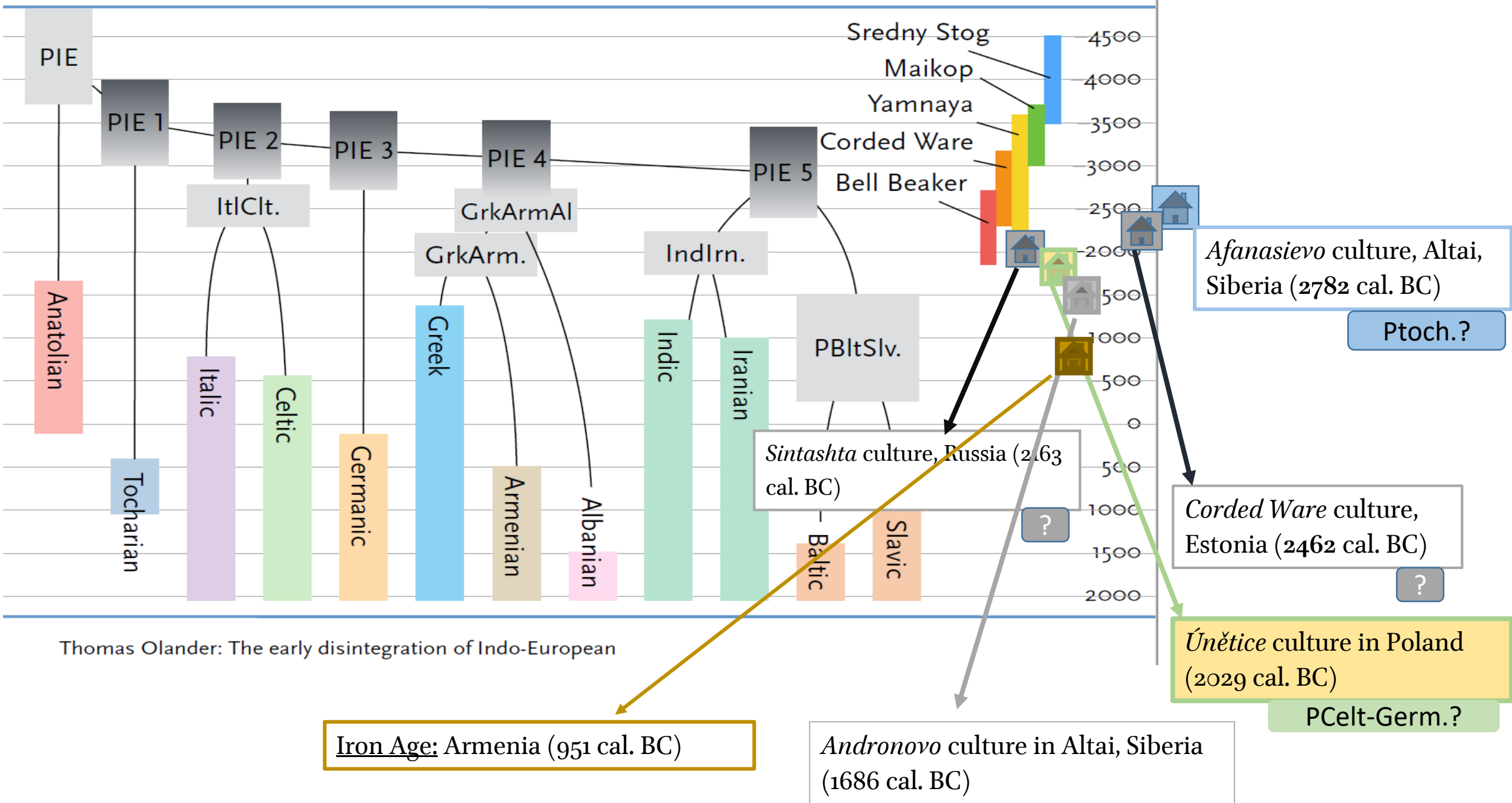
- six new *Y. pestis* genomes spanning from the European Late Neolithic to the Bronze Age (LNBA) dating from 4,800 to 3,700 BP

- *Y. pestis* may have entered Europe from Central Eurasia during an expansion of steppe people, persisted within Europe until the mid Bronze Age, and moved back towards Central Eurasia in parallel with subsequent human population movements.

