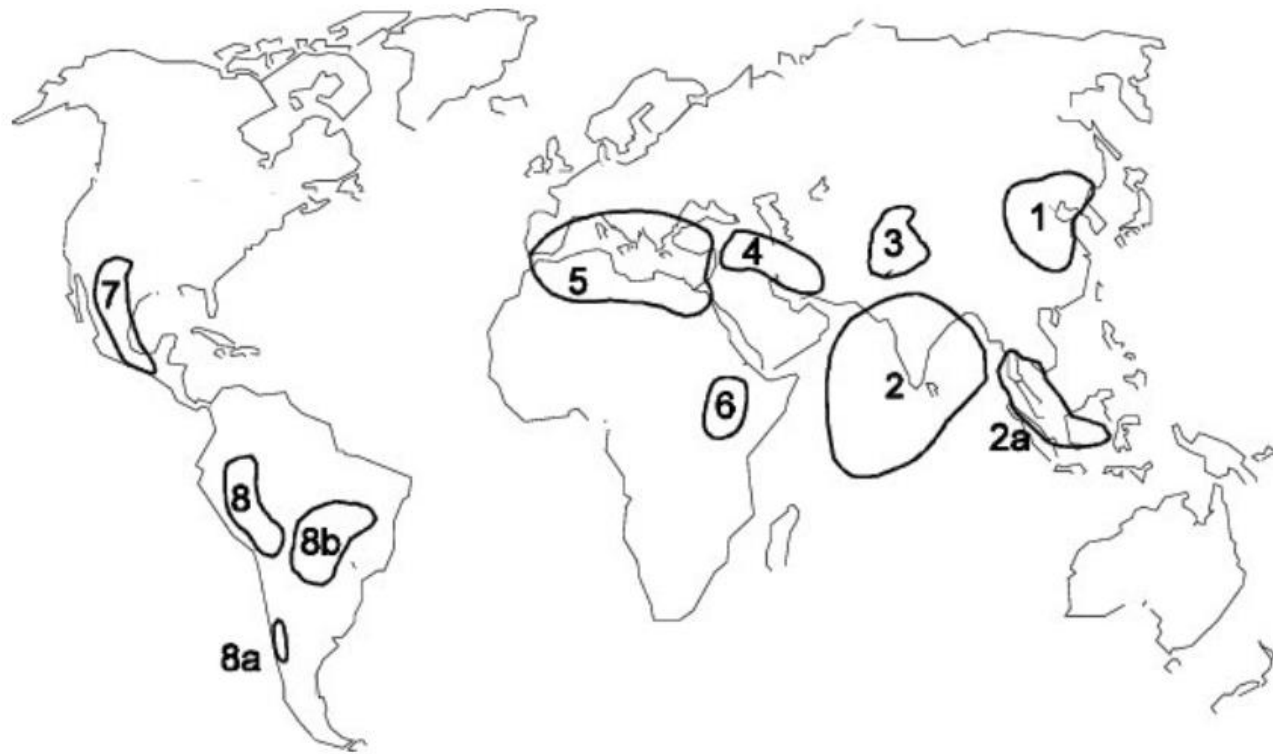


I centri di domesticazione delle piante orticole e frutticole

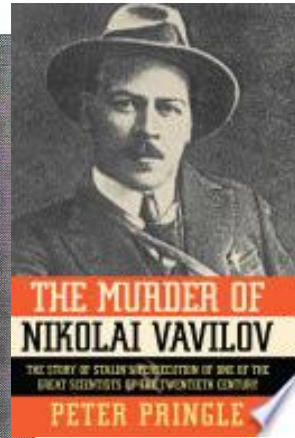
Osvaldo Failla, MULSA



Vavilov, N.I. (1926), Studies on the origin of cultivated plants. Leningrad: Institute of Applied Botany and Plant Breeding, , 78 p



Nikolai Vavilov in his institute office in Leningrad, 1935. On the desk is a map of his “centers of origin” of cultivated plants, the inspiration for his global seed bank, his greatest scientific achievement.



VAVILOV, PADRE FONDATORE
DELLA GENETICA AGRARIA

Second International Congress on the History of Science and Technology

London, June 29 - July 4, 1931



Attraverso la conoscenza del passato, studiando gli elementi dai quali si è sviluppata l'agricoltura, raccogliendo le piante coltivate e gli animali domestici negli antichi centri di origine dell'agricoltura, noi cerchiamo di dominare i processi storici. Noi vogliamo capire come modificare le piante coltivate e gli animali domestici secondo le attuali esigenze.

THE ACADEMY OF SCIENCES OF THE U.S.S.R.
THE SECTION OF CHEMICAL, TECHNICAL
AND BIOLOGICAL SCIENCES

N. I. VAVILOV

Origin and Geography
of Cultivated Plants

DEPARTMENTAL EDITOR
V. F. Dorofeyev
*Academician of the V. I. Lenin All-Union
Academy of Agricultural Sciences*

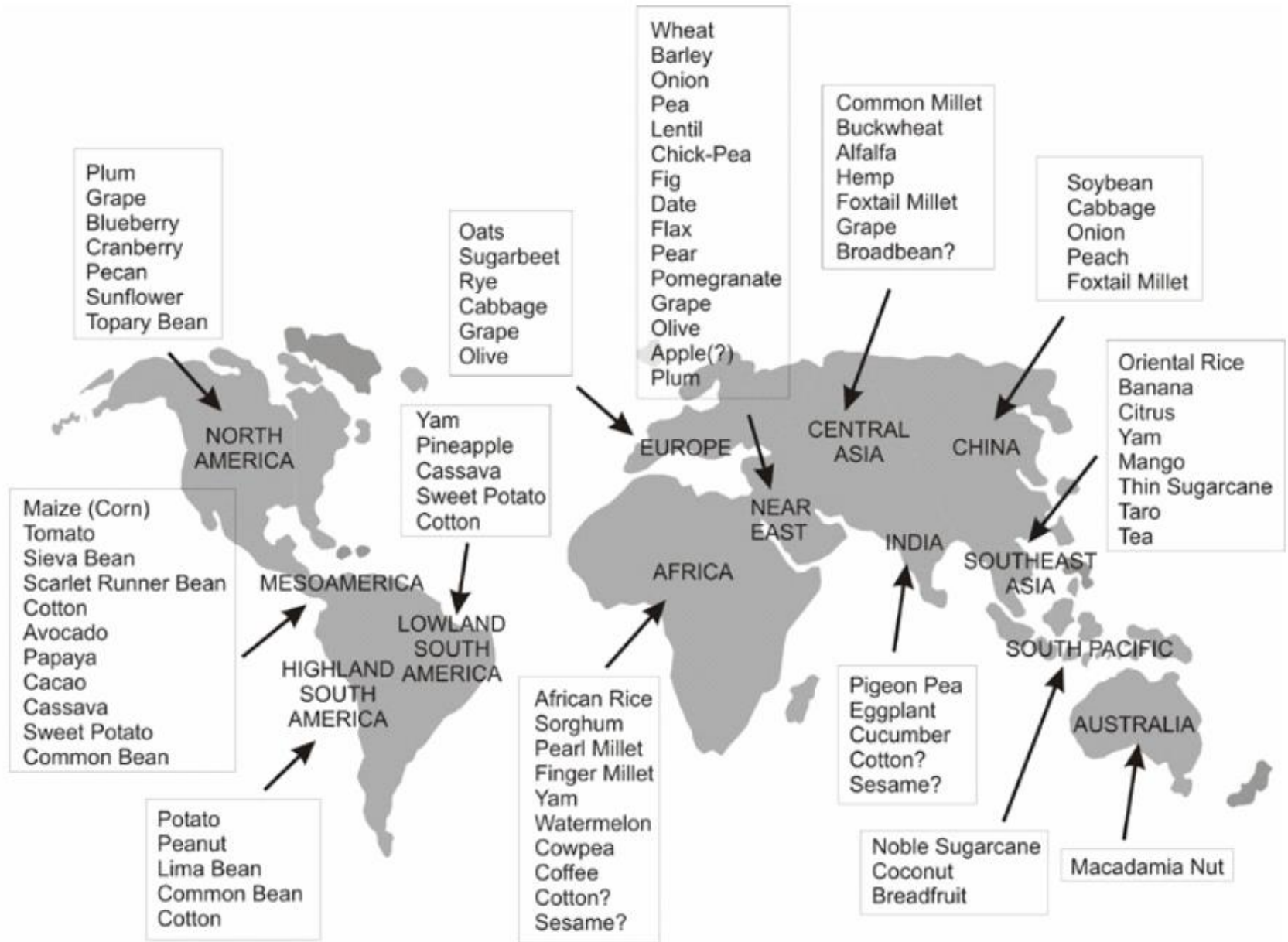
Translated by
DORIS LÖVE

 CAMBRIDGE
UNIVERSITY PRESS

Sulla base di ricerche botaniche di questo genere, acquistano grande valore i dati dell'archeologia, della storia e della linguistica. Confrontati con specie botaniche determinate, possono a volte significativamente integrare e approfondire le conoscenze del passato delle piante coltivate.



