

# Wildlife Travel

## Morocco 2016



## Morocco species lists and trip report, 5<sup>th</sup> to 12<sup>th</sup> March 2016

#	DATE	LOCATIONS & NOTES
1	5 <sup>th</sup> March	Evening arrival at Agadir, transfer to Atlas Kasbah
2	6 <sup>th</sup> March	Atlas Kasbah and local area.
3	7 <sup>th</sup> March	Atlantic Coast: Oued Tamri & Cap Rhir
4	8 <sup>th</sup> March	Taroudant & Tioute Palmery
5	9 <sup>th</sup> March	Sous Massa National Park
6	10 <sup>th</sup> March	Anti Atlas: Ait Baha and agadir at Laatik
7	11 <sup>th</sup> March	Western High Atlas: Paradise Valley to the Cascades du Immouzer
8	12 <sup>th</sup> March	Atlas Kasbah and local area. Evening flight back to UK

### Leaders

Philip Precey

Charlie Rugeroni



Scimitar-horned Oryx, Sous-Massa National Park

A gallery of Philip's photos from this year's Morocco trips can be found online at  
<https://www.flickr.com/photos/wildlifetravel/albums/72157665308862116>

All photos from previous Morocco trips are at  
<https://www.flickr.com/photos/wildlifetravel/albums/72157663540671883>

The flora website that Charlie mentioned is at <http://www.teline.fr/en>

<http://www.moroccoherps.com/en/Inicio/> is an excellent site on the reptiles and amphibians of Morocco

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### Day 1: Saturday 5<sup>th</sup> March. Agadir

Afternoon flights from Gatwick and Stockholm took everyone down across Iberia and along the coast of Morocco, to arrive in Agadir in the early evening. Once through passport control and the currency exchange offices we were whisked off to the wonderfully atmospheric Atlas Kasbah perched atop a small hill in the countryside outside Agadir in time for dinner, a traditional celebratory Moroccan dish of chicken and almond pastilla.

### Day 2: Sunday 6<sup>th</sup> March. Atlas Kasbah and Tighanimine El Baz

We awoke to the sound of Common Bulbul singing noisily in the garden, destined to become a major part of the soundtrack for the week.

After breakfast, and an introduction to the holiday, we set out to explore the garden and surrounds of the Atlas Kasbah.

Enclosed by a sheltering hedge of the non-native white flowered *Myoporum laetum*, the garden is made up of some ornamental plants up near the hotel, including bougainvillea, the cotton tree *Hibiscus tilaceus* and the white-flowered *Justicia adhatoda*, and a wide variety of culinary plants, including many herbs from rosemary, sage and basil to lemon grass and cotton lavender *Santolina rosmarinifolia*, plants we would be able to taste in our various herbal teas throughout the stay. Prominent crops were broad beans and coriander, tomatoes and squashes, as well as olives and, of course, one of the iconic plants of this corner of Morocco, the argan tree *Argania spinosa*, a plant that would accompany us for much of our time over the next week. Argan belongs to the primarily tropical family the Sapotaceae, and today is confined to this corner of southern Morocco, a relic from the time when this area had a tropical climate. The trees, their fruit and the oil which comes from the 'nut' are at the heart of much of the local culture and economy, being used for culinary and health purposes, for washing, for feeding animals and in much of the local traditional architecture: a very special plant.

The Atlas Kasbah has been developed with sustainability very much in mind, and one of the features of the garden is a filtration system for the 'grey water' from the hotel, which is used to irrigate the garden. Growing around the pools used in this filtration system was plenty of sweet potato, *Ipomoea batatas*, while several large North African Water Frogs sat amongst the lily pads and small birds came to drink: Chiffchaff, Sardinian Warbler, Robin, Blackbird, Swallows and the ubiquitous House Sparrows and Common Bulbuls were all present in the garden this morning.

Out along the road, and across into the fields, the effects of grazing were very evident with spiny plants such as the wire-net bush *Launaea arborescens* and the thorny *Zizyphus lotus* used as dead hedges around the fields and poisonous plants including *Withania somnifera* with small green bell flowers and distasteful *Ononis natrix* with yellow flowers and sticky foliage and subsequently seen almost every day throughout the trip. A roadside Zizyphus bush was draped with the vine-like *Periploca angustifolia*, with its beautiful architectural flowers and bizarre 'bulls horn' seed pods. Nearby, an adult Bibron's Agama posed nicely in the sun.

Along the goat track, amongst the rocks we found some very goat-nibbled plants of the ferny-leaved lavender *Lavandula multifida*, the flowers of *Catenanche arenaria* (creamy white with a maroon centre) and the lovely little purple toadflax *Linaria bipartita*.

Amongst the goat-pruned Argan bushes we heard the fluty song of at least four different Black-crowned Tchagras, one of the highlight birds of the area, and eventually managed to get good views (for some) of one bird as it moved slowly through the bushes, singing as he went. Also singing, with a very nice thrush-like song, was a male Western Orphean Warbler which similarly showed well, if rather briefly, for some of us. More showy were a pair of courting Woodchat Shrikes, as well as one or two very handsome Moussier's Redstarts, another North African speciality.

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At a field of newly-sown barley, we found a good variety of arable weedy species, including good stands of a couple of endemic Asteraceae: *Voluntaria marocanna* with violet-blue flowers, and the orangey-yellow *Cladanthus arabicus*, with feathery, sweetly smelling foliage. Also here were some nice plants of the red flowered *Echium horridum*, a relative of viper's bugloss, the specific name referring to the large obvious bristles-like hairs on the stem.

With the blue skies and warm sun, butterflies were a feature of the morning, included Red Admiral, Painted Lady, Clouded Yellow and Small Coper, while less familiar species were Greenish Black-tip (like a smaller version of Clouded Yellow), Moroccan Orange-tip (bright yellow, where 'our' Orange-tip is white), Moroccan Hairstreak (similar to the coppers but with a plain rear underwing), False Mallow Skipper and a trio of interesting blues: Long-tailed Blue, Common Tiger Blue and African Grass Blue. A large cricket pretending to be a stick insect was *Truxalis acuta*; the large dragonfly hawking overhead was Vagrant Emperor, freshly emerged from pools in the Sahara; a small lizard that briefly paused for Ian to take it's photo turned out to be Olivier's Small Lizard.

After a delicious tagine lunch back on the hotel terrace, we set off again to explore the nearby village. Following Ahmed, our local guide, we passed through the village and crossed the dry riverbed up into the old village on the other side. Here there were large clumps of the prickly pear cactus: widely naturalised and even invasive it is now recognised as forming a distinct species from the wild relatives in the America's and classified as *Opuntia ficus-barbarica*.

An interesting plant growing in the courtyard of the now-abandoned large family house was *Aizoon canariense*, a relative of the Mesembryanthemums and a plant Mirjam recognised from the Canary Islands.

Hawking over the dry riverbed we saw some Red-rumped Swallows, a couple of Black Wheatear appeared on roof tops, one or two Laughing Doves flew by and a Southern Grey Shrike put in an appearance at the top of a telegraph pole, but best of all was an adult Golden Eagle that came along the ridge fairly low, before circling up over us and away but up the valley: Tighanimine El Baz, the 'village of the eagle' living up to its name! The village gave an insight into life for many Moroccans: the old houses contrasting with the concrete new; cars and motorbikes with donkey transport; and the added festivities of a village wedding.

### Day 3: Monday 7<sup>th</sup> March. Cap Rhir and Oued Tamri

This morning we set our sights northwards, skirting around the city of Agadir to reach the Atlantic coast. As we left the immediate surroundings of the city, the vegetation began to change, with a low-growing coastal 'steppe' vegetation on the flatter ground mixed in with areas of succulent Euphorbia scrub, and our first stop of the day was just beyond Cap Rhir to explore this interesting spikey habitat.

These Euphorbia scrub communities are unique to the south-west Moroccan coastline down into the Sahara and the Canary Islands off shore. They are a botanical link between this part of Morocco and the flora of the North Atlantic Islands, collectively termed the Macaronesian flora. In the geological past this flora would have been more widespread on the mainland becoming confined to these climatically favourable areas during recent cycles of glaciation.

Here, the vegetation was dominated by a mixture of three succulent species: the umbrella-forming lime-green shrubby *Euphorbia regis-jubae*, the cactus-like *Euphorbia officinarum* and the bizarre succulent groundsel *Senecio anteuphorbia*. Also making up a significant part of this vegetation were the large yellow-flowered composite *Naupilus imbricatus*; *Salsola oppositifolia* with its leathery spiky leaves and pink papery button-like flowers; the semi woody, grey coloured *Polycarpha nivea* with its encrusted looking flower heads and miniscule leaves; the purple flowers and succulent leaves of *Lycium imbricatum*; and two lavenders growing side by side: the ferny-leaved, large-flowered *Lavandula multifida* and *Lavandula dentata* var. *candicans*, with narrow velvety-grey leaves, much smaller flowers and a more medicinal scent.