- six novel *Y. pestis* genomes from Central Europe and the North Caucasus steppe spanning from the Late Neolithic to the Bronze Age.
- all LNBA strains form a single clade in the *Y. pestis* phylogeny
: a common origin of all currently identified *Y. pestis* strains circulating in Eurasia during the Late Neolithic and Bronze Age

- multiple strains circulating in Europe and Asia?

The Indo-European phylogenetic tree and archaeology



leprosy

Toch./Gk./Arm./Lat./Ilr./Celt.

IE

?

plague

Hitt./Toch./Arm./Gk./Lat./Sl./Balt.

IE

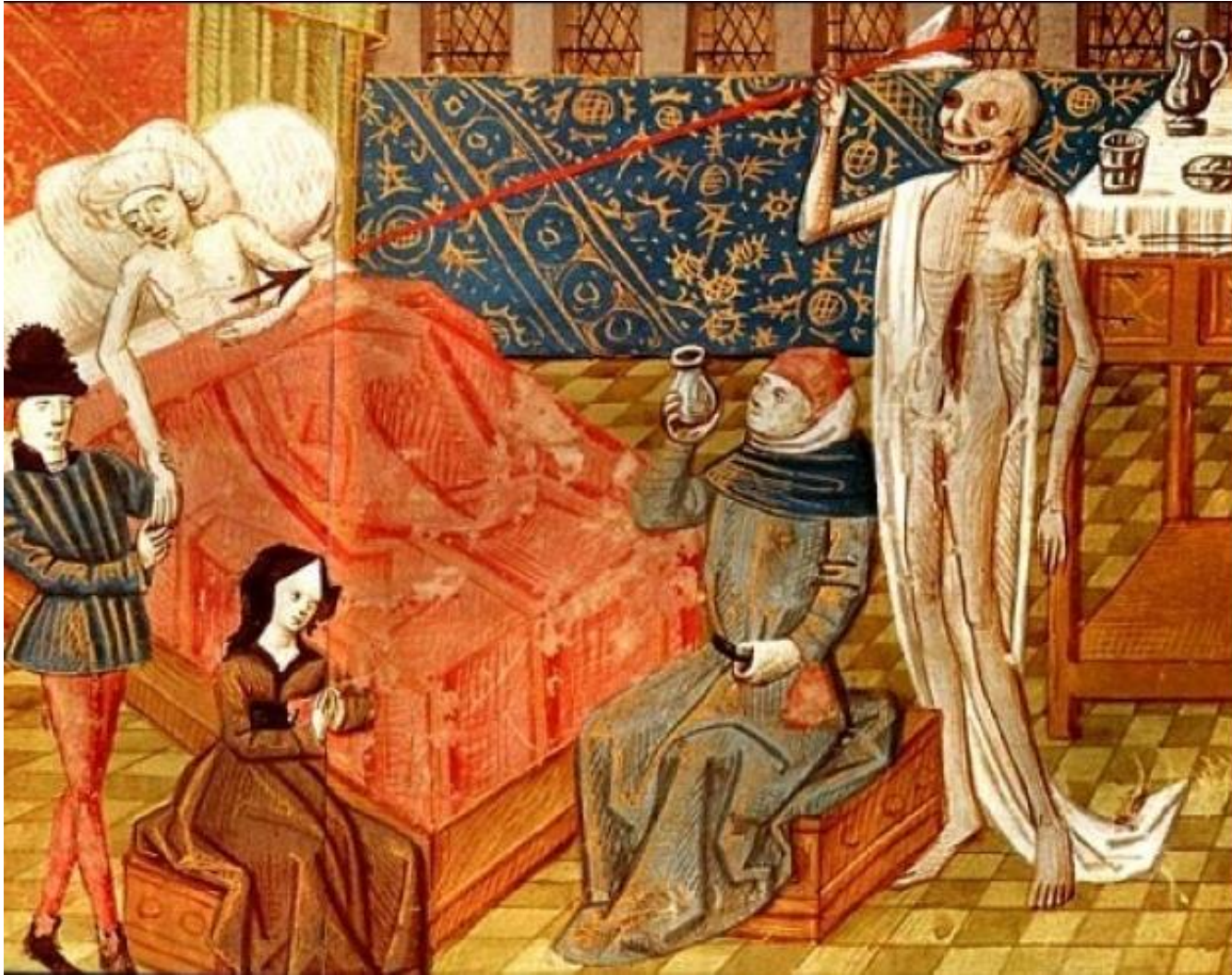
?

hepatitis B

Hitt./Toch./Arm./Gk.

