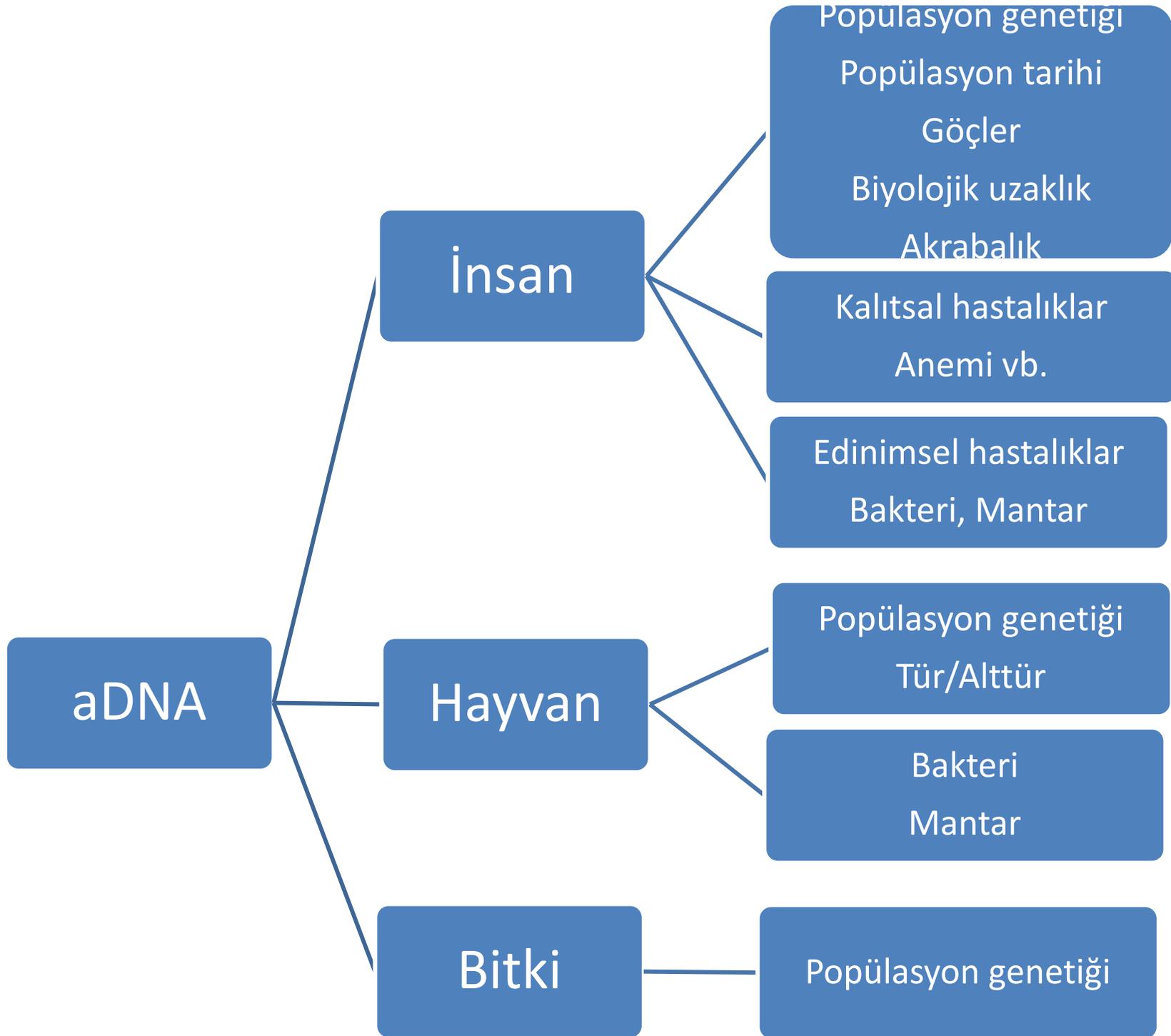


HACETTEPE ÜNİVERSİTESİ
ANTROPOLOJİ BÖLÜMÜ'NDEKİ
ESKİ İNSAN KALINTILARININ
aDNA
ARAŞTIRMALARINDAKİ
POTANSİYELİ

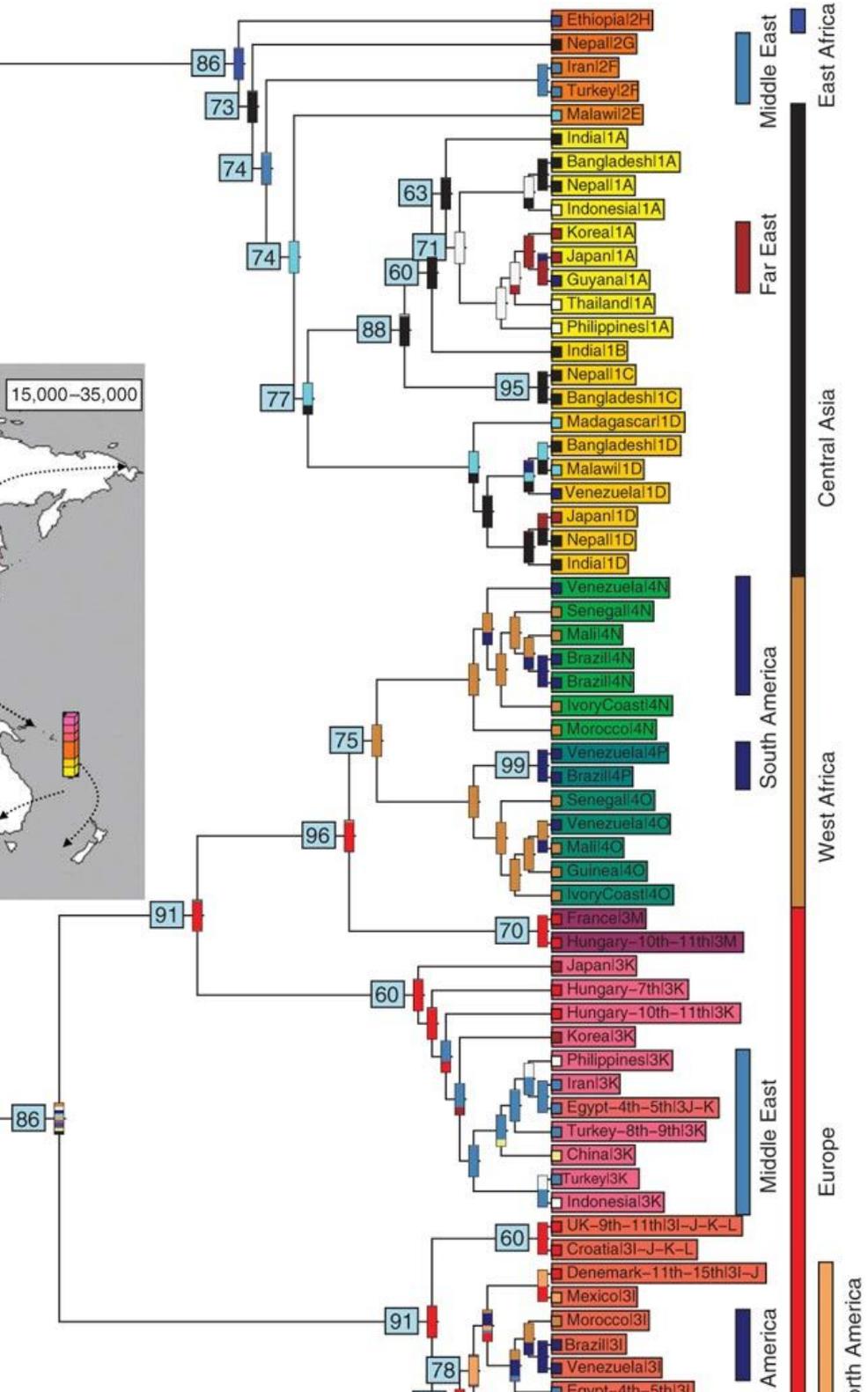
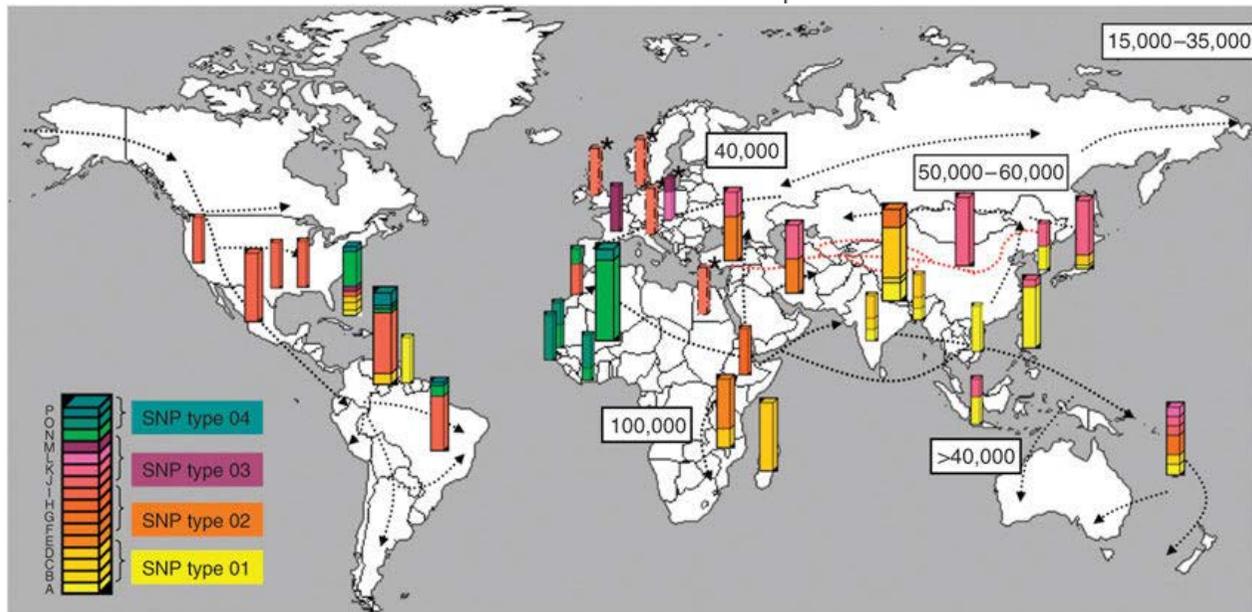
Prof. Dr. Yılmaz Selim Erdal