**Jack R. Harlan
(1917-1998)**



Centers of Origin - Regions of the world where major food crops were domesticated (Harlan, 1976).

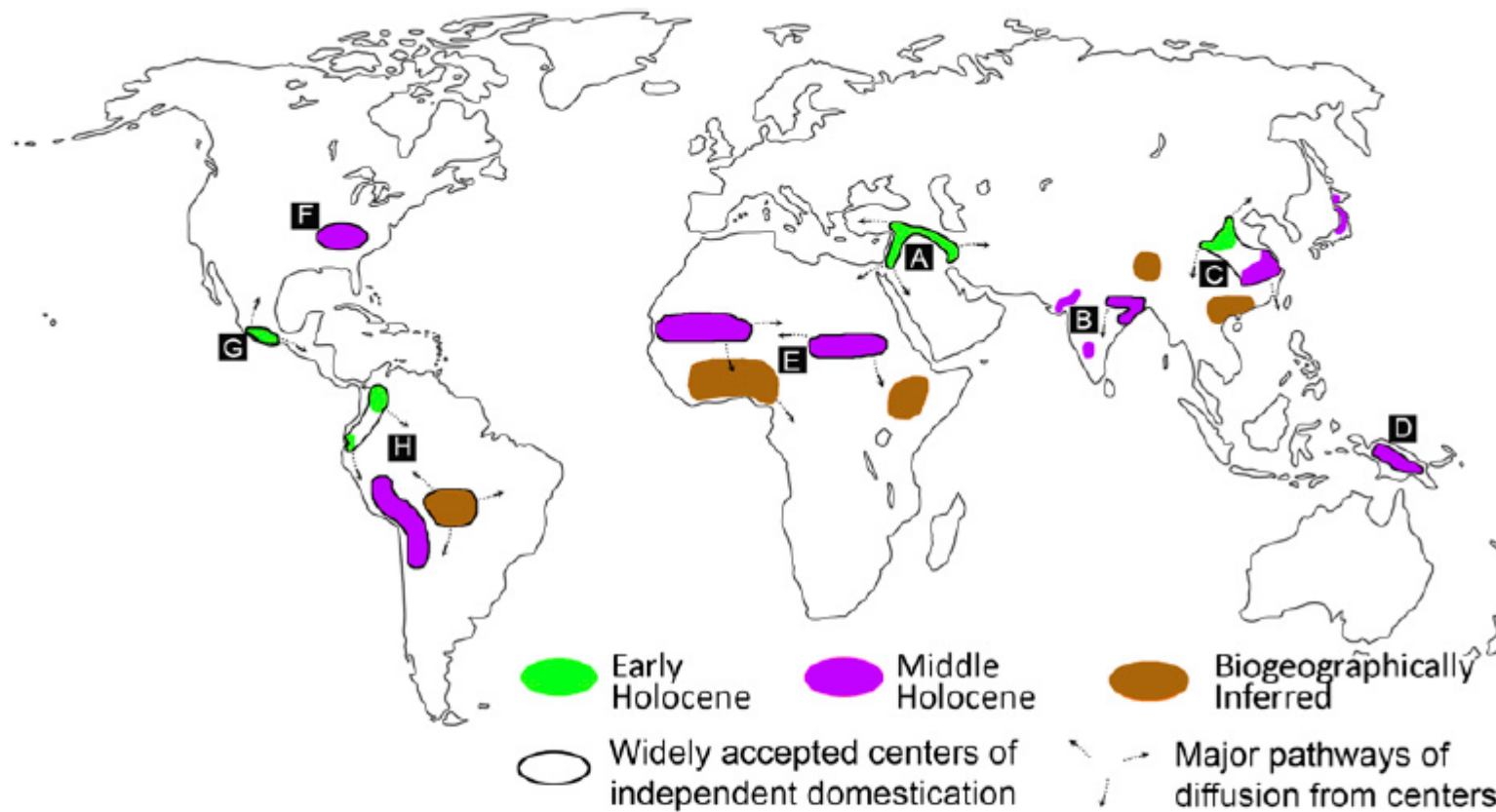


Fig. 1. A map depicting likely centers where the domestication of at least one plant or animal took place. Black outlines surround the most widely accepted independent centers of domestication, and sources of major diffusions of domesticates are indicated by arrows. Green and purple regions, respectively, are those where the domestication process took place during the late Pleistocene to early Holocene transition (12,000–8,200 B.P.), and in the middle Holocene (8,200–4,200 B.P.). Brown regions represent areas where, at present, the evidence for domestication is interpreted based upon the presence of domestic forms indigenous to these regions found outside of their native distributions. Letters A–H correspond to those listed in Fig. 2. Additional detail and references associated with each region are found in the *SI Text*.

PNAS, 2014

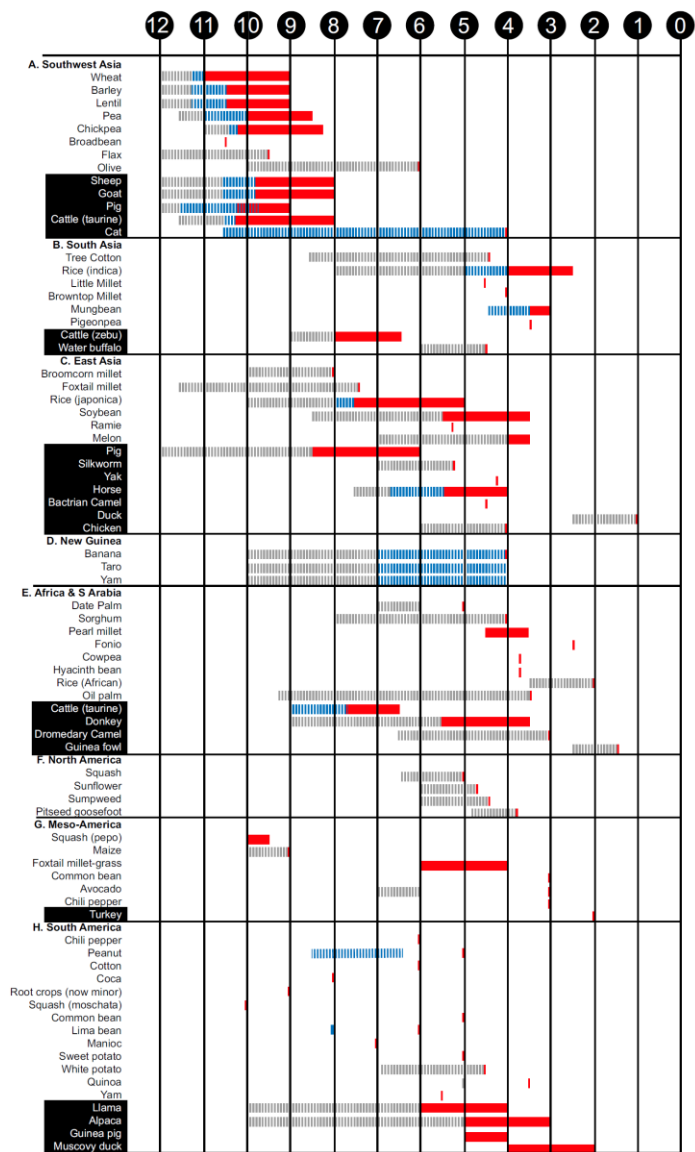
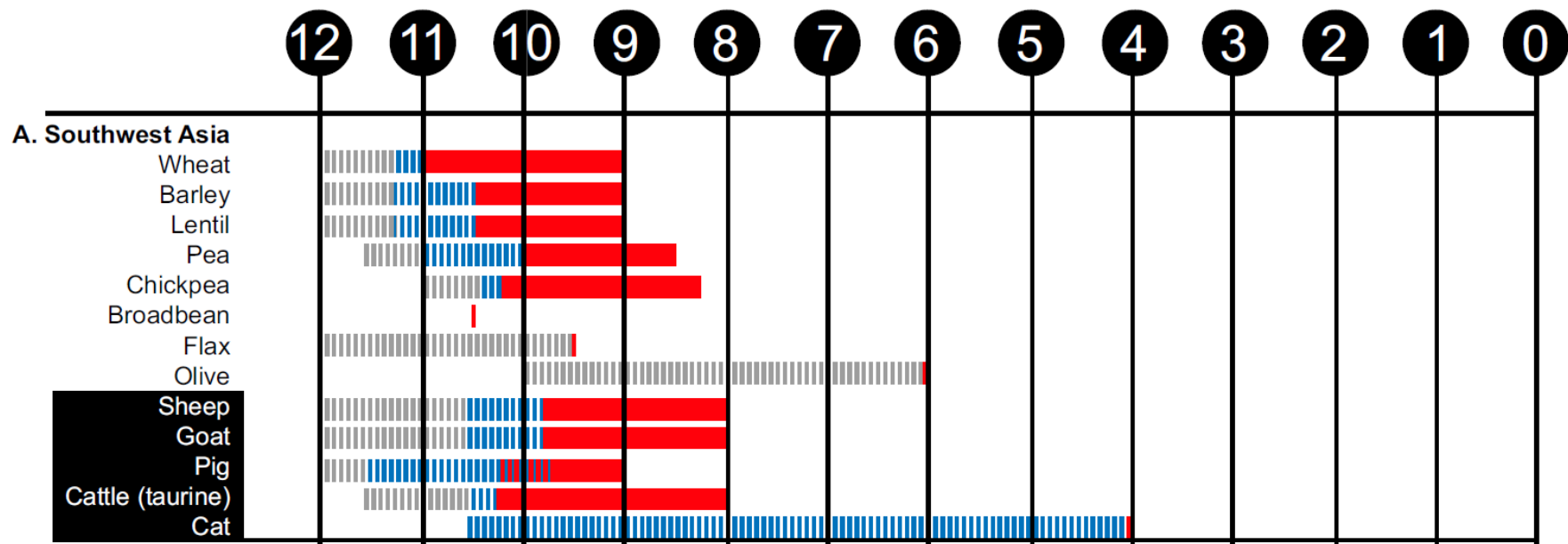
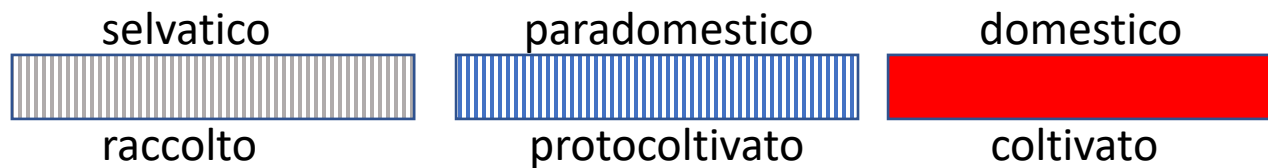


