

Indo-European languages

Celtic



ech

Germanic



ehwa



hweula



ahsō

Latin



equus



axis

Slavic



osb

Baltic



ašvā



ašis

Greek



híppos



kúklos



áxōn

Armenian



ēš

Iranian



aspa



caxra



aša

Indic



áśva



cakrá



ákṣa

Proto-Indo-European



h₁ékú-

horse



k^wek^wlo-

wheel



h₂éks-

axle

Gimbutas 1956

Mallory 1991

Haak et al. 2015



Tocharian



kokale

Inherited IE words vs. loanwords

Regular sound correspondences in reconstructed Indo-European words:

	Germanic	Latin	Greek		Sanskrit	Indo-European
mother	mō <u>p</u> er	mā <u>t</u> er	mét <u>ē</u> r	→	mā <u>t</u> ar	__t__
three	br <u>ī</u> z	tr <u>ē</u> s	tr <u>ē</u> is	→	tr <u>ā</u> yas	t_____
tooth	tan <u>p</u>	du <u>nt</u> -	ódu <u>nt</u> -	→	du <u>nt</u> -	d_t_
ten	te <u>h</u> un	de <u>c</u> em	de <u>k</u> a	→	da <u>ś</u> a	d_____

Erratic sound correspondences in European loanwords:

lentil	lin <u>t</u>	len <u>t</u>	lát <u>h</u> uros	↓	__d	__t	__d ^h __	→	×
pea	arw <u>i</u> t	erv <u>u</u> m	erébint <u>h</u> os	↓	__w_d	__w	__b_d ^h	→	×

Crop names in the Indo-European languages

Celtic

arp-

Latin

ervum

faba

lent-

rāpa

Germanic

arwīt

baunō

lint-

rōbō

Slavic

bobъ

Greek

erébinth^hos

lát^huros

rháp^hus

Baltic

rópė

Armenian

Iranian

Indic

Tocharian

Proto-Indo-European

	<input checked="" type="checkbox"/>	pea
	<input checked="" type="checkbox"/>	bean
	<input checked="" type="checkbox"/>	lentil
	<input checked="" type="checkbox"/>	turnip

Olalde et al.
MBE, 2015

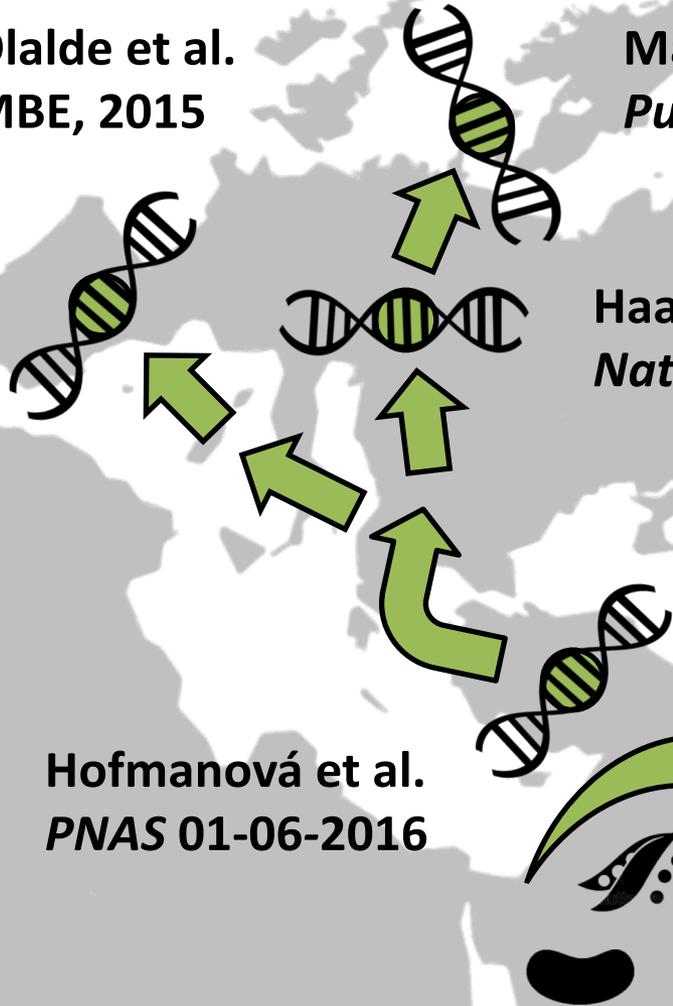
Malmström et al.
PudMed 2012

Haak et al.
Nature 2015

Lazaridis et al.
Biorxiv 16-06-2016

Hofmanová et al.
PNAS 01-06-2016

Agricultural Transition
(10 000 – 4 000 BC)

