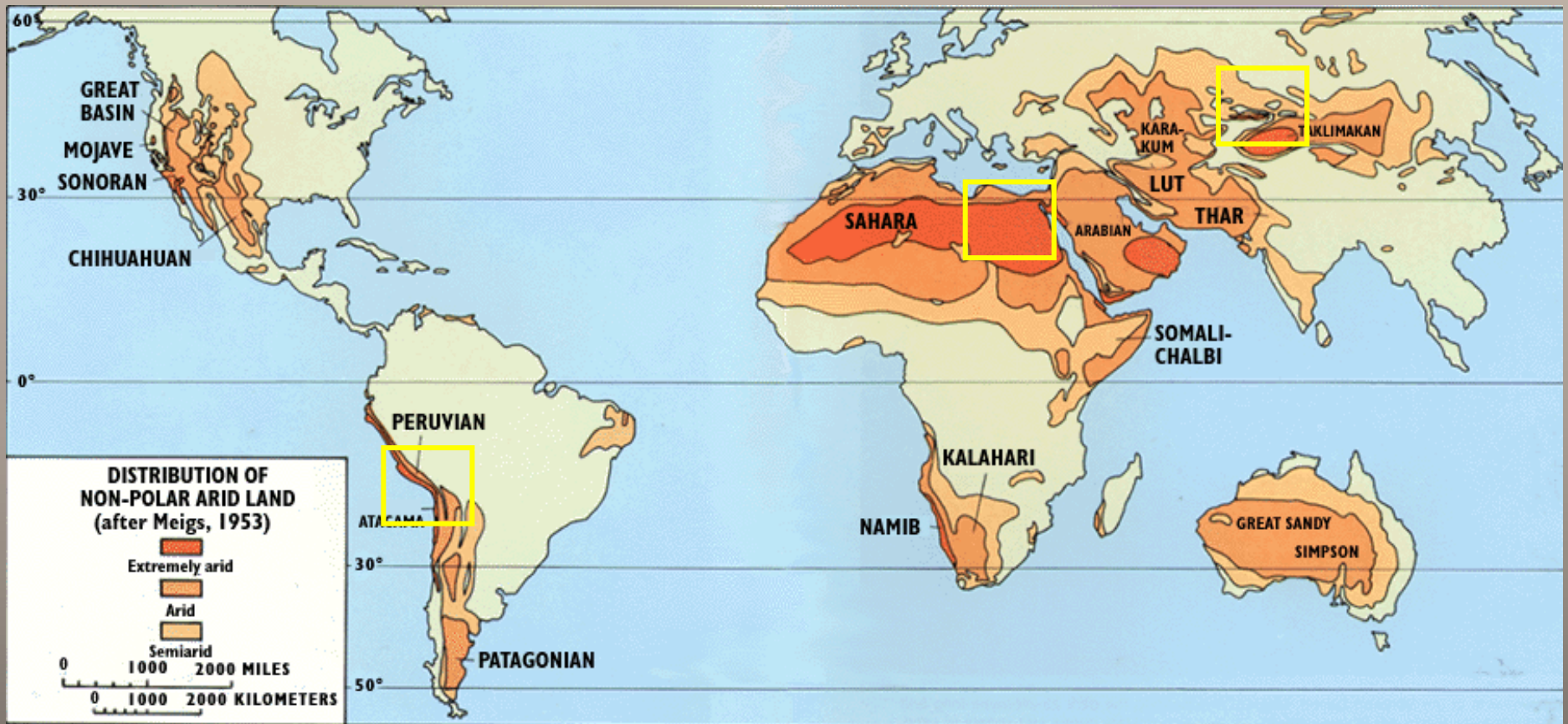




# Pouštní paleoekologie.

Příklady extrémních změn prostředí v průběhu kvartéru.



GREAT BASIN

MOJAVE

SONORAN

CHIHUAHUAN

PERUVIAN

ATACAMA

PATAGONIAN

SAHARA

ARABIAN

SOMALI-CHALBI

KALAHARI

NAMIB

GREAT SANDY SIMPSON

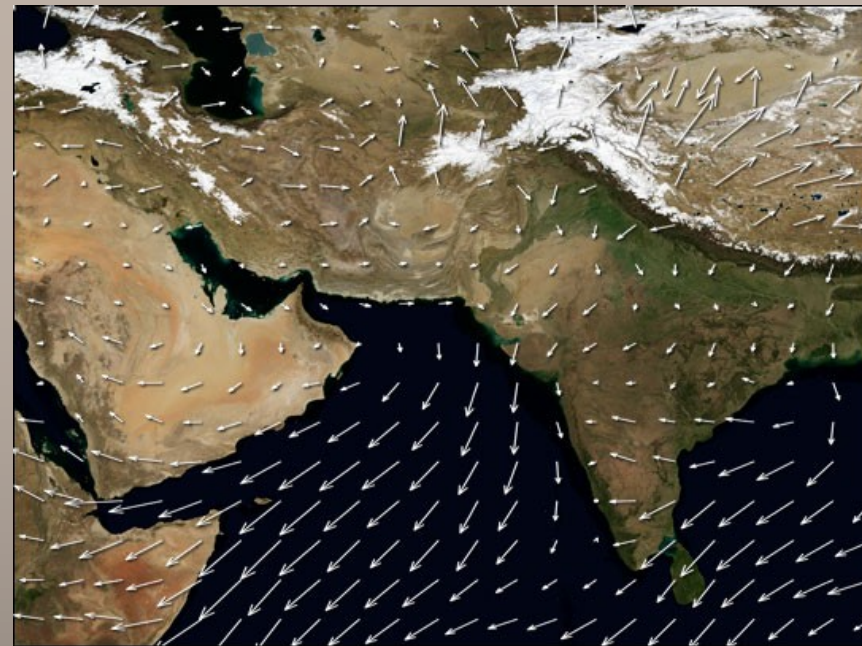
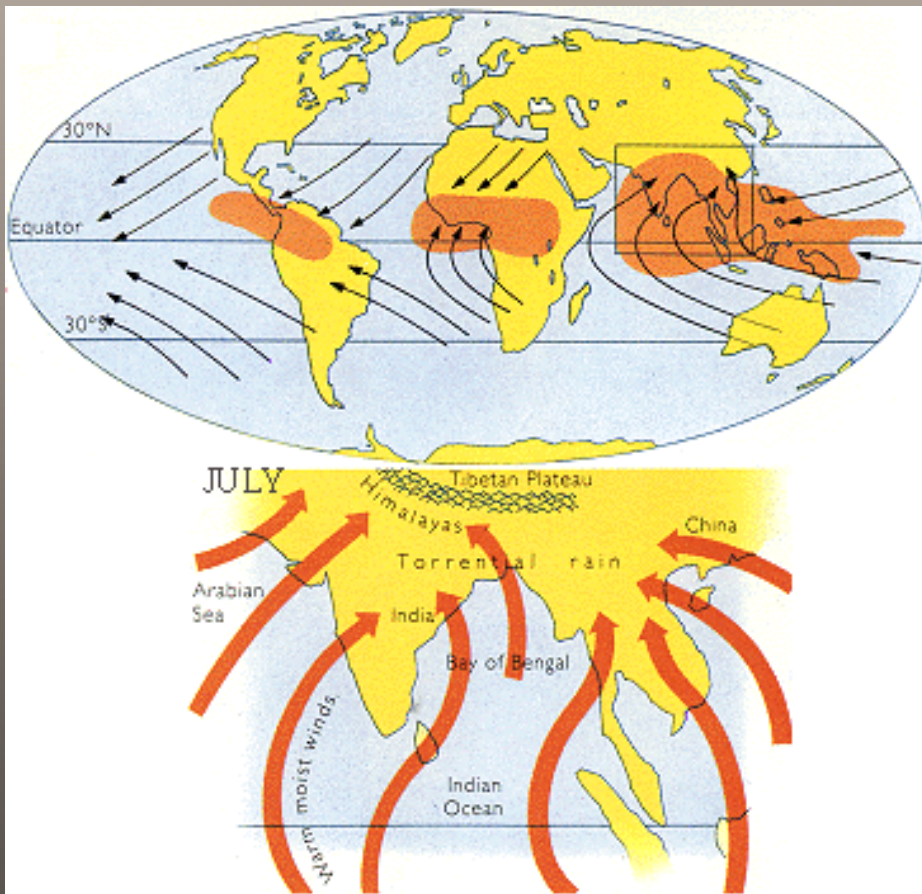
KARAKUM

