

WILDLIFE TRAVEL

Morocco 2019



Morocco, species list and trip report, 19th to 26th December 2019

#	DATE	LOCATIONS AND NOTES
1	19 th December	Departure from UK. Tighanimine El Baz (Valley of the Eagle).
2	20 th December	Atlantic coast. Oued Tamri. Cap Rhir. Agadir Oufella.
3	21 st December	Palais Salam. Taroudant. Tioute Palmery.
4	22 nd December	Souss Massa National Park. Oued Souss.
5	23 rd December	Anti-Atlas. Ait Baha. Laatik.
6	24 th December	Atlas Kasbah. Tighanimine El Baz.
7	25 th December	High Atlas. Cascades du Imouzzet.
8	26 th December	Return to the UK.



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Day One: 19th December. Departure from UK. Tighanimine El Baz (Valley of the Eagle).

An early flight took us from London Gatwick, across the Bay of Biscay, down over Portugal, and finally along the coast of Morocco to Agadir. We were soon through passport control and, dirhams in hand, made it out into the Moroccan sunshine and on our way for the short drive to the Atlas Kasbah, nestled on a hill top in the foothills of the Anti-Atlas.

We arrived in good time for a tour around our new home, which was built with the objective of promoting responsible travel, both in terms of sustainable use of resources and environmental protection, but also in showcasing Berber culture, and supporting the local communities. It was then off to the sunny terrace to tuck into a vegetable tagine, while the first of many dishevelled Painted Ladies were flitting around the flowering Horseradish Tree *Moringa oleifera* above us. From the shrubs below Sardinian Warblers scolded grumpily, while the Common Bulbuls who would be almost constant companions, sang their simple song.

We had a relaxed afternoon to explore our surroundings, starting with an introduction to probably the most important plant of the region and one of the icons of this corner of Morocco: the Argan tree *Argania spinosa*. This species is endemic to southwestern Morocco, and belongs to the primarily tropical family Sapotaceae; a relic of the time when this area had a tropical climate. Argan is at the heart of much of the local culture and economy, being used for culinary and health purposes, washing, feeding animals, fuel, and in much of the traditional architecture. The area of Argan forest has decreased by around half over the last century due to agricultural intensification. It now covers around 828,000 ha, and the Argan forest and its surrounding area were declared a UNESCO Biosphere Reserve in 1998 as a means of promoting the protection and sustainable development of this area. As our week progressed, this important plant would understandably feature highly, in our wildlife watching, our meals and even our beauty regimes!

Walking down the drive of the Atlas Kasbah we could see the very first flushes of green on the Argan below us, as a result of some heavy rains a few days before our arrival. Along the road we spotted some of the area's many spiny plants: *Ziziphus lotus*, which is often used as dead hedging around fields, and the 'chicken-wire bush' *Launea arborescens*. The broad leaves of Branched Asphodel *Asphodelus ramosus*, particularly unpalatable for grazing animals, were appearing among the Argan forest alongside the ferny-leaved Egyptian Lavender *Lavandula multifida*.

A small tail-flipping bird drew our attention: a female Moussier's Redstart, and before too long, her (even finer-looking) companion put in his appearance. This beautifully-marked bird is an endemic resident breeder found in dry and rocky areas of northwest Africa (Morocco, eastwards to Tunisia). The occasional Large White and a notably small generation of Greenish Black-tip were found among the Painted Ladies.

Around a smallholding we found several Laughing Doves feeding on the ground and on the slope beyond a group of Barbary Partridge were scuttling between Argan trees. A Little Owl looked at us with the usual disdain before flying off in search of a new perch. Retracing our tracks there was time to see the Maghreb Magpies at close hand, with their electric blue skin behind the eye. Lurking among the dead hedges we found two unusual succulent and highly toxic members of the Apocynaceae: *Apteranthes europaea* and *Orbea decaisneana*, before it was time to return to the hotel for the arrival of the final member of our group and fish tagine for dinner.

Day Two: 20th December. Atlantic coast. Oued Tamri. Cap Rhir. Agadir Oufella.

We set off north this morning, towards Agadir and onwards along the Atlantic coast. The vegetation quickly began to change, with low-growing coastal steppe vegetation growing alongside areas of succulent *Euphorbia* scrub. We made our first stop close to Cap Rhir to explore this interesting plant community, which is unique to the southwest Moroccan coastline, down into coastal Mauritania and across to the Canary Islands (where closely-related species make up a very similar flora). These communities 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.

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It was cooler and breezier on the coast this morning as we set about exploring the vegetation, which was dominated by a mixture of three succulent species: the umbrella-forming lime-green shrubby *Euphorbia regis-jubae* (found here and in the Canary Islands), the cactus-like *Euphorbia officinarum* (found in southern Morocco and down to Mauritania), and the succulent groundsel *Kleinia anteuophorbium* (endemic to Morocco). Amongst the succulents we found several spikes of the deep maroon *Cynomorium coccineum* beginning to emerge from the sand. This bizarre plant is parasitic on *Suaeda vera* shrubs that grow here, and is a member of the mainly tropical family Balanophoraceae.