Antropoloji Bölümü

yserdal@hacettepe.edu.tr

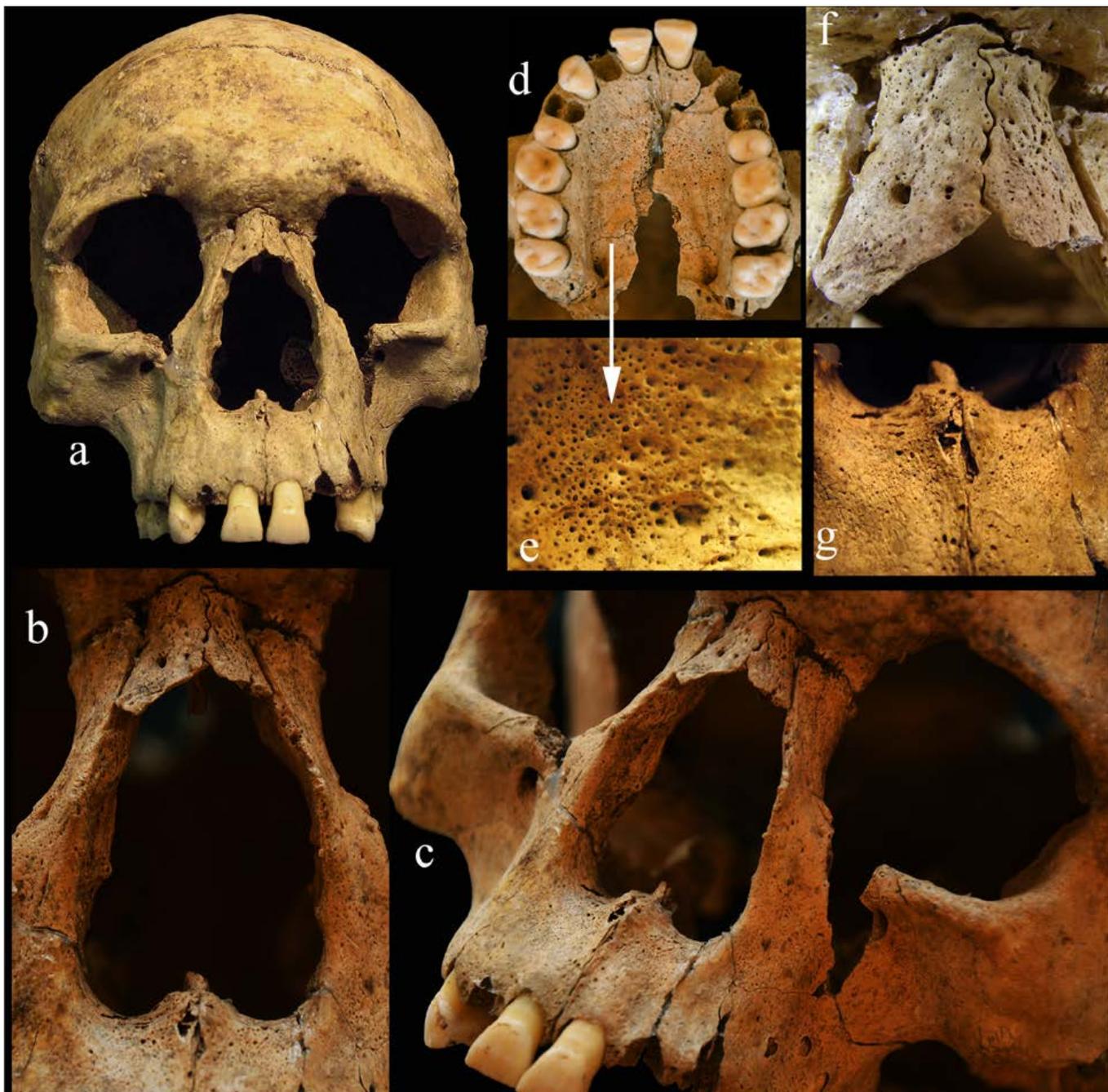


- CÜZZAM



Monot et al., 2009

Macaristan, Abony-Turja-Anyos dűlő
M.Ö. 3780-3650 cal



Karataş, Muhtemel lepra
ETÇ II, M.Ö. 2650-2300



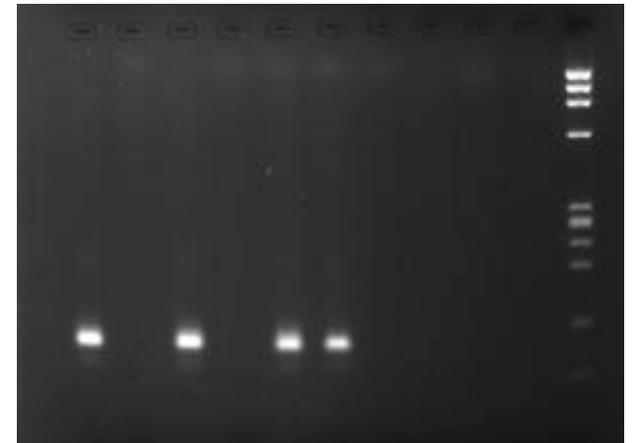
DNA İzolasyonu Yapılan Lepra Örnekleri

- Macaristan
- Polonya
- Macaristan
- İngiltere
- İskoçya
- Hırvatistan
- Danimarka
- Türkiye
- Özbekistan
- 10.yy
- 12-14.yy
- 14-15. yy
- 10-16. yy
- 10. yy
- 5-16. yy
- 5-16. yy
- 8-9. yy
- 1-4.yy