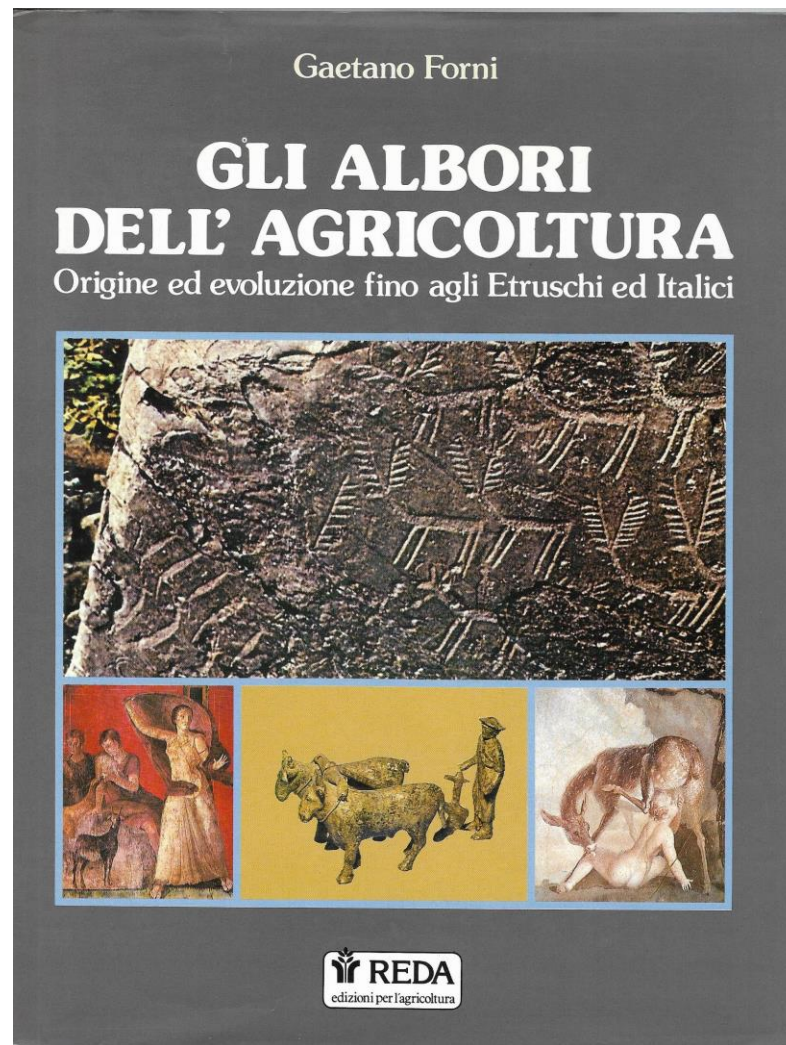
Fig. 2. A chronological chart listing the regions where, and the time frames over which, key plants and animals were domesticated. The numbers in the black circles represent thousands of years before present. Gray dashed lines represent documented exploitation before domestication or posited as necessary lead-time to domestication. Blue dashed lines represent either the management of plants or animals (including translocation) or predomestication cultivation of plants, neither of which were associated with morphological indications of domestication. Red bars frame the period over which morphological changes associated with domestication are first documented and a short, solid red bar represents the latest time by which domestication occurred. Although early Holocene plant domestication took place independently in both the Old and New Worlds, early Holocene animal domestication was restricted to the Near East. In addition, the majority of plants and animals on this list were domesticated in the middle Holocene. Additional details and references associated with each taxon are found in Table S1. Letters A–H correspond to those found in Fig. 1.



Larson, G., Piperno, D. R., Allaby, R. G., Purugganan, M. D., Andersson, L., Arroyo-Kalin, M., Barton, L., Vigueira, C. C., Denham, T., Dobney, K., Doust, A. N., Gepts, P., Gilbert, M. T. P., Gremillion, K. J., Lucas, L., Lukens, L., Marshall, F. B., Olsen, K. M., Pires, J. C., ... Fuller, D. Q. (2014). Current perspectives and the future of domestication studies. *Proceedings of the National Academy of Sciences of the United States of America*, 111(17), 6139–6146. <https://doi.org/10.1073/pnas.1323964111>



