



**Università
degli Studi
di Ferrara**

Marco Peresani

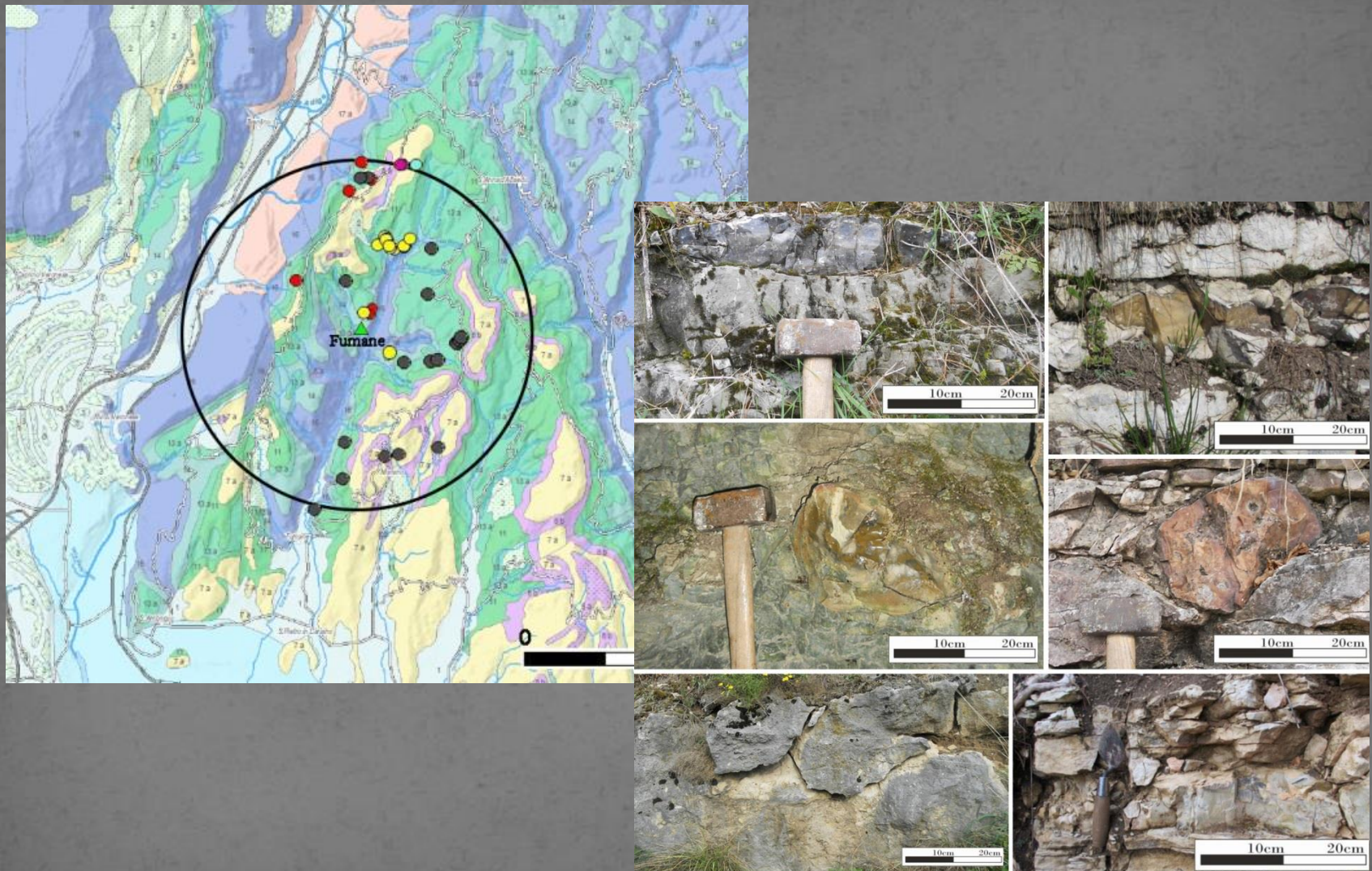
Cronologie e culture del Paleolitico

Lezione 8.1 – Neanderthal land-use

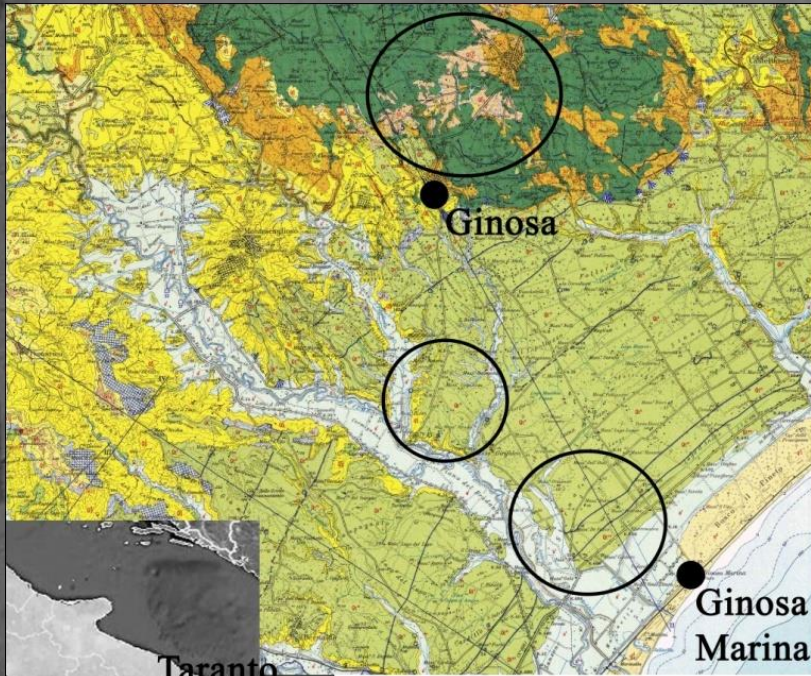
La migration Dessin de Benoit...

Università di Ferrara
Dipartimento di Studi Umanistici
Sezione di Scienze Preistoriche e Antropologiche

