

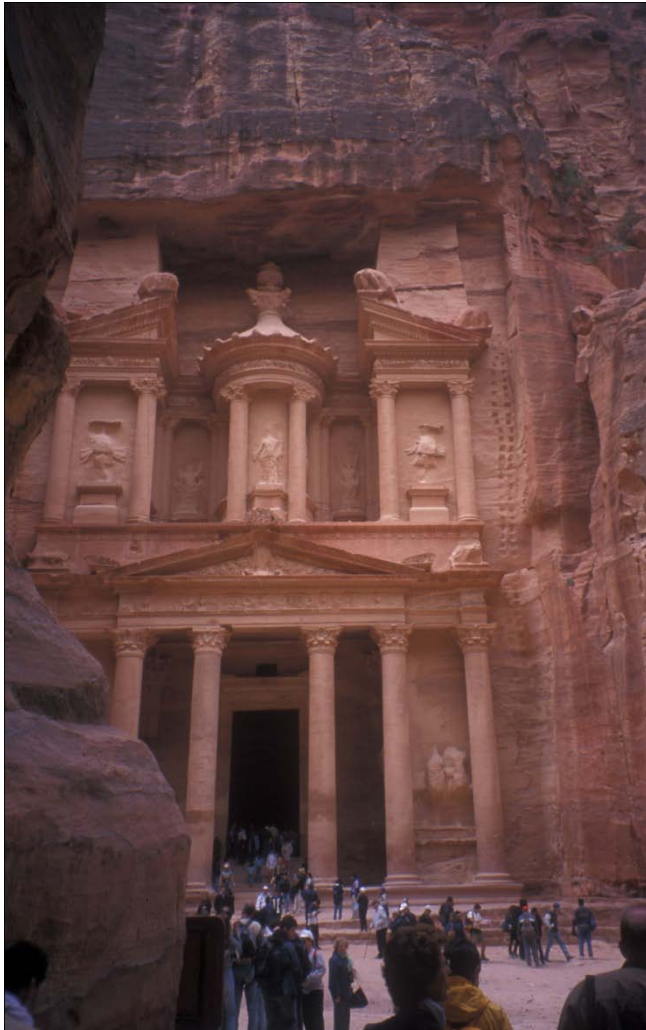
Synanthropic flora of the archaeological sites of Petra (Jordan)

Prof. Dr. Dietmar Brandes

http://www.ruderal-vegetation.de/verschiedene_regionen/index.htm



Petra – Ancient capital of the Nabateans



Khazne al-Firaun „Treasury“

- The most famous place of Jordan is Petra, the former capital of the Nabateans. The hidden location, the safe water supply and the position at the crossing of the Incense Route and the overland route from Egypt to India gave the Nabateans a hold over the trade.
- Some 800 monuments are still to be found in the area. In 1985 Petra was designated a World Heritage Site; in 2007 it was named one of the New Seven Wonders of the World.
- Petra (30 19' 44"N 35 26' 25"O) is situated in an altitude between 800 and 1.350 m.
- From the biogeographical point of view it is near the crossing of the Mediterranean region, the Irano-Turanian region, the Saharo-Arabian and the Sudanian region.



The access to the ancient city of Petra leads through the very impressive Siq, a dim gorge in the Umm Ishrin sandstone.

The Siq has a length of 1.200 m, the walls are 90-180 m high.