LUT

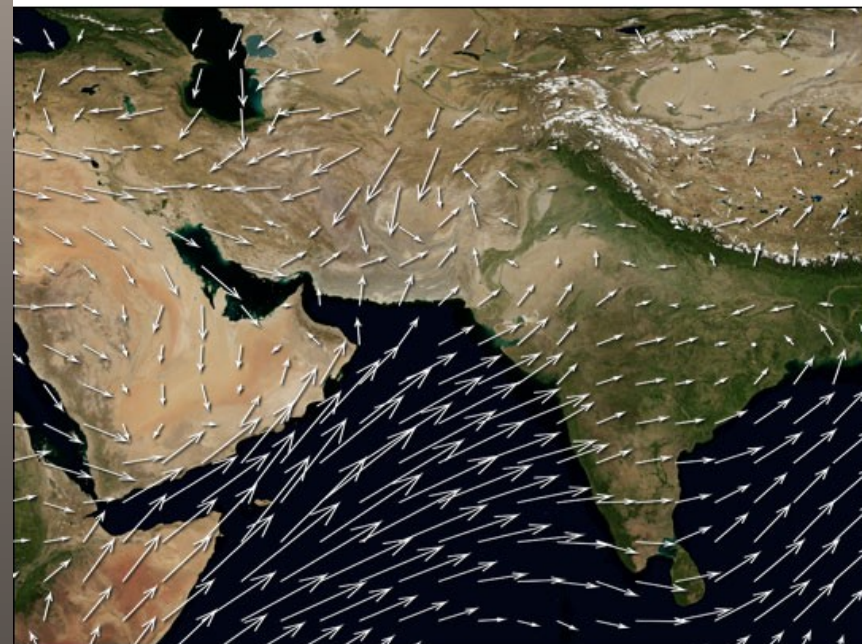
THAR

TULIMAKAN

# LETNÍ MONZUN



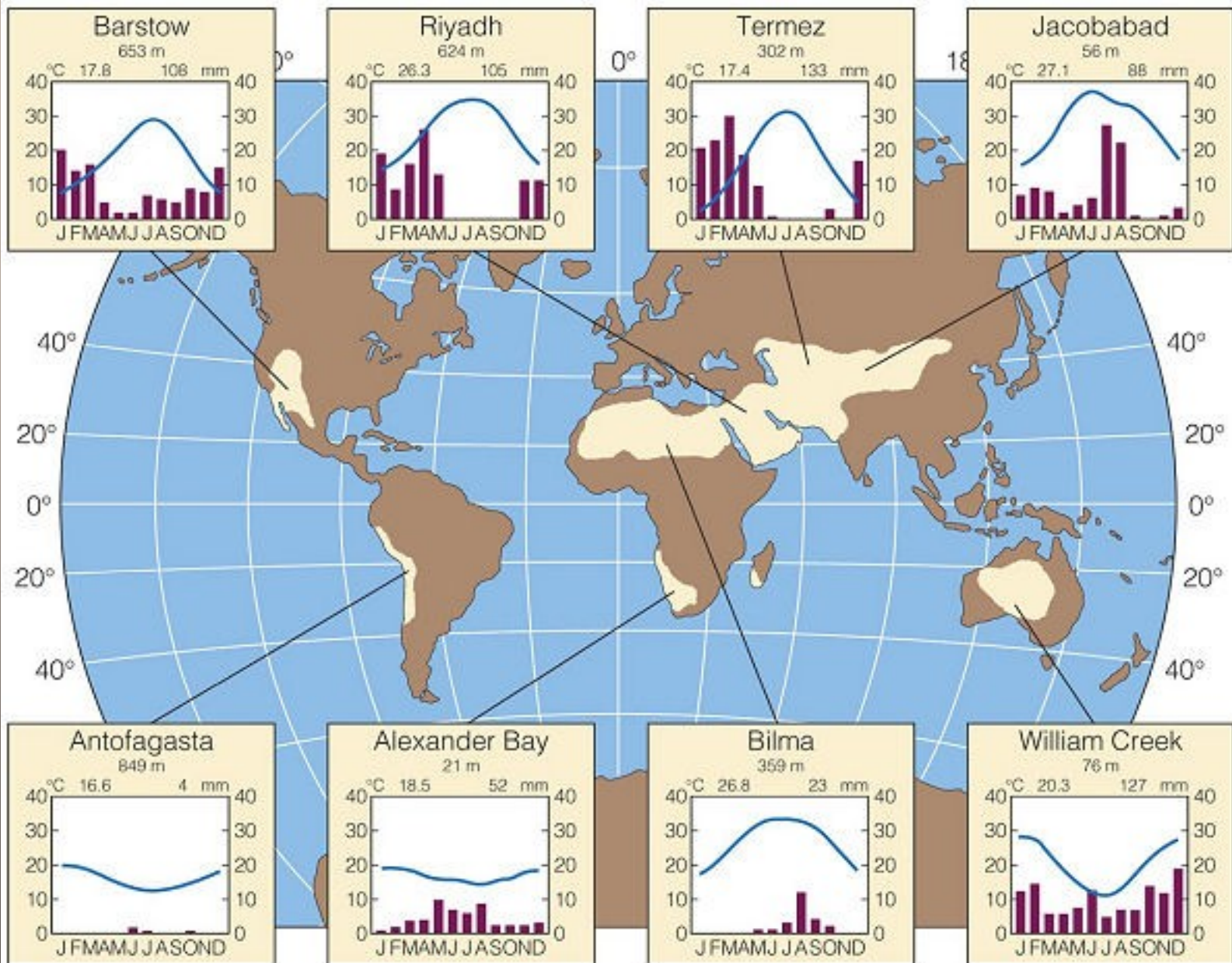
Winter



Summer

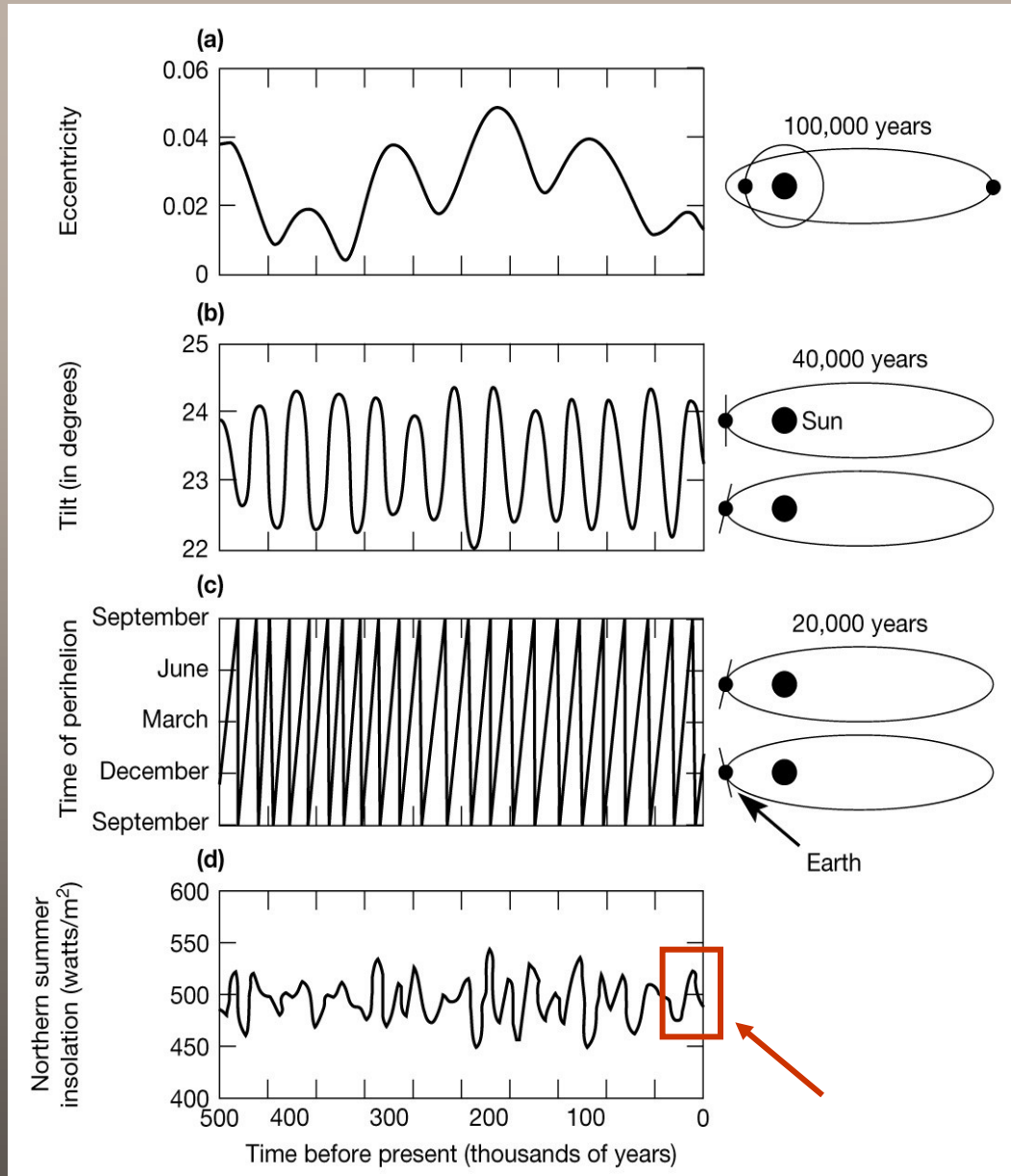
250 km

Wind Velocity of 15 meters/second



# Milankovičovy cykly a síla letního monzunu (John Kutzbach)

CH4