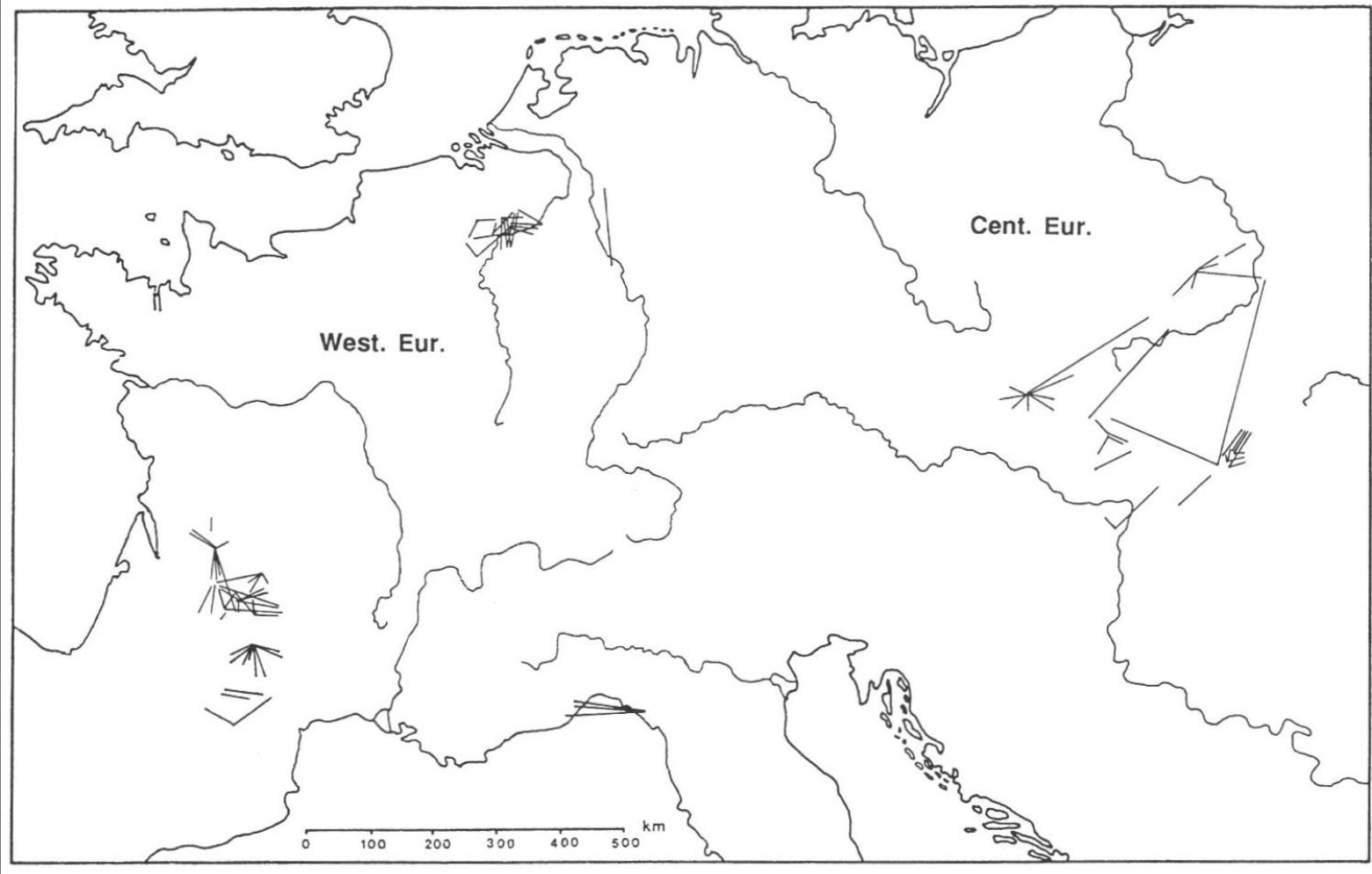
Lithic provisioning and circulation



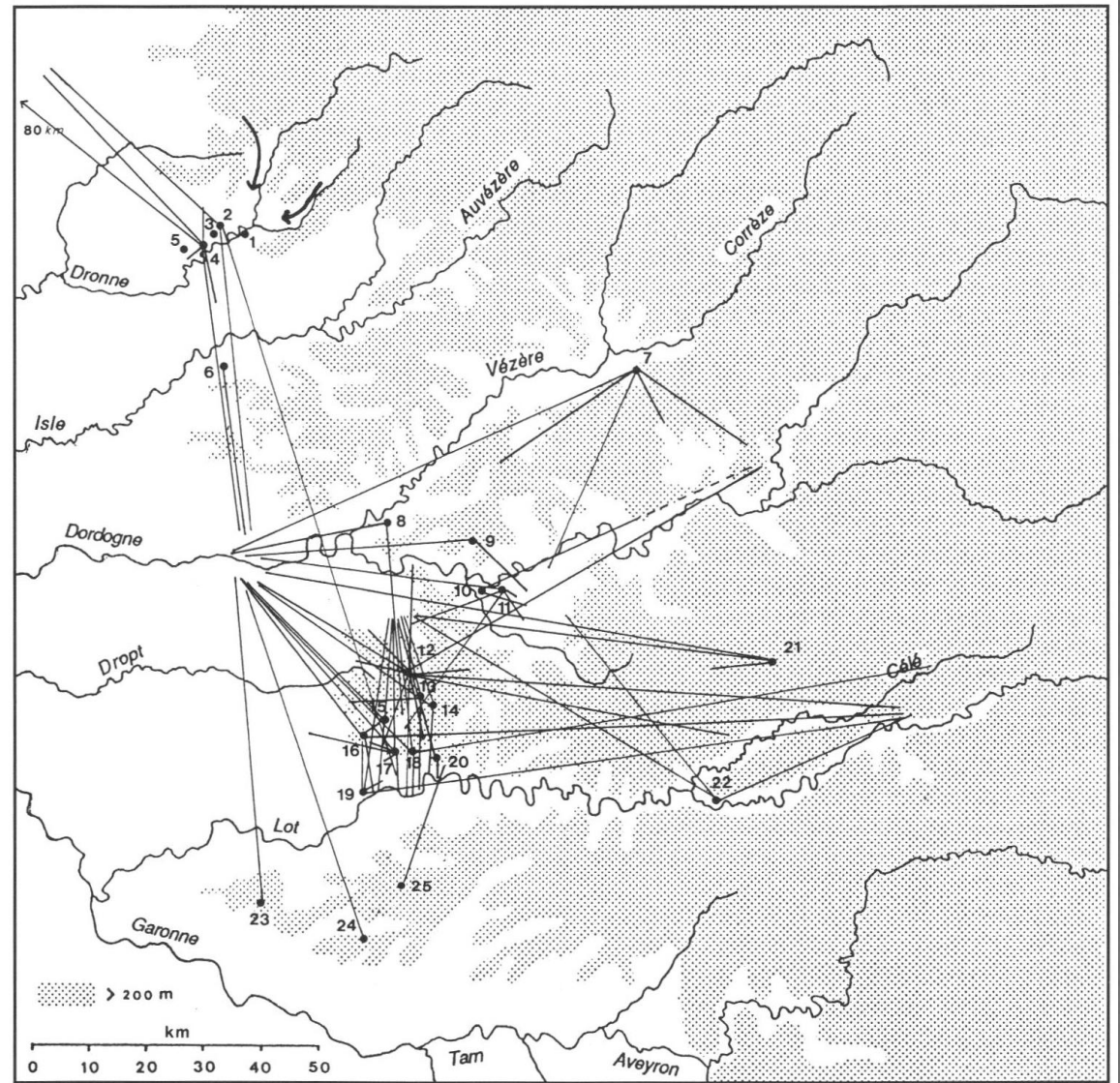




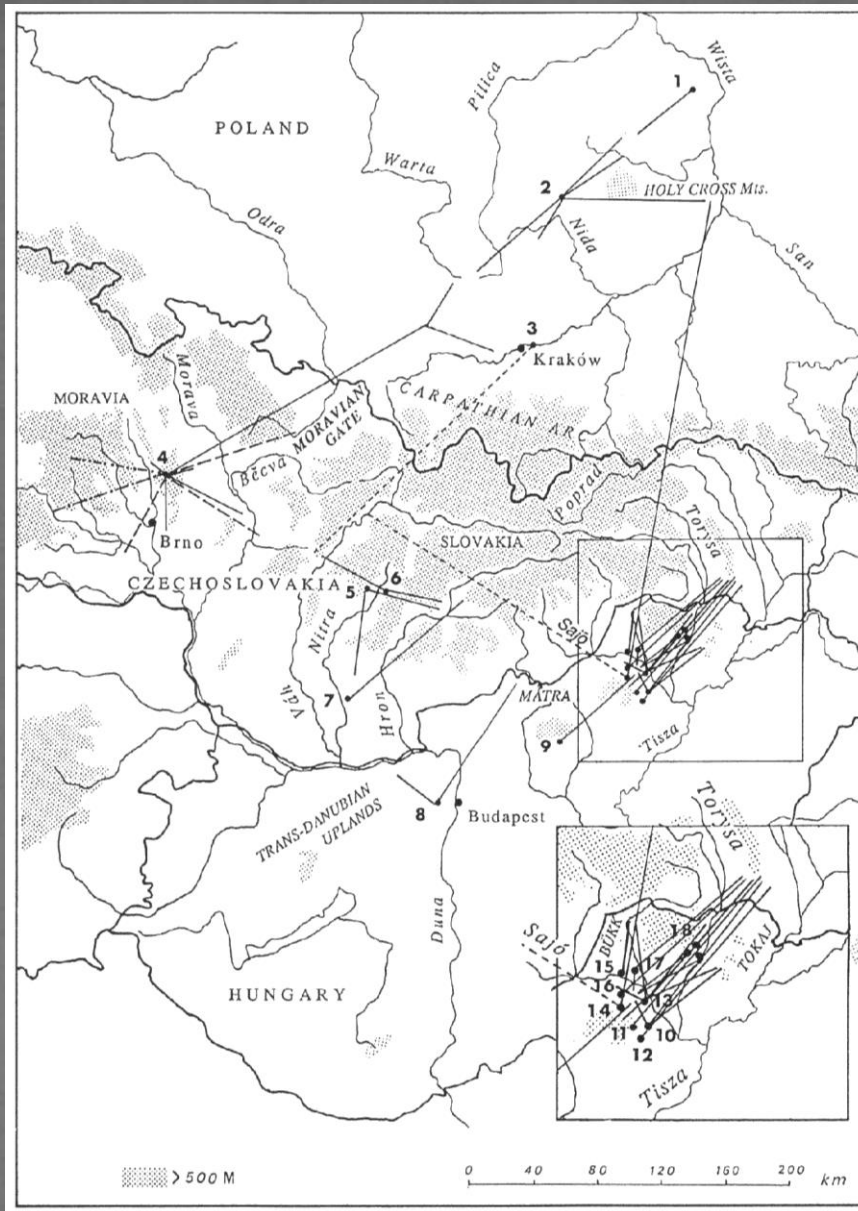
Lithic provisioning and circulation

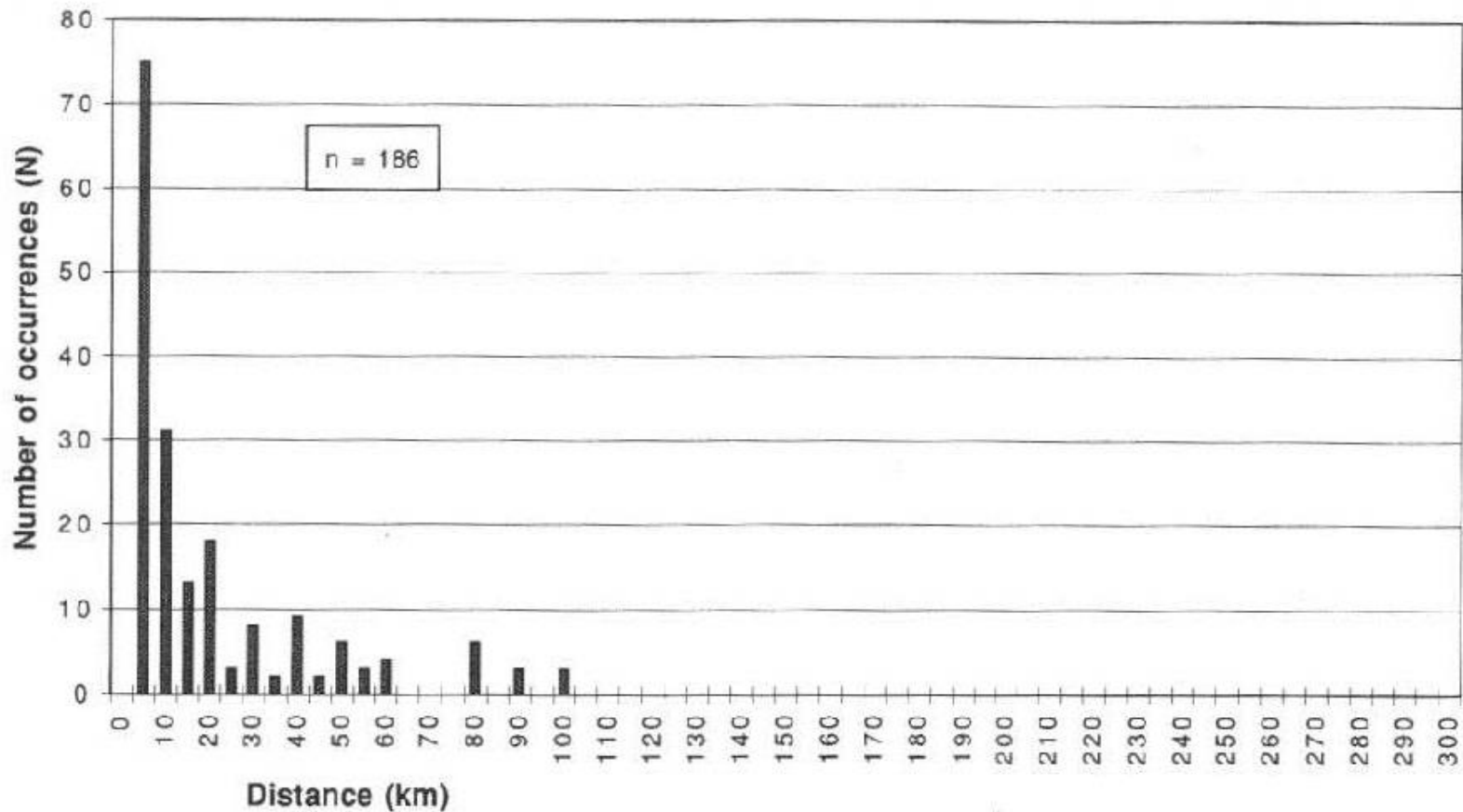


Connection between sites and raw material sources in western France

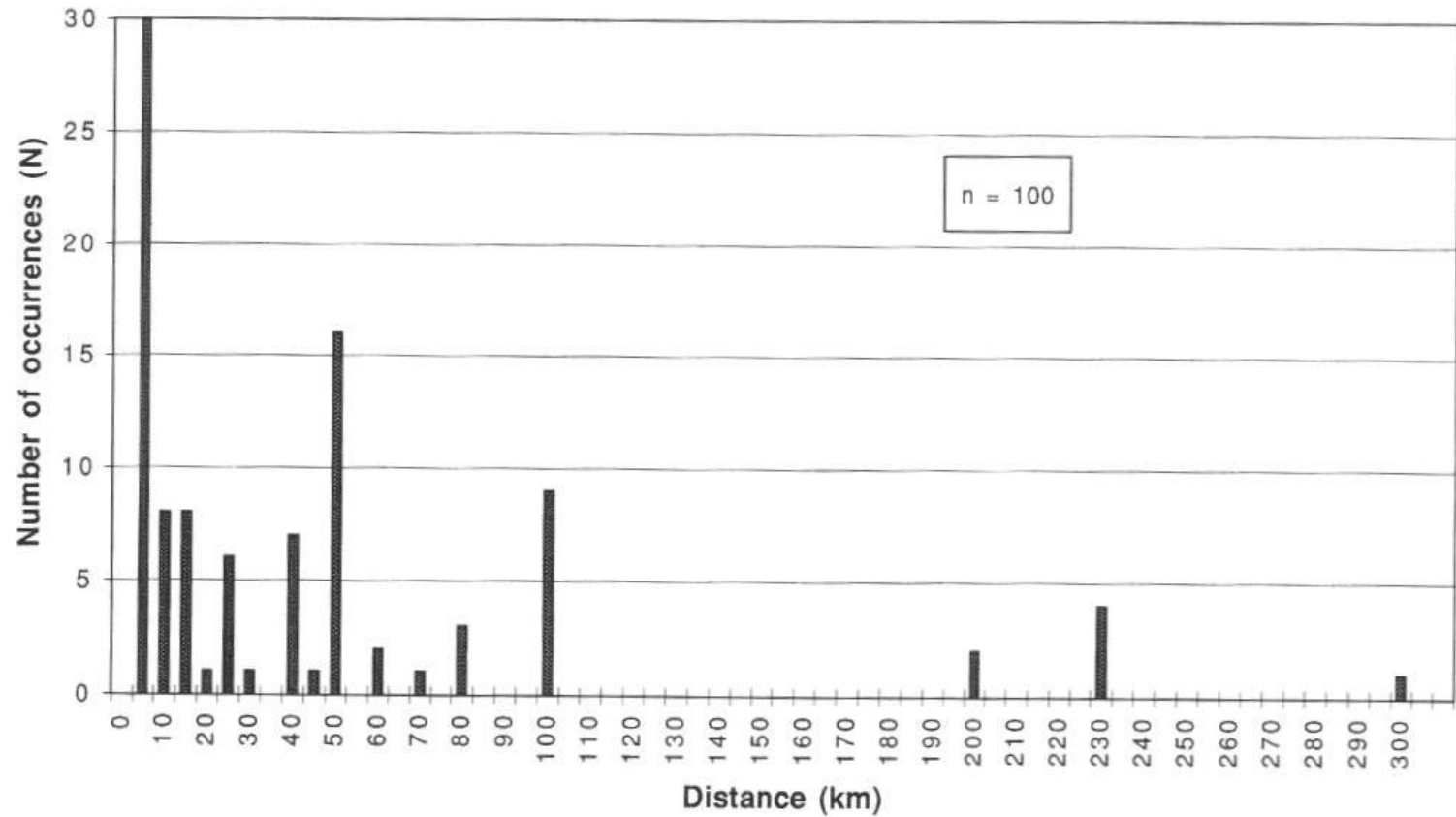


Connection between sites and raw material sources in Central Europe

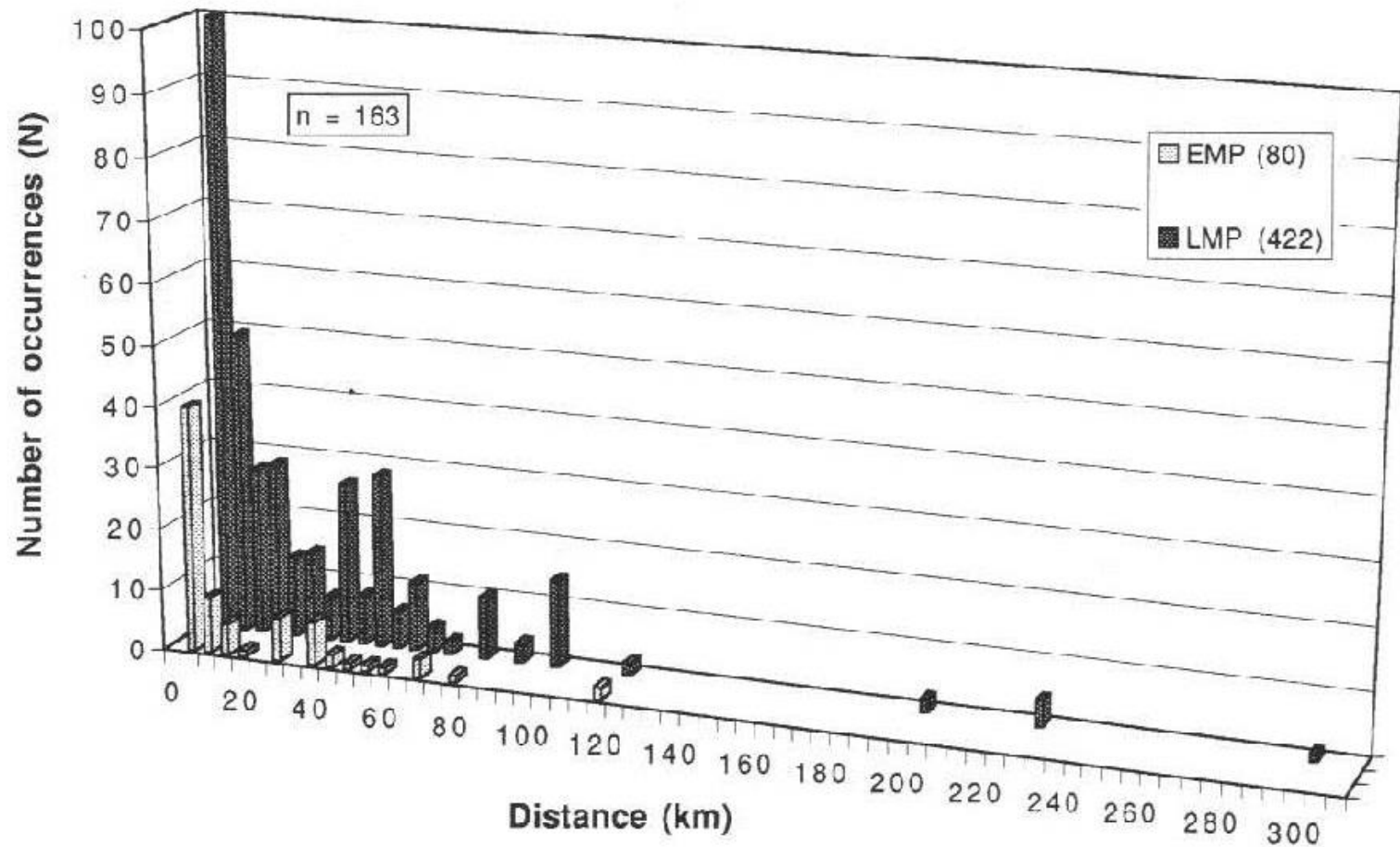