IE

?



The *Plague*



Apollo Smintheus *Il*.1.35-52



πολλά δ' ἔπειτ' ἀπάνευθε κιὼν ἡράθ' ὃ γεραιὸς
Ἀπόλλωνι ἄνακτι, τὸν ἡϋκομος τέκε Λητώ:
κλυθί μευ ἀργυρότοξ', ὃς Χρύσην ἀμφιβέβηκας
Κίλλαν τε ζαθέην Τενέδοιό τε Ἴφι ἀνάσσεις,
Σμινθεῦ εἴ ποτέ τοι χαρίεντ' ἐπὶ νηὸν ἔρεψα,
ἢ εἰ δὴ ποτέ τοι κατὰ πίονα μηρί' ἔκηα
ταύρων ἢ δ' αἰγῶν, τὸ δέ μοι κρήνην ἐέλδωρ:
τίσειαν Δαναοὶ ἐμὰ δάκρυα σοῖσι βέλεσσιν.
ὥς ἔφατ' εὐχόμενος, τοῦ δ' ἔκλυε Φοῖβος Ἀπόλλων,
βῆ δέ κατ' Οὐλύμποιο καρήνων χωόμενος κῆρ,
τόξ' ὥμοισιν ἔχων ἀμφηρεφέα τε φαρέτρην:
ἔκλαγξαν δ' ἄρ' οἷστοι ἐπ' ὤμων χωόμενοι,
αὐτοῦ κινηθέντος: ὃ δ' ἦϊε νυκτὶ ἐοικώς.
ἔζετ' ἔπειτ' ἀπάνευθε νεῶν, μετὰ δ' ἰὸν ἔη
δεινὴ δὲ κλαγγὴ γένηετ' ἀργυρέοιο βιοῖο:
οὐρῆας μὲν πρῶτον ἐπώχετο καὶ κύνας ἀργυροὺς
αὐτὰρ ἔπειτ' αὐτοῖσι βέλος ἐχεπευκὲς ἐφίεις
βάλλ': αἰεὶ δὲ πυραὶ νεκύων καίοντο θαμειαί.

Silver bow

mice

He comes from
the Olympus
and he is angry

plague

And then, when he had gone apart, the old man prayed earnestly to the lord Apollo, whom fair-haired Leto bore: "Hear me, you of the silver bow, who have under your protection Chryse

and sacred Cilla, and who rule mightily over Tenedos and Smintheus, if ever I roofed over a pleasing shrine for you, or if ever I burned to you fat thigh pieces of bulls or goats, fulfill for me this wish:

let the Danaans pay for my tears by your arrows."

So he spoke in prayer, and Phoebus Apollo heard him.

Down from the peaks of Olympus he strode, angry at heart, with his bow and covered quiver on his shoulders.

The arrows rattled on the shoulders of the angry god as he moved; and his coming was like the night.

Then he sat down apart from the ships and let fly an arrow; terrible was the twang of the silver bow.

The mules he attacked first and the swift dogs, but then on the men themselves he let fly his stinging arrows, and struck; and ever did the pyres of the dead burn thick (A. T. Murray)

arrow

Rudra



Apollo



RV 1.114,7.8.10

7. *mā́ no mahā́ntam utá mā́ no arbhakám ' mā́ na úkṣantam utá mā́ na ukṣitám mā́ no vadhīḥ pitáram mótá mātáram ' mā́ naḥ priyās tanúvò rudra rīriṣaḥ*
8. *mā́ nas toké tánaye mā́ na āyaú ' mā́ no góṣu mā́ no áśveṣu rīriṣaḥ vīrān mā́ no rudra bhāmitó vadhīr ' havīṣmantaḥ sádām ít tvā havāmahe*
10. *āré te goghnám utá pūruṣaghnám ' kṣáyadvīra sumnám asmé te astu mṛḷá ca no ádhi ca brūhi deva ' ádhā ca naḥ sárma yacha dvibárhāḥ*

7. Not the great one among us nor the wee little one, not the growing one among us nor the grown--don't smite our father nor our mother. Don't harm our own dear bodies, **Rudra**.