# Vnitřní Asie



Pevnost Ayaz Qala, 6. stol. – poušť Kyzylkum, Uzbekistán



# Jižní Amerika



Vysokohorská poušť mezi Bolivií a Chile, oblast Sajama





*Azorella compacta*



Nazca

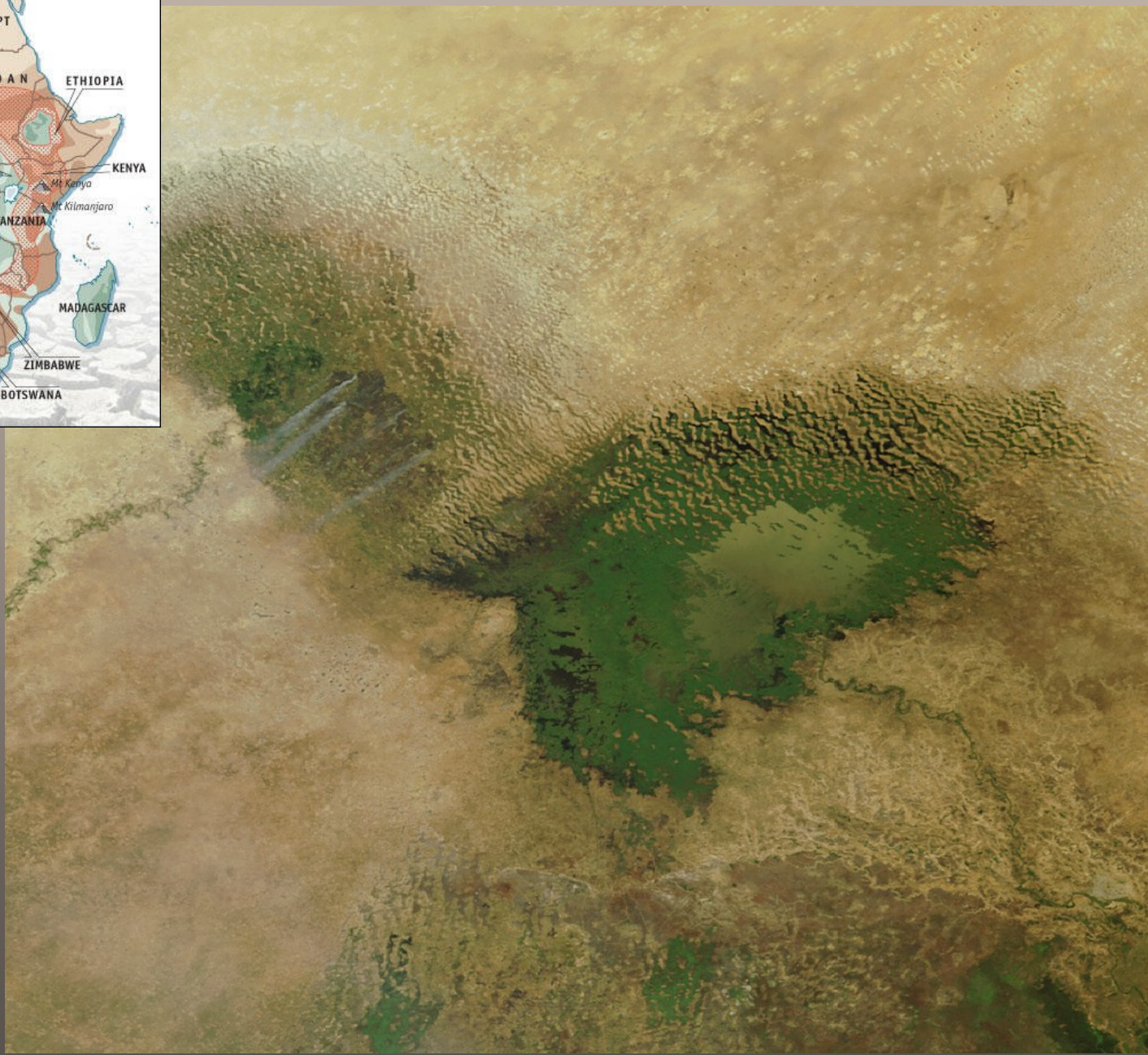
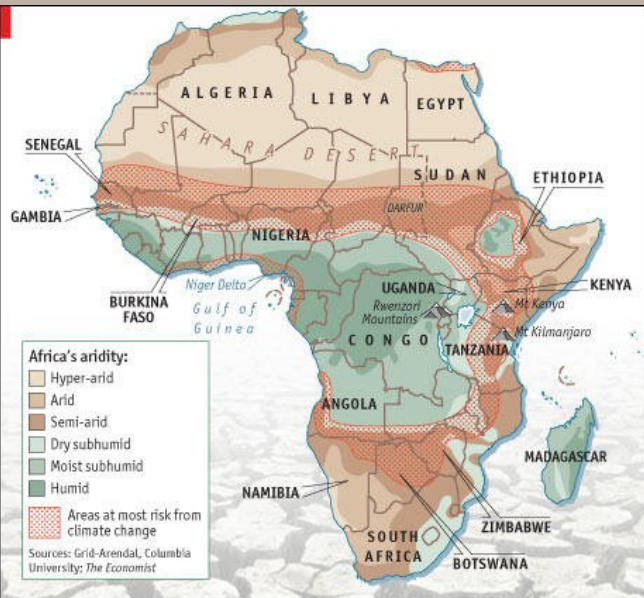