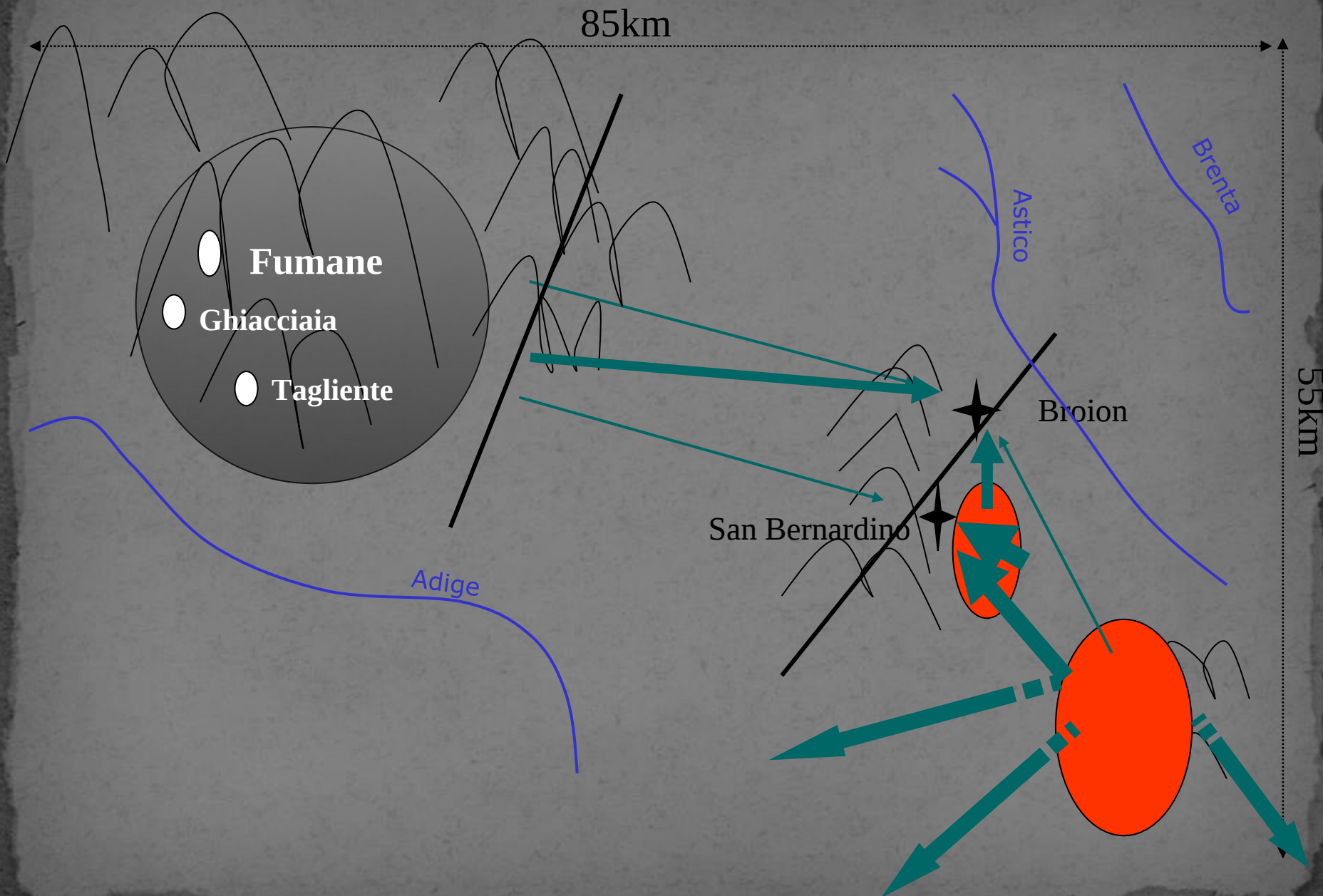
Distribution of raw material transfers in the Aquitaine basin during the Middle Palaeolithic



Distribution of raw material transfers in the central Europe during the Middle Palaeolithic



Distribution of raw material transfers during the early Middle Palaeolithic and the Late Middle Palaeolithic



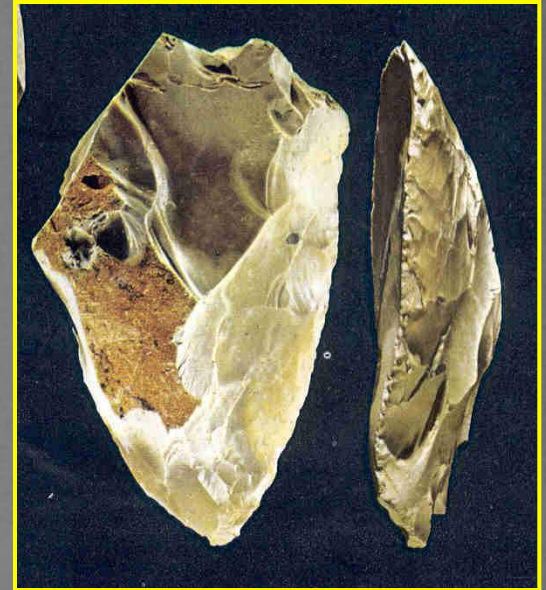
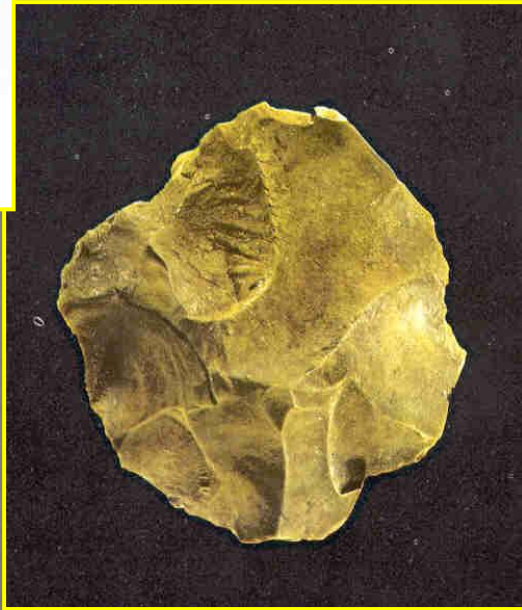
Neanderthal technocomplexes