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As we scanned the stony gully other minor plant characters revealed themselves in the shape of the orange-flowered field marigold *Calendula arvensis* and some dark-centred *Reichardia tingitana*. The ground hugging, fleshy leaved, annual succulent herb *Mesembryanthemum crystallinum*, a few with sparkling white flowers covered in glistening hairs did not fail to impress. Here we also found two species of sea lavender, *Limonium sinuatum* and the endemic *Limonium mucronatum* with smaller flowers and very winged stems. Tiny colourful *Malcomia littorea* dotted the more open sandy areas, and we admired two types of sea heath, both *Frankenia laevis* with larger flowers and leaves bearing a whitish crust and *F.thymifolia*, with its smaller flowers and thyme-like leaves. A duo of interesting parasitic plants were growing out of the sand: the large yellow spikes of the broomrape-relative *Cistanche phelypaea*, a parasite of the suaeda; and the bizarre deep maroon spikes of *Cynomorium coccineum*. A member of the mainly-tropical family Balanophoraceae, when fully in flower this plant smells of rotting flesh to attract flies which pollinate it.

Turning rocks revealed two species of gecko: the large, knobbly Moorish Gecko and the small, beautifully patterned Moroccan Lizard-toed Gecko. We also found a couple of yellow scorpions, one of which was a decent sized animal who looked like she packed quite a punch! Around 20 people die from scorpion stings in Morocco each year, so we gave her the respect she was due.

Our next stop was at the mouth of the Oued Tamri, where just as we settled down with our picnic lunches, a squadron of 30 black birds came low overhead: 5% of the total world population of Northern Bald Ibis! They swirled back and forth over us for a while, settling on the nearby hillside for a while before flying back down towards the estuary and out of sight.

Once we'd finished our lunch, we set off towards the dunes and estuary, only to be halted in our tracks as we found the ibises feeding just behind the dunes, less than 30 metres away from us, giving amazingly good views to us all as they probed and prodded in the sand, hunting surprisingly successfully for beetles, scorpions and small lizards.

Once widespread across southern Europe and North Africa the decline of the Bald Ibis was due to factors including pesticide poisoning, hunting and disturbance, and they reached a low of only around 100 birds by the 1990s. Thankfully the Moroccan population has been a conservation success story with the population now over 600 individuals, split between the Tamri area and the Souss Massa National Park.

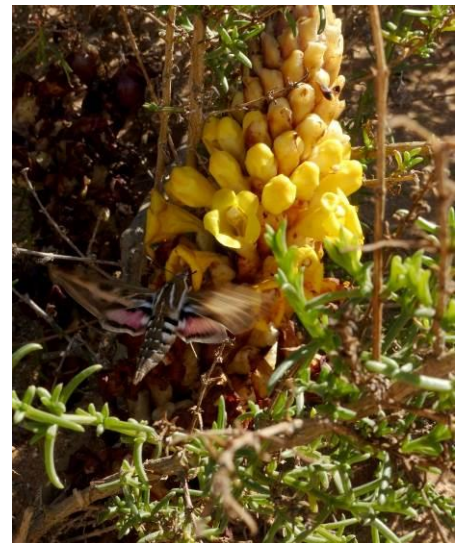
Skirting the dunes, we walked out on to the beach, and promptly disturbed a pair of Stone Curlews, which proceeded to land a little further up the beach, giving everyone great views of their amazing camouflage. On the lagoon itself, a group of Spoonbills were resting on a small island, hundreds of Lesser Black-backed Gull, Yellow-legged Gulls and beautiful silvery Audouin's Gulls were coming and going to wash and rest, and a pair of Ruddy Shelducks flew past, flashing their white shoulder patches and orange bellies. Just behind the dunes, we found a long-dead young Minke Whale carcass. As we turned back to leave, we found that the Bald Ibises had stalked us through the dunes, and were now just behind us, blocking our way! After more wonderful views, they eventually flew up as we made our way back to the vehicle. Alas, the sand dunes and salt marsh that were once as a feature of this site have been much eroded by recent Atlantic storms, and we struggled to find much more than Sea Rocket *Cakile maritima*, Sea Knotgrass *Polygonum maritimum*, Sea Spurge *Euphorbia paralias* and *Suaeda vera*.

Time to head back south again. Just beyond Cap Rhir we stopped to explore one more area of Euphorbia scrub, where the dominant spiny *Euphorbia officinarum* was being parasitized by the pink spikes of *Striga gesnerioides*. We also found the climbing yellow toadflax *Nanorrhinum heterophylla* and other shrubs including *Rhus tripartita* and the Mastic Tree *Pistacia lentiscus*, a plant common around the Mediterranean and found here at the very southern end of its distribution. Offshore, several Gannets were fishing, out beyond the impressive surf.

Our final stop was at the ruined Kasbah overlooking Agadir, which gave wonderful views down over the fishing port and across the city to the swathe of natural vegetation that is Souss Massa National Park on the far side of the bay...



## The Atlantic Coast: Cap Rhir and Tamri



Top, l to r: Northern Bald Ibis at Tamri; Moroccan Lizard-toed Gecko at Cap Rhir.  
Bottom, clockwise from left: *Euphorbia officinarum*, *Euphorbia regis-jubae*, Striped Hawkmoth nectaring on *Cistanche phelypaea* (Charlie Rugeroni) and a scorpion, all at Cap Rhir.

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### Day 4: Tuesday 8th March. Taroudannt and Tioute

Heading east, our journey to Taroudannt took us through the Souss valley, an important area of agricultural production, particularly oranges and bananas and salad crops cultivated under polythene for export to northern Europe. A soaring Booted Eagle showed nicely along the way.

The town of Taroudannt is often described as a mini Marrakech, its mud plastered ramparts, dating back to the 16<sup>th</sup> century, an impressive sight on arrival. Tucked away inside the walls is the impressive Hotel Palais Salem, its impressive entrance taking us past a yellow trumpet flowered *Alamanda* tree, into a place of shade, shadow and tranquillity, a world away from the intense morning light and the hustle and bustle of a town at work. Once a Saadi palace, the hotel's courtyards embodied elements of traditional Islamic gardens as being places of rest and reflection alongside running water and, importantly, a reminder of the promised paradise. In the cool of the hotel's interior, surrounded by Berber tile mosaics and Arabic wall designs, Mohamed explained the fascinating history of Morocco's tribes turbulent and cultural past and its significance to Taroudant's market town beginnings, situated on a major caravan route between the north and the Sahara.

The inner courtyard with its central babbling fountain and bathed in the dappled shade of ancient fig trees *Ficus carica*, the 'Ikea plant' (more properly the Fiddle-leaf Fig *Ficus lyrata*) flowering banana plants and loquats *Erybotria japonica*, led us into what was once the harem garden, complete with an immense rubber tree *Ficus elastica*, its buttress roots, snaking their way across the flower bed. The main garden, a mix of exotics, succulents, native trees and shrubs dwarfed the old building and we soon found our own shady piece of paradise as we sat by the pool drinking coffee, among the hibiscuses, more loquats and a magnificent flowering trumpet vine with chalice-like flowers *Solandra maxima*, whilst enjoying the antics of a family of noisy newly-fledged Kestrels. In a small pool nearby, four rather sad-looking Moorish Terrapins looked a little out of place...

A walk round onto the city walls gave views over the town and to the snow-capped High Atlas beyond, with circling Kestrels, zooming Pallid Swifts and a couple of fly-by Little Swifts. In the distance, a White Stork was standing on her nest at the top of a telecoms mast.

Into the old Medina, where we failed miserably to avoid the retail opportunities offered by various coffee grinders, colourful piles of spices, dried fruit and a veritable apothecary of herbs and remedies. But alas, no fez, nor post cards.

We left Taroudannt and headed south, stopping for a soaring Bonelli's Eagle on the way, before carrying on towards the edge of the Anti-Atlas, a much lower and older range of mountains than the High Atlas to the north. Argan trees continued to dominate the landscape, although the countryside got increasingly arid as we headed towards Tioute: many of the younger Argan trees had been heavily overgrazed by marauding goats, and in so doing had created what looked like green termite mounds.

Lunch was on the edge of the palmery, where things couldn't be much more different to the arid surroundings if they tried: the cool shade of the trees and the babbling of running water accompanied our picnic, along with some freshly squeezed orange juice. Our much enjoyed shade was provided by an amazing structure of metal and cables giving support to 17 wisterias, planted in a circle which over time had grown to create what could only be described as a huge circus tent. Gill and Ian set themselves the tricky task of photographing Painted Ladies on carmine-coloured bougainvilleas.