Kovuklukaya, Ortaçağ 8-9. yy

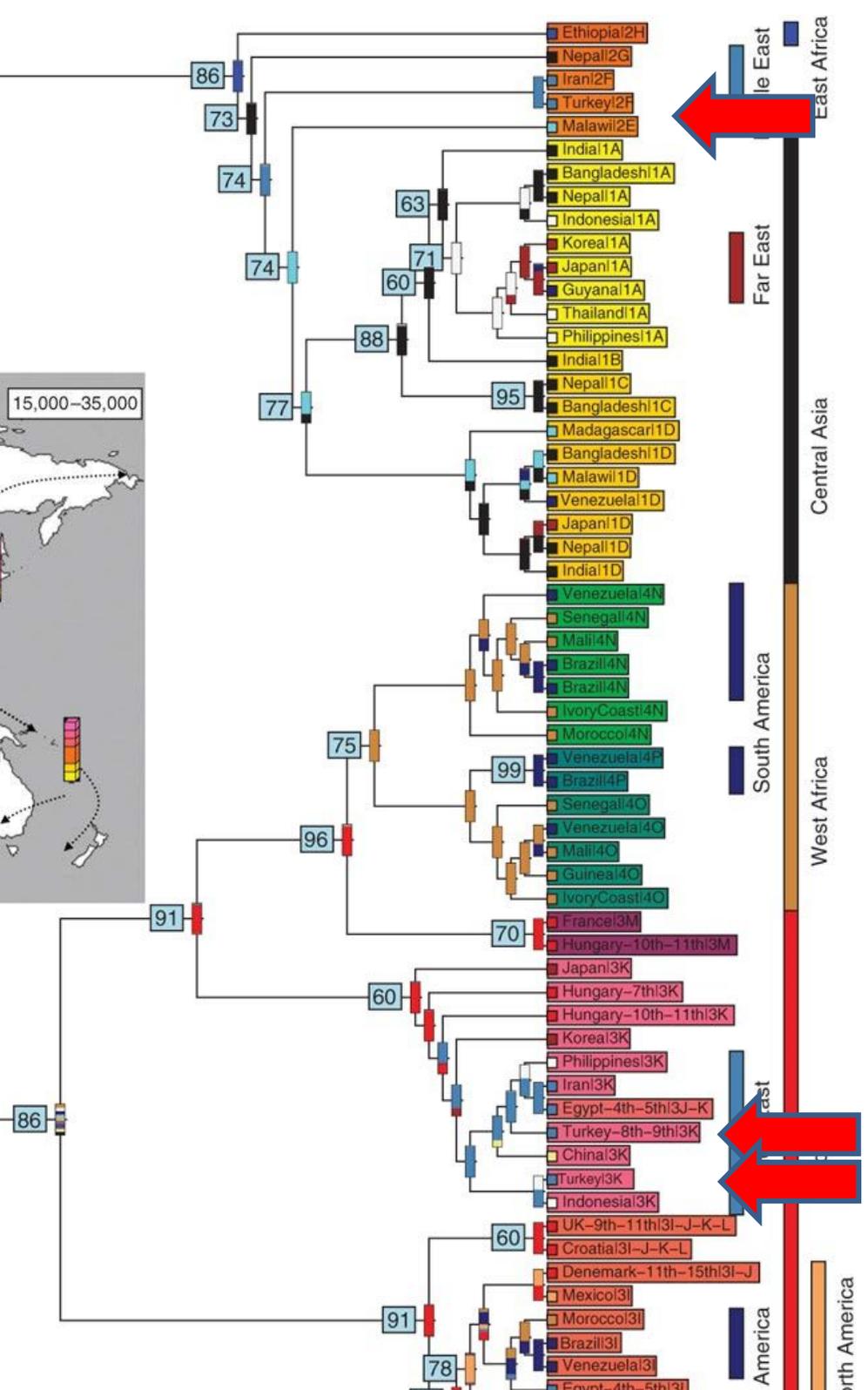
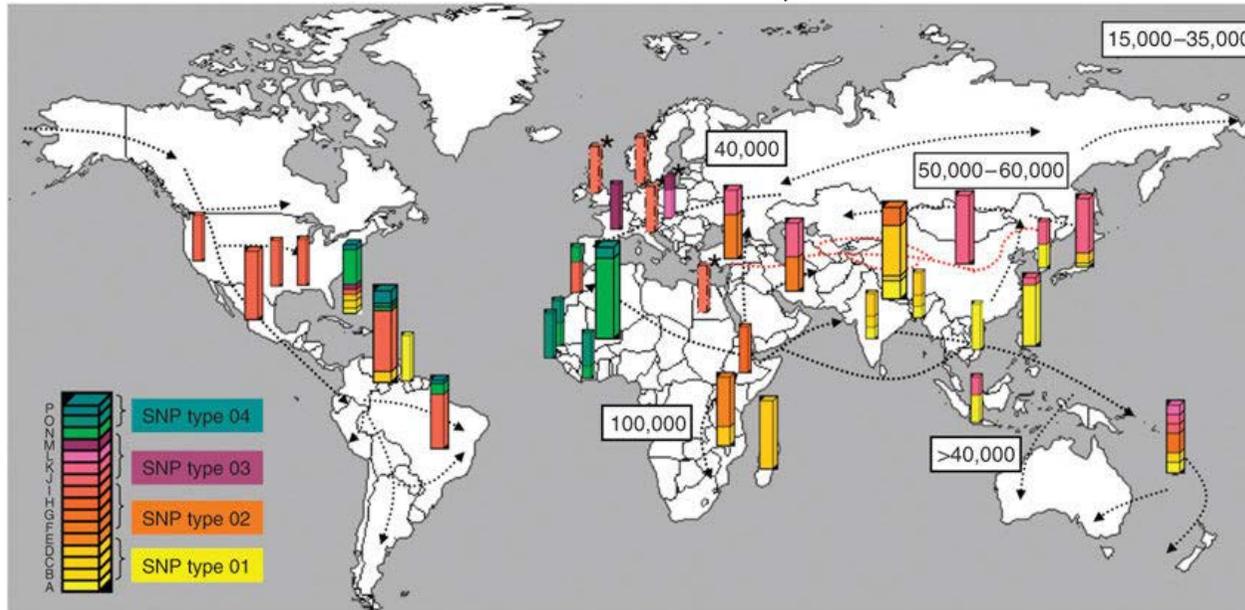


Rhinomaxillary sendrom



INFANTILE LEPROSY

- Dünyada leprosinin dağılımı ve Türkiye'den Örneklerin Önemi



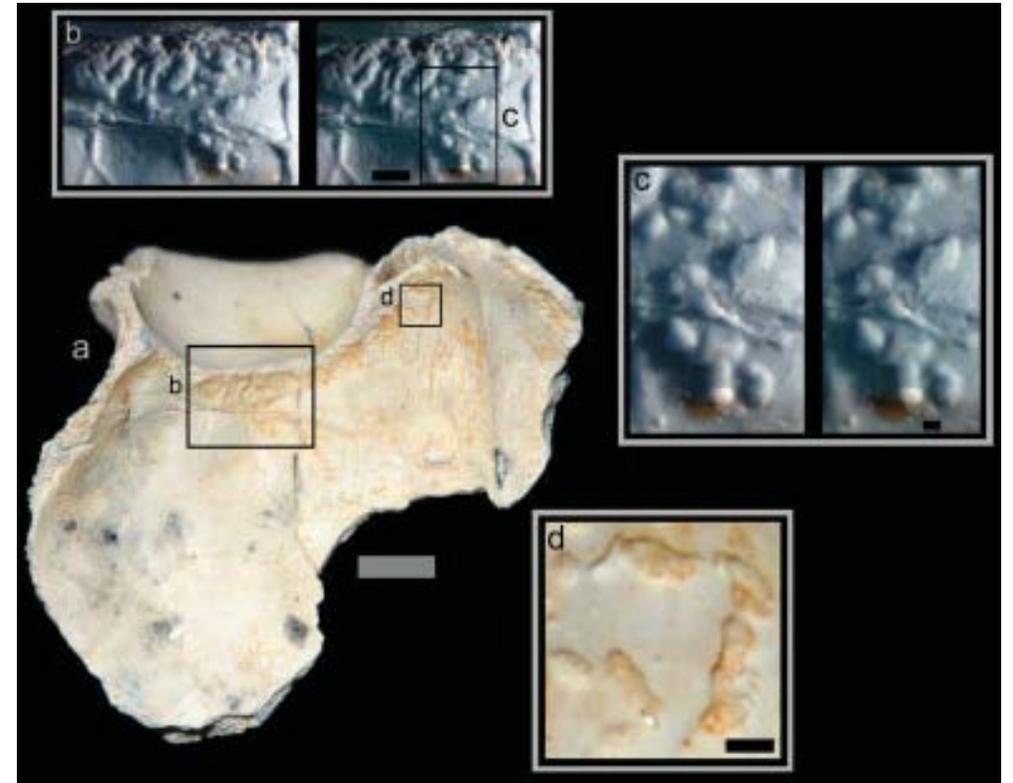
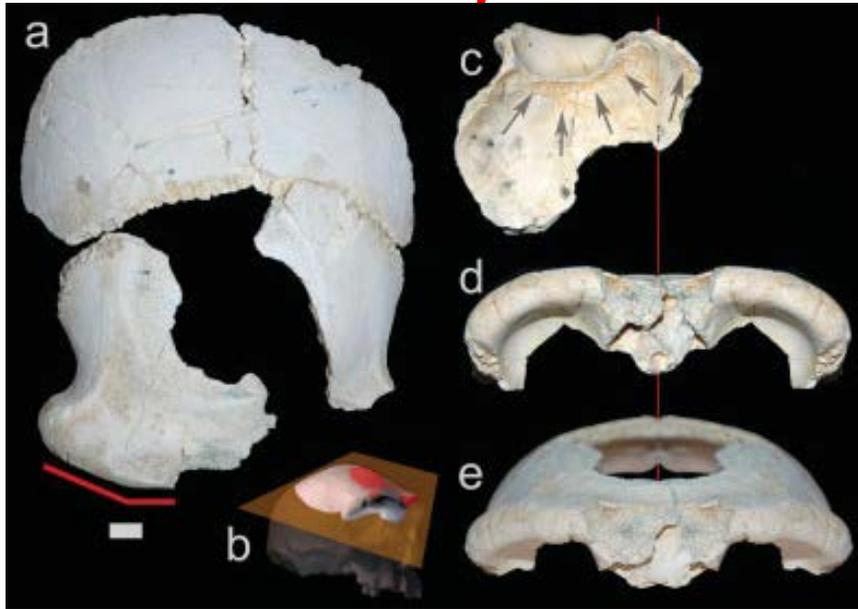
Monot et al., 2009

TÜBERKÜLOZ

- HASTALIĞIN KÖKENİ
- İNSAN-SIĞIR GEÇİŞİ
 - Kafatasının iç yüzeyinde enfeksiyon izleri (*Serpens Endocrania*)
 - Hypertrophic osteoarthropathy
 - Süngerimsi kemiklerde bölgesel tahribatın varlığı
 - Epifizlerde lokal değişimler
 - Kalça ve diz eklemlerinde tahribat
 - Eklem kaynaşmaları
 - Kaburgalarda proliferative kemik reaksiyonları
 - Omurlarda kaviteler ya da omuru çökmesi, Pott omuru