MIDDLE PALAEOLITHIC: Mousterian (300.000-40.000 B.P)

Curated techniques of stone flaking



Levallois Method

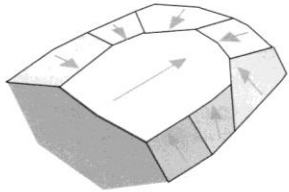


Scraper

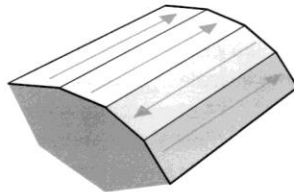
1

Débitage Levallois

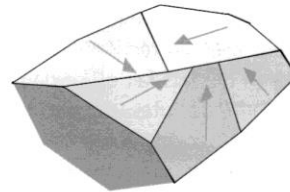
à éclat préférentiel



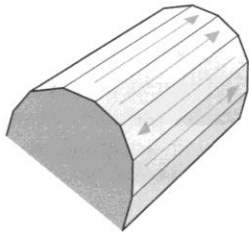
à éclats récurrents uni-bipolaires



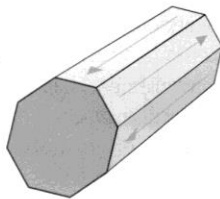
à éclats récurrents centripètes

**Débitage laminaire**

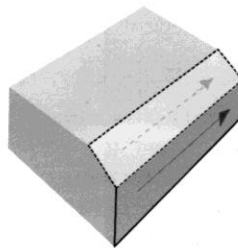
semi-tournant



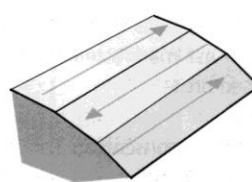
tournant



frontal

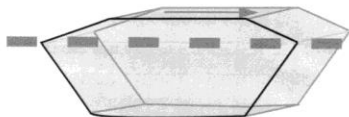
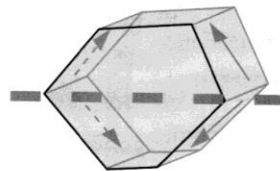
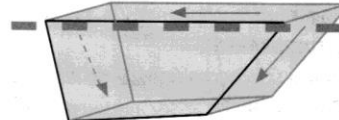


facial



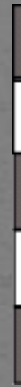
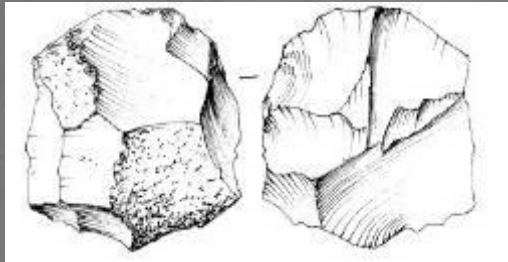
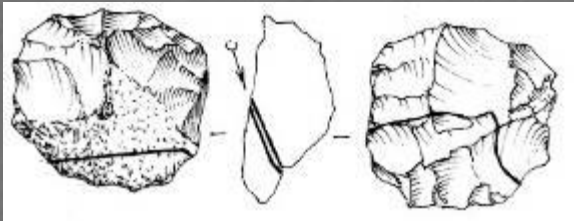
Variability of flaking methods

2

Débitage Levallois**Débitage discoïde****Débitage Quina**

production/reduction

MONTE VERSA



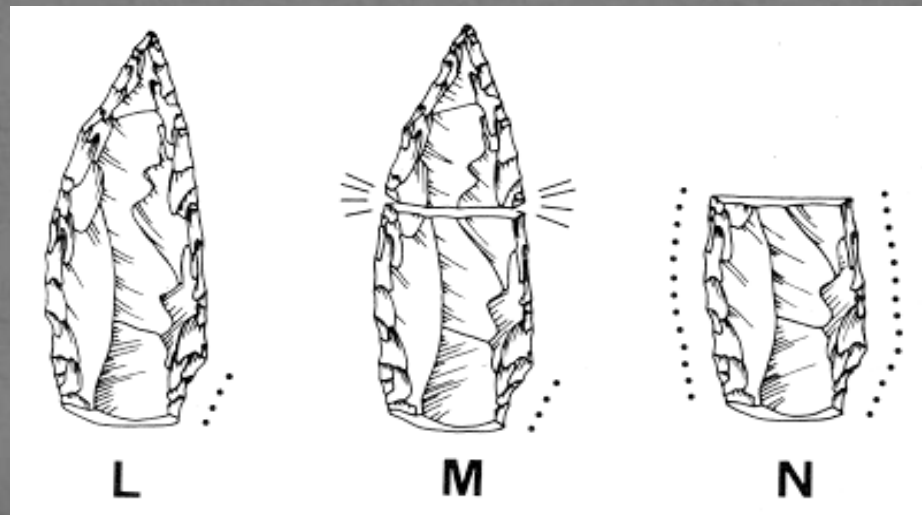
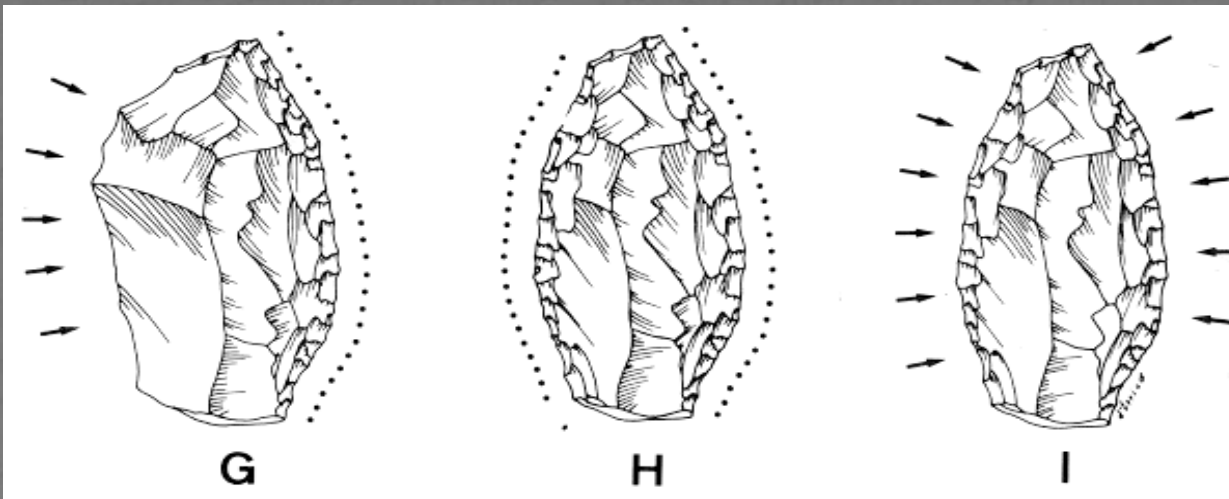
**SAN BERNARDINO
CAVE**

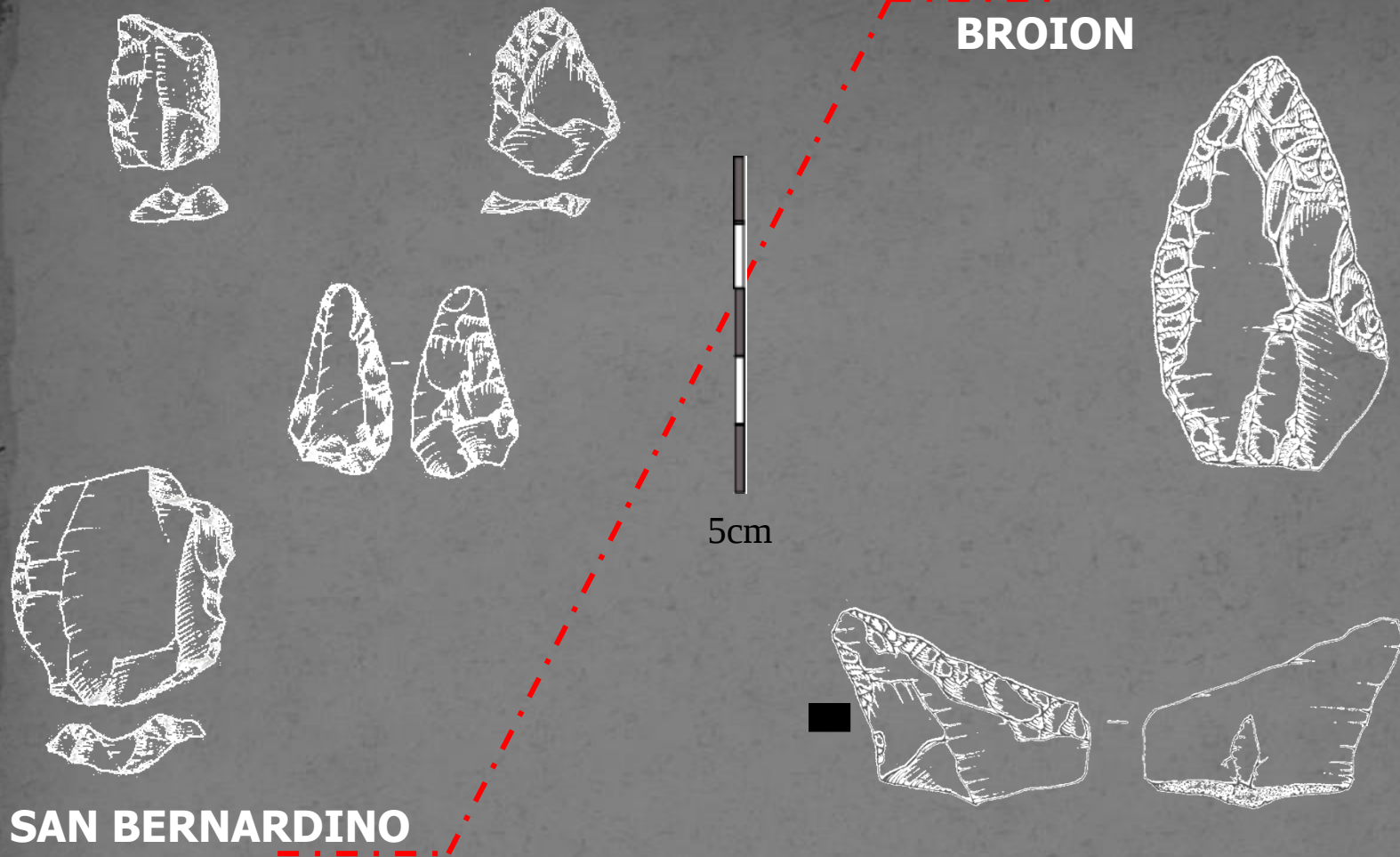
Difference in the degree of exploitation of flint:

San Bernardino : «long term» and differentiated frequentations
→ intense exploitation