After lunch we set off on a walk along the irrigation channels that are the life blood of the palmery. The Date Palms, *Phoenix dactylifera* require a constant source of water and hence are associated with springs in these arid environments. The dates produced by this palm are harvested from September and stored for later sale (in season at Christmas in the UK) or used as a source of food for the local people. Lining the irrigation channels was the familiar Maidenhair Fern, *Adiantum capillus-veneris*, along with the occasional Brookweed *Samolus valerandi*. Other water-demanding plants including White Poplar *Populus alba* and the Carob tree *Ceratonia siliqua*. Among the cultivated allotments we came across the smart *Lathyrus*

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*clymenum* and the bright *Vicia benghalensis*, matched in colour by a single *Gladiolus byzantinus* growing amongst barley and backlit by the afternoon sun. Nearby, Weasel's Snout *Misopates oronticum* and a single *Plantago afra* were also spotted in between sprawling *Convolvulus althaeoides*. The bizarre 'dutchman's pipe' flowers of *Aristolochia baetica* were found in bloom along the trackside, but the floral highlight came in the form of a plant seen here six years ago on Wildlife Travel's first Morocco trip, and still flowering in the very same spot: *Linaria ventricosa*. This tall, multi-stalked endemic toadflax possessed exquisite yellow-ochre flowers tinged with maroon venation and with a mid-lip capped in fine golden hairs.

Amongst the palm trees, fields of alfafa, broad beans and barley were growing, with the lush conditions attracting plenty of smaller birds: Robin, Blackcap, Great Tit, Common Bulbul, Blackbird and the attractive local subspecies of Chaffinch were all common, the occasional Moussier's Redstart put in an appearance, and a Black-crowned Tchagra sang his beautiful fluting whistle in the distance.

Our final stop was at the Argan oil co-operative in the village of Tioute, a mixture of both modern technology and the traditional – no one can forget the room of local women hand-cracking the hard Argan nuts. This is the second oldest co-operative in Morocco founded in 2001, our purchases a direct way to return money to the local population: a very suitable destination for International Women's Day.

### Day 5: Wednesday 9<sup>th</sup> March. Souss Massa National Park

Today was something a little bit different. Instead of our trusty minibus, Mohammed arrived this morning at the head of a convoy of four 4-wheel drives, which whisked us off around the outskirts of Agadir to the Souss Massa National Park. The dusty track leading to the park's interpretative centre was lined in parts with the impressively thorned *Acacia ehrenbergiana*, used as protective hedging. After a short introduction to the Park by the National Park guide, we entered the Rokein Special Reserve, a 2000 hectare enclosure within the National Park. The difference between 'inside' and 'outside' was immediately obvious: with grazing goats excluded, the ground vegetation was much more extensive and varied. And happily so, as this provides the necessary food for the browsing animals that make the reserve their home.

The 'Sahelo-Saharan megafauna' is one of the most endangered assemblages of large animals in the world, threatened by a combination of overhunting and lack of grazing through competition with domestic livestock, primarily goats and camels. Once widespread across the arid regions of North Africa, several of the antelopes of the Sahara are now extremely rare in the wild: four important members of the 'Sahelo-Saharan megafauna' have been 're-wilded' here in the National Park.

First up was the dainty Dorcas Gazelle, with elegant horns and handsome 'go faster stripes'. This is among the smallest of the gazelles, and the one doing the best in the wild in Morocco.

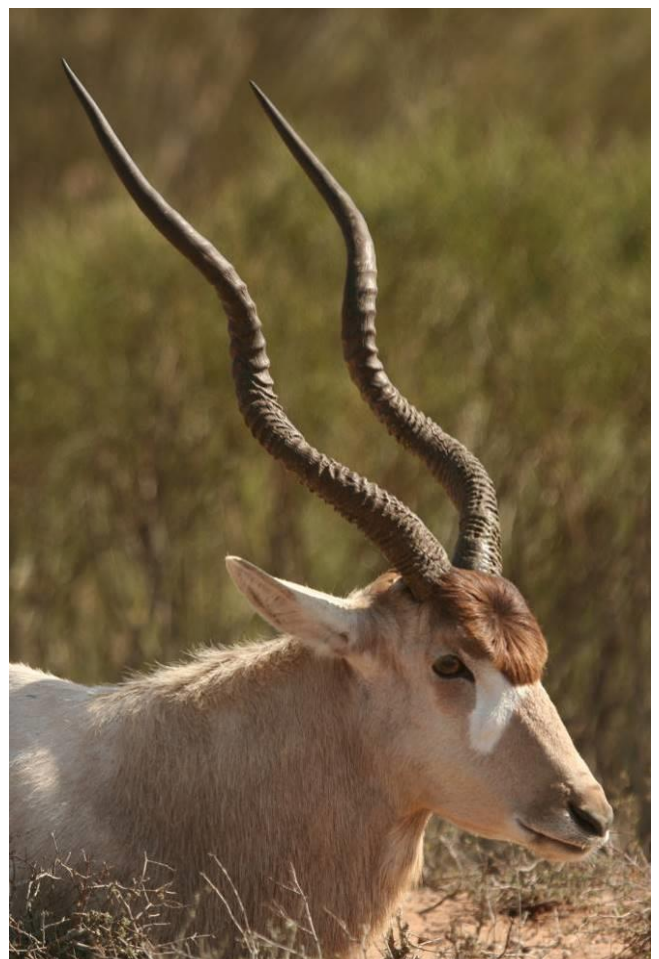
Next we found the handsome Addax, a much larger, ghostly pale antelope, a native of stony and sandy areas out in the Sahara proper, now down to fewer than 200 individuals in the wild but obviously doing very well here as we saw good numbers, including a sparring pair of males and a courting couple later on, with a small calf nearby.

The third of the antelopes, and the largest, was the beautiful Scimitar-horned Oryx, with their ginger neck, tear-shaped face markings and swept back scimitar horns, found in the nearby 1200 hectare reserve of Arrouais. This species is now extinct in the wild, with the population here now the largest single herd left on the planet.

And to finish off our 'mega-fauna' quartet, we enjoyed great views of the Red-necked Ostriches. This North African subspecies is the largest of the Ostriches, making it the largest bird in the world, and is noticeably more colourful than the sub-Saharan birds more familiar from East and Southern African safaris



## Souss Massa National Park



Top: Dorcas Gazelle. Bottom Left: Scimitar-horned Oryx. Bottom Right: Addax

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Within the two enclosures, the vegetation consisted mostly of a mix of coastal steppe, planted eucalypt woodland with the Australian *Acacia pycnantha* and blocks of *Retama monosperma* scrub over old and young sand dunes. A low-growing dwarf shrub, dominating in much of the open steppe area of the first enclosure was *Helianthemum confertum*, with tiny yellow flowers. Once inside the second enclosure the surface was noticeably sandier and we found a second *Helianthemum* dominated the scene: the low-growing *Helianthemum lippi*. Punctuating the sand we came across some thistly-like globe thistles, with last year's flowers held aloft on short stalks – the suitably-named *Echinops spinosissimus* subsp. *spinosus*. They were either dotted around or else formed small patches and were most evident near our viewing point which amazingly held one in full flower. The impressive looking tennis ball sized flower-head, complete with inch-long thorns on top, contained whitish long-pointed flower bracts which held purple veined stamens. The stems were similarly streaked in purple and held spine tipped, white veined leaves.

Out of the 'big game enclosures', we drove overland south through the National Park, crossing a lot of very arid, very heavily grazed land. A group of about 10 Cream-coloured Coursers were spotted on a particularly bare piece of ground, uncomfortably close to the Moroccan Army training areas... At our next impromptu stop we found what looked like an abandoned game of yellow pétanque but what, on closer inspection turned out to be the yellow melon-like fruits of *Citrullus colcyntis*, the Bitter Apple, a member of the cucumber family, with a few frilly leaves coming through the sand. Our cross-country drive ended with a close interrogation by a Little Owl, perched at the roadside.

Our picnic site was overlooking the Oued Massa, where a Great White Egret flew upriver, followed by a couple of Little Egrets. Unfortunately the dry conditions this year meant the trackside vegetation was pretty poor, so after a short walk down the track we headed back up river to explore an area of wonderful *Euphorbia officinarum* scrub, where the euphorbias formed some amazing spiny cushions over the hillside. Growing amongst them were yet another yellow composite, *Anvillea garcinii*

Our final stop was the estuary at Oued Souss. Mediterranean Gulls were fairly common amongst the larger numbers of Black-headed and Lesser Black-backed Gulls, and we also picked out a beautiful adult Slender-billed Gull. Waders included Grey Plover, Dunlin, Knot, Redshank, Curlew and Oystercatcher. But the stars of the river were a little further away, a flock of about 50 Greater Flamingos feeding alongside a large roosting flock of White Storks. Just away from the stony riverbank path we spotted some better examples of *Aizoon canariense*, alongside the low and fleshy-stalked *Opophytum theurkaufii* (syn. *Mesembryanthemum theurkaufii*).

### Day 6: Thursday 10<sup>th</sup> March: Into the Anti-Atlas

Heading south-east we took the road to Ait Baha one of the larger towns in the western Anti Atlas to explore the plants and landscapes of this region. The Anti-Atlas contains some of the oldest rocks in the World, an ancient mountain range which started to form 300 million years ago and once rivalled the Himalayas in height. Today they are much eroded, the highest peaks between 2500–2700m. In comparison the more recent High Atlas only reached their maximum height within the last 10 million years: the tallest peak is Jbel Toubka at 4167m. A major feature of the Anti-Atlas is the highly folded rock strata, numerous valleys and rounded peaks, with many villages still living their traditional lifestyles.