Homo erectus, Kocabaş Fosili, Denizli

Leptomeningitis tuberculosa



Dja'de Suriye, M.Ö. 8800-8290

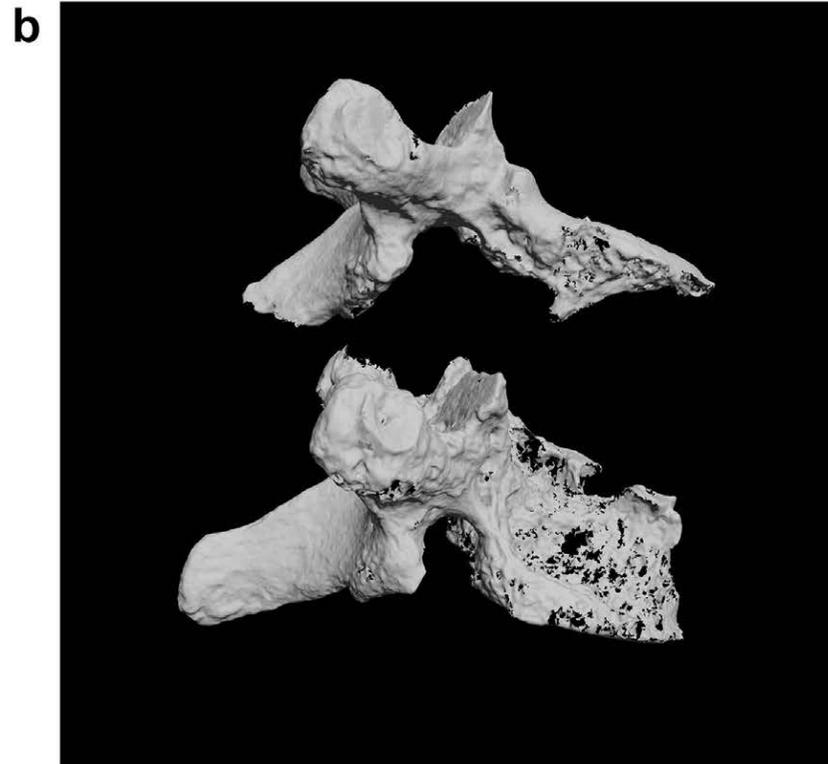
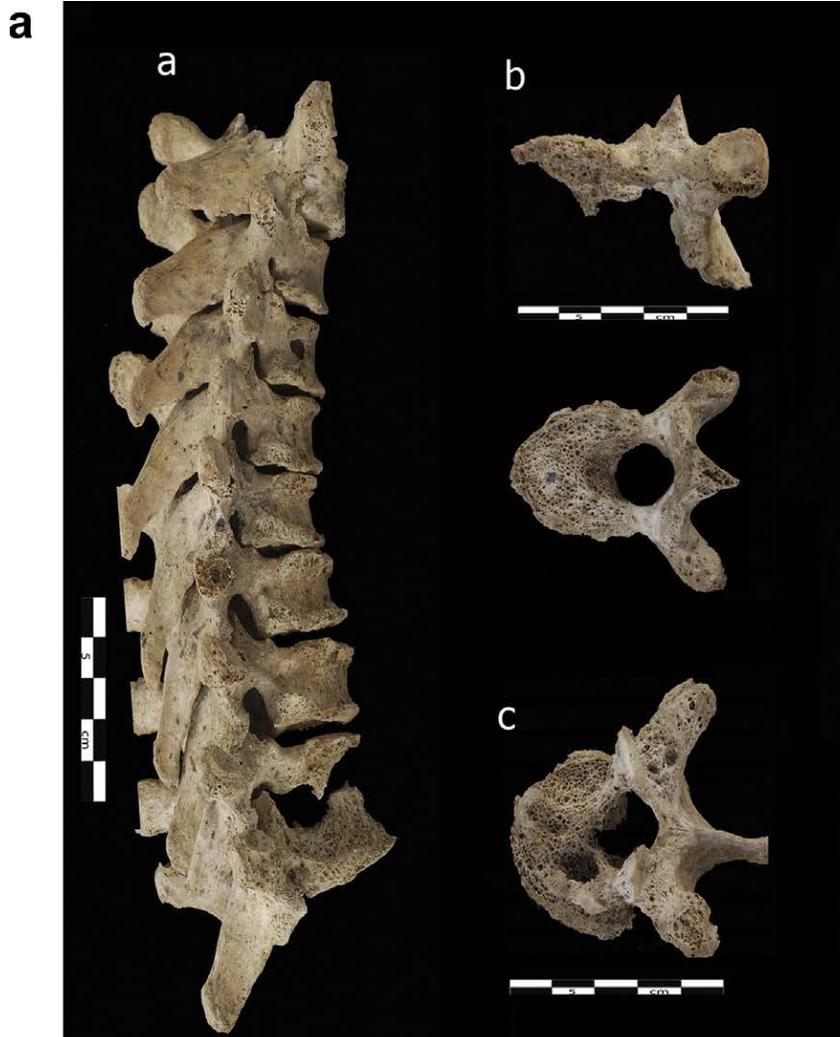
4 örnekte muhtemel tüberküloz

Pott omuru

Kaburgalarda enfeksiyon,

mtDNA IS6110 Dja'de 483 +

mycolic asit 2 birey +

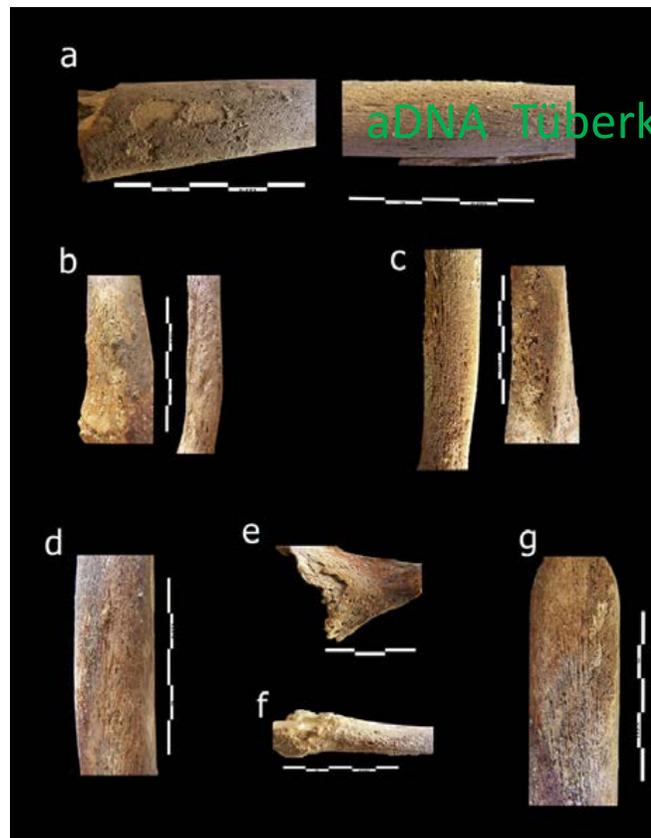


Dja'de 304 Baker et al. 2015

Tel Aswad

M.Ö. 8200-7600

‘Ain Ghazal M.Ö. 7250



aDNA Tüberküloz Ne

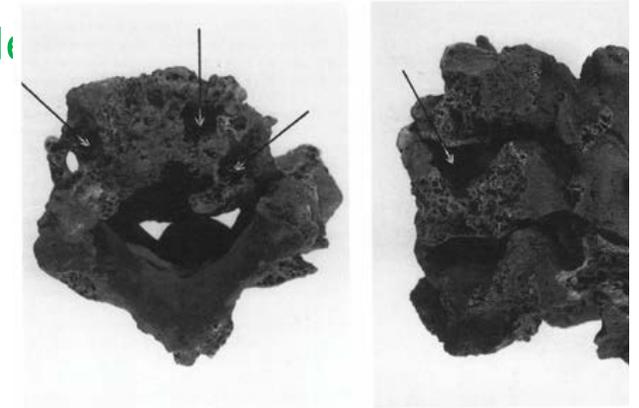
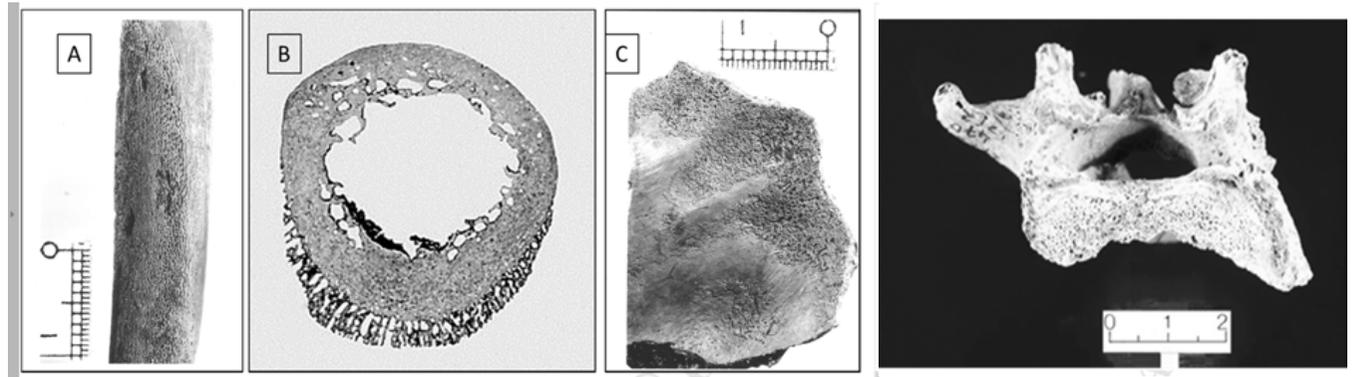


Fig. 2: Cavitation and canals resembling cloaca.