Monte Versa : "short term" and specialised frequentations
→ middle exploitation

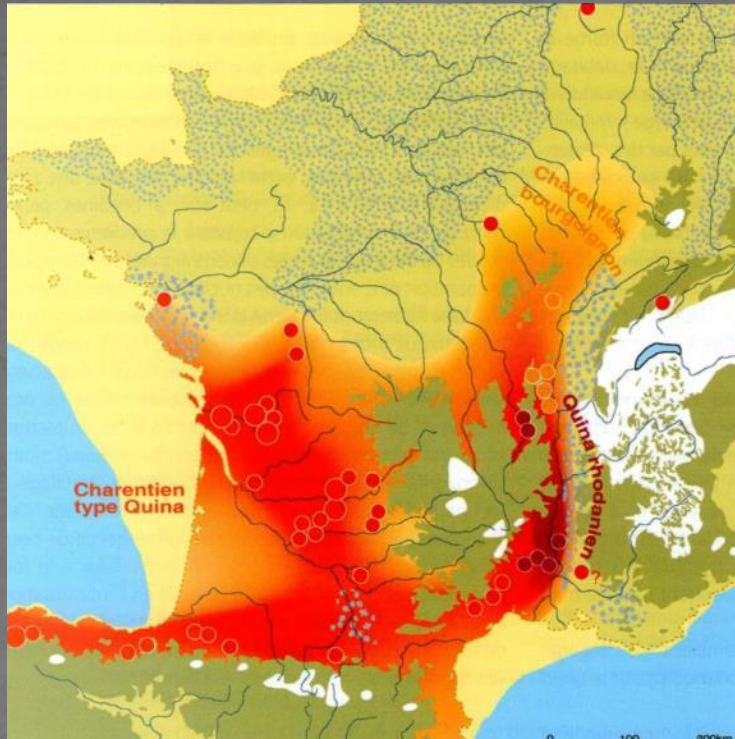
Use, reuse and discard of scrapers



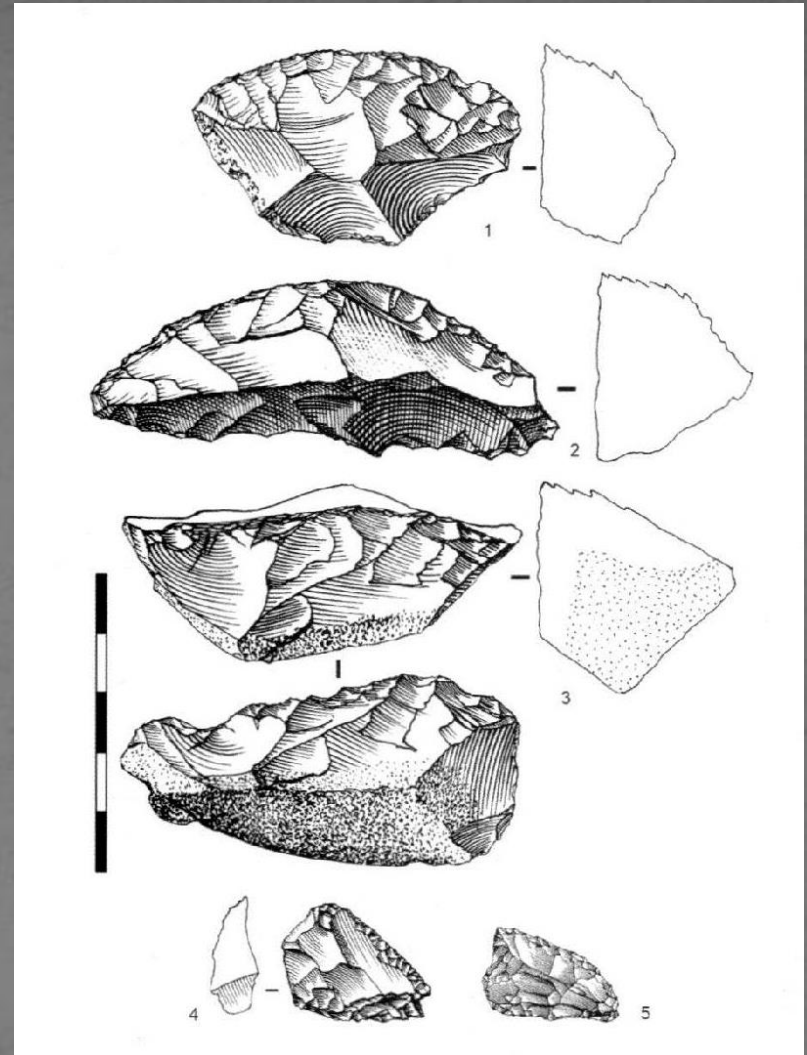


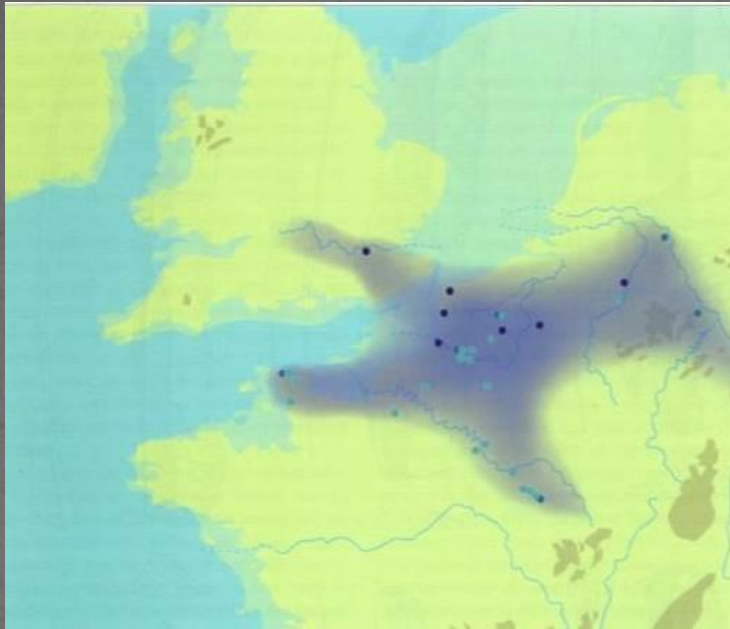
Rate of retouched tools and magnitude of retouch:

- San Bernardino cave: «long term» and differentiated frequentations, *in situ* production
- Broion : short term" and specialised frequentations, importation of artifacts



Quina Mousterian industries





Middle Palaeolithic blade industries

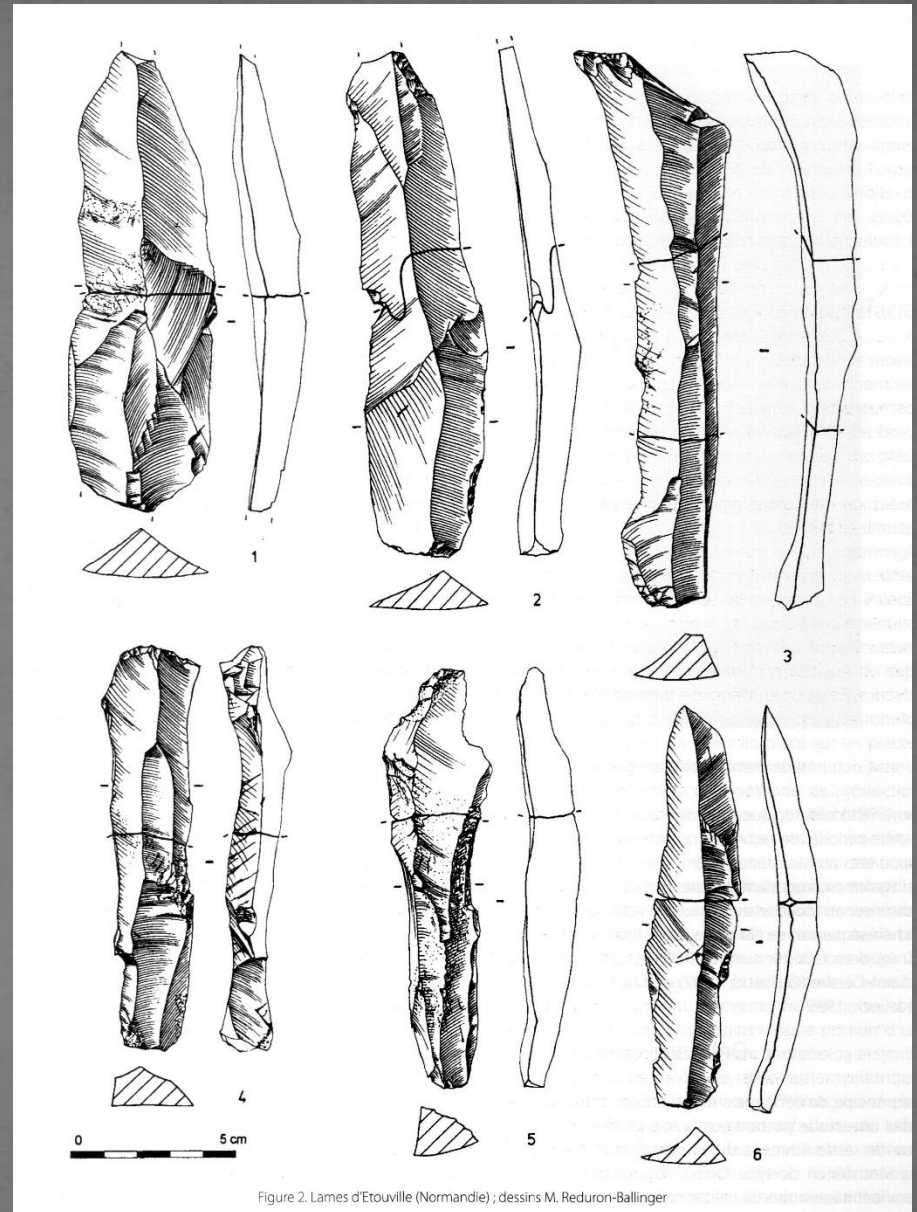
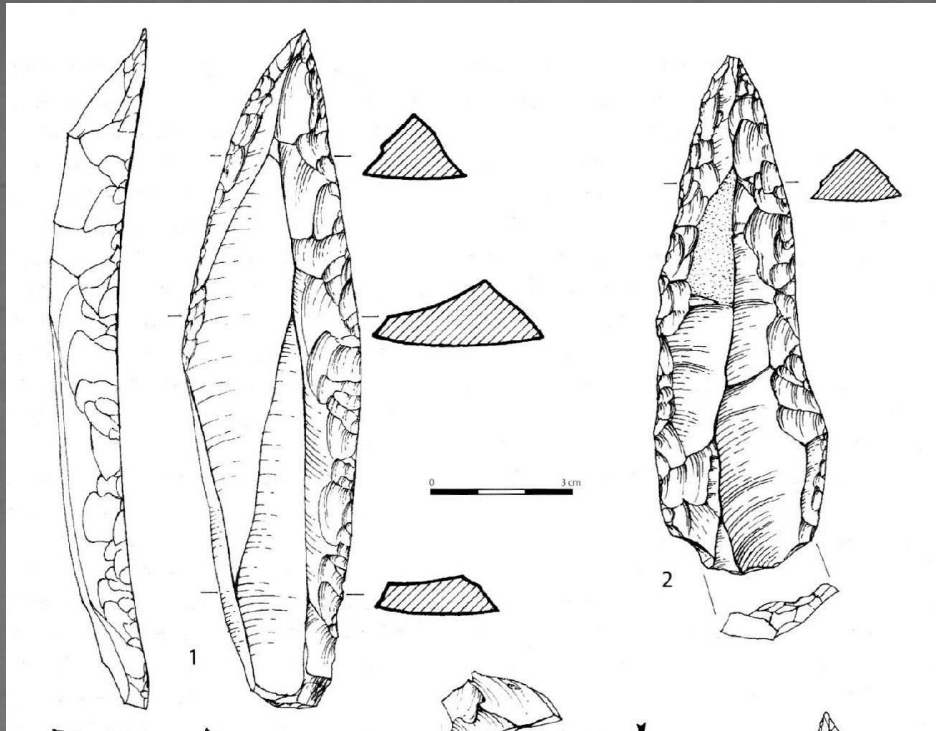
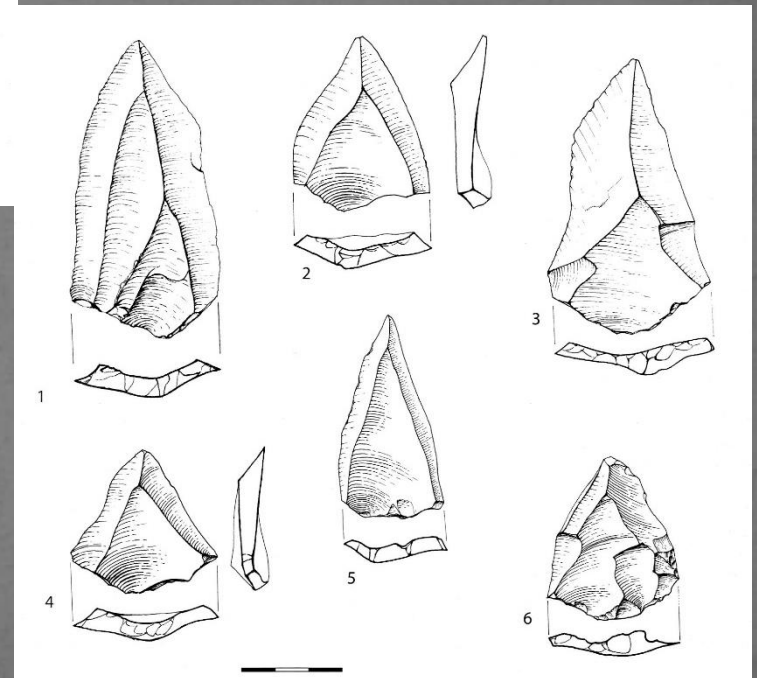