As we approached across the river valley of the Souss we spotted large plants of a grey-leaved fleshy plant up to 3-4 metres tall, the primarily Saharan species, *Calotropis procera* in the Apocynaceae (now home to what was the Asclepidaceae). Feeding on these highly poisonous plants we found a few small caterpillars of the Plain Tiger, a butterfly related to the well-known Monarch. Both larvae feed on toxic plants and are able to tolerate and sequester the plant's steroidal heart poison as a form of defence, making them inedible to predators – alas, this time we couldn't find any adults.

This stop proved quite successful: a Hoopoe was singing from a nearby tree, a young praying mantis was hiding on one of the *Calotropis* plants, and at rather speedy Spur-thighed Tortoise eventually dived into the bottom of the thorny 'dead hedge'.

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After a coffee stop in Ait Baha, when we could see Ravens soaring along the ridge nearby, and some footwear-related retail opportunities at the famous local cobblers, we climbed further into the Anti-Atlas.

A roadside stop was made next to a patch of *Teucrium capitatum*, while some successful rock-turning produced sightings of both yellow and black scorpions, a couple of young Bibron's Agamas, a very brightly coloured Moroccan Lizard-toed Gecko and a rather gorgeous Algerian Orange-tailed Skink, a much larger adult than yesterday's little youngster (and rather mis-named: this species is primarily found across much of southern and central Morocco, just sneaking across the border into a small area of Algeria).

Onwards to our next stop at the tiny village of Laatik, to visit an ancient *agadir*, a fortified grain store dating from the time when local Berber tribes still fought each other (this particular *agadir* is some 770 years old). These buildings are typical of the Anti-Atlas and we saw a few others during the day perched on high ground with commanding views. It was a treat to be taken inside by the local custodian to see the wonderful old architecture, the prison, store rooms accessed by 'stepping stones', a well for freshwater to survive any siege and to get a chance to look inside the store rooms themselves.

Within the walls of the *agadir* we could hear the now-familiar twittering of House Buntings, a trio of Spur-thighed Tortoises of varying sizes emerged from the rocks, and plants included Henbane *Hyoscamus niger* (used locally as incense, as explained by the *agadir* custodian) and the fresh violet-blue flowers of *Lavendula multifida*, here growing at the very southern edge of its range. Other interesting plants growing outside the walls were a trio of yellow composites: *Pallenis spinosa*, a common Mediterranean flower with sharp spines on the end of the bracts; and two local specialities, the feathery-leaved *Cladanthus arabicus*, and the sweetly-smelling *Anvillea garcinii*.

After our tasty-as-ever lunch, we retraced our steps, stopping on an area of rocky hillside covered with a veritable rock garden of *Euphorbia officinarum*, here growing in the beautifully tight cushions of the *echinarum* form (considered by some to be a distinct subspecies), along with a few spikes of the purple *Striga gesnerioides* and two species of fern, somehow surviving in this incredibly dry situation: the annual fern *Cheilanthes vellea* and an asplenium which looked very similar to the more familiar Rustyback Fern from back home. For some of us, this Anti-Atlas hillside provided a treasured moment for peace and quiet contemplation under the scarce shade provided by argan trees.

Heading back down towards Ait Baha, on the rocky roadsides we all enjoyed sightings of the bouncy Barbary Ground Squirrels, their presence also revealed amongst the rocks by empty Argan nuts expertly nibbled opened by these tough-toothed rodents.

Our final stop was a little lower down, where we found one last endemic for the day: a yellow flowered shrubby pea, *Hesperolaburnum platycarpum*, its few flowers smelling very sweetly. This shrub seemed to be covering much of the hillside and we could only imagine what a sight it must be when in full flower. The stems are used to weave baskets such as those seen in the cool anteroom of the *agadir*. Nearby we also found a few spikes of *Linaria ventricosa* just coming into flower.

And then it was back home, stopping briefly to recharge the alcohol supplies...



## The High Atlas



Top: the endemic Moroccan Day Gecko *Quedenfeldtia moerens*. Left: *Chamaerops humilis* var *cerifera*  
Right: (clockwise from top right): *Polygala balansae*, *Genista tricuspidata*, mantis in Paradise Valley (Charlie Rugeroni) and *Tetraclinis articulata*



### Day 7: Friday 11<sup>th</sup> March. The Western High Atlas

Driving north on the coast road, our route cut inland to explore the foothills of the western High Atlas. Our first stop was within a narrow river gorge at around 200m, the vegetation still very much dominated by Argan trees, where a small covey of Barbary Partridges flew up in front of Fiona. Under foot we found plenty of fossil oyster shells, evidence of the submarine geological history of these mountains.

Our next stop at about 800m was an opportunity to explore the open woodland of *Tetraclinis articulata*, the 'Thuja of the Berbers'. This conifer is primarily found only in Morocco and Algeria, with two small relictual populations in Malta and Andalucia. Morocco holds 600,000ha of the 1Mha world population of the tree. Well-known for its unusual grain and rich colour, tetraclinis wood is handcrafted to produce ornaments and kitchen utensils; its large burrs or *lupias*, a result of 'self-coppicing', a way of coping with wildfires and overgrazing, are much prized by wood-carvers. Its resin, sandarac gum, is used to make a liquor taken as a remedy for cramps, insomnia and difficult childbirths. The name refers to the cones which are split into fours and its finely divided foliage. Also present here was *Globularia alypum* in flower around the spiny euphorbia, while at ground level we had *Plantago lagopus*, *Eryngium ilicifolium*, and *Catananche arenaria*.

Reaching the palmery at the start of Paradise Valley, a walk up the road along the river revealed some interesting plants: *Lavandula maroccana* found only in the High Atlas; *Andryala maroccana* a yellow flowered daisy distinguished by its very hairy inflorescence heads; the aromatic *Warionia saharae* bushes growing out of the cliff face, a plant very much of the Sahara that reaches its northerly limit here; the colourful 'yellow composite', *Perralderia conopifolia* ssp *purpurascens*; two species of succulent Caralluma, *Caralluma munbyana* with its purple-blotched stem and hook-like soft spines growing at the track side, and *C. europaea*, a more regular, four-sided greyish stem growing higher up on a ledge; a stand of *Hypericum aegyptiacum* growing down by the riverside; up on a ledge was *Scilla latifolia* with its broad strap-like leaves and bottle-brush-like flowerheads, albeit just gone over; and *Salvia aegyptiaca* was in flower along the roadside. Whilst photographing the flowers we also found a couple of lovely little Moroccan Day Geckos, an endemic lizard that posed for us all to see. Grey Wagtail fed along the river bed, a little heap of Moorish Terrapins sunbathed in the water where Ian also photographed a Goblet-marked Damselfly, and a Barbary Ground Squirrel ran along the ledge up on the cliff.

From Paradise, we headed upwards (ever upwards) towards our lunch stop below the Cascades du Immouzer at a local restaurant from where we could look up at the 'cascades', which were alas dry this year. A Hummingbird Hawk-moth was busy nectaring at the flowers in the garden here, along with a variety of interesting bee species. The garden was home to a *Pistacia atlantica* tree, and a wander into the surrounding olive groves revealed the lovely little *Arisarum simorhinum* in flower, together with Smilax and White Bryony growing side by side and *Ajuga iva* (of which more later).

After yet another wonderful picnic lunch, thanks to the kitchens of the Kasbah, we headed upwards again, stopping on a slope where we were able to admire one of the special plants of the High Atlas, *Polygala balansae*, a small spiny shrub with spectacular deep ruby purple and yellow flowers. We may be familiar with the herbaceous milkworts from chalk grasslands in the UK but most members of this group are small shrubs. Until very recently this was thought to be a Moroccan endemic, but a small population has now been found in southern Spain, close to Granada.

Also present here was *Lavandula dentata* var. *dentata* (much greener than the variety down on the coast), the gorse-like *Genista tricuspidata* and cultivated Almond trees, another indication of our altitude, but one of the stars was found by the rock-climbers amongst us, growing up on the hillside beneath the *Polygala*: a small clump of the delicate fritillary *Fritillaria lusitanica*.

Our next stop was in a valley at about 1300m. Here the southern side was dominated by impressive stands of the Dwarf Fan Palm, *Chamaerops humilis* var. *cerasifera*, the variant with softer glaucous foliage, looking very different to the variety familiar from nurseries back home. On the northern side of the valley,

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a different vegetation was clearly present, dominated by Holm Oak, *Quercus ilex*, again another indicator of altitude. This is really a tree of the Mediterranean but growing this far south is only found in the cooler and more amenable climate found at altitude in the High Atlas, here forming only a shrub.