Fig. 3: Lithic lesions and drainage can

Paleopatolojik lezyonlar
Tüberküloz pozitif

Atlit Yam M.Ö. 6,200-
5,500



aDNA ve mycolic acid lipid biomarker
extant genetic lineages IS1081
IS6110

En azından 15,000 yıldır tüberküloz bakterisinin varlığı biliniyor
Avrupa ve Amerika'da sanayileşme sonrası dönemde neredeyse epidemiyeye dönüşmüştür

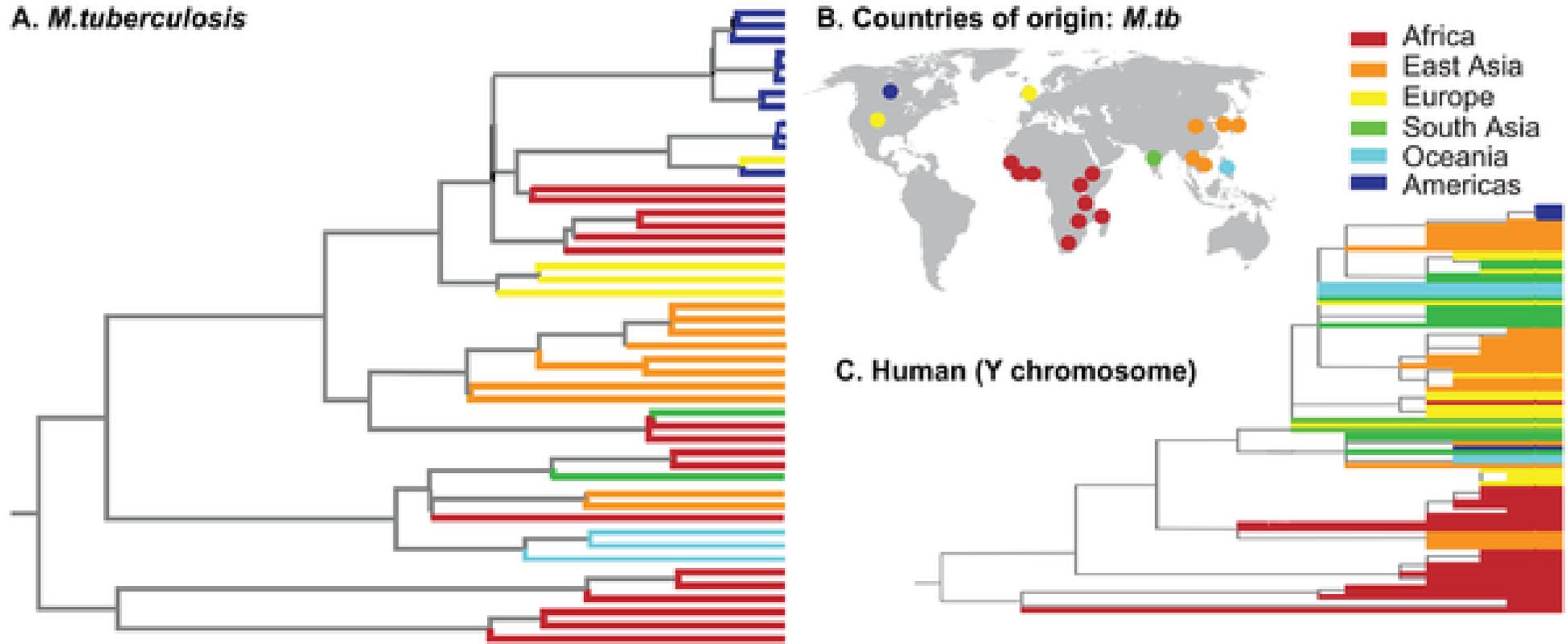
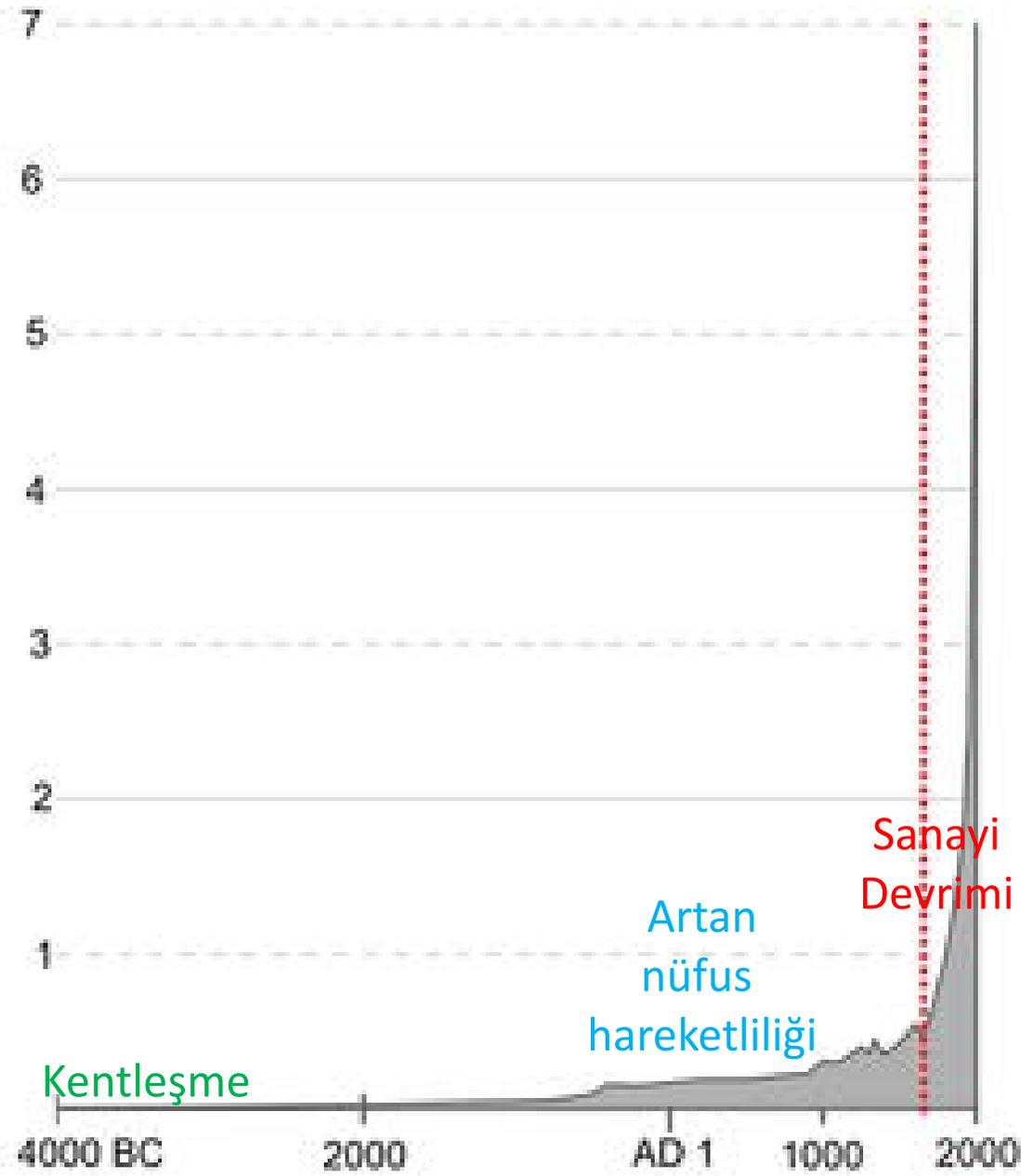


Figure 1. Geographic and genetic structure of global sample of *M.tb* genomes.

Pepperell CS, Casto AM, Kitchen A, Granka JM, Cornejo OE, et al. (2013) The Role of Selection in Shaping Diversity of Natural *M. tuberculosis* Populations. *PLOS Pathogens* 9(8): e1003543. <https://doi.org/10.1371/journal.ppat.1003543>
<http://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1003543>



Pepperell CS, Casto AM, Kitchen A, Granka JM, Cornejo OE, et al. (2013) The Role of Selection in Shaping Diversity of Natural *M. tuberculosis* Populations. *PLOS Pathogens* 9(8): e1003543. <https://doi.org/10.1371/journal.ppat.1003543>
<http://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1003543>

VEBA

Antonine plague M.S. 165/Çiçek?