Synanthropic flora of the Siq

Adiantum capillus-veneris, *Anchusa strigosa*, *Ajuga chia*, *Arum elongatum*, *Ballota* cf. *Undulata*, *Bryonia*, *Capparis spinosa*, *Carduus* cf. *argentatus*, *Daphne linearifolia*, *Diploaxis harra*,

Echinops, *Emex spinosa*, *Ephedra*, *Ferula communis*, *Ficus carica*, *Galium aparine*, *Gomphocarpus sinaicus*, *Hyoscyamus aureus*, *Juniperus phoenicea*, *Lamarckia aurea*, *Leopoldia comosa*, *Malva parviflora*, *Malva sylvestris*, *Marrubium vulgare*, *Matthiola longipetala*,

Nerium oleander, *Parietaria alsinifolia*, *Parietaria judaica*, *Phlomis*, *Phragmites australis*, *Podonosma orientalis*, *Salvia lanigera*, *Sanguisorba* cf. *minor*, *Scrophularia nabataeorum*, *Senecio glaucus* subsp. *coronopifolius*, *Sisymbrium irio*, *Sisymbrium orientale*, *Umbilicus intermedius*, *Urtica pilulifera*.



↑ *Capparis* cf. *spinosa* (Capparidaceae)

↙ *Galium canum* (Rubiaceae)



Podonosma orientalis
(Boraginaceae)



Herbar	
Dietmar Brandes, Braunschweig	
Name: <i>Parietaria alsinifolia</i> = <i>folia</i> Delile	
Fam.: <i>Urticaceae</i>	
leg.: Br.	Fundort: Jordanien
det.: Br.	Datum: 7.4.1999
Standort: Felsklippe in Petra	



Parietaria alsinifolia enlarged ↗



Scrophularia nabataeorum (Scrophulariaceae)



Overgrazed and degraded steppe and semi-desert with *Urginea maritima*



Overgrazing by goats results in degradation of the vegetation



Juniperus phoenicea, *Thymelaea hirsuta* and *Urginea maritima*



Thymelaea hirsuta (Thymelaeaceae)



Ononis natrix (Fabaceae)



Urginea maritima und *Ononis natrix*



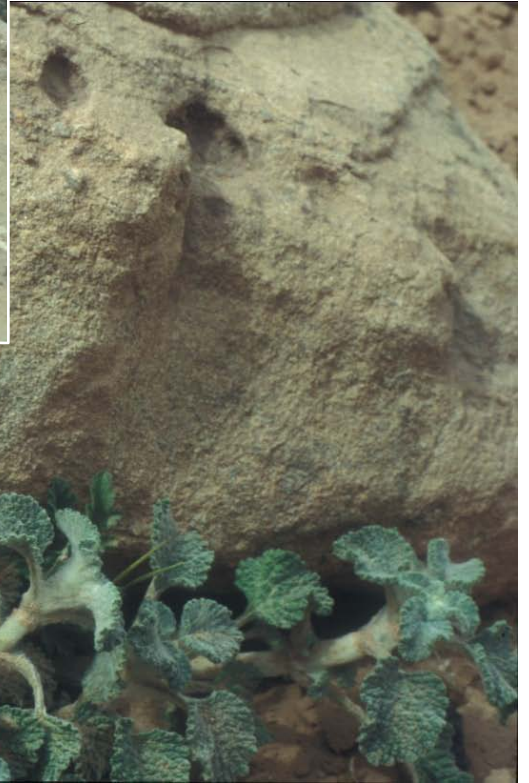
Peganum harmala and *Urginea maritima*

Tab. 1: *Urginea maritima* - *Peganum harmala* - community

Number of relevé area [m ²] vegetation cover [%] number of species	1	2	3	4	5	6	7	8
Urginea maritima	3.2	3.2	2.2	2.2	2.1	2.2	2.2	2.2
Peganum harmala	2.2	2.2	2.2	2.2	1.1	2.2	+	3.3
Ononis natrix	1.1	1.1	1.1	1.1	+	+	1.1	.
Malva parviflora	+	.	1.1	1°1	1.2	1.2	.	1.1
Thymelaea hirsuta	2.2	2.1	.	.	.	2.2	1.1	1.1
Hyoscyamus aureus	r	+	+	2.1	.	.	.	.
Cynodon dactylon	+2	.	+	.	1.2	.	.	1.2
Marrubium vulgare	.	+	1.1	+	1.1	.	.	.
Emex spinosa	+°	.	.	.	+	.	.	+°
Astragalus cf. tribuloides	+	.	.	.	.	.	+	.
Ifloga spicata	+	.	.	.	.	.	.	+2
Plantago cf. albicans	.	.	.	.	.	1.2	1.2	.
Retama raetam	.	.	.	.	.	+	+°	.
further species	1	1	1	5	1	2	3	3