Gaetano Forni
28 dicembre 1926



1990, 432 pagine, illustrato



ნანა რუსიშვილი
Nana Rusishvili

ვაზის კულტურა საქართველოში
პალეოეთნობოტანიკური მონაცემების საფუძველზე

Культура виноградной лозы в Грузии
Результаты палеоэтноботанических исследований

Grapevine Culture in Georgia on Basis of Palaeobotanical Data

ასოციაცია „მთენი“
"Mteny" Association
Ассоциация "Мтени"
2007

Dangreuli Gora

Badaani

Kvatskhelebi

Khizanaant Gora

Dighomi

Argeta

Dangreuli Gora



VI – IV mill. BC

VI – IV mill. BC

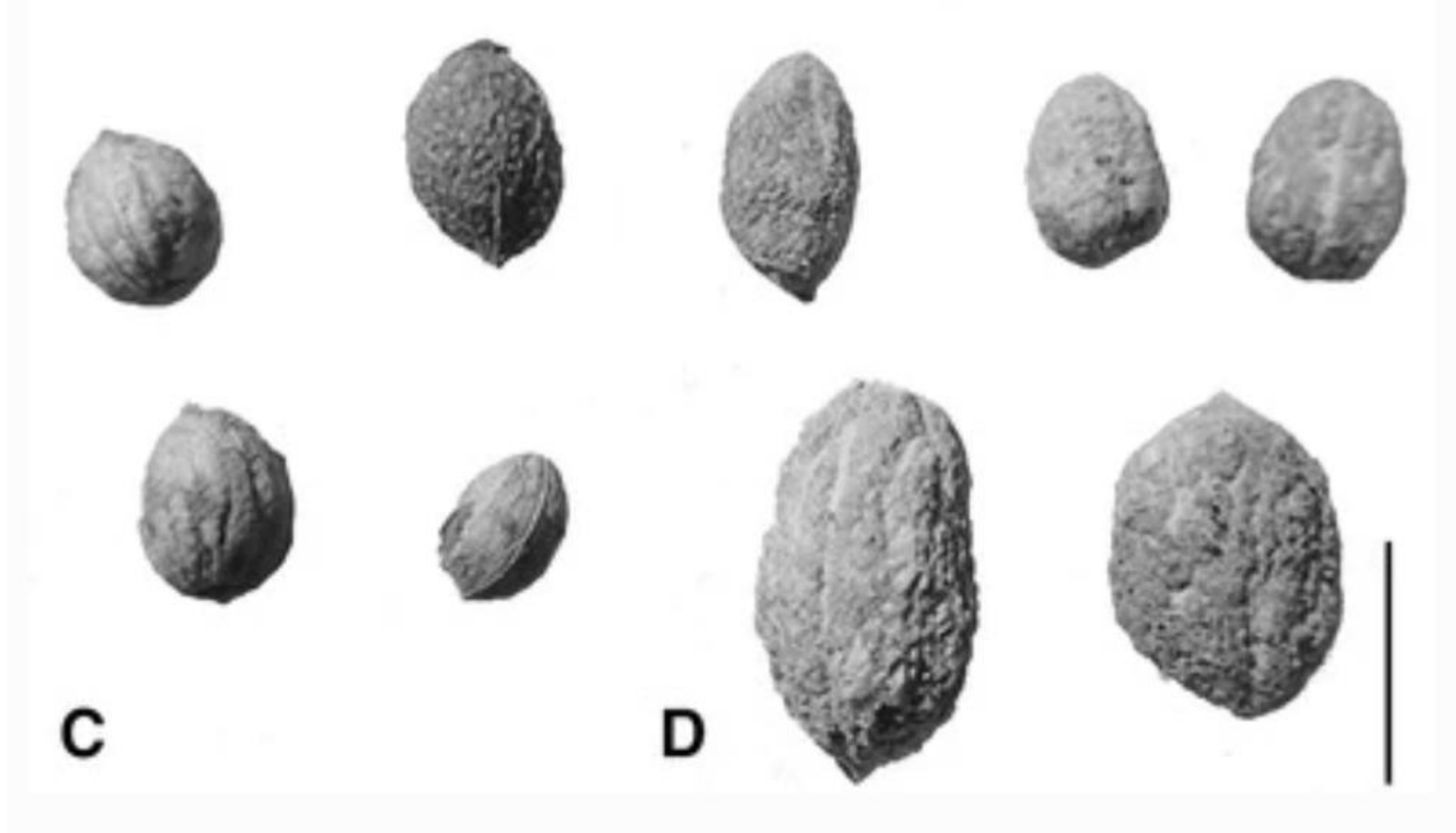
VI mill. BC

III mill. BC

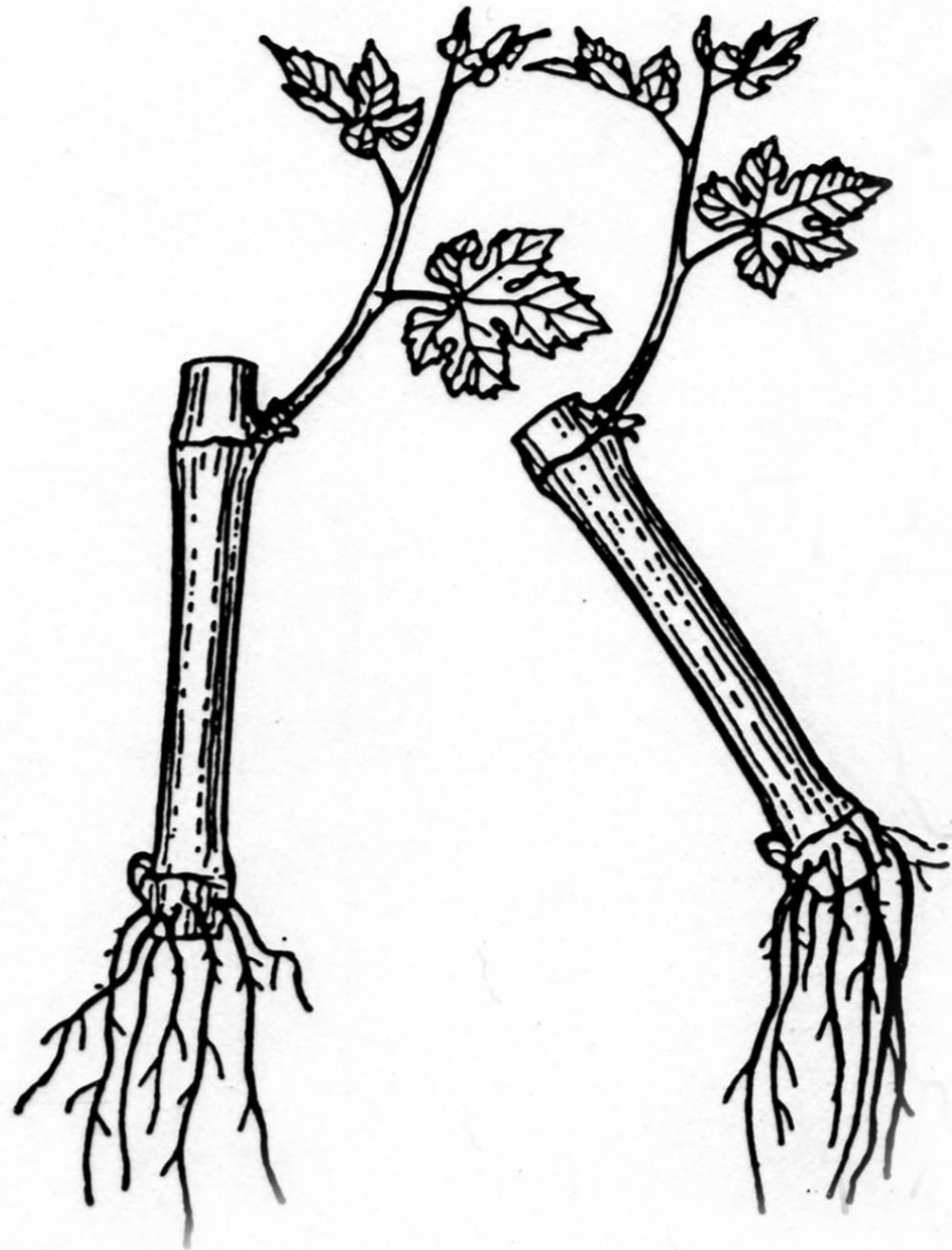
III mill. BC

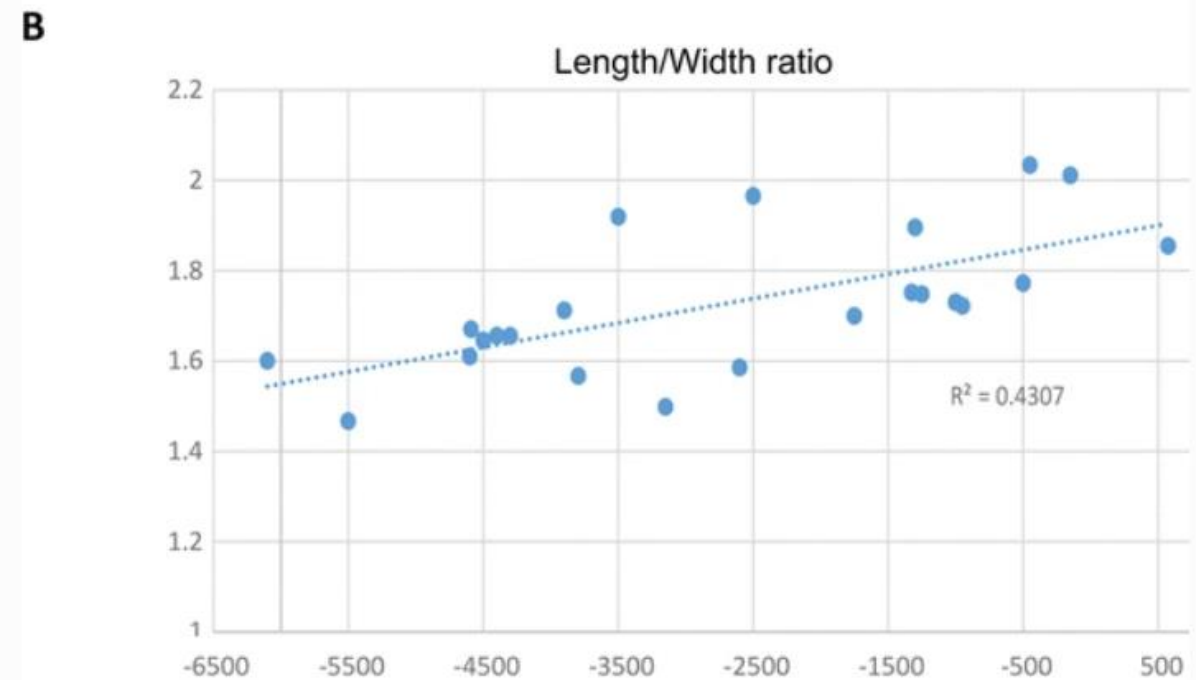
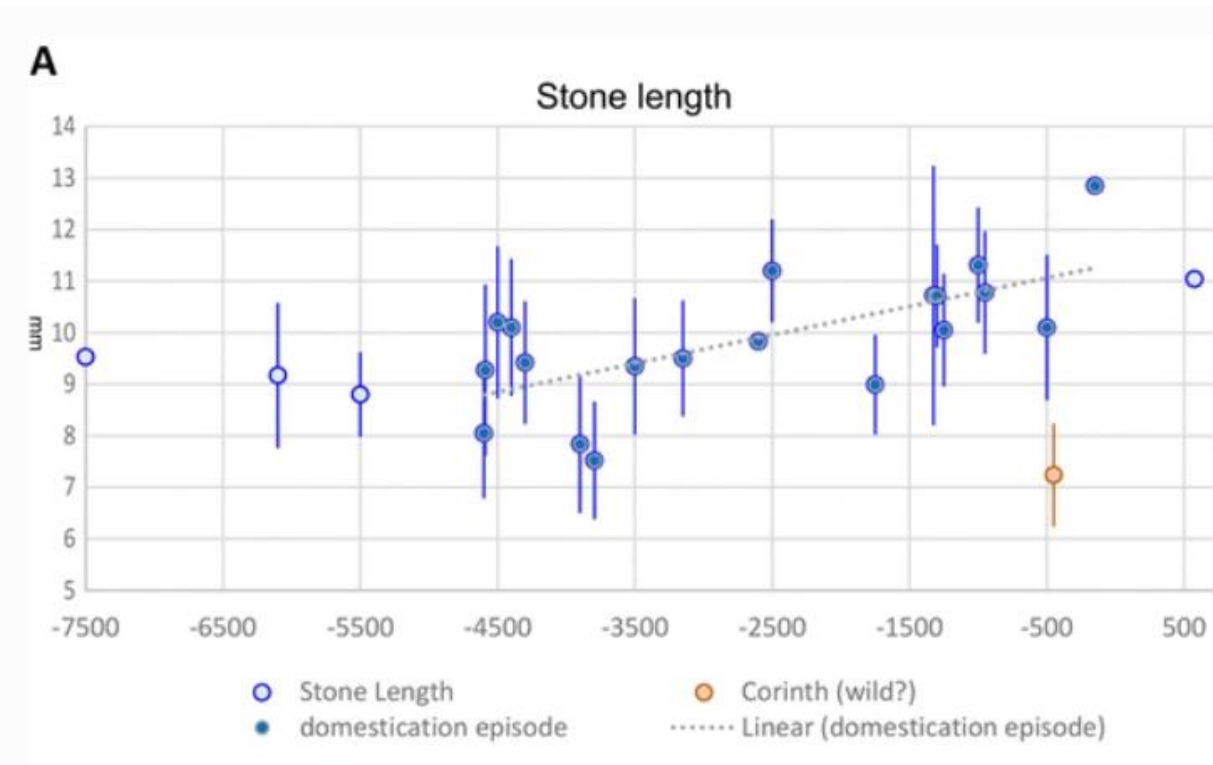
II mill. BC