Figure 2. Lames d'Etouville (Normandie) ; dessins M. Reduron-Ballinger



Mousterian Points from the Near East



The Mousterian technocomplexes

COMPLESSI MUSTERIANI (F. BORDES 1953)	SCHEGGIATURA LEVALLOIS		SCHEGGIATURA NON LEVALLOIS	
	FACIES NON LEVALLOIS	FACIES LEVALLOISIANA IL ty > 30	TALLONI A FACETTE IF > 45; IFs > 30	TALLONI LISCII IF < 45; IFs < 30
M. QUINA O CHARENTIANO 55 < I Ress < 82 19 < I Cess < 54	La Ferrassie C e D			La Quina Combe Grenal B,C La Chapelle a. S.
M. TIPICO 22 < I Ress < 37	Le Moustier B e J	Oissel Houppesville (= Levalloisiano VII di Breuil)	Pech de l'Aze II b - 4C	
M. DI TRADIZIONE ACHEULEANA TIPO A 22 < I Ress < 37	Le Moustier G Gare de Couze Combe - Capelle Fontmaure 1	Bihorel (= Levalloisiano V di Breuil)	Pech de l'Aze I inf. La Chaise 3 e 4	
M. DI TRADIZIONE ACHEULEANA TIPO B 3 < I Ress < 13	Belcayre ?	Goderville	Pech de l'Aze I sup.	
M. A DENTICOLATI 3 < I Ress < 13	Belcayre ?	Evreux II	Pech de l'Aze a 4 Combe Grenal D	

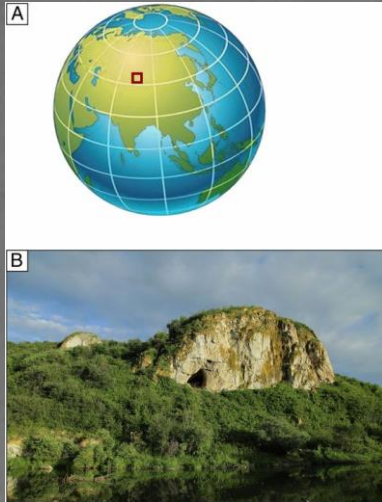
From Keilmesser to
Handaxes: Macro-
Regional Variability
among Western
European Late Middle
Palaeolithic Bifacial
Tools.



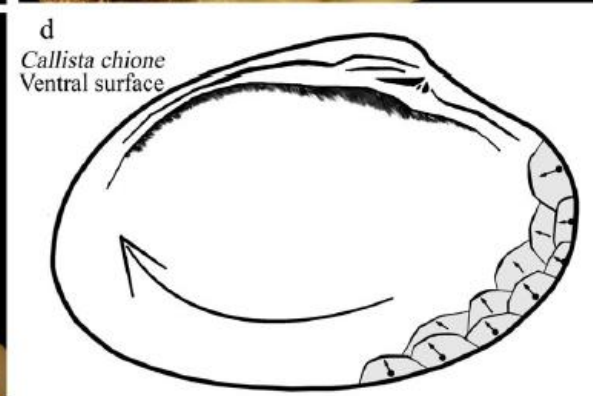
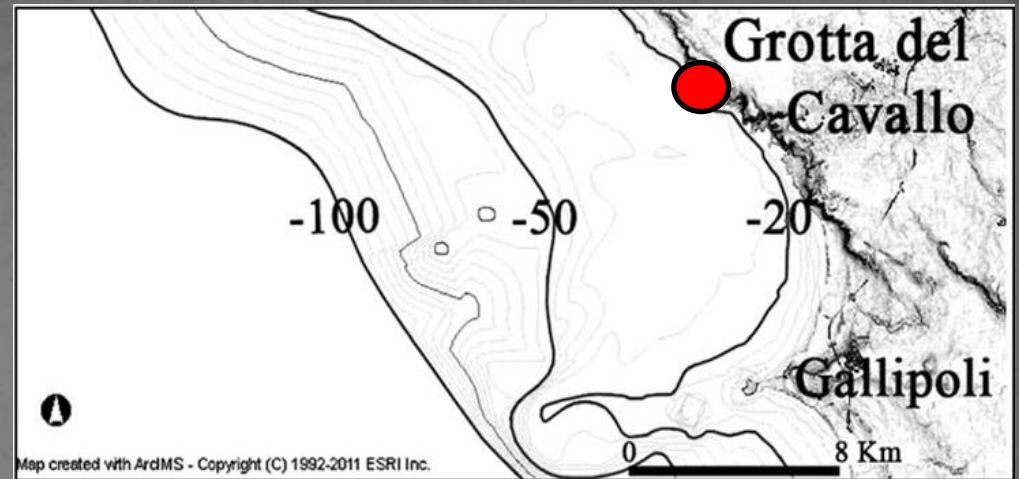
Archaeological evidence for two separate dispersals of Neanderthals into southern Siberia

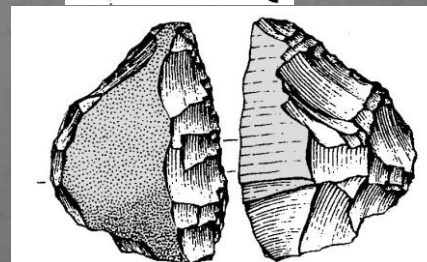
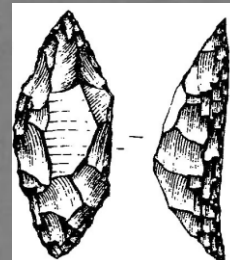
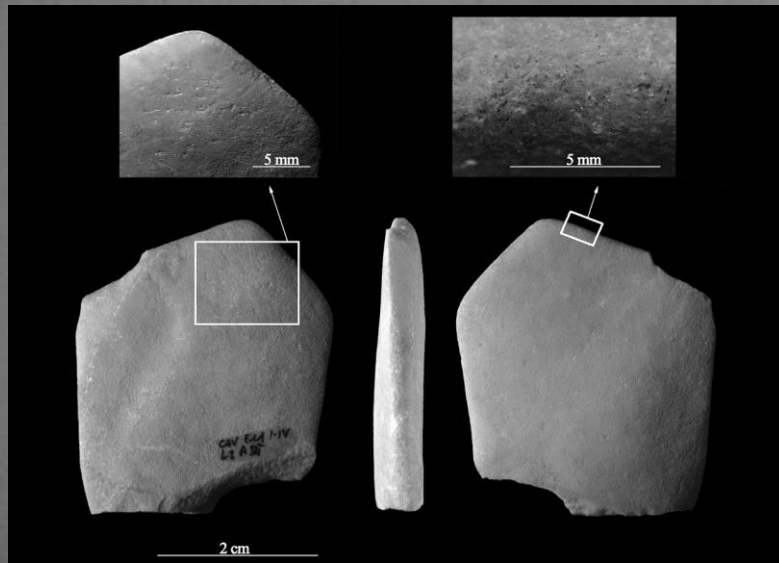
Kseniya A. Kolobova^{a,1}, Richard G. Roberts^{b,c,1}, Victor P. Chabai^d, Zenobia Jacobs^{b,c}, Maciej T. Krajcarz^e, Alena V. Shalagina^a, Andrey I. Krivoshekin^{a,f}, Bo Li^{b,c}, Thorsten Uthmeier^g, Sergey V. Markin^a, Mike W. Morley^{h,i}, Kieran O'Gorman^h, Natalia A. Rudaya^a, Sahra Talamo^j, Bence Viola^k, and Anatoly P. Derevianko^a

Chagyrskaya Cave

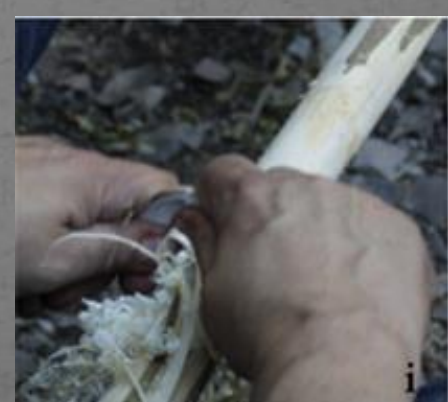
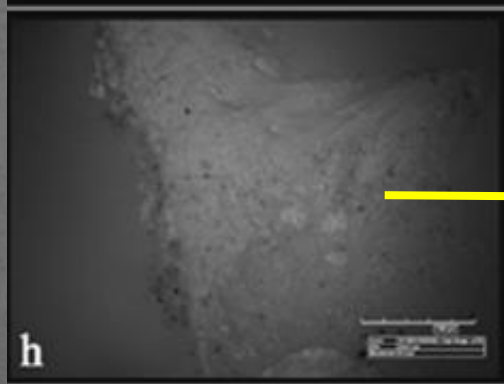
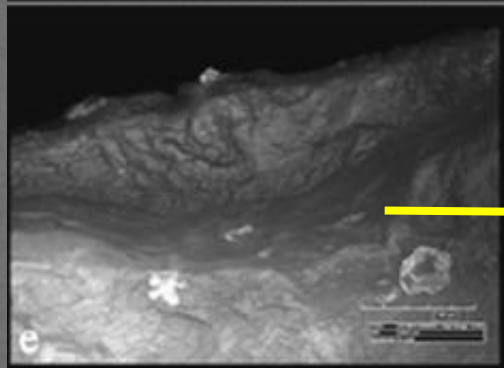
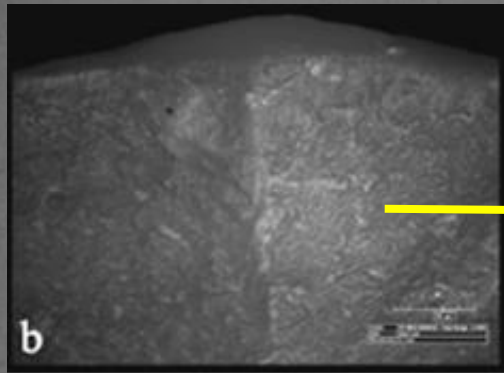


Use of Callista chione shells as tools





Use of Callista chione shells as tools



Neanderthal dietary habits

Traditional view on Neandertal's diet



PNAS

September 22, 2009 | vol. 106 | no. 38

Isotopic evidence for the diets of European Neanderthals and early modern humans

Michael P. Richards^{a,b,1} and Erik Trinkaus^c

Isotopic evidence for Neanderthals from Be...