Cyprian plague M.S. 250 Tifüs, kolera,
çiçek, kızamık, şarbon, ebola

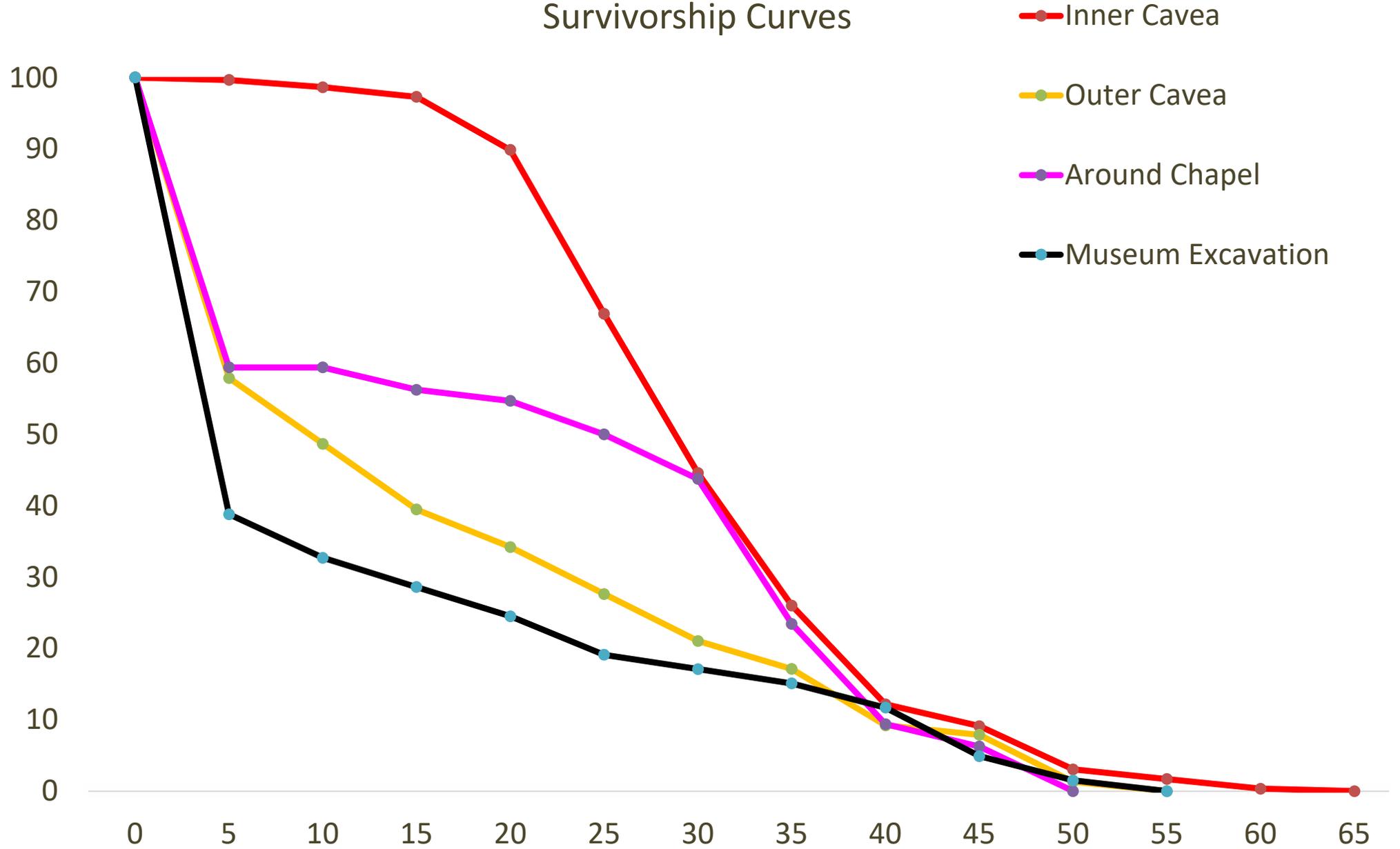
Justinian plague M.S. 541-543

Kara Ölüm 1347

JUSTINIAN VEBASI VE KARA ÖLÜM



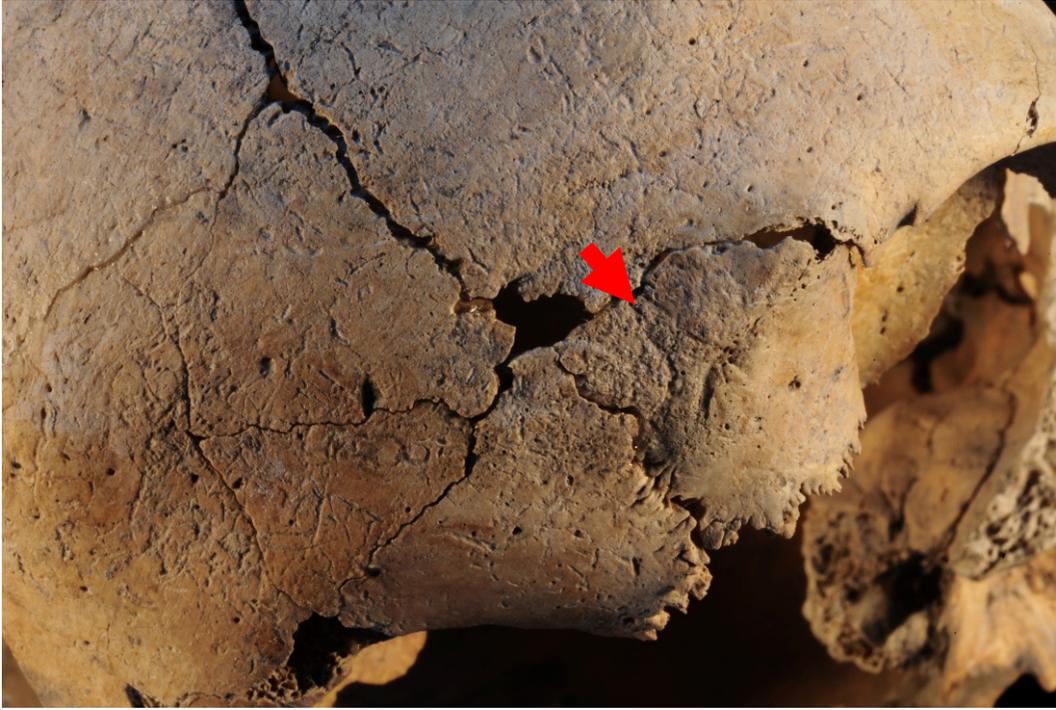
Survivorship Curves



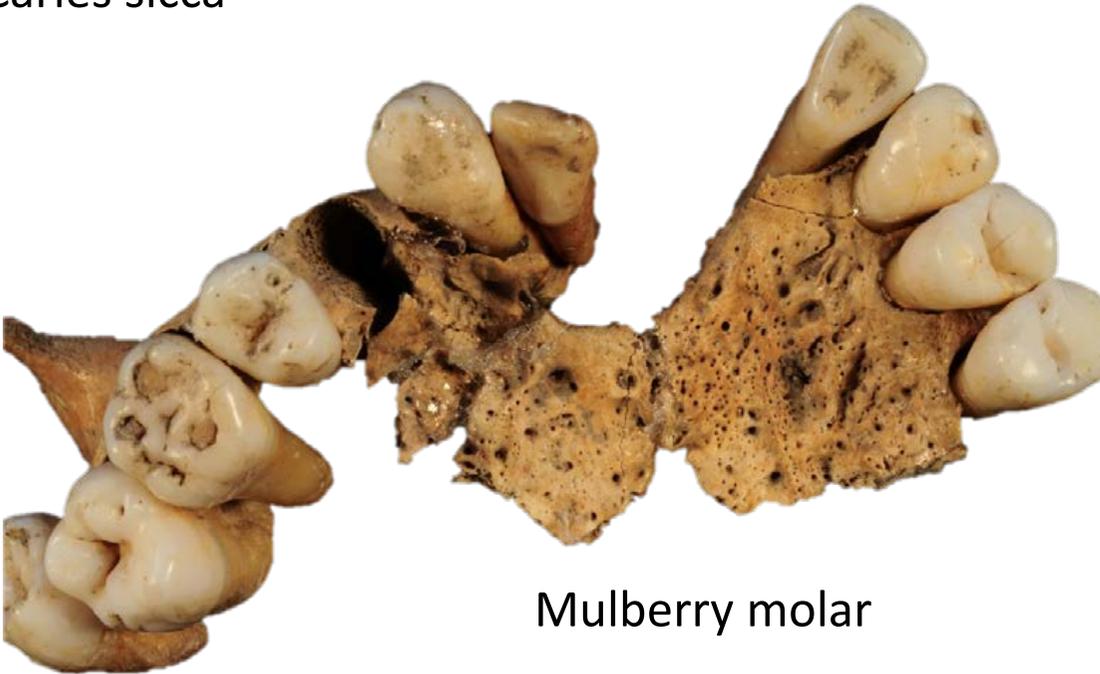
İZNİK, 13. YY, KONJENİTAL SİFİLİZ



İZNİK, 13. YY, KONJENİTAL SİFİLİZ



Caries sicca



Mulberry molar



İZNİK, 13. YY, KONJENİTAL SİFİLİZ

Gummatous osteomyelitis



Clavicle



Humerus



Radius