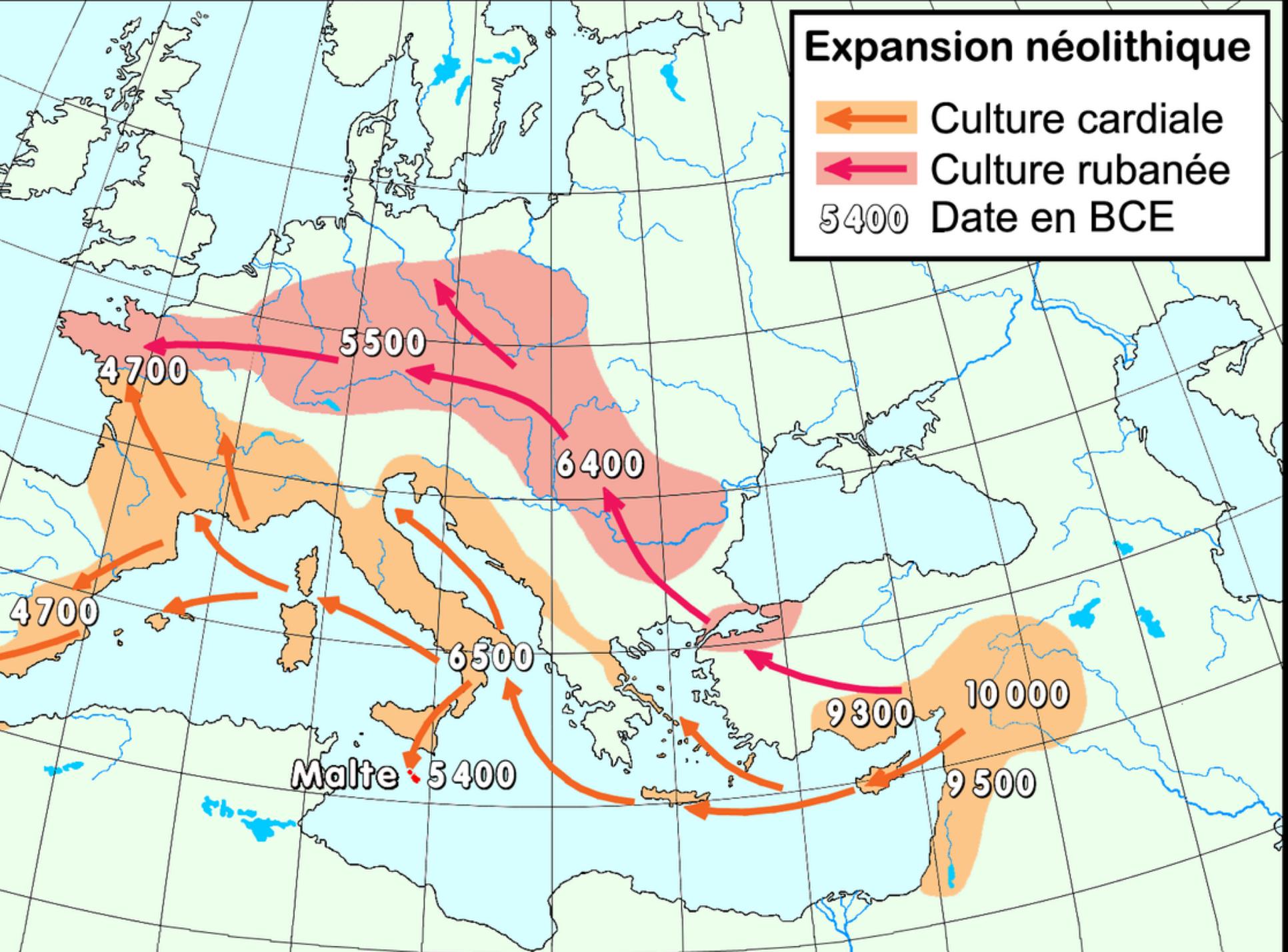


Expansion néolithique

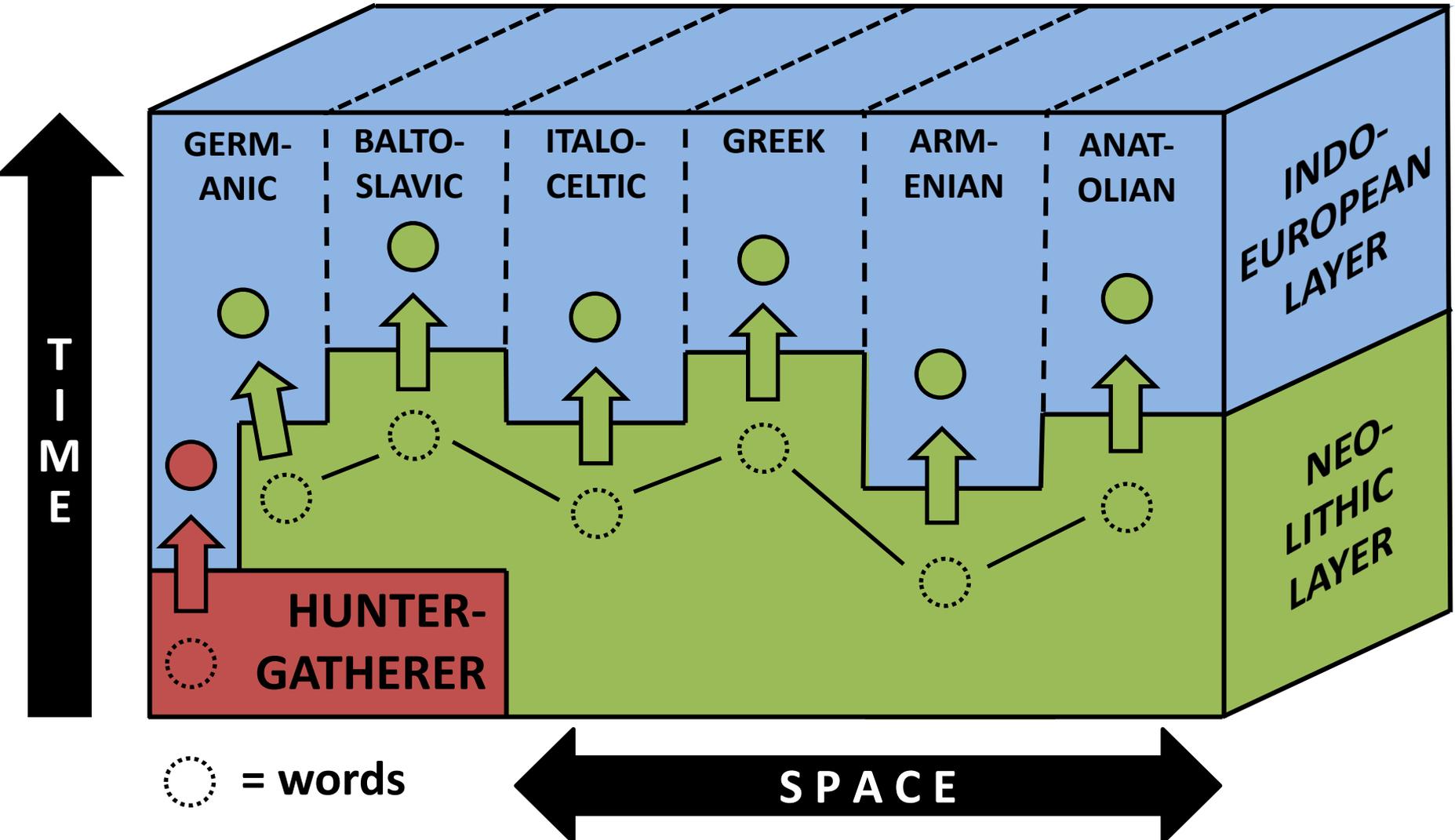
← Culture cardiale

← Culture rubanée

5400 Date en BCE



Schematic Model of Language Contact in Europe ±5-4 kya





**known
non-Indo-
European
languages**

Sámi

Finnish

Estonian

Basque

†Tar-
tessian

†Palaeo-
Iberian

†Rhaetic

†Etruscan

Hungarian

†Palaeo-
Sardinian

†Elymian

Berber

†Sicanian

†Lemnian

†Minoan