8. Don't do harm to our progeny and posterity nor to our (own) lifespan, **not to our cows nor to our horses**. Don't smite our heroes, Rudra, when enraged. We, with our oblations, will always invoke you.

10. In the distance be your cow-smiting and men-smiting (anger). You who rule over heroes, let your favor be on us.

Rudra



Apollo



AVŚ 11.2.1

*bhāvāśarvau mṛḍātaṃ mābhí yātaṃ bhūtapatī pásupati námo vām
prátihitām áyatāṃ má ví srāṣṭam má no himsiṣṭam dvipádo má cátuṣpadaḥ*

‘O Bhava-and-Çarva, be gracious; do not go against (us); ye lords of beings,
lords of cattle, homage to you! (the arrow) that is fitted, that is drawn, do not
let fly; do not harm our bipeds nor quadrupeds’

A black and white photograph of a marble statue of Apollo, the Greek god of music, poetry, and the sun. The statue is shown in a dynamic, contrapposto pose, standing on a rectangular base. He is depicted as a young man with curly hair, wearing a short chiton. He holds a long, curved bow in his left hand and an arrow in his right hand, which is raised towards his head. The statue is set against a dark background.

KBo 3.46 obv. 33

hurla=ma=ššan henkan sija[er]

‘(The gods have protected Hurma), but they shot/hurled the plague at the Hurrian (and the Hurrian army began to die)’

CHD Š: 20, Kempinski - Košak 1982: 89, 92 'hurled', Soysal 2000: 97 n. 20 'shot'

§1

1 [dI]M URU_{ḫatti} BELI-YA [... BEL] U^{MEŠ}-YA [...]

4 kī=wa kwit iyatten

5 nu=wa=kan INA ŠÀ-BI KUR URU_{ḫatti} ḫinkan tarnatten

6 nu=wa KUR URU_{ḫatti} ḫinganaz arumma mekki tamaštat

7 nu=wa PAN ABI-YA PAN ŠEŠ-YA akkišketat

10 kāš MU-20^{KAM}

11 kwit=kan INA ŠÀ KUR URU_{ḫatti} akkiškettari

12 nu=kan IŠTU KUR URU_{ḫatti} ḫinkan [a]rḫa UL=pat taruptari

§5 [...]

64 nu LÚ^{MEŠ} appa[ndan] kwin ēpper

65 n=an mahḫan INA KUR URU_{ḫatti} EGIR-pa uwatēr

66 nu=kan INA ŠÀ-BI LÚ.MEŠŠU.DAB.BIḪLA ḫinkan kišat

67 n=aš a[k]kiškewan d[āiš]

§6

70 nu=kan INA ŠÀ KUR_{ḫatti} apēzz(a) UD^{KAM}-az akkiškettari

§1

1 [Wetter]gott von Ḫatti, mein Herr, [und (ihr) Götter von Ḫatti,] meine [Herr]en [...]

4 Dies (ist es) was ihr getan habt:

5 Ihr habt die Seuche ins Innere des Landes Ḫatti gelassen

6 und das Land Ḫatti wurde von der Seuche überaus heftig bedrückt.

7 Es wurde unter meinem Vater (und) meinem Bruder gestorben.

10 Dies (ist) das 20. Jahr,

11 dass im Inneren des Landes Ḫatti gestorben wird.

12 Die Seuche wird aus dem Lande Ḫatti nicht [f]ort(geschafft und) beendet.

§ 5 [...]

64 Die Kriegsgefangenen, die sie ergriffen,

65 [a]ls sie sie ins Land Ḫatti (mit sich) zurückbrachten,

66 entstand (unterwegs) eine Seuche unter den Kriegsgefangenen.