# Severní Afrika



sateliní snímek NASA,  
srpen 2007



Za posledních 2000 let nejméně 7 extrémních suchých výkyvů srovnatelných s dnešními.

# Východní Sahara, egyptská Západní poušť



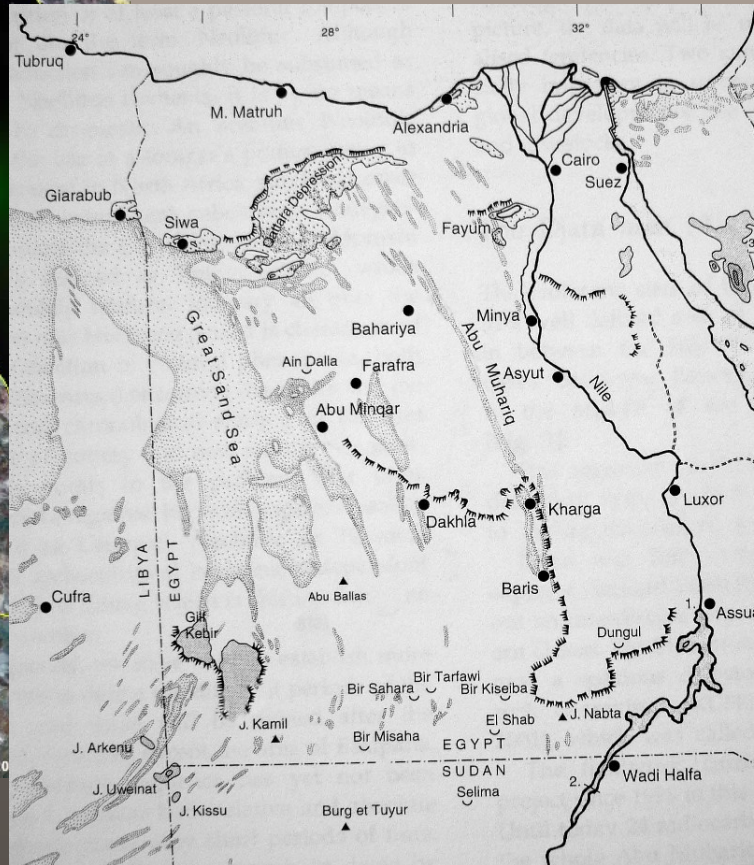
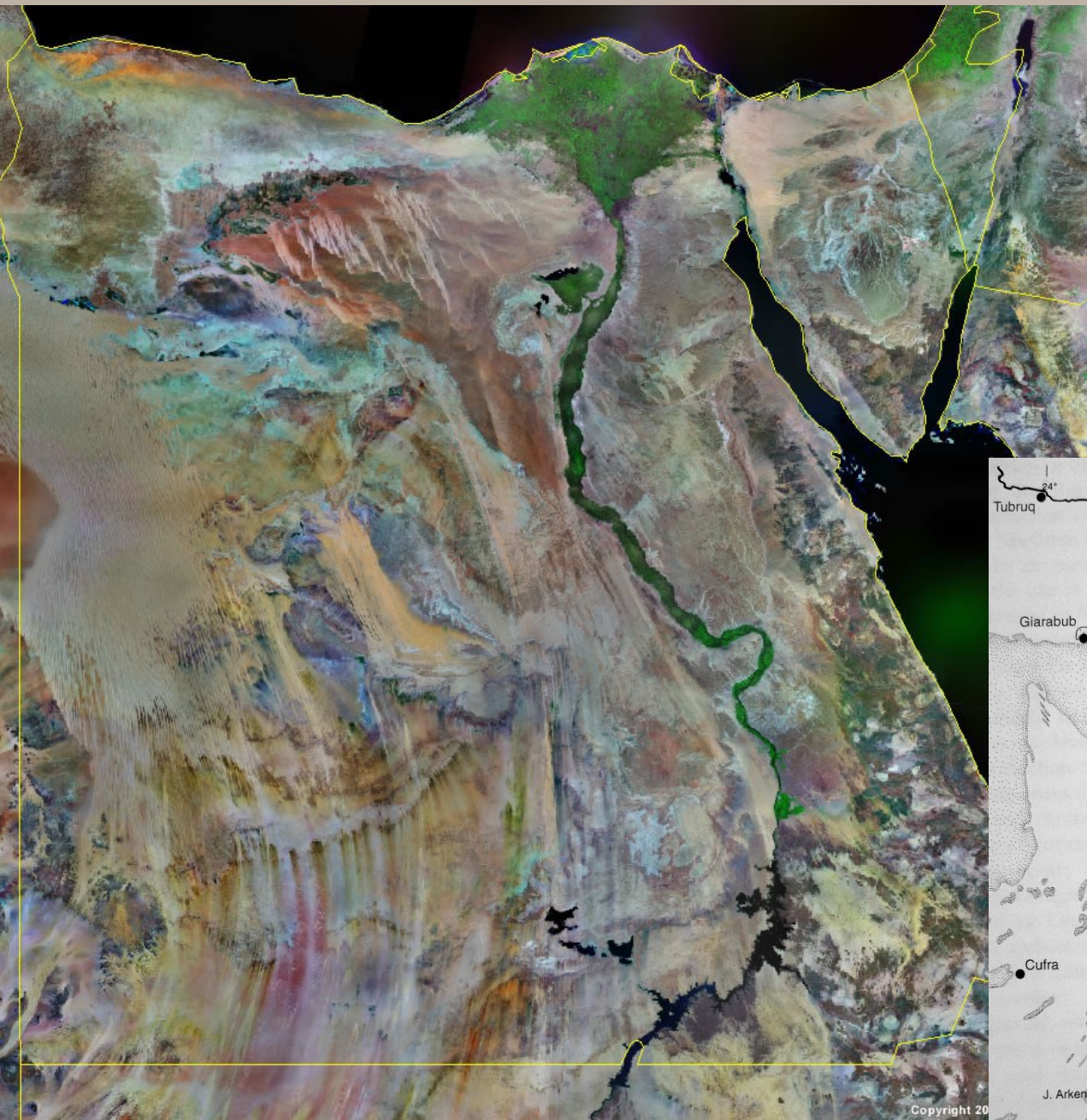