VII – VI cent. BC



c wild *Olea europaea* ssp. *sylvestris* (collected from Turkey), **d** domesticated *O. europaea* ssp. *europaea*. All specimens in the UCL archaeobotanical reference collection; scale bars 1 cm





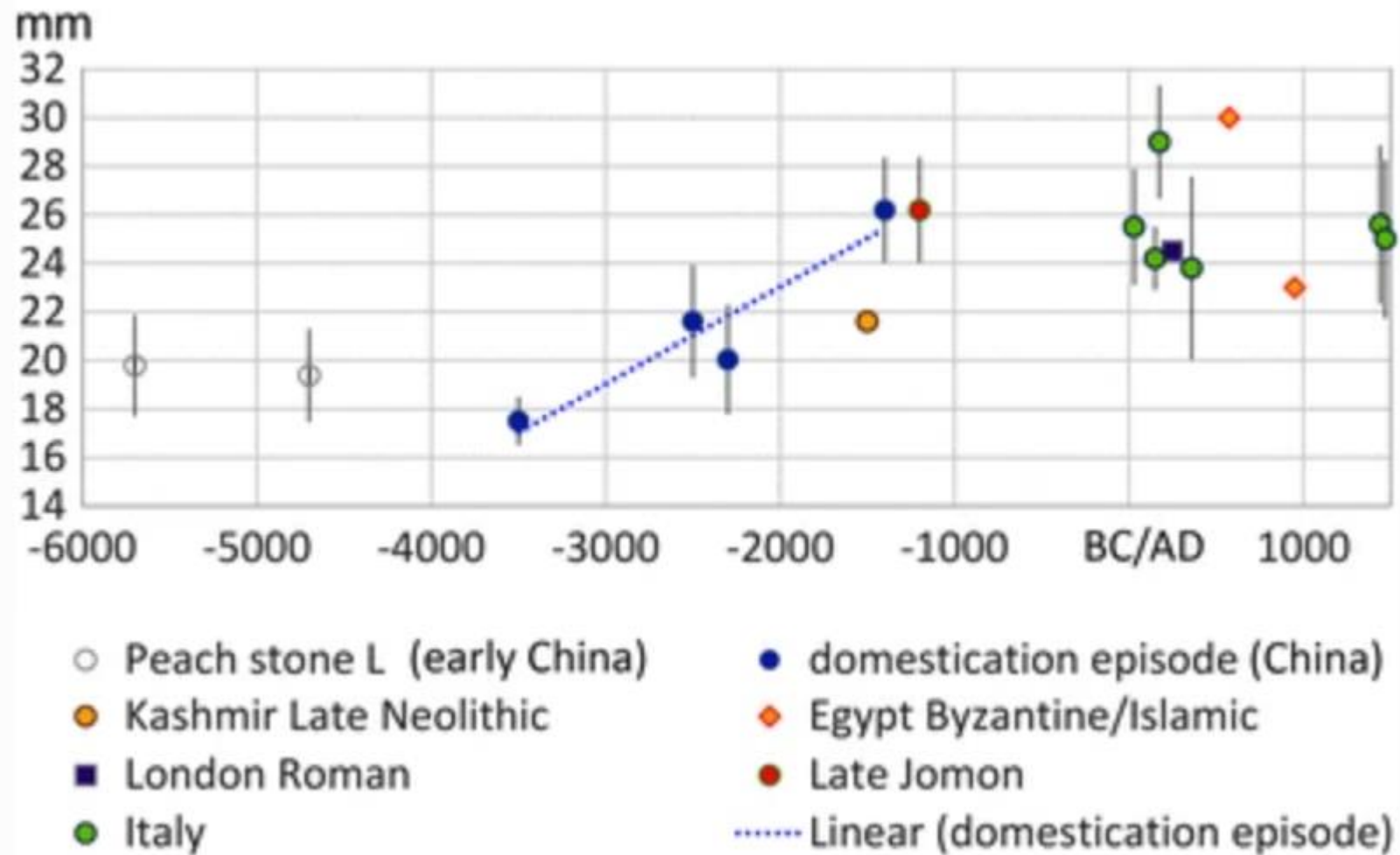
Olea europaea stone size over time: **a** average and st. dev. of stone length plotted by median age estimate; **b** length/width ratio over time indicating the trend towards elongation.

Fuller, D. Q. (2018). Long and attenuated: comparative trends in the domestication of tree fruits. *Vegetation History and Archaeobotany*, 27(1), 165–176.