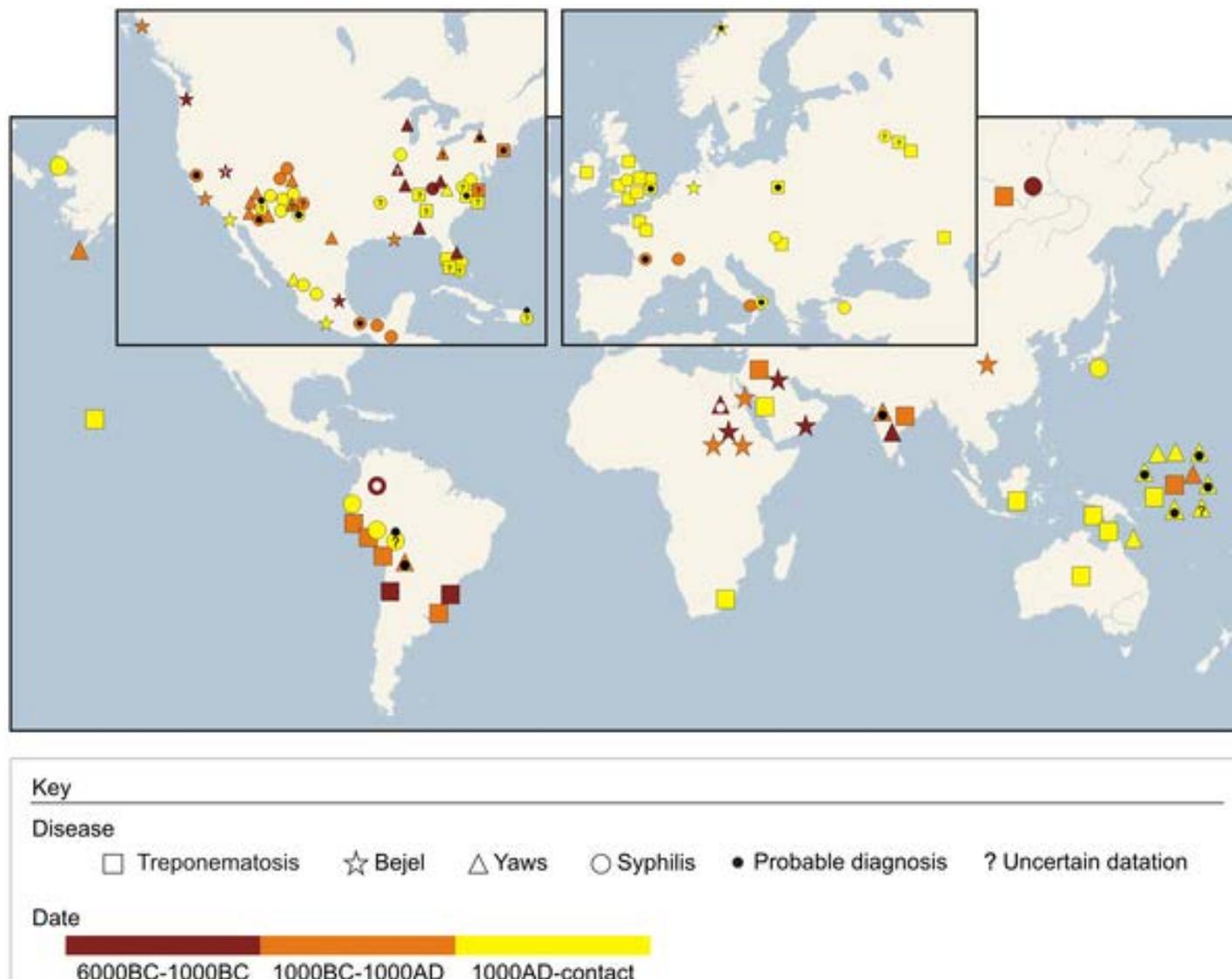


Tibia



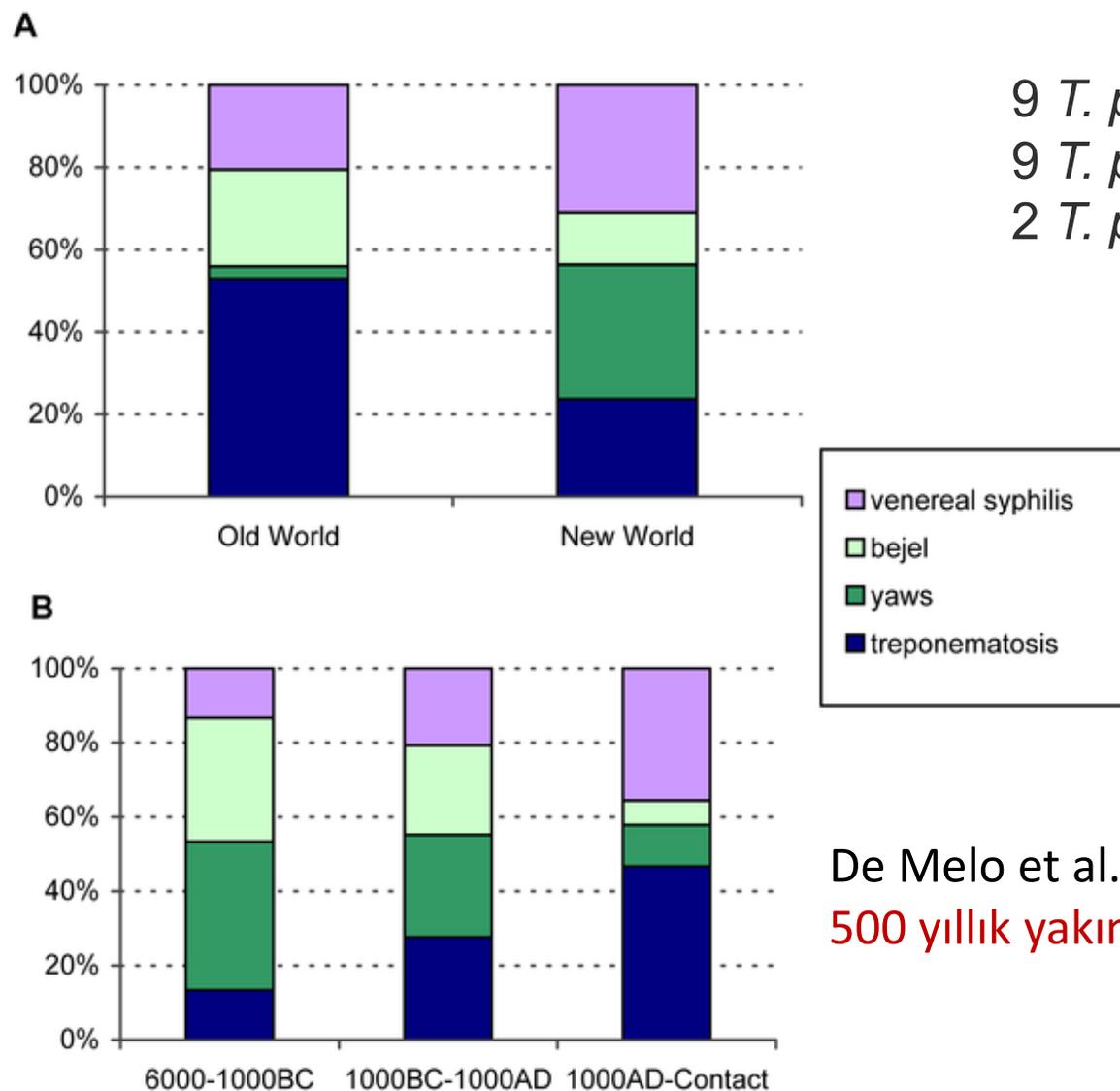
Fibula

Figure 3. Pre-Columbian Treponematoses map.



de Melo FL, de Mello JCM, Fraga AM, Nunes K, Eggers S (2010) Syphilis at the Crossroad of Phylogenetics and Paleopathology. PLOS Neglected Tropical Diseases 4(1): e575. <https://doi.org/10.1371/journal.pntd.0000575>
<http://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0000575>

Figure 4. Geographical and temporal distribution of treponematoses.