One final stop came after we'd crossed the ridge of the mountains at 1550m, where we found a steppe-like dwarf shrub vegetation growing on what was almost limestone pavement. New shrubs here included both *Cistus crispus* and *C. creticus* and the Kermes Oak *Quercus coccifera*, giving the area a more Mediterranean feel. Amongst the rocks we found several plants of the pretty little *Ajuga iva* with deep cerise-pink flowers (unlike the yellow-flowered form seen earlier in the olive grove, and growing in the garden back at the Kasbah), the miniscule daisy, *Bellis annua* subsp. *microcephala* and a single beautiful specimen of Barbary Nut *Gynandiris sisyrhynchium*.

From up here we had some impressive views across to the snow-caps of the High Atlas, while the air below the mountains was 'overcast' with the dust from the deserts further south.

After stocking up with handfuls of almonds from the most persuasive saleswoman yet, it was homewards bound, down the quiet back lanes to return to the Atlas Kasbah. Friday's in Morocco means vegetable or meat couscous, a fitting meal to mark our last evening.

### **Day 8: Saturday 12<sup>th</sup> March. Atlas Kasbah and return home**

One final morning wander took some of us back down to the dry hillsides across the road from the hotel.

A party of Bee-eaters flew over, at least two Western Orphean Warblers and three or more Black-crowned Tchagras were singing from the argan trees, Cirl Buntings and Woodchat Shrikes put on good shows for us, and a single Corn Bunting and a flock of Spanish Sparrows were also new for the list.

After yet another delicious lunch, outside on the terrace, we had a last couple of hours to relax and enjoy the Atlas Kasbah before mint tea on the terrace provided final refreshment and a chance to thank Mohammed and Rasheeda, M'bark and Hussein and the Atlas Kasbah team for our stay and their great hospitality.

Philip Precey and Charlie Rugeroni, Wildlife Travel, March 2016



Little Owl, Souss Massa National Park

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	SCIENTIFIC NAME	ENGLISH NAME	Notes	Seen
	<b>PTERIDOPHYTES</b>			
	<i>Cheilanthes vellea</i>		annual fern, rocky hillside	10 <sup>th</sup>
	<i>Asplenium cf ceterach</i>	Rustyback Fern	Rocky hillside (10 <sup>th</sup> ) and olive grove (11 <sup>th</sup> )	10 <sup>th</sup>
	<b>CONIFERS</b>			
	<b>Cupressaceae</b>			
	<i>Cupressus sempervirens</i>		Planted, around Immouzer	11 <sup>th</sup>
	<i>Tetraclinis articulata</i>	Thuya of the Berbers	High Atlas	11 <sup>th</sup>
	<b>Ephedraceae</b>			
	<i>Ephedra fragilis</i>	Jointed Pine	Source of ephedrine	8 <sup>th</sup>
	<b>Pinaceae</b>			
	<i>Pinus halepensis</i>		Planted, around Immouzer	11 <sup>th</sup>
	<b>DICOTYLEDONS</b>			
	<b>Acanthaceae</b>			
	<i>Justicia adhatoda</i>		Planted: hotel gardens	8 <sup>th</sup>
	<b>Aizoaceae</b>			
	<i>Carpobrotus acinaciformis</i>	Hottentot Fig	carpets along the roadside north of Agadir	7 <sup>th</sup>
	<i>Mesembryanthemum crystallinum</i>		on the sandy ground at Cap Rhir	7 <sup>th</sup>
	<i>Opophytum theurkaufii</i>		Oued Souss	8 <sup>th</sup>
	<i>Aizoon canariense</i>		In the old village courtyard	6 <sup>th</sup>
	<b>Amaranthaceae</b>			
	<i>Salsola oppositifolia</i>		Pinkish papery flowers	7 <sup>th</sup>
	<b>Araucariaceae</b>			
	<i>Araucaria heterophylla</i>	Norfolk Island Pine	Planted: around Agadir	7 <sup>th</sup>
	<b>Anacardiaceae</b>			
	<i>Pistacia lentiscus</i>		High Atlas	11 <sup>th</sup>
	<i>Pistacia atlantica</i>		Restaurant below the cascades	11 <sup>th</sup>
	<i>Rhus tripartita</i>		Cap Rhir area	7 <sup>th</sup>
	<b>Apiaceae</b>			
	<i>Eryngium ilicifolium</i>			11 <sup>th</sup>
	<b>Apocyanaceae</b>			
	<i>Calotropis procera</i>		Desert plant with big glaucous leaves, food plant of Plain Tiger	10 <sup>th</sup>
	<i>Caralumma europaea</i>		Succulent: four-sided	7 <sup>th</sup>
	<i>Caralumma munbyana</i>		Succulent: purplish, hooked	11 <sup>th</sup>
	<i>Nerium oleander</i>	Oleander	Dry river beds	6 <sup>th</sup>
	<i>Periploca angustifolia</i>		Vine with 'bull horn' seed pods	6 <sup>th</sup>
	<b>Araceae</b>			
	<i>Arisarum simorhinum</i>		'Friars cow' in the olive grove	11 <sup>th</sup>
	<b>Aristolochiaceae</b>			
	<i>Aristolochia baetica</i>		'Dutchman's pipe', palmery	8 <sup>th</sup>
	<b>Asteraceae</b>			
	<i>Andryala maroccana</i>		Aromatic, roadside in Paradise Valley	11 <sup>th</sup>
	<i>Andryala pinnatifida</i> (=A. canariensis)		The yellow aster with fluffy balls, Cap Rhir	7 <sup>th</sup>
	<i>Anvillea garcinii</i>		Minty-lemon-scented foliage, outside the agadir	10 <sup>th</sup>
	<i>Bellis annua</i> ssp <i>microcephala</i>		Tiny daisy, High Atlas	11 <sup>th</sup>
E	<i>Catananche arenaria</i>		Creamy flower with maroon centre	6 <sup>th</sup>
	<i>Chrysanthemum coronarium</i>		In the garden	7 <sup>th</sup>
E	<i>Cladanthus arabicus</i>		Orangey yellow with feathery foliage, arable weed	6 <sup>th</sup>
	<i>Echinops spinosissimus</i> subsp. <i>spinosus</i>		Very spiny flowerhead, Souss Massa	9 <sup>th</sup>
	<i>Launaea arborescens</i>		'chicken wire bush' with yellow flower	6 <sup>th</sup>

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	SCIENTIFIC NAME	ENGLISH NAME	Notes	Seen
E	<i>Nauplius imbricatus</i>		Shrubby, yellow flowers	7 <sup>th</sup>
	<i>Onopordum cf macranthum</i>		'donkey fart' thistle	6 <sup>th</sup>
	<i>Pallenis spinosa</i>		Spiny bracts, pale yellow flower: outside the agadir	10 <sup>th</sup>
	<i>Perralderia coronopifolia ssp purpurascens</i>		Paradise Valley	12 <sup>th</sup>
	<i>Phagnalon saxatile</i>			7 <sup>th</sup>
	<i>Phagnalon rupestre</i>		Near the Polygala	11 <sup>th</sup>
	<i>Reichardia tingitana</i>		Dark centred 'dandelion' in the garden	6 <sup>th</sup>
	<i>Senecio anteuphorbia</i>		Succulent, around Cap Rhir	7 <sup>th</sup>
	<i>Tagetes patula</i>		Planted: garden	8 <sup>th</sup>
E	<i>Volutaria maroccana</i>		Violet blue flower, arable weed	6 <sup>th</sup>
	<i>Warionia saharae</i>		Saharan bush, very aromatic leaves, Paradise Valley	11 <sup>th</sup>
<b>Balanophoraceae</b>				
	<i>Cynomorum coccineum</i>		Maroon parasite, in sandy soil	7 <sup>th</sup>
<b>Boraginaceae</b>				
	<i>Echium horridum</i>		Red bugloss with long spines	6 <sup>th</sup>
	<i>Heliotropium crispum</i>	Heliotrope	Road verges	6 <sup>th</sup>
<b>Brassicaceae</b>				
	<i>Cakile maritime</i>	Sea Rocket	Tamri	7 <sup>th</sup>
	<i>Malcolmia littorea</i>		Cap Rhir	7 <sup>th</sup>
<b>Cactaceae</b>				
	<i>Opuntia ficus-barbarica</i>	Fig of the Berbers	invasive in villages	6 <sup>th</sup>
	<i>Opuntia cylindrica</i>		alien: tubular cactus	6 <sup>th</sup>
<b>Caryophyllaceae</b>				
	<i>Paronychia argentea</i>		Goat-trampled	6 <sup>th</sup>
	<i>Polycarpaea nivea</i>		Greyish woody herb	7 <sup>th</sup>
	<i>Spergularia fimbriata</i>			6 <sup>th</sup>
	<i>Spergularia fimbriata</i>			6 <sup>th</sup>
<b>Chenopodiaceae</b>				
	<i>Chenopodium murale</i>	Nettle-leaved Goosefoot	In the village	6 <sup>th</sup>
	<i>Suaeda vera</i>			7 <sup>th</sup>
<b>Cistaceae</b>				
	<i>Cistus crispus</i>		High Atlas	11 <sup>th</sup>
	<i>Helianthemum canariense</i>		Cap Rhir	7 <sup>th</sup>
	<i>Helianthemum confertum</i>		'addax' enclosure, Souss Massa	9 <sup>th</sup>
	<i>Helianthemum lippi</i>		'oryx' enclosure, Souss Massa	9 <sup>th</sup>
<b>Convolvulaceae</b>				
	<i>Convolvulus althaeoides</i>		In the garden	6 <sup>th</sup>
	<i>Ipomaea batatus</i>		In the garden, around the ponds	6 <sup>th</sup>
<b>Crassulaceae</b>				
	<i>Umbilicus rupestris</i>	Navelwort	In the palmery	8 <sup>th</sup>
<b>Cucurbitaceae</b>				
	<i>Citrillus colocynthis</i>	Bitter Apple	Sous Massa	9 <sup>th</sup>
<b>Cuscutaceae</b>				
	<i>Cuscuta arvensis</i>	Field Dodder		6 <sup>th</sup>
<b>Euphorbiaceae</b>				
	<i>Euphorbia officinarum</i>		Columnar succulent	7 <sup>th</sup>
	<i>Euphorbia paralias</i>	Sea Spurge	On the beach, Tamri	7 <sup>th</sup>
	<i>Euphorbia regis-jubae</i>		Shrubby succulent	7 <sup>th</sup>
	<i>Mercurialis annua</i>	Annual Mercury	In the agadir	10 <sup>th</sup>
<b>Fabaceae</b>				
	<i>Acacia ehrenbergiana</i>		Very large thorns, Souss Massa	9 <sup>th</sup>
	<i>Acacia gummifera</i>		Low, scrubby acacia near Kasbah	6 <sup>th</sup>
	<i>Acacia pycnantha</i>	Golden Wattle	Australian, planted Souss Massa	9 <sup>th</sup>
	<i>Genista tricuspidata</i>		Yellow 'gorse', High Atlas	11 <sup>th</sup>