Peganum harmala (Zygophyllaceae)



Marrubium vulgare
(Lamiaceae)



Launaea capitata (Asteraceae)



Matthiola longipetala (Brassicaceae)



Trigonella stellata (Fabaceae)



Daphne linearifolia
(Thymelaeaceae)



Ferula communis
(Apiaceae)



Reichardia tingitana (Asteraceae)



Anchusa aegyptiaca (Boraginaceae)



Farsetia aegyptiaca (Brassicaceae)



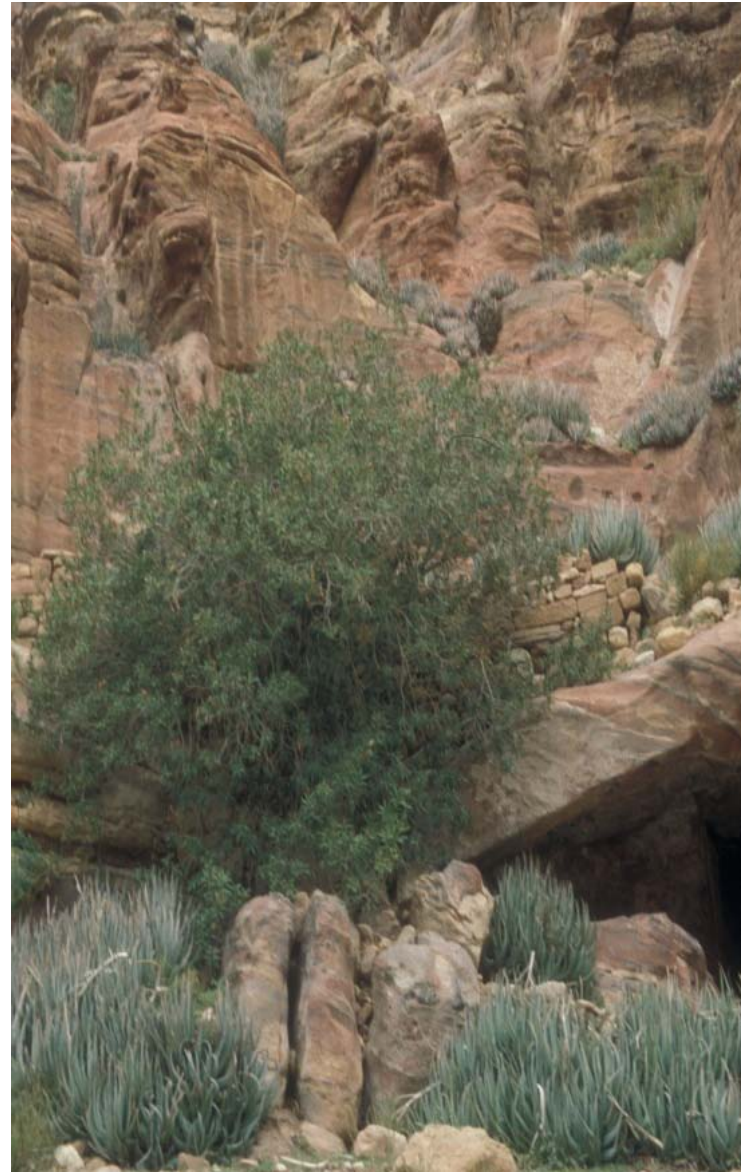
Forsskaolea tenacissima (Urticaceae)



Aloe vera (Liliaceae). An alien plant - possibly introduced by the Nabataeans for medicinal purposes (Ruben & Disi 2006).