†Hattic

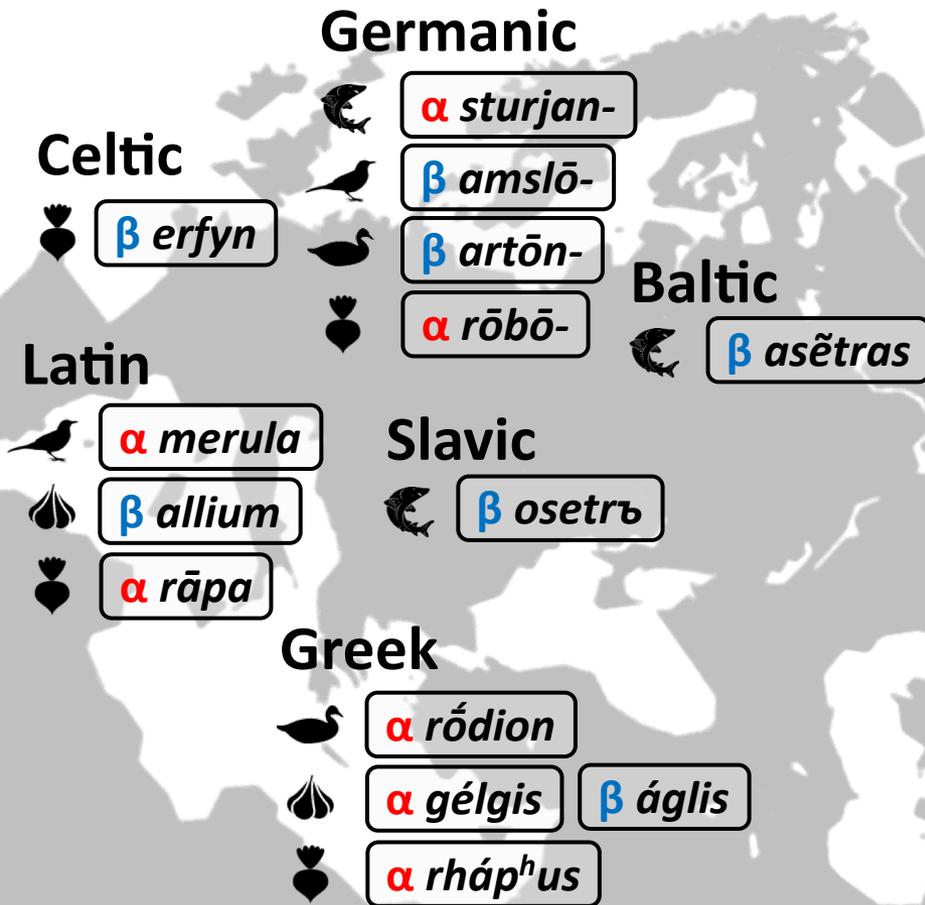
Caucasian

†Eteocrete

†Hurrian

†Eteocypriot

Semitic



Proto-Neolithic form			
	α	β	
🦆	<i>str</i>	<i>a-setr</i>	sturgeon
🐦	<i>mesl</i>	<i>a-msl</i>	blackbird
🦆	<i>rōd</i>	<i>a-rd</i>	duck?
🌱	<i>gedl</i>	<i>a-gdl</i>	garlic
🌱	<i>rap</i>	<i>a-rp</i>	turnip

Iranian

Tocharian

Indic

Recurrent α -alternation in many non-Indo-European words

Celtic

☛ α *kolesno-*

☘ α *semmar-*

Basque

☛ β *golosti*

Sardinian

☛ β *gorosti*

Greek

☛ *kélastros*

Germanic

☛ α *hulisa-*

☘ β *smēr-*

Georgian

☘ *samqura*

Armenian

☛ β *kostfi*

Iranian

Indic

European Neol. forms

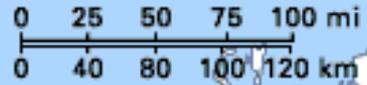
	α	β	
☛	<i>koles</i>	<i>golost(r)</i>	holly
☘	<i>semh₁r</i>	<i>smeh₁r</i>	clover

The Georgian word has a good Kartvelian etymology: *sam* = '3' + *qur* = 'ear', cf. Lat. *tri-folium*.