67 Seither s[t]arb[en] sie (beständig).

§ 6

70 Seit jenem Tag wird im Inneren des Landes Ḫatti gestorben.

(Rieken et al. Hethitologie Portal, Mainz)

Apollo



Rudra



Rešep

Syrian god; God of War, Thunder and Pestilence



Rudra



Apollo



Rešep

Syrian god; God of War, Thunder and Pestilence

prayer of Anat to Ba'al to keep the arrows of Rešep away :

KTU 1.82,3-4 [yš]b*/d*t. b'l. ḥṣ. ršp/bn*. km. yr. klyth. wblh

May Ba'al take away the arrow of Rešep when R. shoots **his arrow** at his **kidneys and at his heart** (de Moor/Spronk 1984:24, Niehr 2003:87)

Cf. Ugar. ršp ḥṣ 'Rešep Lord of the Arrow', cf. ršp ḥgb 'R. the gatekeeper', ršp šb 'R. of the army'

Rešep as healer:

KTU 1.123,30-32 šlm il ḥšm / ršp inš i[lm] / drm ilm

Hail, god of the tomb / Rešep, of the deified ancestors / the families of gods

Rudra



AV 6.90

1 *yām te rudrá iṣum ásyad áṅgebhyo hṛdayāya ca*
idām tām adyá tvád vayām viṣūcīm ví vrhāmasi
2 *yās te śatām dhamānayo 'ṅgāny ānu viṣṭhitāḥ*
tāsām te sárvasām vayām nír viṣāṇi hvayāmasi

1. The **arrow that Rudra hurled at thee, at thy limbs and heart**, that do we now thus eject asunder from thee.
2. The hundred tubes that are thine, distributed along thy limbs, of all these of thine do we call out the poisons

RV 2.33.2

tvādattebhī rudra śamtamebhiḥ ' śatām hīmā aśīya bheṣajébhiḥ
vṛ àsmád dvéṣo vitarām vṛ áṃho ' vṛ ámīvāś cātayasvā viṣūcīḥ

2. Through the **remedies** given by you that bring best luck, Rudra, might I reach a hundred winters.

Banish hatred away from us, very far away, distress away, and afflictions away, widely scattered.

4cd *ún no vīrām arpayā bheṣajébhīr ' bhiṣáktamaṃ tvā bhiṣájām śṛṇomi*

Set up our heroes **with your remedies**: I hear that you are **the best healer of healers**.

Rešep

Syrian god; God of War, Thunder and Pestilence

prayer of Anat to Ba'al to keep the arrows of Rešep away :

KTU 1.82,3-4 [yš]b */d*t. b'l. ḥṣ. **ršp/bn***. km. yr. klyth. wblh
May Ba'al take away the **arrow of Rešep** when R. shoots his arrow at his **kidneys and at his heart** (de Moor/Spronk 1984:24, Niehr 2003:87)

Cf. Ugar. *ršp ḥṣ* 'Rešep Lord of the Arrow', cf. *ršp ḥgb* 'R. the gatekeeper', *ršp šb* 'R. of the army'

Rešep as healer:

KTU 1.123,30-32 *šlm il ḥšm / ršp inš i[lm] / drm ilm*

of the deified ancestors / the



Rudra

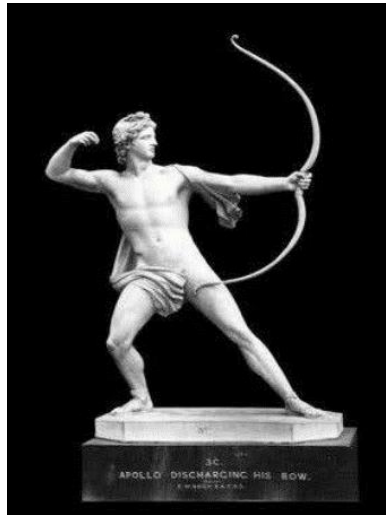


Rešep

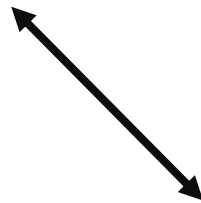
Syrian god; God of War, Thunder and Pestilence



Apollo

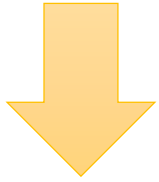


Maruts





Maruts: the archers *of the sky*



How are their
arrows?