Image © 2006 TerraMetrics  
© 2006 Europa Technologies

©2007 Google

Pointer 26°14'28.48" N 28°35'40.96" E elev 763 ft Streaming ||||| 100%

Eye alt 17.64 mi





Foto Martin Frouz, NG

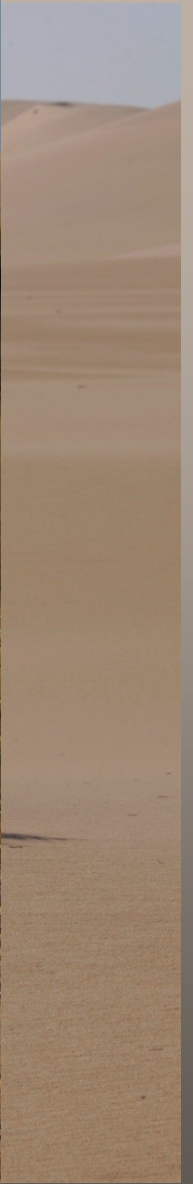


Foto Martin Frouz, NG

# NASA – radarový snímek části Velkého písečného moře



Bahay Issawi





Image © 2006 TerraMetrics

Image © 2006 DigitalGlobe

©2006 Google™

Pointer 24°40'52.47" N 31°06'41.30" E elev 1238 ft Streaming ||||| 100%

Eye alt 15435 ft

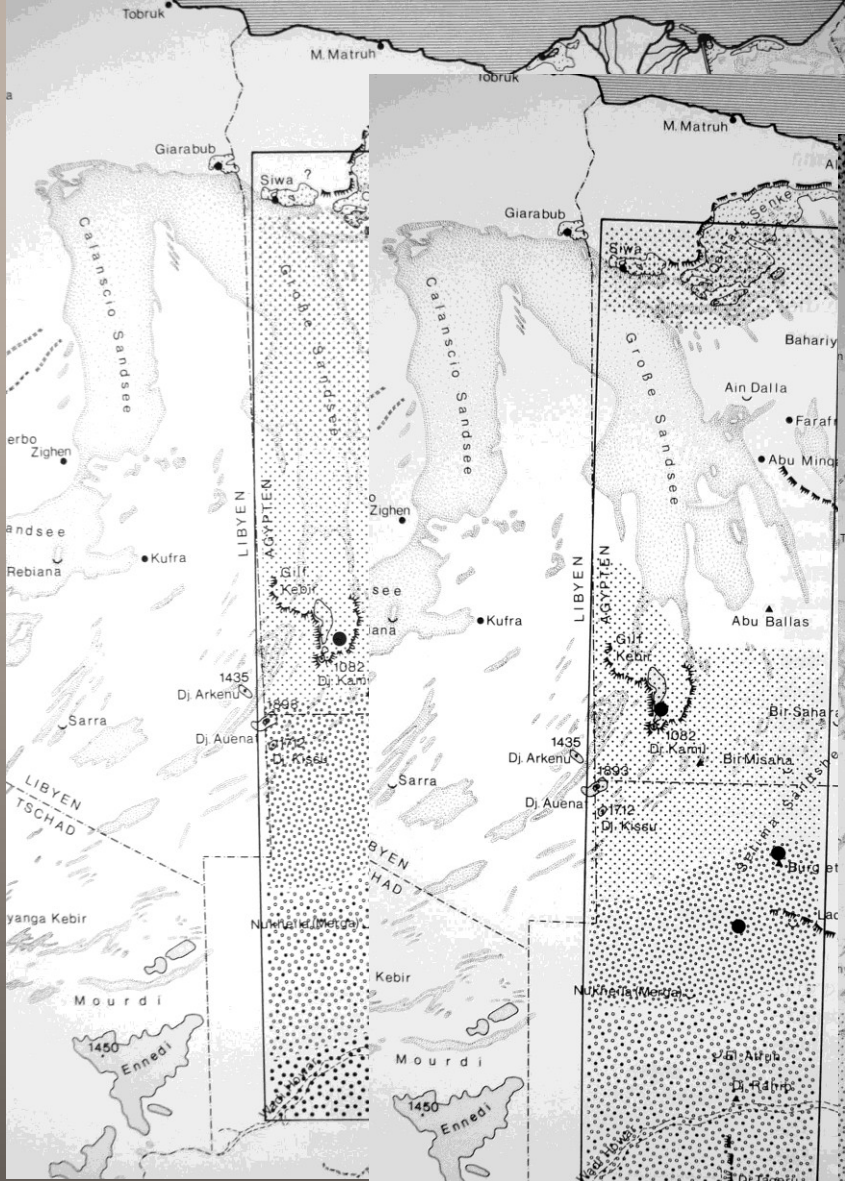


Image © 2006 DigitalGlobe

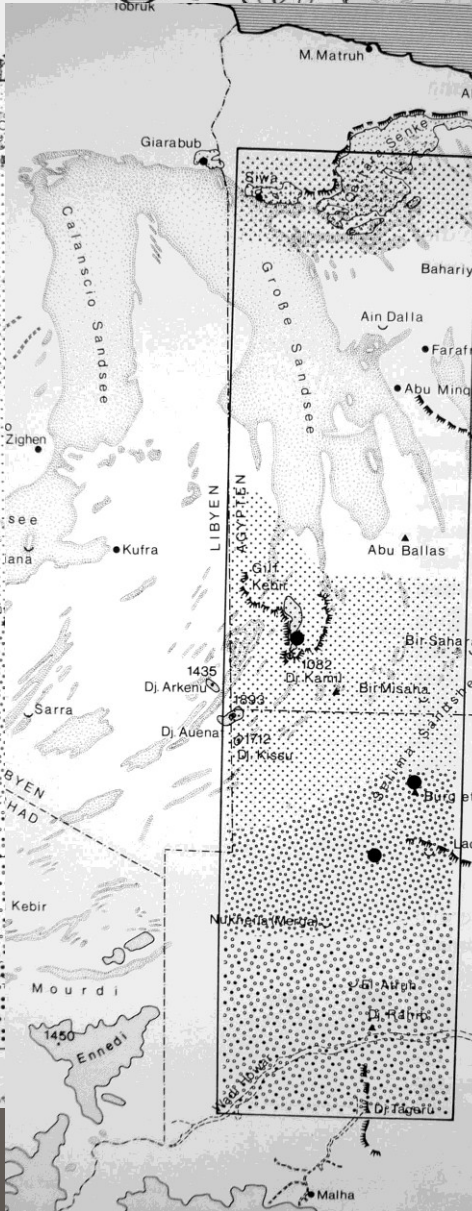
© 2006 Google

Pointer 25°38'14.98" N 29°27'47.78" E elev 1244 ft Streaming ||||| 100%

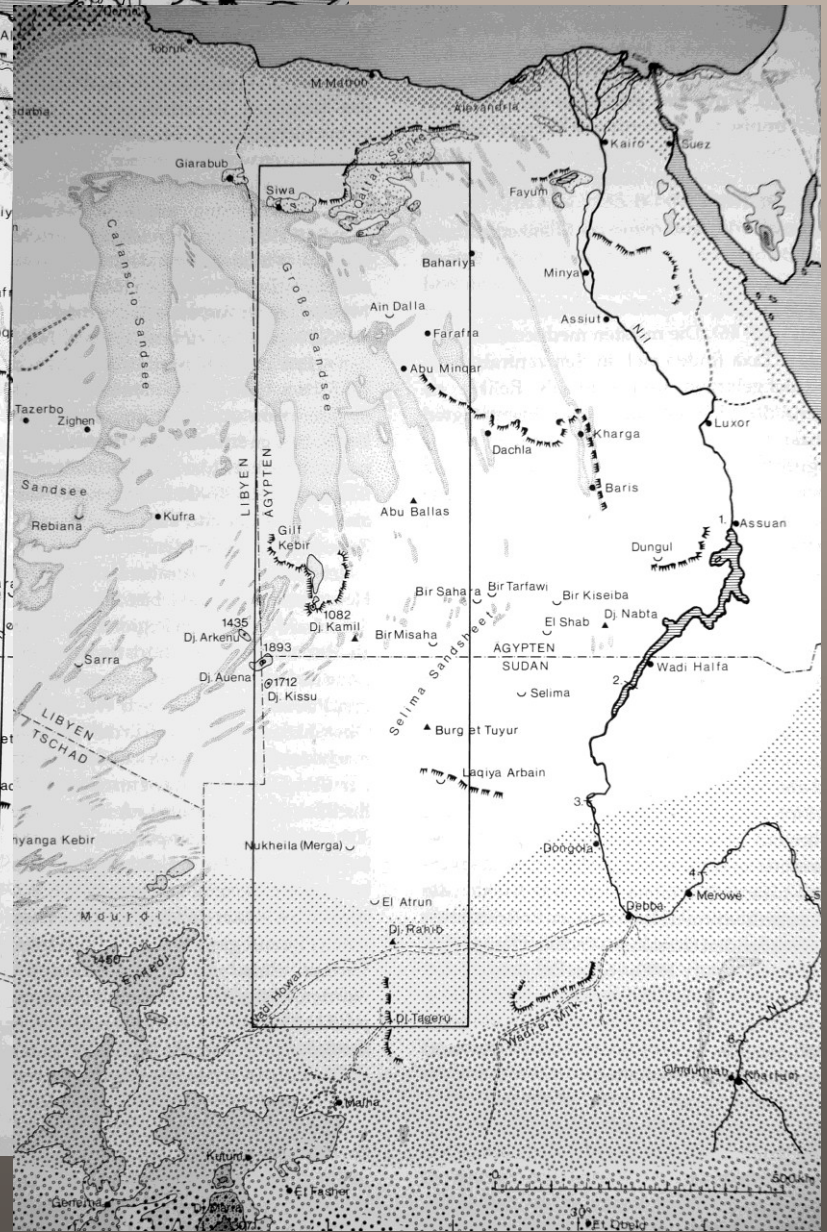
Eye alt 28473 ft



8000 BP

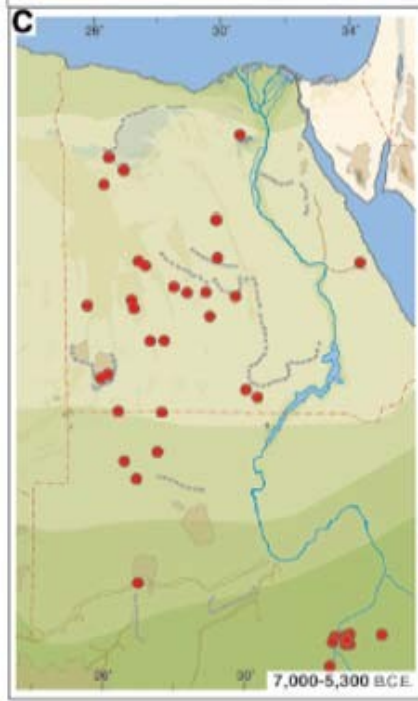
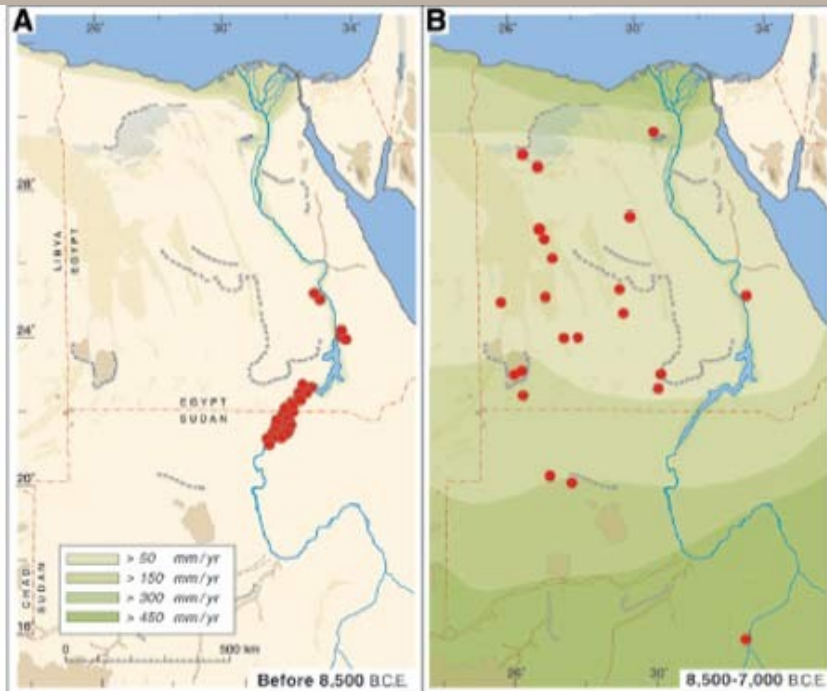