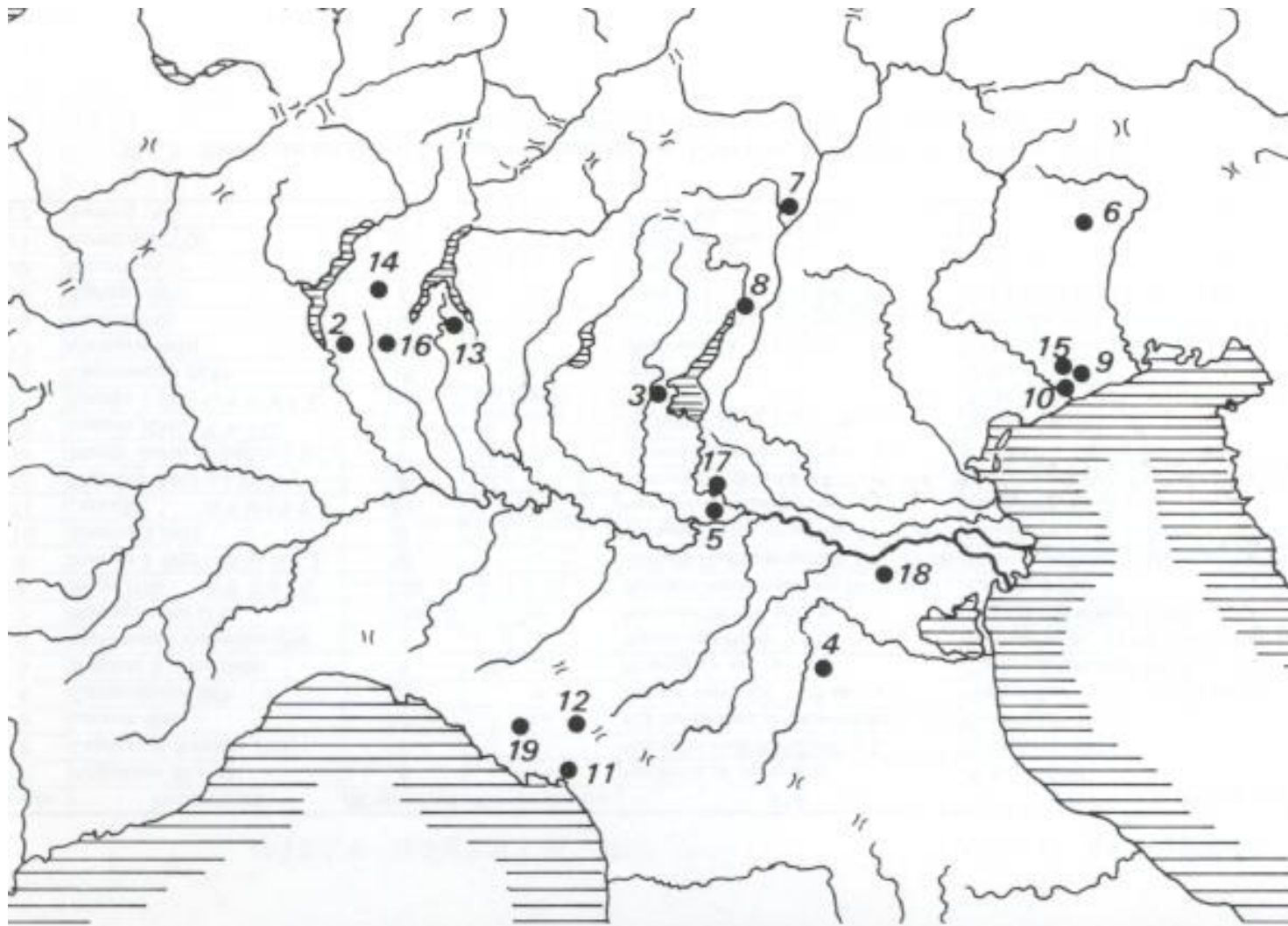
<https://doi.org/10.1007/s00334-017-0659-2>



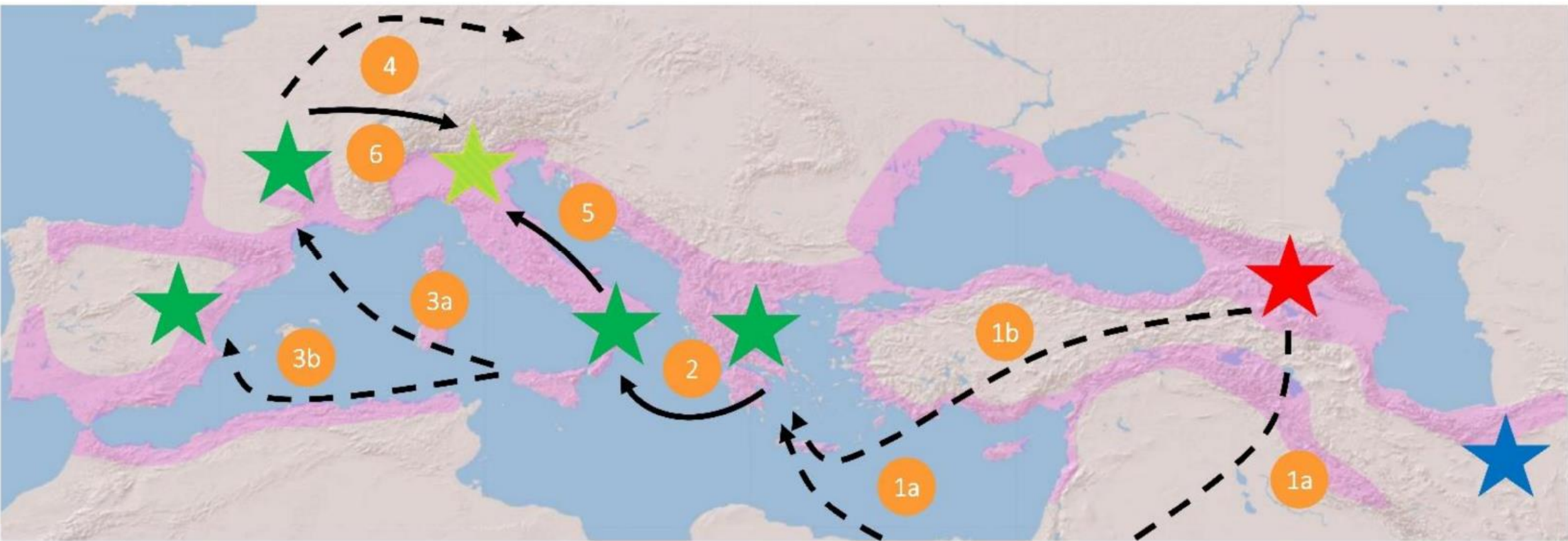
Zheng, Y., Crawford, G. W., & Chen, X. (2014). Archaeological evidence for peach (*Prunus persica*) cultivation and domestication in China. *PLoS ONE*, 9(9). <https://doi.org/10.1371/journal.pone.0106595>



Prunus persica stone size over time: average and st. dev. of stone length and plotted by median age estimate. Trend line indicates least squares regression through the inferred domestication episode.



Di Vora e Castelletti 1995 Indagine preliminare sull'archeologia della vite (*Vitis vinifera* L.) in base ai caratteri diagnostici del vinacciolo, Rivista archeologica dell'antica provincia e Diocesi di Como, 176, 333-358.



★ Primary domestication center

★ Putative domestication/
diversification centers

★ Center of admixture

★ Putative center of
domestication

→ Migration route confirmed
by molecular data

- - - - - Migration route

1a Buono and Vallariello (2002); Marvelli et al. (2013)

1b Paschou et al. (2014)

2 De Lorenzis et al. (2019)

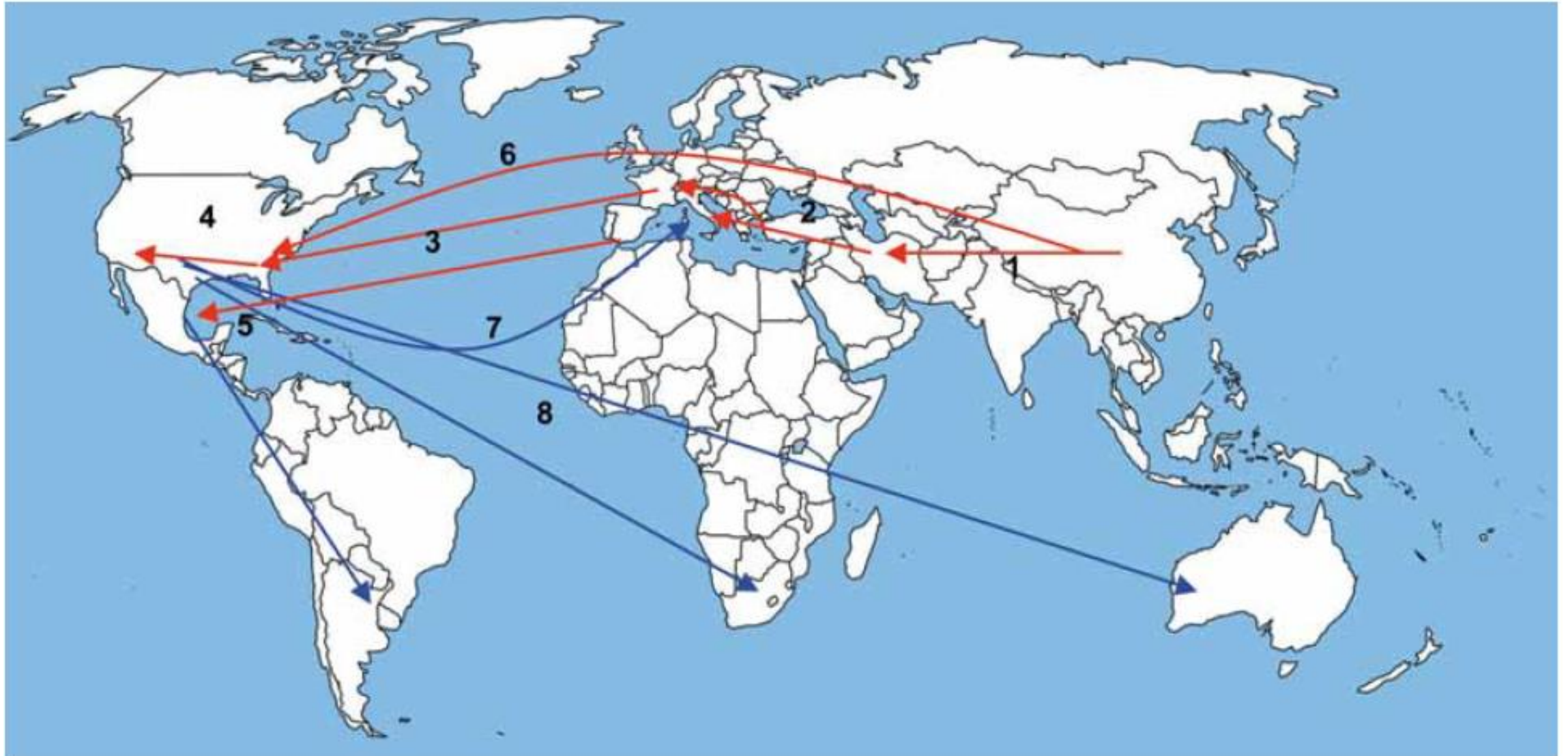
3a Bouby et al. (2013)