RV 1.64.10cd (Indra)

ástāra iṣuṃ dadhire gábhastyor' anantásuṣmā vṛṣakhādayo náraḥ
“The **archers** have taken their arrows in their fists, **the superior men of endless tempests** and bullish bangles”

IId [...] *marúto bhrájadṛṣṭayaḥ* ‘[...] the Maruts with their **glinting spears**’

RV 8.20.11

samānám añjy eṣāṃ / ví bhrājante
rukṃáso ádhi bāhúṣu
dávidyutat y ṛṣṭáyaḥ

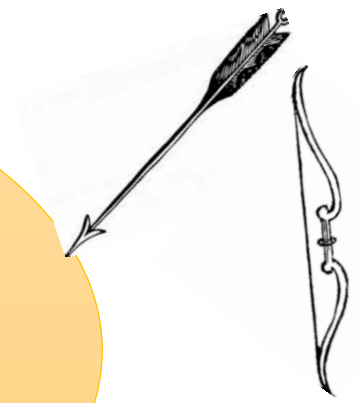
“(Maruts) Common to them (all) is their unguent; their **brilliant glint** on their arms. **Their spears keep flashing.**”

RV 1.172.2

āré sá vaḥ sudānavo ' māruta ṛñjatí sáruḥ
āré ásmā yám ásyatha

In the distance be **your straight-aiming arrow**, you Maruts rich in drops, in the distance the stone that you hurl.

Arrows are... **bright – feathered - swift**



RV 1.148.4cd
ád asya vāto ánu vāti śocír '
ástur ná śáryām asanām ánu dyún
“after that the **wind fans his flame, like an arrow, the shot of a shooter**, through the days.

RV 8.77.7
śatábradhna ísus táva '
sahásraparṇa éka ít
yám indra cakṛśé yújam
“Your arrow with a hundred **ruddy glints and a thousand feathers** was the single one that you made into your yokemate, o Indra.”

RV 6.46.11
ád^ha smā no vṛdhé bhav_a '
ṇdra nāyām avā yudhí
yád antárikṣe patáyanti parṇíno '
didyávas tigmámūrdhānaḥ
“So then, as ever, be there to strengthen us. Indra, help our leader in the fight, when the **feathered, sharp-headed arrows** fly in the midspace”

sharp!

RV 1.66.7 (Agni)
séneva sṛṣṭāmaṇ dadhāt y
ástur ná didyút tveṣápratīkā
“Set loose like an army, he initiates an onslaught, **like the arrow of an archer with its dazzling point.**”

RV 7.46.1ab
imā rudráya sthirádhanvane gíraḥ ' *kṣipréṣave devāya*
svadhāvne
“Bring these songs to Rudra, whose **bow is taut and whose arrow is swift**”

Apollo Smintheus *Il*.1.35-52



πολλά δ' ἔπειτ' ἀπάνευθε κιὼν ἡράθ' ὃ γεραιὸς
Ἀπόλλωνι ἄνακτι, τὸν ἡϋκομος τέκε Λητώ:
κλυθὶ μευ ἀργυρότοξ', ὃς Χρύσην ἀμφιβέβηκας
Κίλλαν τε ζαθέην Τενέδοιό τε Ἴφι ἀνάσσεις,
Σμινθεῦ εἴ ποτέ τοι χαρίεντ' ἐπὶ νηὸν ἔρεψα,
ἢ εἰ δὴ ποτέ τοι κατὰ πίονα μηρί' ἔκηα
ταύρων ἢ δ' αἰγῶν, τὸ δέ μοι κρήνην ἐέλδωρ:
τίσειαν Δαναοὶ ἐμὰ δάκρυα σοῖσι βέλεσσιν.
ὥς ἔφατ' εὐχόμενος, τοῦ δ' ἔκλυε Φοῖβος Ἀπόλλων,
βῆ δέ κατ' Οὐλύμποιο καρήνων χωόμενος κῆρ,
τόξ' ὥμοισιν ἔχων ἀμφηρεφέα τε φαρέτρην:
ἔκλαγξαν δ' ἄρ' οἷστοι ἐπ' ὤμων χωομένοιο,
αὐτοῦ κινηθέντος: ὃ δ' ἦϊε νυκτὶ εἰοικώς.
ἔζετ' ἔπειτ' ἀπάνευθε νεῶν, μετὰ δ' ἰὸν ἔην
δεινὴ δὲ κλαγγὴ γένητ' ἀργυρέοιο βιοῖο:
οὐρῆας μὲν πρῶτον ἐπώχετο καὶ κύνας ἀργυροὺς
αὐτὰρ ἔπειτ' αὐτοῖσι βέλος ἔχεπευκὲς ἐφίεις
βάλλ': αἰεὶ δὲ πυραὶ νεκύων καίοντο θαμειαί.