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	SCIENTIFIC NAME	ENGLISH NAME	Notes	Seen
E	<i>Hesperolaburnum platycarpum</i>		Dominant shrub on hillsides near the agadir: used for weaving baskets	10 <sup>th</sup>
	<i>Lathyrus clymenum</i>		Sweet pea-like, at the Palmery	8 <sup>th</sup>
	<i>Lotus creticus</i>		roadside weed	6 <sup>th</sup>
	<i>Ononis natrix</i>		sticky leaves, smells of tom cats	6 <sup>th</sup>
	<i>Parkinsonia aculeata</i>	Palo Verde	Paradise Valley	11 <sup>th</sup>
	<i>Retama monosperma</i>		white-flowered broom	9 <sup>th</sup>
	<i>Vicia benghalensis</i>		The deep purple vetch at the Palmery	8 <sup>th</sup>
<b>Fagaceae</b>				
	<i>Quercus ilex</i>	Holly Oak	High Atlas	11 <sup>th</sup>
<b>Frankeniaceae</b>				
	<i>Frankenia laevis</i>		Cap Rhir: larger leaves	7 <sup>th</sup>
	<i>Frankenia thymifolia</i>		Cap Rhir: smaller leaves	7 <sup>th</sup>
<b>Geraniaceae</b>				
	<i>Erodium hesperium</i>			6 <sup>th</sup>
	<i>Geranium rotundifolium</i>	Round-leaved Crane's-bill	Olive grove	11 <sup>th</sup>
	<i>Geranium robertianum</i>	Herb Robert	Olive grove	11 <sup>th</sup>
<b>Hypericaceae</b>				
	<i>Hypericum aegytiacum</i>		yellow St John's wort, Paradise Valley	11 <sup>th</sup>
<b>Lamiaceae</b>				
	<i>Ajuga iva</i>		Yellow flowered in olive grove, cerise flowers at the top, High Atlas	11 <sup>th</sup>
	<i>Ceratonia siliqua</i>	Carob	Eg Palmery	8 <sup>th</sup>
	<i>Lavandula dentata var candicans</i>		Greyish leaves: Cap Rhir	7 <sup>th</sup>
	<i>Lavandula maroccana</i>		Paradise Valley	11 <sup>th</sup>
	<i>Lavandula multifida</i>		hillsides around the hotel; in the palmery; in the agadir	6 <sup>th</sup>
	<i>Rosmarinus officinalis</i>		Garden	6 <sup>th</sup>
	<i>Salvia aegyptiaca</i>		small annual sage, roadside	6 <sup>th</sup>
	<i>Teucrium capitatum</i>		tiny deep red flowers: by the roadside at the skink stop	10 <sup>th</sup>
<b>Malvaceae</b>				
	<i>Hibiscus rosa-sinensis</i>	Hibiscus	Planted: in the Kasbah gardens	6 <sup>th</sup>
	<i>Hibiscus tileaceae</i>	Cotton Bush	Planted: in the Kasbah gardens	6 <sup>th</sup>
<b>Moraceae</b>				
	<i>Ficus elastica</i>	Rubber Fig	The enormous rubber tree in the hotel courtyard	8 <sup>th</sup>
	<i>Ficus carica</i>	Common Fig	Eg the ancient fig trees in the hotel courtyard	8 <sup>th</sup>
	<i>Ficus lyrata</i>	Fiddle-leaf Fig	The 'ikea' tree, in the hotel courtyard	8 <sup>th</sup>
<b>Myoporaceae</b>				
	<i>Myoporum laetum</i>		Planted: in the hotel gardens	6 <sup>th</sup>
<b>Nitrariaceae</b>				
	<i>Nitraria retusa</i>		Greyish shrub at Oued Massa	9 <sup>th</sup>
<b>Nyctaginaceae</b>				
	<i>Bougainvillea sp</i>		Widely planted	11 <sup>th</sup>
<b>Orobanchaceae</b>				
	<i>Cistanche phelypaea</i>	Desert Hyacinth	Yellow spikes, parasite on Chenopods	7 <sup>th</sup>
	<i>Striga gesnerioides</i>		Purple spike, parasite on Euphorbia	7 <sup>th</sup>
<b>Papaveraceae</b>				
	<i>Glaucium corniculatum</i>	Long-horned Poppy	in the ploughed field with the little owl: red flowered	6 <sup>th</sup>

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	SCIENTIFIC NAME	ENGLISH NAME	Notes	Seen
	<b>Plantaginaceae</b>			
	<i>Globularia alypum</i>		Around the Tetraclinis	11 <sup>th</sup>
	<i>Linaria bipartita</i>		Little violet toadflax	6 <sup>th</sup>
	<i>Linaria ventricosa</i>		The Anti-Atlas toadflax, in the Palmery	8 <sup>th</sup>
	<i>Misopates oronticum</i>	Weasel's Snout	Arable weed	8 <sup>th</sup>
	<i>Nanorrhinum heterophylla</i>		Yellow scrambling toadflax	6 <sup>th</sup>
	<i>Plantago afra</i>		Branched plantain, arable weed	8 <sup>th</sup>
	<i>Plantago lagopus</i>		Downy plantain, near Thuya	11 <sup>th</sup>
	<i>Veronica anagallis-aquatica</i>	Blue Water-Speedwell	Paradise Valley	11 <sup>th</sup>
	<b>Plumbaginaceae</b>			
	<i>Limonium sinuatum</i>		'everlasting' sea lavender, road verges and dry places	6 <sup>th</sup>
E	<i>Limonium mucronatum</i>		Winged stems, sandy places	7 <sup>th</sup>
	<b>Polygalaceae</b>			
	<i>Polygala balansae</i>		Star plant of the High Atlas	11 <sup>th</sup>
	<b>Polygonaceae</b>			
	<i>Polygonum maritimum</i>	Sea Knotgrass	Tamri	7 <sup>th</sup>
	<i>Rumex vesicarius</i>		with pink inflated calyxes	6 <sup>th</sup>
	<b>Primulaceae</b>			
	<i>Anagallis arvensis</i>	Scarlet Pimpernel	Blue form	6 <sup>th</sup>
	<i>Samolus valerandi</i>	Brookweed	Palmery	8 <sup>th</sup>
	<b>Resedaceae</b>			
	<i>Reseda lutea</i>	Wild Mignonette	Arable weed	6 <sup>th</sup>
	<i>Reseda alba</i>	White Mignonette	Arable weed	6 <sup>th</sup>
	<i>Reseda media</i>		Near the Tetraclinis	11 <sup>th</sup>
	<b>Rhamnaceae</b>			
	<i>Zizyphus lotus</i>		Very thorny dead hedges	6 <sup>th</sup>
	<b>Rubiaceae</b>			
	<i>Rubia peregrina</i>		Palmery	8 <sup>th</sup>
	<b>Sapotaceae</b>			
	<i>Argania spinosa</i>	Argan		6 <sup>th</sup>
	<b>Scrophulariaceae</b>			
	<i>Scrophularia peregrina</i>		In the village	6 <sup>th</sup>
	<b>Solanaceae</b>			
	<i>Hyoscyamus niger</i>	Black Henbane	Basal rosettes, in the agadir	10 <sup>th</sup>
	<i>Lycium imbricatum</i>		Purple flowers: Cap Rhir	7 <sup>th</sup>
	<i>Nicotiana glaucum</i>		Alien: South American invasive weed	6 <sup>th</sup>
	<i>Solanum nigrum</i>	Black Nightshade	in the agadir	10 <sup>th</sup>
	<i>Withania frutescens</i>		Palmery	8 <sup>th</sup>
	<i>Withania somnifera</i>		Poisonouse bush	6 <sup>th</sup>
	<b>Tamaricaceae</b>			
	<i>Tamarix gallica</i>	French Tamarisk		7 <sup>th</sup>
	<b>Urticaceae</b>			
	<i>Urtica pilulifera</i>	Roman Nettle	In the village	6 <sup>th</sup>
	<b>Zygophyllaceae</b>			
	<i>Fagonia cretica</i>		Purple flower, scrambling	6 <sup>th</sup>
	<b>MONOCOTYLEDONS</b>			
	<b>Arecaceae</b>			
	<i>Chamaerops humilis var cerifera</i>	Dwarf Palm	High Atlas	11 <sup>th</sup>
	<i>Phoenix dactylifera</i>	Date Palm	Tioute palmery	8 <sup>th</sup>
	<i>Washingtonia filifera</i>		Planted along the drive way	6 <sup>th</sup>
	<b>Asparagaceae</b>			
	<i>Muscari comosum</i>	Tassel Hyacinth	In the garden	6 <sup>th</sup>