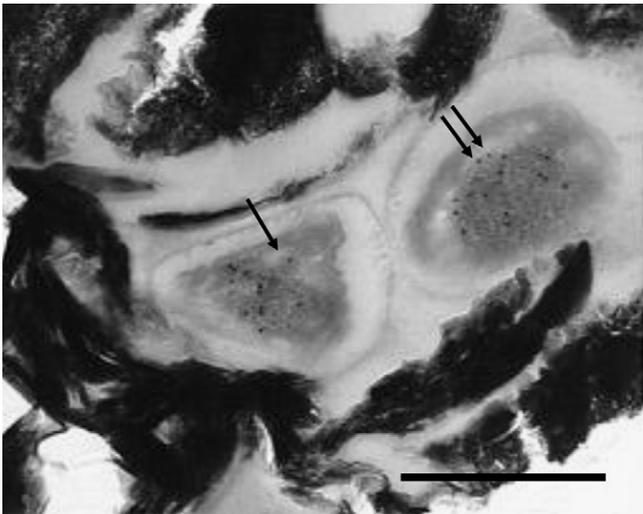
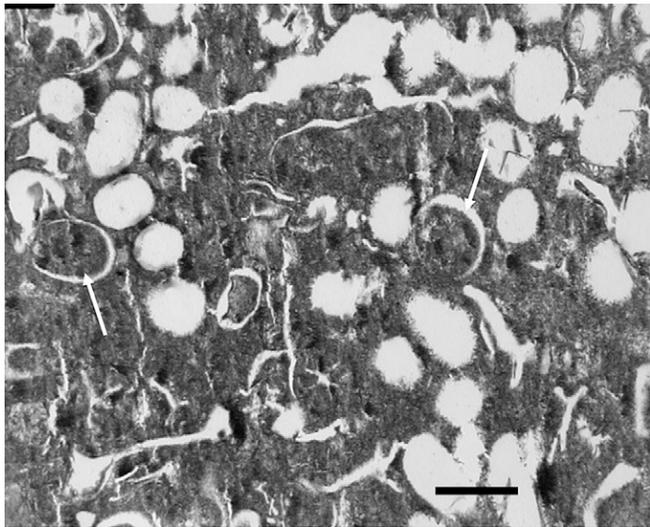


9 *T. pallidum* subsp. *pallidum*,
9 *T. pallidum* subsp. *pertenue*
2 *T. pallidum* subsp. *endemicum*

De Melo et al. venereal syphilis'in yaygınlaşması için
500 yıllık yakın bir tarihin kabul edilmez

de Melo FL, de Mello JCM, Fraga AM, Nunes K, Eggers S (2010) Syphilis at the Crossroad of Phylogenetics and Paleopathology. PLOS Neglected Tropical Diseases 4(1): e575. <https://doi.org/10.1371/journal.pntd.0000575>
<http://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0000575>

Dental, Arterial, Renal calculus



Transmission electron mikroskop görüntüleri

A molecular portrait of maternal sepsis from Byzantine Troy

Gardnerella vaginalis (modern)

Staphylococcus saprophyticus (yaygın değil)

A



B

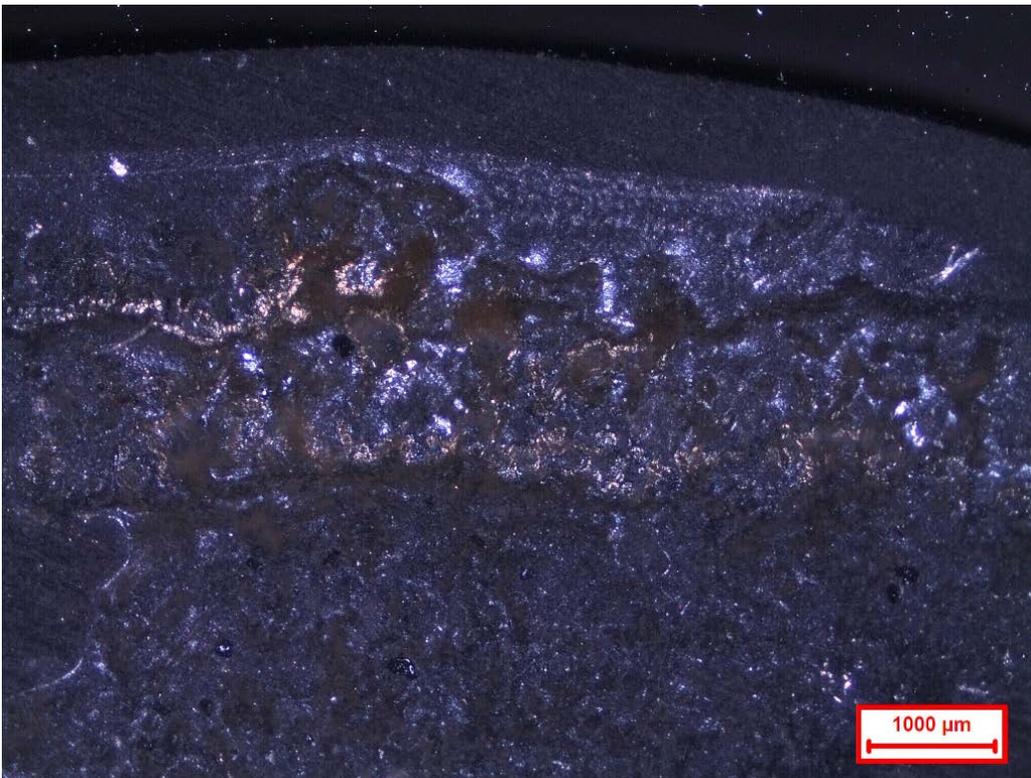


C



Oluz Höyük Ortaçağ SK 13

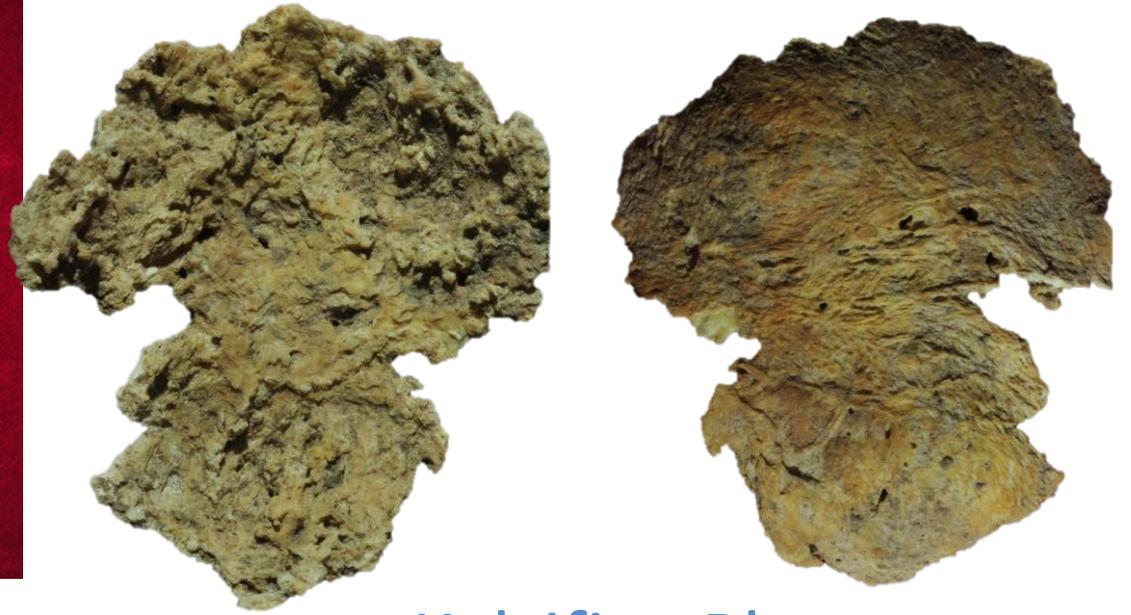
Mesane Taşı





Hakemi Use, Ortaçağ

M106 Yaşlı Kadın



Kalsifiye Pleura



Sacrum



Antropoloji
Bölümü



Biyolojik
Antropoloji
Laboratuvarı

Kazılar
Mezarlar
Mezarlıklar

İskelet

Arkeoloji
Sanat Tarihi
Tarih
Adli bilimler

Biyoarkeoloji

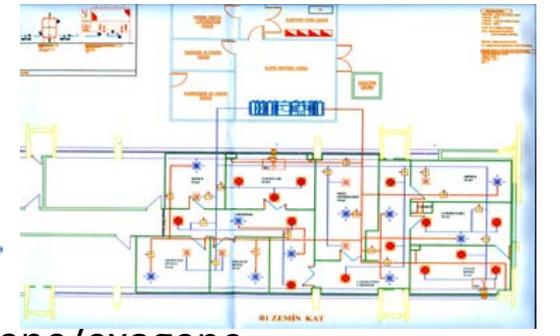
Antropoloji

Adanmış
aDNA izolasyon
Laboratuvarı

aDNA
izolasyonu

Indogene/exogene

Dizileme laboratuvarı



Moleküler genetik

Biyoinformatik



aDNA bilgisi

INTERDISIPLINER

ULUSLARARASI

TEŞEKKÜRLER

- * Prof. Dr. Seza Özen ve Sağlık Bilim Kurulu üyelerine
- * Birlikte çalıştığım arkeologlara
- * aDNA çalışmalarlarındaki ortaklarımıza
 - Wisconsin Üniversitesi, Madison
 - Max Planck Institute, Jena
 - Harvard Üniversitesi
 - Stockholm Üniversitesi
 - Uppsala Üniversitesi
 - ODTÜ
- * sabrınız için sizlere...