3b Buono and Vallariello (2002); Marvelli et al. (2013)

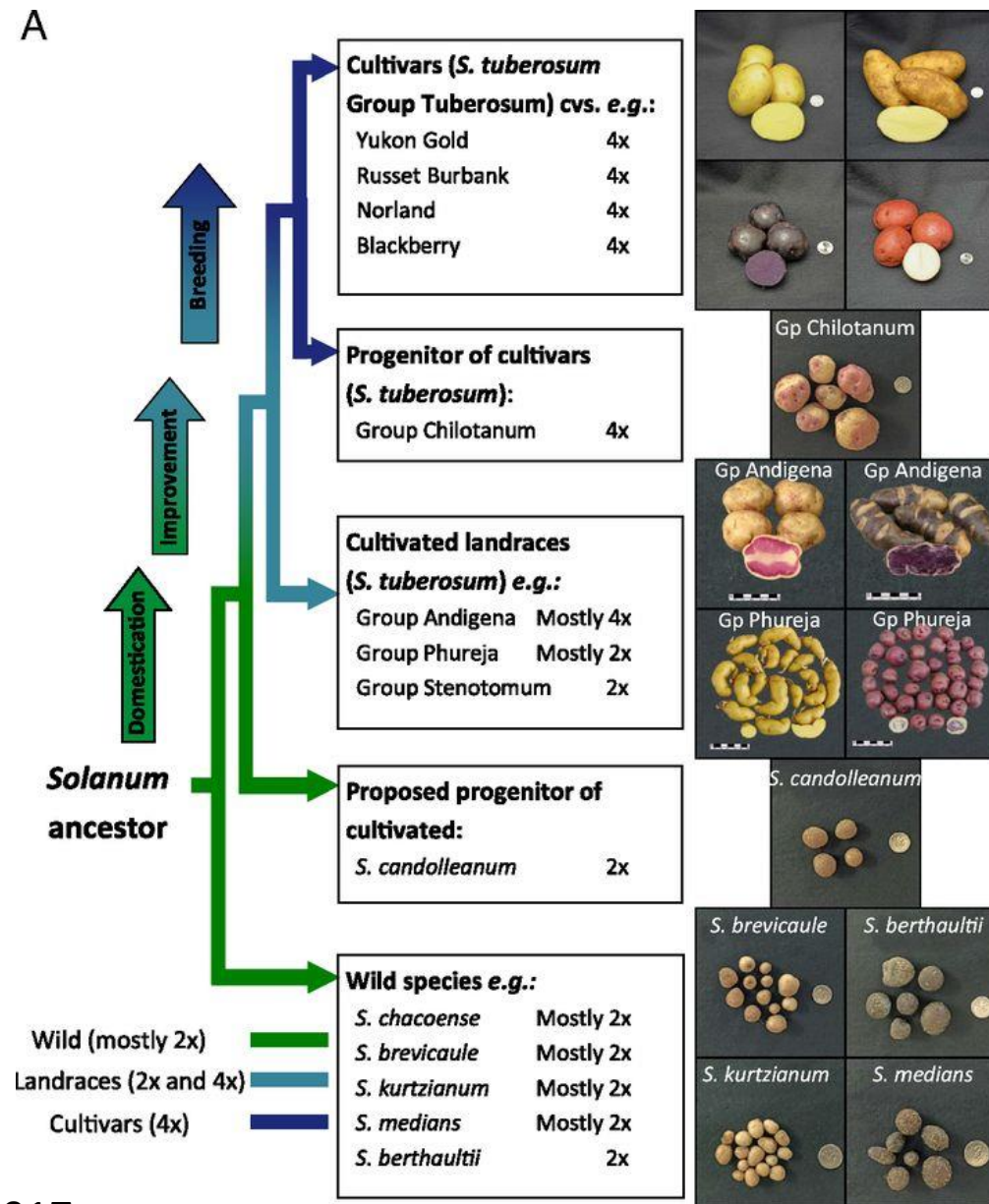
4 Buono and Vallariello (2002); Marvelli et al. (2013)

5 6 De Lorenzis et al. (2019)