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	SCIENTIFIC NAME	ENGLISH NAME	Notes	Seen
<b>Poaceae</b>				
	<i>Arundo donax</i>	Giant Reed	By the ponds in the garden	6 <sup>th</sup>
	<i>Cynodon dactylum</i>		Finger grass, field edges	6 <sup>th</sup>
<b>Iridaceae</b>				
	<i>Gladiolus byzantinus</i>		Palmary	8 <sup>th</sup>
	<i>Gynandiris sisyrinchium</i>	Barbary Nut		11 <sup>th</sup>
<b>Liliaceae</b>				
	<i>Fritillaria lusitanica</i>		Near the Polygala	11 <sup>th</sup>
<b>Xanthoroeaceae</b>				
	<i>Asphodelus ramosus ssp nervosus</i>		Broad leaves	6 <sup>th</sup>
	<i>Asphodelus fistulosus</i>		Narrow leaves	6 <sup>th</sup>
	<i>Urginea maritima</i>	Sea Asphodel	'Tulip' leaves	6 <sup>th</sup>



*Echium horridum*, Atlas Kasbah

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Family Ratidae (Ratites)										
	Red-necked Ostrich	Struthio camelus camelus					X			
		This sub-species is now <b>Critically Endangered</b> : once widespread across northern Africa, they now survive in the wild just in Cameroon, Chad and Central African Republic, as well as in a couple of National Parks in Tunisia where, like here, they have been reintroduced. This subspecies has also been introduced to a national park in Saudi Arabia and to Israel, within the range of the now-extinct syriacus subspecies.								
Family Anatidae (Ducks, Geese & Swans)										
	Ruddy Shelduck	Tadorna ferruginea			X					
	Mallard	Anas platyrhnhcos					X			
Family Phasianidae (Pheasants and Partridges)										
	Quail	Coturnix coturnix					H			
	Barbary Partridge	Alectoris barbara							X	
Family Podicipedidae (Grebes)										
	Little Grebe	Tachybaptus ruficollis					X			
Family Sulidae (Gannets)										
	Gannet	Morus bassanus			X					
Family Phalacrocoracidae (Cormorants)										
	Great Cormorant	Phalacrocorax (carbo) carbo/sinensis			X		X			
		The dark-breasted cormorants are wintering birds from Europe								
	White-breasted Cormorant	Phalacrocorax (carbo/lucidus) maroccanus			X					
		The white-breasted forms of cormorant found throughout Africa are sometimes split as a separate species, Phalacrocorax lucidus								
Family Ardeidae (Hérons)										
	Cattle Egret	Bubulcus ibis					X			
	Little Egret	Egretta garzetta			X		X			
	Great Egret	Casmerodius albus					X			
	Grey Heron	Ardea cinerea			X		X			
Family Ciconiidae (Storks)										
	White Stork	Ciconia ciconia				X	X	X		
Family Threskiornithidae (Spoonbills and Ibises)										
	Northern Bald Ibis	Geronticus eremita			X					
		Currently categorised as <b>Critically Endangered</b> , during the 2015 breeding season a record count of 116 nesting pairs was made, and by the end of 2015 the total wild population in Morocco was over 600 individuals, up from 433 at the end of 2013. Outside Morocco, around 100 birds live in semi-captivity at Birecik in Turkey, and perhaps a single bird remains at the recently discovered but seemingly doomed colony in Syria.								
		A recently reintroduced population in southern Spain now numbers around 80 released birds, and the first breeding took place in 2008.								
	Spoonbill	Platalea leucorodia			X					
Family Phoenicopteridae (Flamingoes)										
	Greater Flamingo	Phoenicopterus roseus					X			
Family Accipitridae (Hawks and Eagles)										
	Golden Eagle	Aquila chrysaetos		X						
	Bonelli's Eagle	Aquila fasciata				X	X			
	Booted Eagle	Aquila pennata				X				
	Black Kite	Milvus migrans					X			
	Marsh Harrier	Circus aeruginosus					X			
	Sparrowhawk	Accipiter nisus					X			
Family Falconidae (Falcons)										
	Kestrel	Falco tinnunculus		X	X	X	X	X	X	X
Family Burhinidae (Stone curlews)										
	Stone Curlew	Burhinus oedicnemus			X			X		



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Family Glareolidae (Coursers and Pratincoles)										
	Cream-coloured Courser	<i>Cursorius cursor</i>					X			
Family Scolopacidae (Sandpipers)										
	Dunlin	<i>Calidris alpina</i>					X			
	Knot	<i>Calidris canuta</i>					X			
	Curlew	<i>Numenius arquata</i>					X			
	Redshank	<i>Tringa totanus</i>					X			
Family Charadriidae (Plovers)										
	Grey Plover	<i>Pluvialis squatarola</i>					X			
	Kentish Plover	<i>Charadrius alexandrinus</i>			X					
Family Laridae (Gulls)										
	Black-headed Gull	<i>Chroicocephalus ridibundus</i>			X		X			
	Slender-billed Gull	<i>Chroicocephalus genei</i>					X			
	Mediterranean Gull	<i>Ichthyaetus melanocephalus</i>					X			
	Audouin's Gull	<i>Ichthyaetus audouinii</i>			X					
	Yellow-legged Gull	<i>Larus michahellis</i>			X		X		X	X
	Lesser Black-backed Gull	<i>Larus fuscus</i>			X		X		X	X
Family Sternidae (Terns)										
	Sandwich Tern	<i>Sterna sandvicensis</i>					X			
Family Columbidae (Pigeons and Doves)										
	Rock Dove/Feral Pigeon	<i>Columba livia</i>		X	X	X	X	X	X	X
	Woodpigeon	<i>Columba palumbus</i>					X	X	X	X
	Collared Dove	<i>Streptopelia decaocto</i>		X	X	X	X	X	X	X
	Laughing Dove	<i>Streptopelia senegalensis</i>		X		X	X	X	X	X
Family Strigidae (Owls)										
	Little Owl	<i>Athene noctua</i>		X			X			X
	The paler races of Little Owl are split by some authorities as Lilith's Owl <i>Athene glaux</i> , found across North Africa and from southern Romania east across the Middle East and Central Asia.									
Family Apodidae (Swifts)										
	Pallid Swift	<i>Apus pallidus</i>			X	X	X	X	X	X
	Little Swift	<i>Apus affinis</i>				X	X			
Family Meropidae (Bee-eaters)										
	Bee-eater	<i>Merops apiaster</i>								X
Family Upupidae (Hoopoes)										
	Hoopoe	<i>Upupa epops</i>		X				X		X
Family Alaudidae (Larks)										
	Crested/Thekla Lark	<i>Galerida cristata/theklae</i>		X	X	X	X	X	X	X
Family Hirundinidae (Swallows and Martins)										
	House Martin	<i>Delichon urbica</i>		X		X	X		X	
	Red-rumped Swallow	<i>Hirundo daurica</i>		X			X	X	X	
	Swallow	<i>Hirundo rustica</i>		X	X	X	X	X	X	X
	Sand Martin	<i>Riparia riparia</i>					X			
Family Motacillidae (Pipits and Wagtails)										
	Iberian Wagtail	<i>Motacilla (f.) iberiae</i>				X				
	Yellow Wagtail	<i>Motacilla (f.) flavissima</i>				X				
	White Wagtail	<i>Motacilla (a.) alba</i>		X		X	X	X		X
	Grey Wagtail	<i>Motacilla cinerea</i>							X	
Family Muscicapidae (Flycatchers and Chats)										
	Moussier's Redstart	<i>Phoenicurus moussieri</i>		X	X	X	X	X	X	X
	Stonechat	<i>Saxicola torquata</i>					X		X	
	Black Wheatear	<i>Oenanthe leucura</i>		X					X	
	Blue Rock Thrush	<i>Monticola solitarius</i>		X	X			X		
Family Turdidae (Thrushes)										
	Blackbird	<i>Turdus merula mauritanicus</i>		X	X	X	X	X	X	X