The contribution of lithic products of Mousterian industrial variability: The example of Combe-Grenal

Jean-Philippe Faivre^{a,*}, Emmanuel Diserens^a, Jean-Luc Guadelli^a, Michel Lenoir^a



ELSEVIER

Monospecific faunal spectra in Mousterian social behavior

William Rendu^{a,b,*}, Sandrine Costamagno^a, Liliane Meignen^c

Quaternary

Contents lists available at SciVerse ScienceDirect

Comptes Rendus Palevol

www.sciencedirect.com

Human palaeontology and prehistory

Small and large game: Human use of diverse faunal resources at the site of Bolomor Cave (Valencia, Spain)

Perit et grand gibier: l'utilisation humaine de ressources fauniques au niveau IV de la Grotte du Bolomor (Valence, Espagne)

Ruth Blasco^{a,b,*}, Josep Fernández Peris^c

Hervé Bocherens

19. Neanderthal Dietary Habits: Review of the Isotopic Evidence

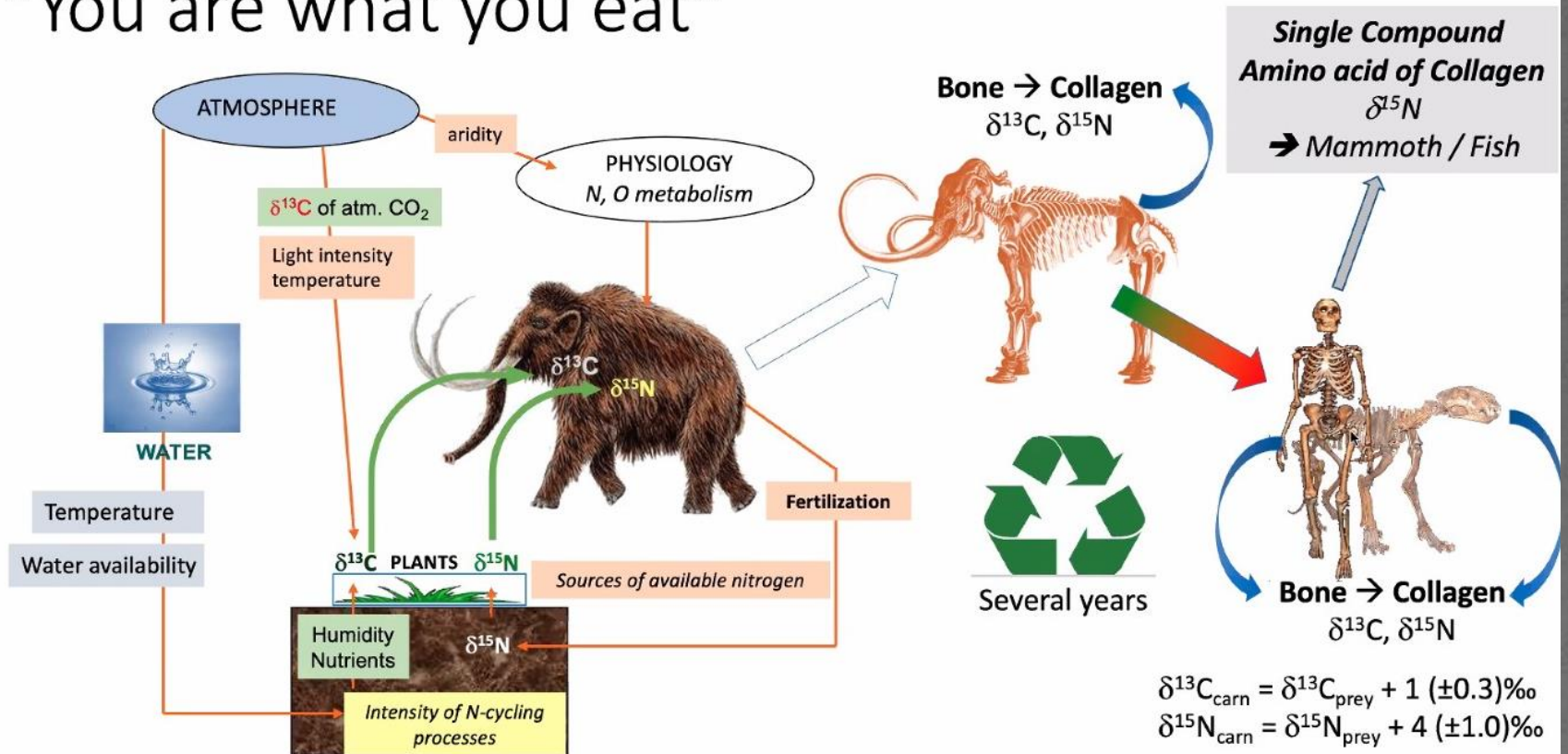


CrossMark

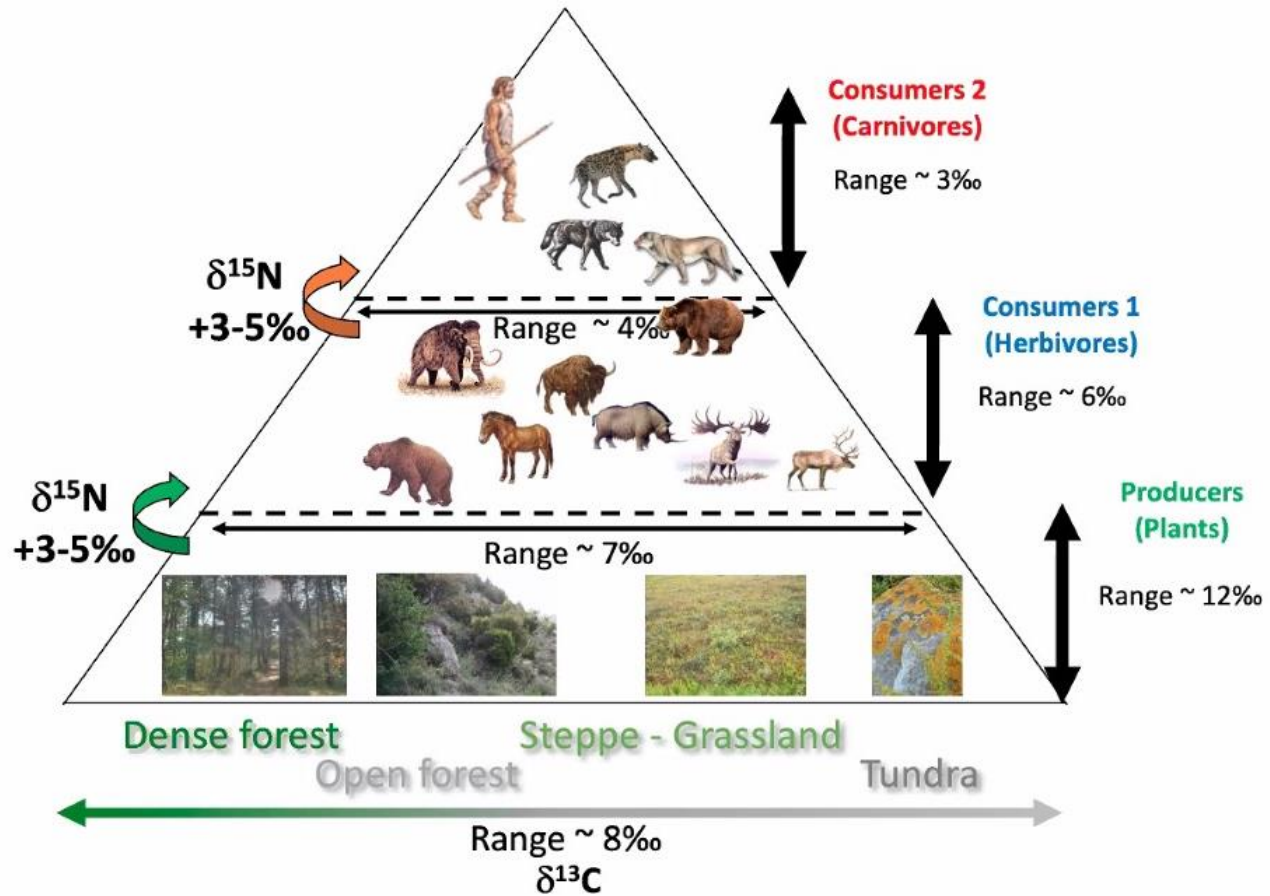
Methodological limitations

- Faunal remains do not represent the bulk diet
- Stable isotope analysis is limited to bone preservation (most specimens analyzed are from northern and central European sites)
- Large changes in protein sources may be indicated by only small changes in the isotopic ratio

Carbon and nitrogen stable isotopes: “You are what you eat”



Isotopic paleoecology in the Late Pleistocene



Indirect evidence of plant consumption: remains

Journal of Archaeological Science (2002) 29, 703–719

The Exploitation of Plant Resources by Neanderthals in Amud Cave (Israel): The Evidence from Phytolith Studies

Marco Madella, Martin K. Jones, Paul Goldberg, Yuval Goren, Erella Hovers

Journal of Archaeological Science (2000) 27, 931–947

Phytoliths in the Middle Palaeolithic Deposits of Kebara Cave, Mt Carmel, Israel: Study of the Plant Materials used for Fuel and Other Purposes

Rosa M. Albert* and Steve Weiner†

Journal of Archaeological Science 32 (2005) 475–484

Mousterian vegetal food in Kebara Cave, Mt. Carmel

Efraim Lev^{a,*}, Mordechai E. Kislev^b, Ofer Bar-Yosef^c

Indirect evidence of plant consumption: dental affections

Journal of Human Evolution (1995) **29**, 189–192

Middle Palaeolithic dental caries : new evidence from Kebara (Mount Carmel, Israel)

Anne-marie Tillier, Baruch Arensburg, Yoel Rak, Bernard Vandermeersch

Journal of Archaeological Science (2002) **28**, 555–557

A Carious Neandertal Molar from the Bau de l'Aubesier, Vaucluse, France

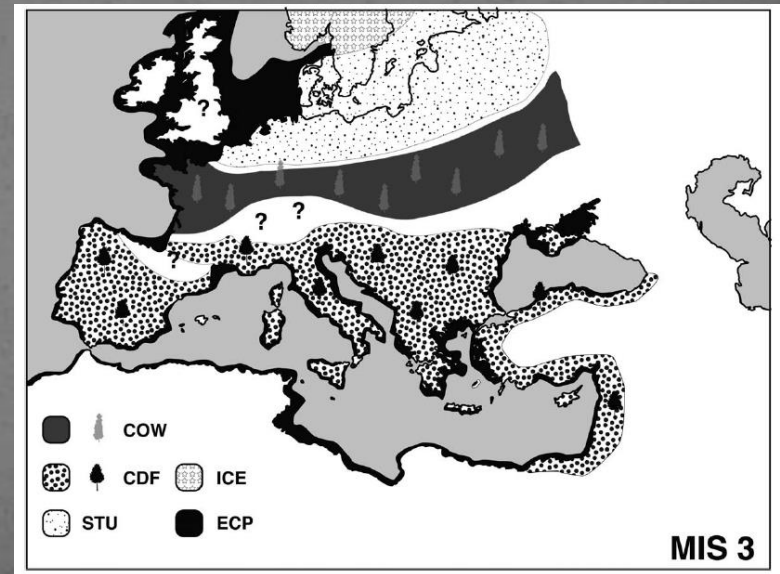
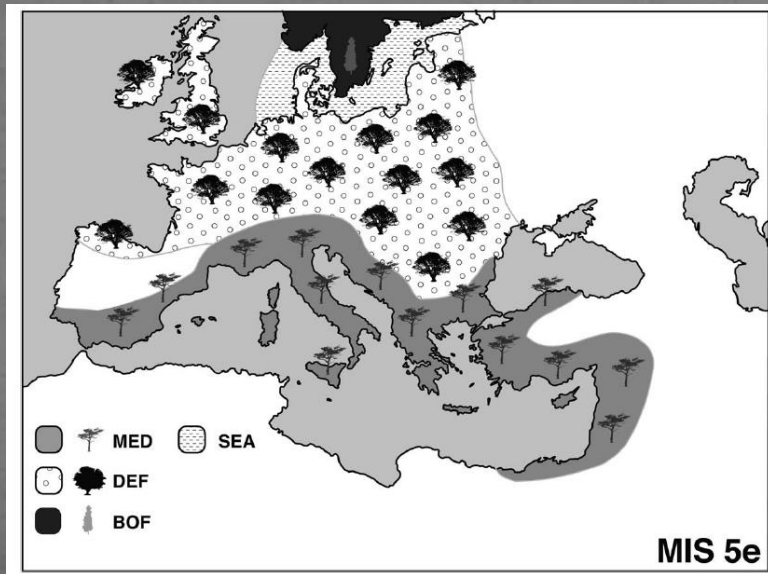
Serge Lebel, Erik Trinkaus