4500 BP



0 BP

14C: mezi 6 000 a 8 000 BP



# jeskyně Džara





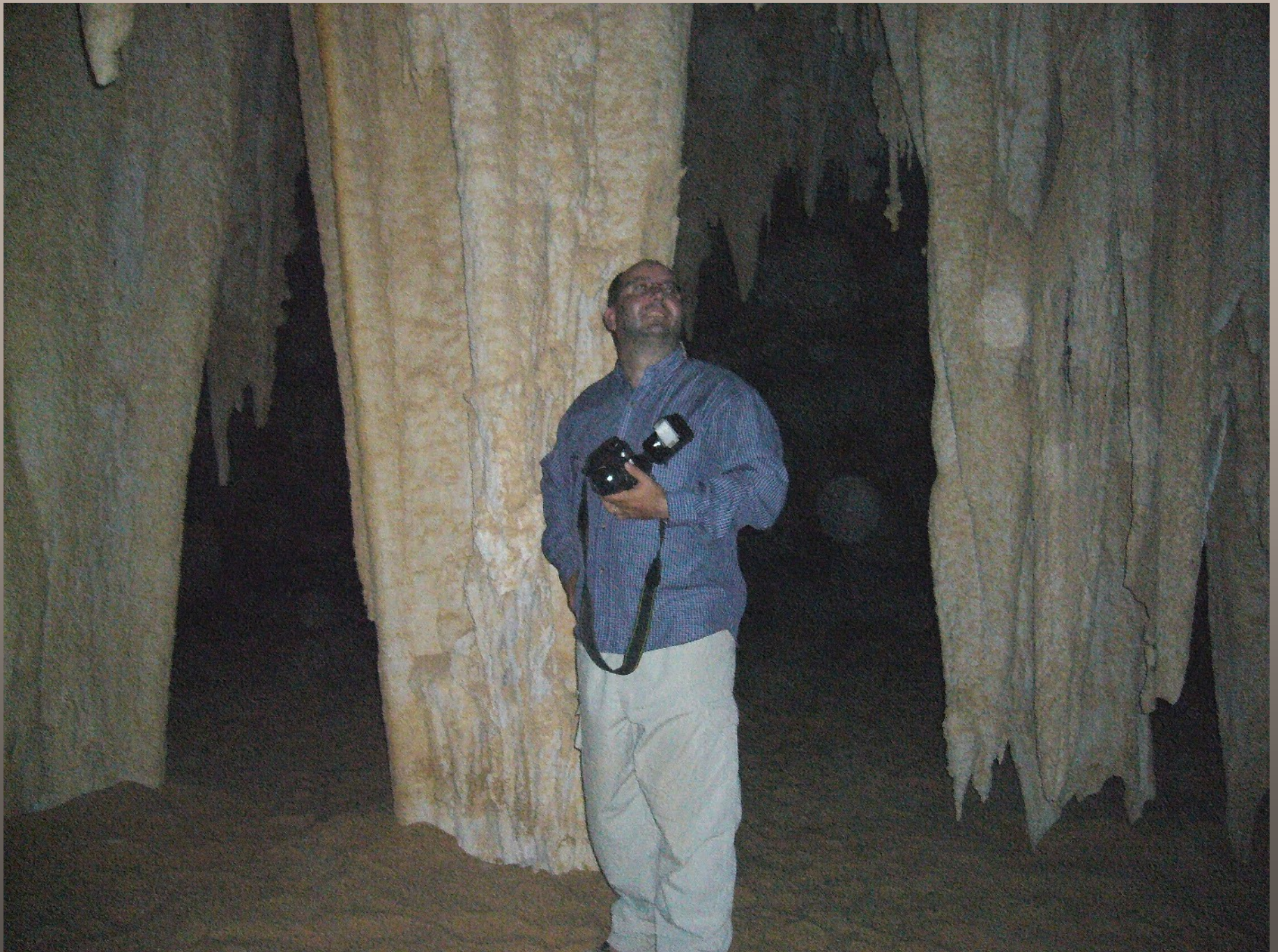


Foto Martin Frouz, NG



„Vodní hora“ (Gebel Khufu) a okolí



Foto Martin Frouz, NG



Foto Martin Frouz, NG

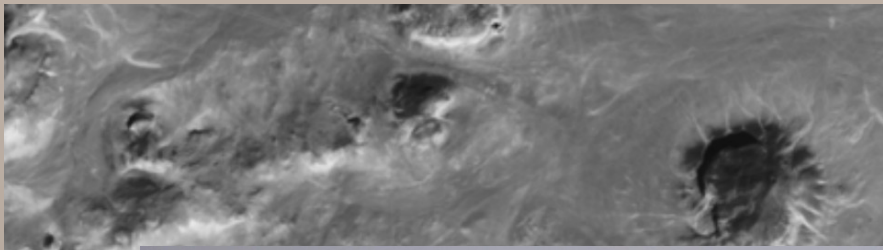




Foto Martin Frouz, NG



Foto Martin Frouz, NG





# Gilf Kebir





*Dichanthium annulatum*



700 μm





Foto Martin Frouz, NG



Foto Martin Frouz, NG





Foto Martin Frouz, NG



Foto Martin Frouz, NG





Foto Martin Frouz, NG



Foto Martin Frouz, NG

## osídlení doby římské v Západních oázách

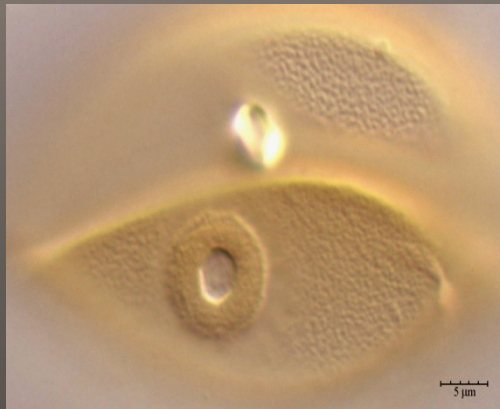


„koptské sucho“ (cca 500 – 600 AD)





Bír-Šoviš (Bahariya), přelom 4. a 5. stol.



<i>Artemisia</i>	2
<i>Avena</i> - type	7
Brassicaceae	14
<i>Caltha</i> - type	1
Compositae Subfam. Cichorioideae	4
Gramineae	4
<i>Isoetes</i>	10
<i>Mentha</i> - type	2
monolette spores	1
<i>Olea</i>	2
<i>Picea</i>	1
<i>Pinus cembra</i> - type	9
<i>Pinus sylvestris</i> - type	54
<i>Plantago major</i>	1
<i>Potamogeton</i>	1
<i>Quercus</i>	2
<i>Rumex acetosa</i> - type	2
<i>Trapa natans</i>	2
<i>Trifolium</i> - type	1
Umbelliferae	3
varia	14
<i>Vitis</i>	240
total sum (including spores)	377



	complete	phragments
<i>Ficus carica</i>	24000	0
<i>Vitis vinifera</i>	41	38
<i>Olea europea</i>	21	23
<i>Phoenix dactilifera</i>	8	12
<i>Solanum sp.</i>	2	0
<i>Cucumis sativus/melo</i>	2	1
<i>Persica vulgaris</i>	0	1
<i>cf. Cannabis</i>	5	6
<i>Bolboschoenus glaucus</i>	1	0
<i>Juniperus cf. phoenicea</i>	1	0
<i>Secale sp.</i>	1	0
fish bones	2	0
indeterminata	10	0