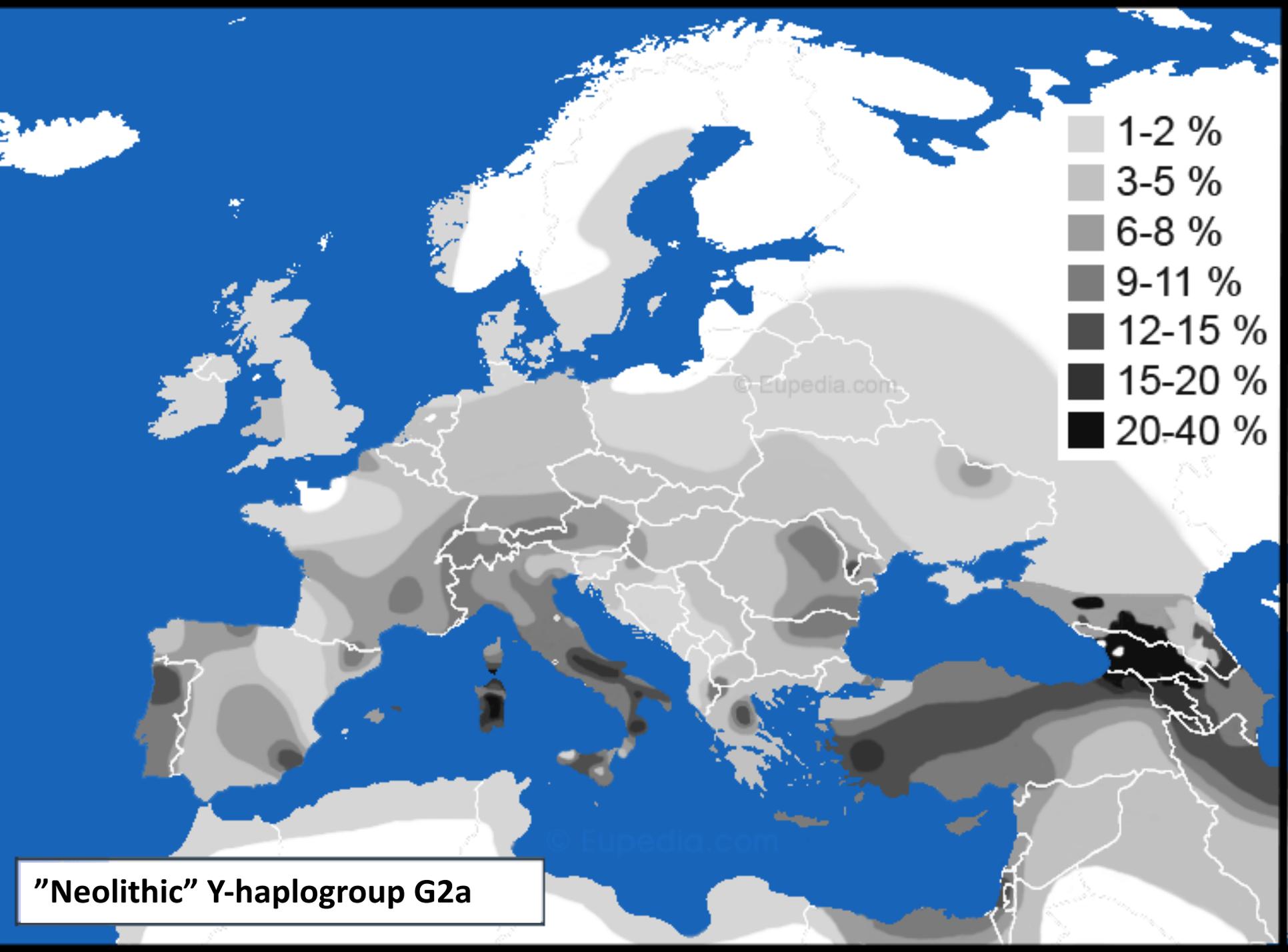
Celtic-Germanic: *s-m-h₁-r

Kartvelian: *s-m-q-r

Two old non-Indo-European botanical terms



- NORTHWEST
(ABKHAZO-ADYGHIAN)
- NORTHEAST
(NAKHO-DAGESTANIAN)
- Nakh
- Dagestanian
- SOUTH
(KARTVELIAN)



"Neolithic" Y-haplogroup G2a

Schematic Model of Language Contact in Europe ±5-4 kya