J Dent Res 90(4):428-432, 2011

New Evidence of Dental Pathology in 40,000-year-old Neandertals

M.J. Walker¹, J. Zapata¹,
A.V. Lombardi², and E. Trinkaus^{3*}

Wide eco-geographic range



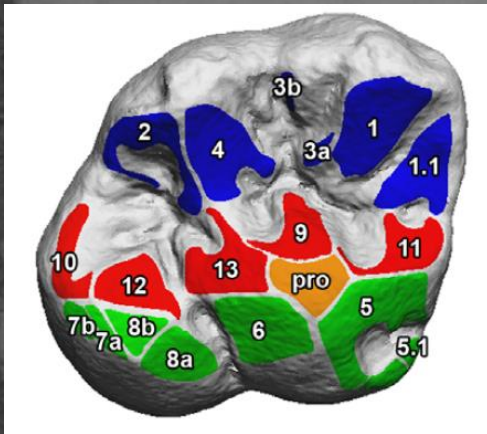
New evidences on Neandertal's diet



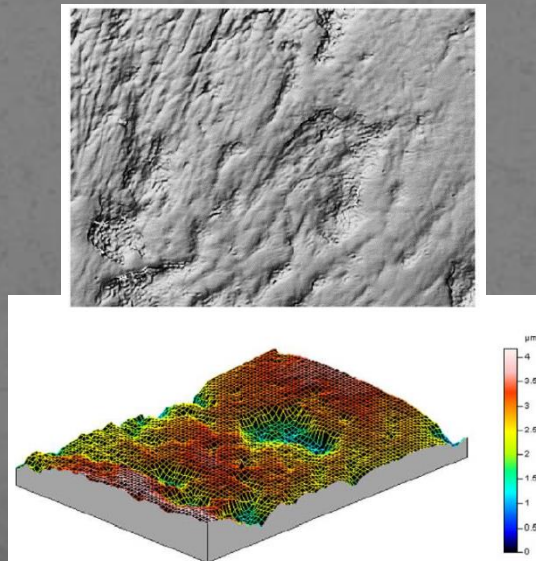
**Stone tool function
(residues on lithics)**



Dental calculus (phytoliths)



Macrowear



Microwear



Coprolites

Residues on lithics and use-wear analyses

OPEN ACCESS Freely available online

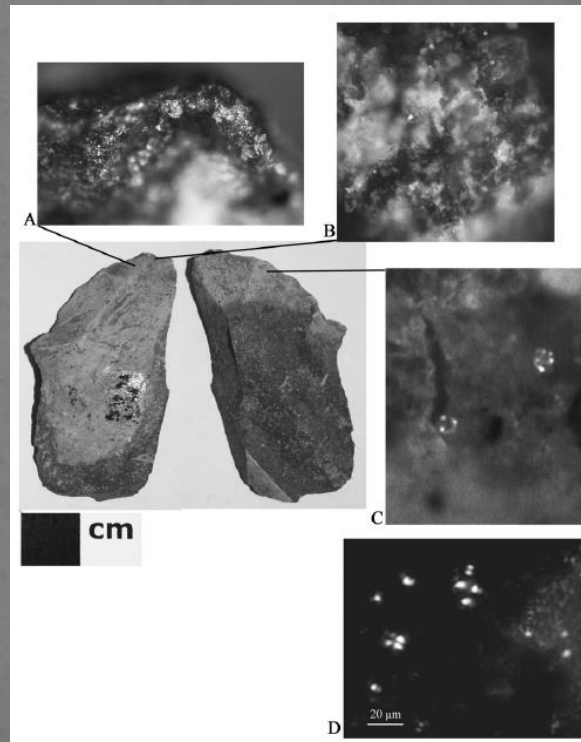
August 2011 | Volume 6 | Issue 8 | e23768

PLOS one

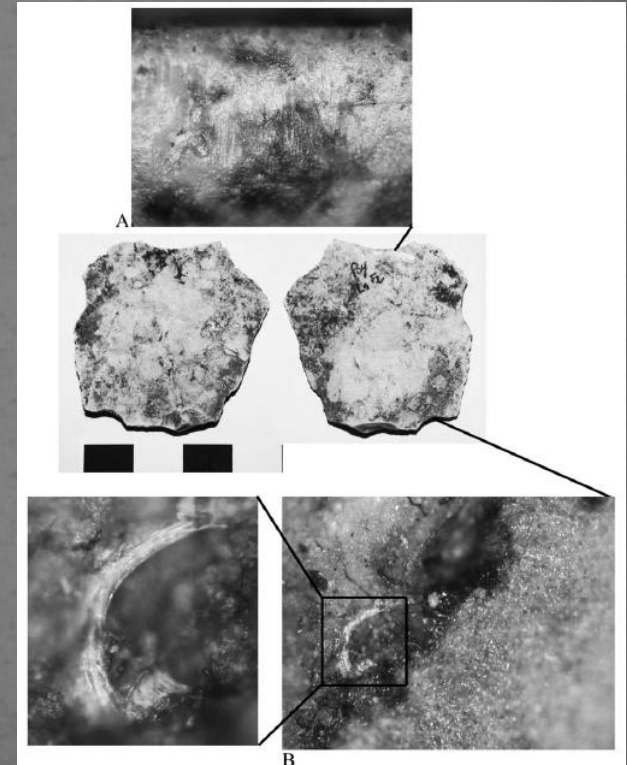
Neanderthal Use of Fish, Mammals, Birds, Starchy Plants and Wood 125-250,000 Years Ago

Bruce L. Hardy^{1*}, Marie-Hélène Moncel²

In addition to large terrestrial herbivores, Neanderthals at Payre, Ardèche (France) also exploited starchy plants, birds, and fish.



Starchy plant processing tool



Fish processing tool

Microfossils in dental calculus

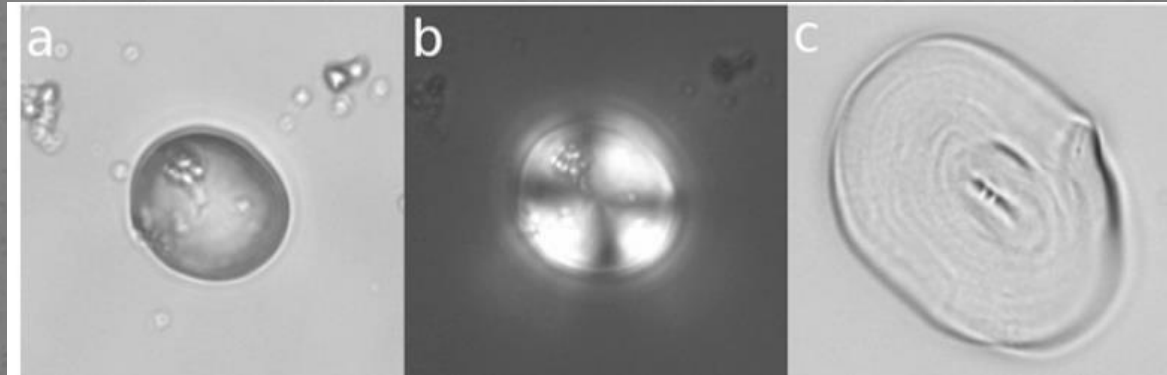
PNAS

486–491 | PNAS | January 11, 2011 | vol. 108 | no. 2

Microfossils in calculus demonstrate consumption of plants and cooked foods in Neanderthal diets (Shanidar III, Iraq; Spy I and II, Belgium)

Amanda G. Henry^{a,b,1}, Alison S. Brooks^a, and Dolores R. Piperno^{b,c,1}

Hordeum spp. starch grain from Shanidar tooth 4 under bright field and cross-polarized light.



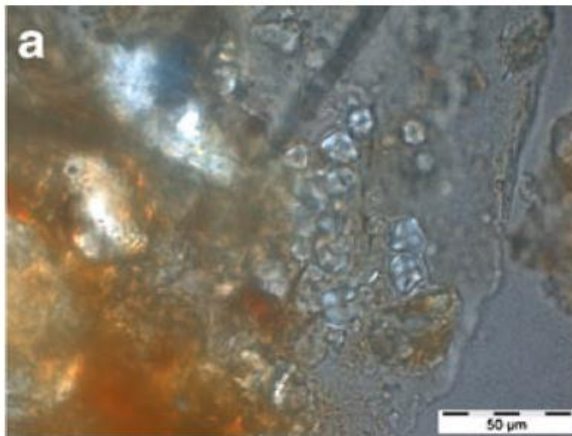
Cooked *Hordeum spp.* starch from Shanidar tooth 5

Biomarkers in dental calculus

Naturwissenschaften (2012) 99:617–626

Neanderthal medics? Evidence for food, cooking, and medicinal plants entrapped in dental calculus

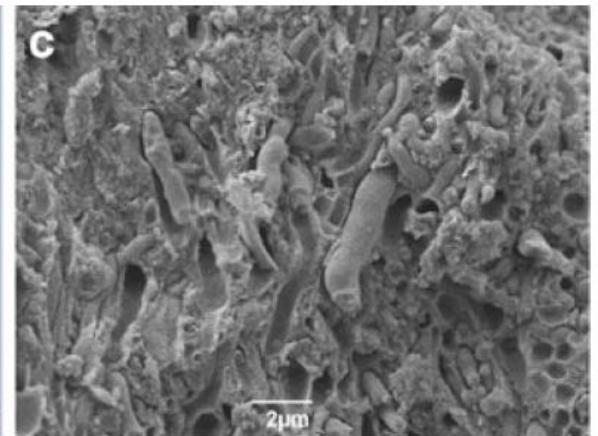
Karen Hardy • Stephen Buckley • Matthew J. Collins • Almudena Estalrrich • Don Brothwell • Les Copeland • Antonio García-Tabernero • Samuel García-Vargas • Marco de la Rasilla • Carles Lalueza-Fox • Rosa Huguet • Markus Bastir • David Santamaría • Marco Madella • Julie Wilson • Ángel Fernández Cortés • Antonio Rosas



Group of starch granules still embedded in dental calculus matrix (SD 1427b)



Damaged starch granule (17 µm diameter) viewed under polarized light (SD 1327i)



Filamentous and cocci bacteria (sample SD 1427c)