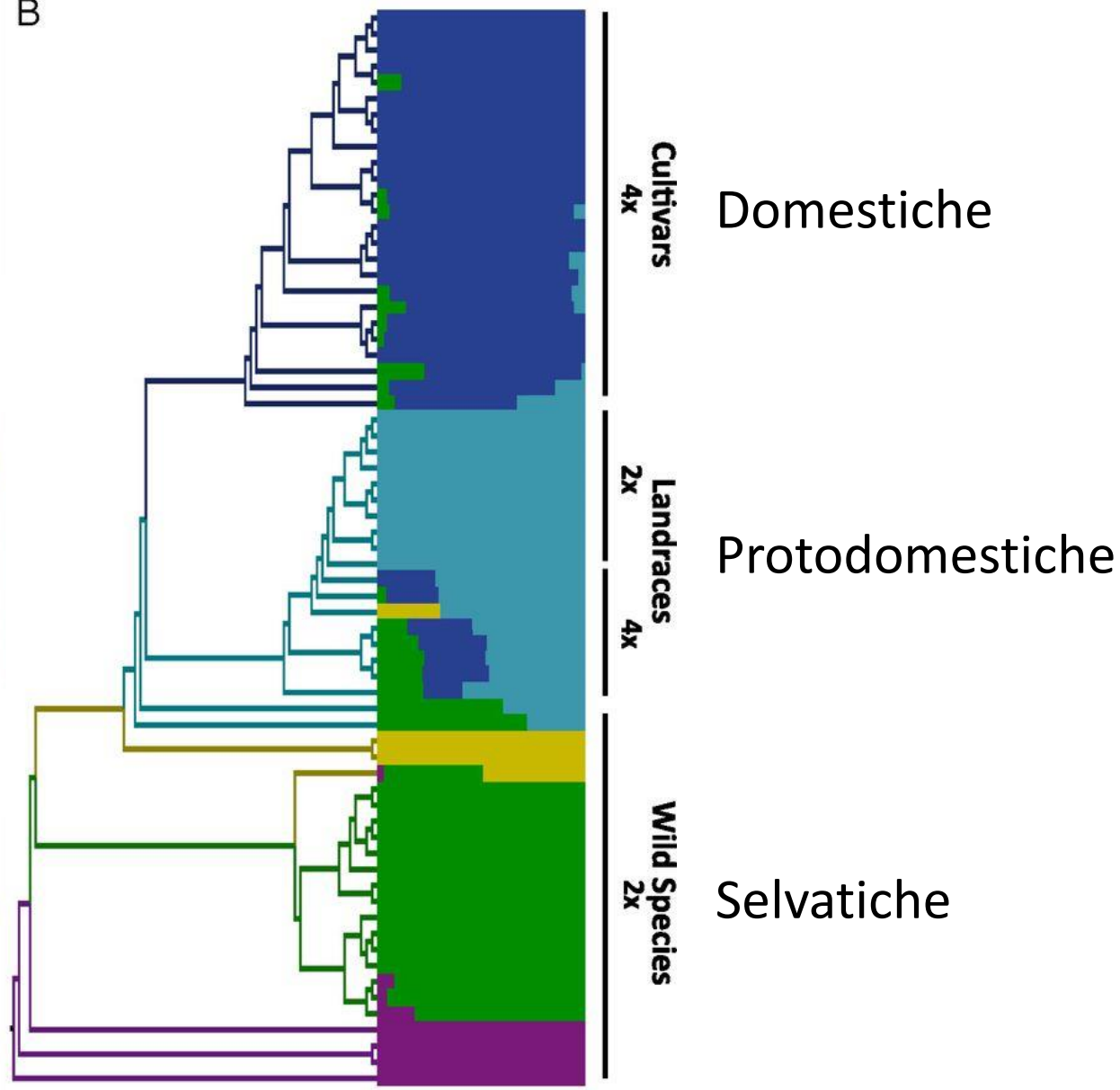
DALLA CINA AL MONDO



A

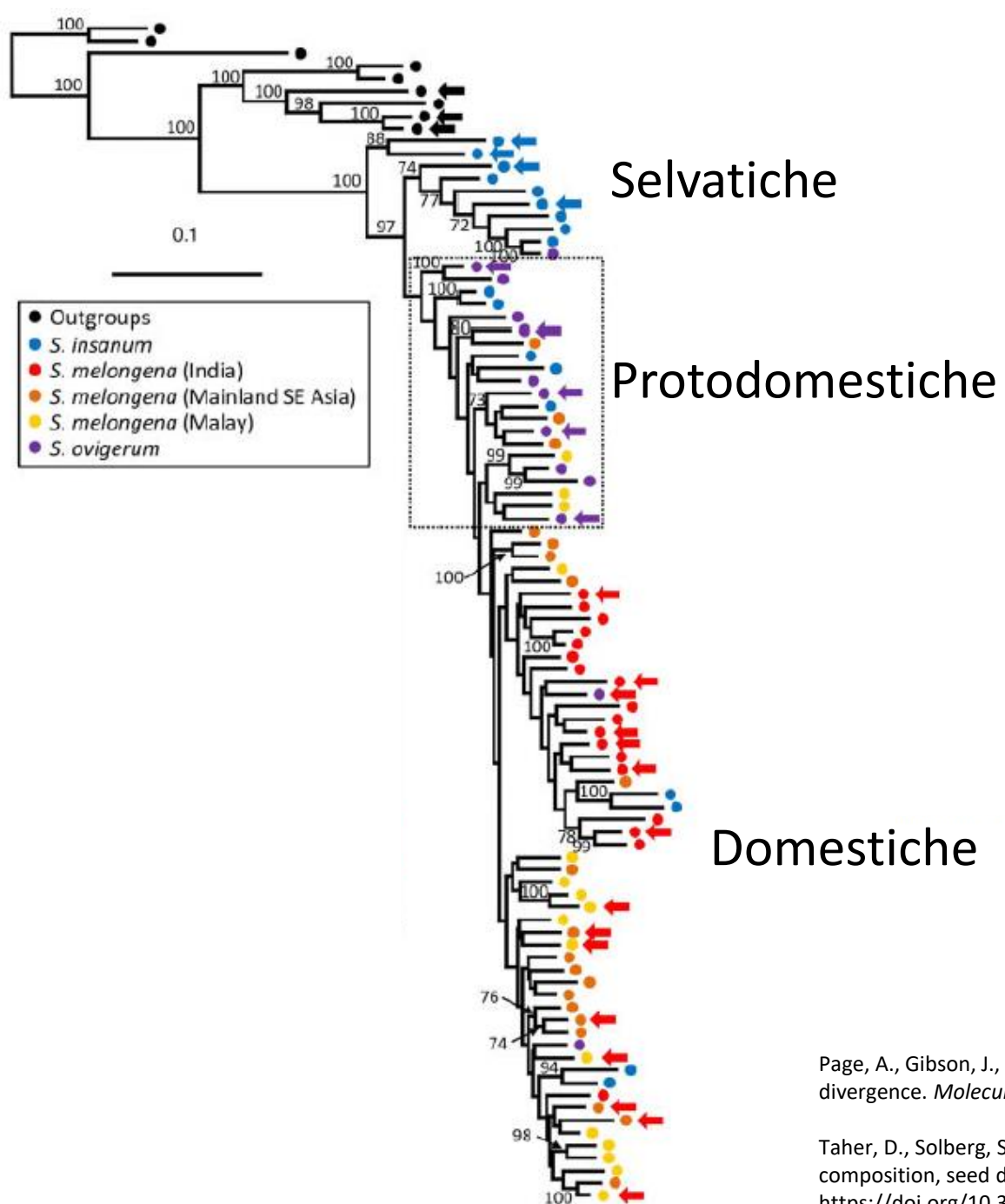


B



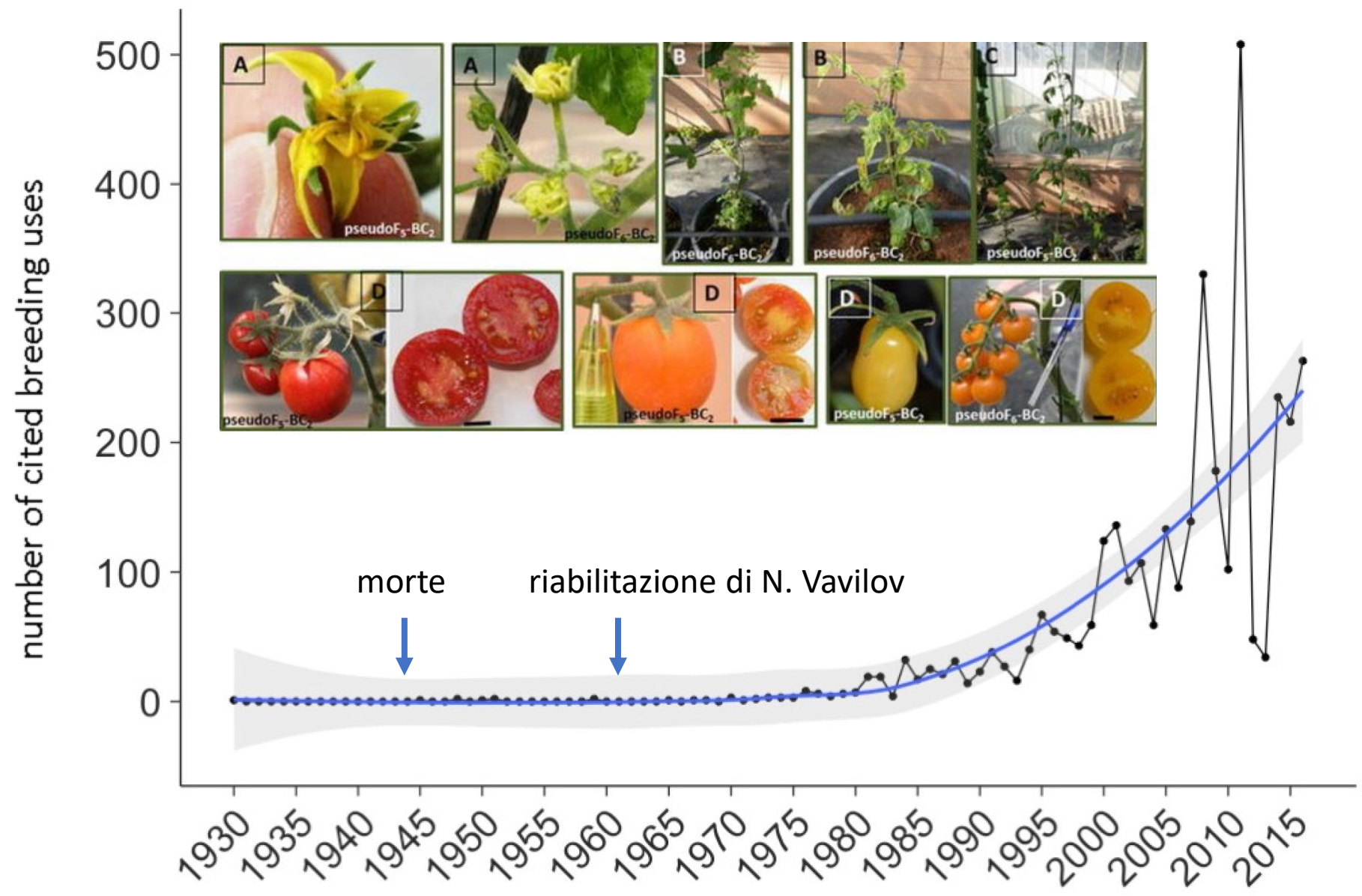
PNAS 2017

Hardigan, M. A., Laimbeer, F. P. E., Newton, L., Crisovan, E., Hamilton, J. P., Vaillancourt, B., Wiegert-Rininger, K., Wood, J. C., Douches, D. S., Farré, E. M., Veilleux, R. E., & Buell, C. R. (2017). Genome diversity of tuber-bearing *Solanum* uncovers complex evolutionary history and targets of domestication in the cultivated potato. *Proceedings of the National Academy of Sciences of the United States of America*, 114(46), E9999–E10008. <https://doi.org/10.1073/pnas.1714380114>



Page, A., Gibson, J., Meyer, R. S., & Chapman, M. A. (2019). Eggplant domestication: Pervasive gene flow, feralization, and transcriptomic divergence. *Molecular Biology and Evolution*, 36(7), 1359–1372. <https://doi.org/10.1093/molbev/msz062>

Taher, D., Solberg, S., Prohens, J., Chou, Y. Y., Rakha, M., & Wu, T. H. (2017). World vegetable center eggplant collection: Origin, composition, seed dissemination and utilization in breeding. *Frontiers in Plant Science*, 8(August), 1–12. <https://doi.org/10.3389/fpls.2017.01484>



Sulle nostre tavole il nostro passato prossimo



nel passato remoto il futuro