Aloe vera (Liliaceae)





Salvia lanigera (Lamiaceae)



Roemeria hybrida
(Papaveraceae)



Astragalus spinosus (Fabaceae)



Gastrocotyle hispida (Boraginaceae)





Psoralea flaccida (Fabaceae)



Caylusea hexagyna (Resedaceae)



Erodium hirtum (Geraniaceae)



Fagonia mollis (Zygophyllaceae)



Ajuga chia (Lamiaceae)



Leopoldia comosa (Hyacinthaceae)



Juniperus phoenicea (Juniperaceae)

Plants of wadis

Nerium oleander

Gomphocarpus sinaicus

Daphne linearifolia

Fritillaria libanotica

Arum elongatum

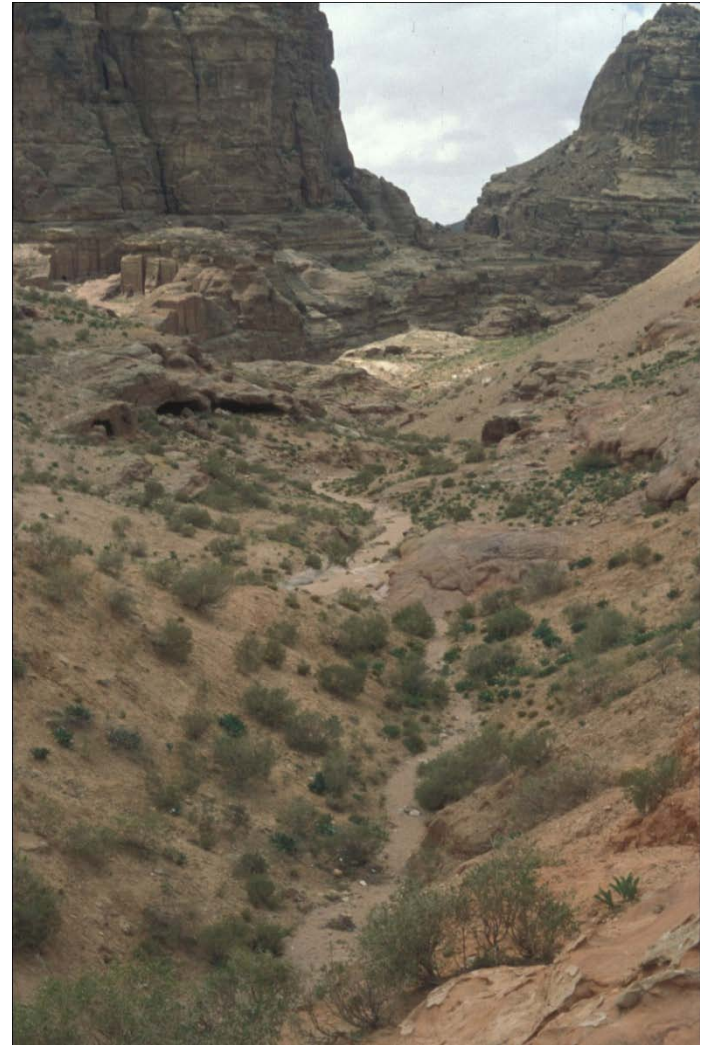
Brunnera orientalis

Parietaria judaica

Ochradenus baccatus

Diplotaxis harra

Aloe vera (relic of cultivation?)



Small wadi



Gomphocarpus sinaicus (Asclepiadaceae)



Diplotaxis harra (Brassicaceae)



Ochradenus baccatus (Resedaceae)



Brunnera orientalis (Boraginaceae)



Arum cf. *elongatum* (Araceae)



Fritillaria libanotica (Liliaceae)



Asphodeline lutea (Liliaceae)



Pistacia atlantica (Anacardiaceae) and *Nerium oleander* (Apocynaceae)



Olea europaea cultivated in the vicinity of the modern village



Ruderal vegetation with some Chenopodiaceae

References

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