*Elatine sp.*



*Triticum dicoccon*



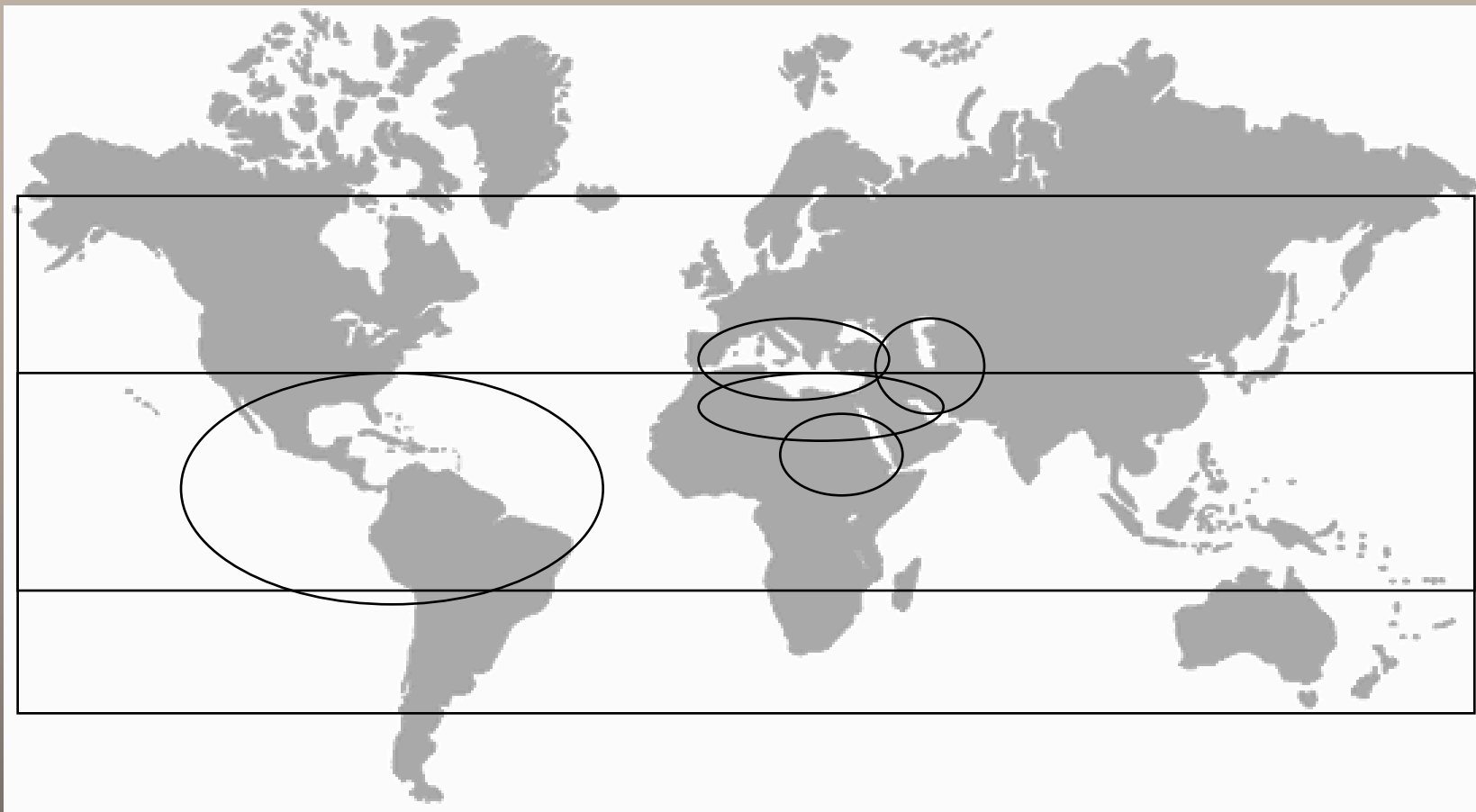
*Medicago sp.*



*Eleocharis cf palustris*

Fytogeografické vazby: kosmopolitní, mediteránní, saharo-arabské, sudano-dekanské, irano-turánské

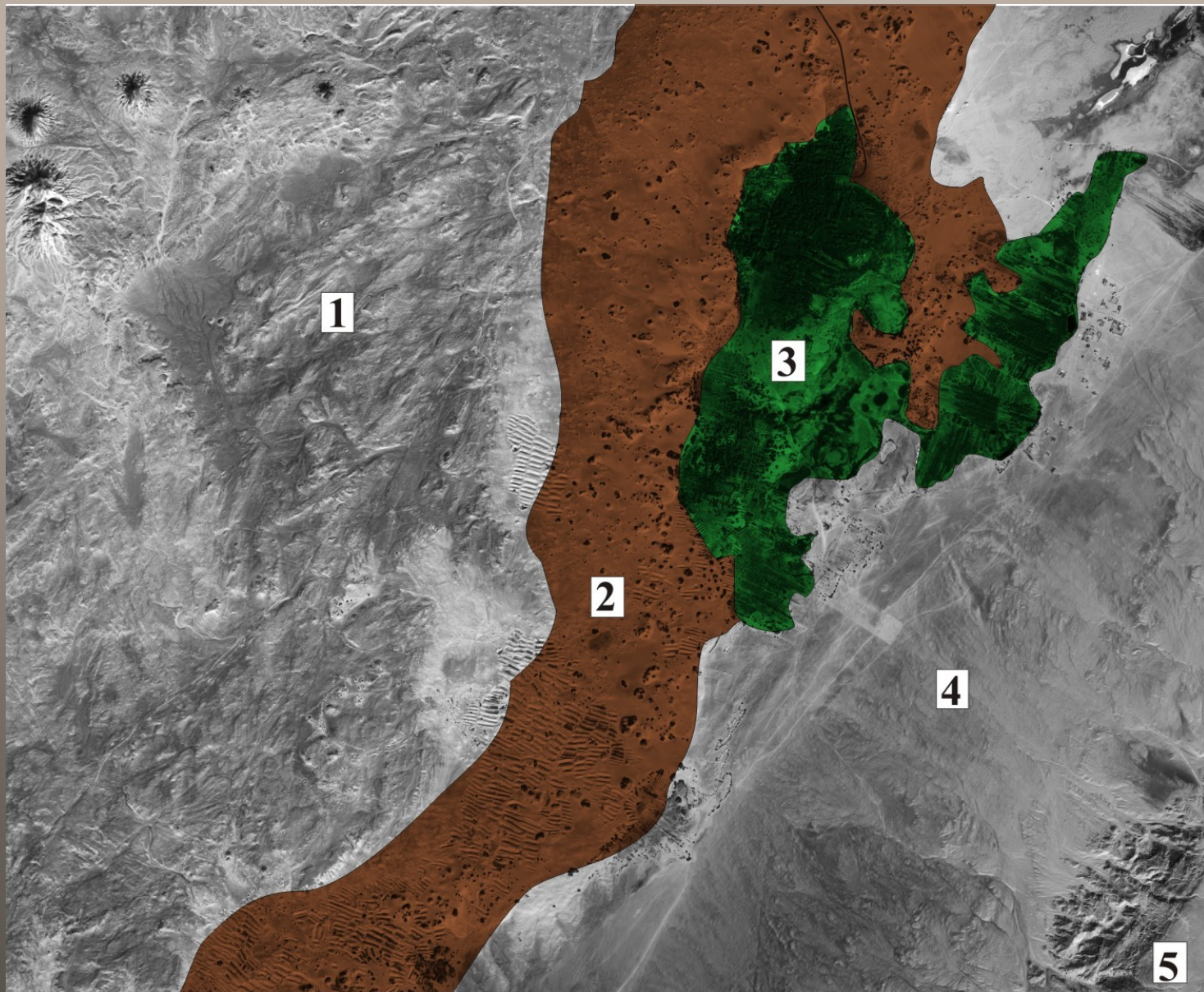




Floristické elementy:

1. Saharo-arabské
2. Sudano-Dekanské
3. Irano-Turánské
4. Mediteránní
5. Neotropické
6. Pantropické
7. Kosmopolitní

satelitní snímek – část oázy El-Hajez - krajinná zonace



*Alhagi graecorum*



manawáry





*Scarabeus sacer*

V minulosti zavlažovaná zóna starého osídlení





# Vegetační pahrbky - agúly





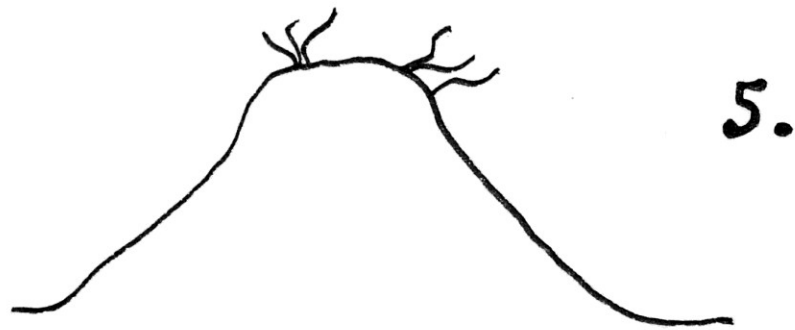
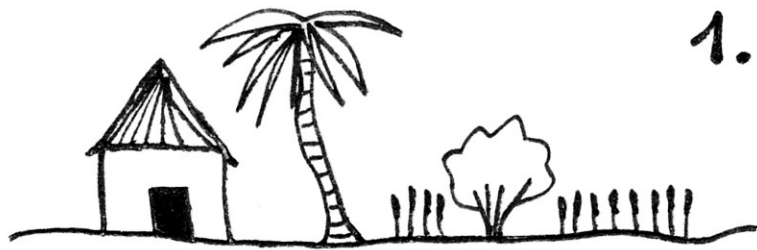
*Tamarix amplexicaulis*, *T. aphylla*, *T. nilotica*, *Ephedra allata*, *Acacia nilotica*







14C :1526 ± 84 BP





*Ziziphus spina-christi*



<http://westerndesertflora.geolab.cz>