Silver bow

mice

He comes from
the Olympus
and he is angry

plague

And then, when he had gone apart, the old man prayed earnestly to the lord Apollo, whom fair-haired Leto bore: "Hear me, you of the silver bow, who have under your protection Chryse

and sacred Cilla, and who rule mightily over Tenedos and Smintheus, if ever I roofed over a pleasing shrine for you, or if ever I burned to you fat thigh pieces of bulls or goats, fulfill for me this wish:

let the Danaans pay for my tears by your arrows."

So he spoke in prayer, and Phoebus Apollo heard him.

Down from the peaks of Olympus he strode, angry at heart, with his bow and covered quiver on his shoulders.

The arrows rattled on the shoulders of the angry god as he moved; and his coming was like the night.

Then he sat down apart from the ships and let fly an arrow; terrible was the twang of the silver bow.

The mules he attacked first and the swift dogs, but then on the men themselves he let fly his stinging arrows, and struck; and ever did the pyres of the dead burn thick (A. T. Murray)

arrow



The Maruts and the thunderbolt

(feat. Agni and the sharp teeth)

RV 1.88.5 (Maruts)

*etát tyán ná yójanam aceti ' sasvár ha yán maruto gótamo vaḥ
páśyan hīraṇyacakrān ' áyodaṃṣṭrān vidhāvato varāhūn*

“Just now it has appeared, not (even) a wagon-trek away—the (formulation) that Gotama (has made) in private for you, Maruts, upon seeing your golden-wheeled (chariots) and (you) **copper-tusked boars** streaking across (the sky)”

RV 1.143.5

*ná yó várāya marútām iva svanáḥ ' séneva sṛṣṭá divyá yáthāśániḥ
agnír jámbhais tigitaír atti bhárvati ' yodhó ná sátṛūn sá vānā nṇjate*

“Who is not to be hindered, like the roar of the Maruts, like an army unleashed, like a **heavenly missile**, with his sharp fangs Agni eats; he devours. Like a fighter his rivals, he bears down on the trees.”

RV 1.66.6 (Maruts)

*na ugrā marutaḥ sucetúnā ' áriṣṭagrāmāḥ sumatím pipartana
o didyúd rádati krívirdatī ' riṇāti paśváḥ súdhiteva barhāṇā*

mighty Maruts, you invulnerable band--with kind attention deliver our benevolence.

your missile with its gory teeth scrapes (a path), mightily it **eats (the trees)** as a well-placed (goad) sets the livestock flowing.”

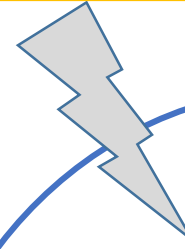
If arrows ...



are swift
are bright
are feathered
bring diseases/plague
are thunderbolts (: Maruts)



And why?



Then
might the plague
be represented as
a thunderbolt?

Thunderbolt's plague = a *fulminant* plague?

Aesch.*Pers.*715-716

Δα. τίνι τρόπῳ; λοιμοῦ τις ἦλθε σκηπτὸς ἢ στάσις πόλει;

Βα. οὐδαμῶς, ἀλλ' ἀμφ' Ἀθήνας πᾶς κατέφθαρται στρατός.

- How did it happen? Did some stroke of plague or factional strife come upon the State?
- Neither; but near Athens our whole host has been brought to ruin.



Thank you for your
attention!

Danse Macabre, fresco on the *Black Plague* from the XIV century
Oratorio dei Disciplini, Church of Clusone (Bergamo, Italy)