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<b>Family Sylviidae (Sylviid Warblers)</b>										
	Blackcap	<i>Sylvia atricapilla</i>		X	X	X	X		X	
	Sardinian Warbler	<i>Sylvia melanocephala</i>		X	X	X	X	X	X	X
	Western Orphean Warbler	<i>Sylvia hortensis</i>		X						X
<b>Family Phylloscopidae (Leaf Warblers)</b>										
	Common Chiffchaff	<i>Phylloscopus collybita</i>		X	X	X	X		X	X
<b>Family Cettiidae (Bush Warblers)</b>										
	Cetti's Warbler	<i>Cettia cetti</i>					H			
<b>Family Cisticolidae (Cisticolas)</b>										
	Zitting Cisticola	<i>Cisticola juncidis</i>				X	H			
<b>Family Paridae (Tits)</b>										
	Great Tit	<i>Parus major</i>		X		X	X	X	X	X
	African Blue Tit	<i>Cyanistes tenerifae</i>					X			
<b>Family Laniidae (Shrikes)</b>										
	Southern Grey Shrike	<i>Lanius elegans algeriensis</i>		X	X	X	X	X	X	X
	Woodchat Shrike	<i>Lanius senator</i>		X	X	X	X	X	X	X
<b>Family Malaconotidae (Tchagras)</b>										
	Black-crowned Tchagra	<i>Tchagra senegalus</i>		X	H	H	H	H	H	H
<b>Family Pycnonotidae (Bulbuls)</b>										
	Common Bulbul	<i>Pycnonotus barbatus</i>		X	X	X	X	X	X	X
<b>Family Corvidae (Crows)</b>										
	Maghreb Magpie	<i>Pica (pica) mauritanica</i>		X	X	X	X	X	X	X
	Raven	<i>Corvus corax</i>						X		
<b>Family Sturnidae (Starlings)</b>										
	Spotless Starling	<i>Sturnus unicolor</i>		X	X	X	X	X	X	X
<b>Family Passeridae (Sparrows)</b>										
	House Sparrow	<i>Passer domesticus</i>		X	X	X	X	X	X	X
	Spanish Sparrow	<i>Passer hispaniolensis</i>								X
<b>Family Fringillidae (Finches)</b>										
	North African Chaffinch	<i>Fringilla coelebs africana</i>		X		X	X	X	X	X
	Greenfinch	<i>Carduelis chloris</i>		X		X	X	X	X	X
	Goldfinch	<i>Carduelis carduelis</i>		X		X	X		X	X
	Linnet	<i>Carduelis cannabina</i>					X		X	
	Serin	<i>Serinus serinus</i>				X	X		X	
<b>Family Emberizidae (Buntings)</b>										
	House Bunting	<i>Emberiza sahari</i>		X	X	X	X	X	X	X
	Cirl Bunting	<i>Emberiza cirlus</i>		X		X				X
	Corn Bunting	<i>Milandria calandra</i>								x



Southern Grey Shrike, Cap Rhir

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<b>AMPHIBIANS &amp; REPTILES</b>										
	North African Water Frog	<i>Pelophylax saharica</i>		X		X		X	X	X
	Spur-thighed Tortoise	<i>Testudo graeca soussensis</i>		X		X	X	X		
	Moorish Terrapin	<i>Mauremys leprosa saharica</i>				X			X	
	Moorish Gecko	<i>Tarentola mauretanica</i>			X		X			
E	Moroccan Lizard-toed Gecko	<i>Saurodactylus brosseti</i>			X			X		
E	Moroccan Day-Gecko	<i>Quedenfeldtia moerens</i>							X	
	Algerian Orange-tailed Skink	<i>Eumeces algeriensis</i>					X	X		
	Bibron's Agama	<i>Agama impalearis</i>		X				X	X	
	Busack's Fringe-toed Lizard	<i>Acanthodactylus (pardalis) busacki</i>			X		X			
	Olivier's Small Lizard	<i>Mesalina olivieri</i>		X						
<b>MAMMALS</b>										
	Dromedary	<i>Camelus dromedarius</i>			X	X	X	X		
	Dorcas Gazelle	<i>Gazella dorcas</i>					X			
		Currently categorised as <b>Vulnerable</b> by the IUCN, suffering a decline of more than 30% in the last 20 years.  Found throughout the Sahel and Sahara, from Morocco to Djibouti and extending into Jordan, Syria and southern Israel. Threatened by over-hunting and loss of habitat through over-grazing.								
	Addax	<i>Addax nasomaculatus</i>					X			
		Currently categorised as <b>Critically Endangered</b> by the IUCN. Once found throughout the Sahel and Sahara, Addax have suffered from over-hunting and loss of habitat through over-grazing, and the the total wild population may now be as few as 180 individuals, restricted to a narrow 600km-long band between Niger and Chad.  70 animals were introduced to the enclosure at Souss Massa NP in the mid-1990s, and the population here probably now numbers around 600 individuals. A second managed population is present in Bou Hedma NP in Tunisia. These two populations are now being used for a re-introduction programme in Tunisia, with others planned for Morocco and the Mali/Mauritanian border.								
	Scimitar-horned Oryx	<i>Oryx dammah</i>					X			
		Currently categorised as <b>Extinct in the Wild</b> by the IUCN. Once found throughout the Sahara and Sahel, the last wild populations were lost from Chad and Niger during the late 1980s: the last wild animals were seen in 1988.  There are managed populations in fenced enclosures in Senegal and Tunisia, but the largest population is in Souss Massa NP, where around 250 animals can be found in the Arrouais enclosure. A reintroduction project is currently planned for the 78,000 km <sup>2</sup> Ouadi Rimé-Ouadi Achim Game Reserve in central Chad.  In common with the other antelopes, threatened by over-hunting and loss of habitat through over-grazing.								
	Barbary Ground Squirrel	<i>Atlantoxerus getulus</i>			X			X	X	X
	Minke Whale	<i>Balaenoptera acutorostrata</i>			D					

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<b>BUTTERFLIES</b>										
<b>Family Papilionidae (Swallowtails)</b>										
	Southern Scarce Swallowtail	<i>Iphiclides (podarius) feisthamelii</i>							X	
<b>Family Pieridae (Whites)</b>										
	Moroccan Orange Tip	<i>Anthocharis belia</i>		X		X				
	Orange Tip	<i>Anthocharis cardamine</i>							X	
	Greenish Black-tip	<i>Euchloe charltonia</i>		X				X		X
	Large White	<i>Pieris brassicae</i>		X		X			X	
	Bath White	<i>Pontia daplidice</i>		X					X	X
	Clouded Yellow	<i>Colias croceus</i>		X		X			X	X
	Cleopatra	<i>Gonopteryx cleopatra</i>		X					X	
<b>Family Nymphalidae (Admirals and Fritillaries)</b>										
	Painted Lady	<i>Vanessa cardui</i>		X	X	X	X	X	X	X
	Red Admiral	<i>Vanessa atalanta</i>		X	X				X	
	Two-tailed Pasha	<i>Charaxes jasius</i>							X	
<b>Family Satyridae (Browns)</b>										
	Speckled Wood	<i>Pararge aegeria</i>				X			X	
	Wall Brown	<i>Lasiommata megera</i>							X	
<b>Family Danaide (Monarchs)</b>										
	Plain Tiger	<i>Danaus chrysippus</i>						X		
<b>Family Lycaenidae (Blues &amp; Coppers)</b>										
	Moroccan Hairstreak	<i>Tomares mauretanicus</i>		X	X					
	Small Copper	<i>Lycaena phlaeas</i>		X					X	X
	Common Tiger Blue	<i>Tarucus theophrastus</i>		X						
	Common Blue	<i>Polyommatus icarus</i>					X			
	African Grass Blue	<i>Zizeeria knysna</i>		X		X				
	Long-tailed Blue	<i>Lampides boeticus</i>		X						X
<b>Family Hesperidae (Skippers)</b>										
	False Mallow Skipper	<i>Carcharodus tripolinus</i>		X						X
<b>MISCELLANEOUS</b>										
	Vagrant Emperor	<i>Hemianax ephippiger</i>	The large, sandy brown dragonfly							
	Goblet-marked Damselfly	<i>Erythromma lindenii</i>	On the river in Paradise Valley							
	Striped Hawk-moth	<i>Hyles livornica</i>	One feeding on Cistanche, Cap Rhir							
	Hummingbird Hawk-moth	<i>Macroglossum stellarum</i>	At the restaurant below the cascades							
	an ant-lion	Myrmeleontidae	Pits along the trackside, Tioute							
	scorpions: at least 2 species		Several under rocks: yellow and black							



Moroccan Hairstreak, Tighanimine el Baz