Whilst the rains (or lack of) had held off many flowers, we found patches of flowering *Launea arborescens*, along with the purple tubular flowers of *Lycium imbricatum*, the first flowers of the endemic and fragrant-leaved *Astericus imbricatus*, and the sea-lavender *Limonium mucronatum* (another Moroccan endemic). The smelly and sticky-leaved Yellow Restharrow *Ononis natrix* was common, and large patches of Sea Squill *Drimia maritima* were beginning to emerge. Several yellow *Buthus* sp. scorpions were found sheltering under rocks: around 20 people die from scorpion stings in Morocco each year, so they were given the respect they were due. The scrub was fairly quiet for birds, save the ubiquitous grumbling of the Sardinian Warblers, so we continued northwards along the coast, towards the mouth of the Oued Tamri.

Following lunch among the sand we headed along the beach towards the river mouth. There were plenty of gulls to scan through on the beach, but a group of black birds beyond them instantly drew our attention, one of Morocco's star birds: Northern Bald Ibis. In total there were 29 of these 'ugly birds' on the beach. Once widespread across southern Europe, North Africa and parts of the Middle East, they were lost from most of their range as a result of poisoning from pesticides, hunting, disturbance at nesting sites, and more recently, loss of their foraging habitats to coastal development, reaching a low of only around 100 birds by the 1990s. The last remaining Middle Eastern birds were a tiny colony near Palmyra in Syria, who migrated down via the Yemen to Somalia and Eritrea for the winter. These birds are now almost certainly extinct; doomed by the various conflict zones that make up their territory. There is positive news however from the Moroccan population, with at least 708 individuals at the most recent count, and 170 chicks fledged in 2019. An introduced population in southern Spain now numbers around 80 birds, with further small, managed colonies introduced to Germany and Austria. The Northern Bald Ibis was down-listed to Endangered on 22 November 2018, after more than three decades categorised as Critically Endangered. At last the ibis departed, treating us to a fly-by as they headed south down the coast.

We next turned our attention to the gathering of gulls, which contained a good contingent of Audouin's Gulls, alongside the larger Yellow-legged Gulls and Lesser Black-backed Gulls. A quick inventory of colour-ringed Audouin's Gulls and some later internet research revealed birds born in Portugal, Italy, Corsica and Cota Doñana in Spain among their ranks.

Finally, passing a patch of Sea Spurge *Euphorbia paralias* we reached the river mouth, which had been reprofiled since our last visit, presumably by some impressive winter storms. There were plenty of Coots bobbing on the water, with the occasional Little Grebe diving among them. Several pairs of Ruddy Shelduck dozed, and five or six dark-capped Moroccan Wagtails called among themselves as they foraged around the banks, while a Kingfisher occasionally whizzed by in a flash of turquoise. Up high, a large group of Crag Martins was passing through with a handful of Pallid Swift among them. Changing our viewing position we found a group of 22 Ferruginous Ducks floating serenely on the water, with a couple of Pochard-hybrids doing their best to fit in. As we made our way back along the beach, a Marsh Harrier was spotted briefly low over the reeds, and a smaller contingent of Northern Bald Ibis passed us as they flew north along the coast.

We started retracing our steps, stopping just beyond Cap Rhir to visit another area of Euphorbia scrub, watched over by Stonechats and Moussier's Redstarts, and a chance to spot Gannets dive-bombing just off shore, before we set off back towards Agadir. Our final stop was at the ruined Agadir Oufella, much of which was destroyed in the 5.8 magnitude earthquake that struck the city on 29 February 1960. The promontory provided views across the fishing port, Agadir itself, and on the Souss-Massa National Park, the High Atlas and the Anti-Atlas. We then made our way back to the Atlas Kasbah for couscous (it was Friday night after all).

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Clockwise from top left: Cap Rhir, *Cynomorium coccineum*, Northern Bald Ibis, Audouin's Gulls, *Euphorbia officinarum*

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Day Three: 21st December. Palais Salam. Taroudant. Tioute Palmery.

We set off east this morning, headed for the town of Taroudant. Our journey took us through the important agricultural area of the Souss Valley where crops such as oranges, bananas and salad are grown (often under polythene); much destined for export to northern Europe. Taroudant is often described as a mini-Marrakech with its mud-plastered ramparts dating back to the 16th Century; an imposing and impressive sight on arrival. Our visit started with a visit to the Hotel Palais Salam, tucked away from the hustle and bustle, inside the town walls. Once a Saadi palace on the major caravan route between the north and the Sahara, the hotel's courtyards embody elements of traditional Islamic gardens as places of rest and reflection alongside running water and, importantly, a reminder of the promised paradise. We had some time to explore the courtyards with their mixtures of exotic plants, succulents and native trees, spotting Blackcaps, Chiffchaffs and House Buntings before it was time to emerge back into the sunshine and busy streets of Taroudant.

We headed to the Berber Souk, to explore stalls heaving with dried fruits, mountains of spices, wood carvings and more. After a thorough explanation of everything from musk to henna, and once we had bought enough ras el hanout "to open a Moroccan restaurant" it was time to continue on our way. Leaving Taroudant, we continued south-east towards the edge of the Anti-Atlas and the village of Tioute. We had our lunch at the palmery under the watchful gaze of several cats and a White Stork, before setting off for a walk. Our first spot was a patch of *Aristolochia baetica*, a vine bearing interesting 'Dutchman's pipe' flowers. In the palmery, the network of irrigation channels crossing the site to supply the demands of the Date Palms *Phoenix dactylifera* were also supporting other water-demanding species such as Carob *Ceratonia siliqua*, Navelwort *Umbeliscus rupestris* and Maidenhair Fern *Adiantum capillus-veneris*. 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 local communities. Along the channels we spotted the occasional North African Water Frog and Epaulet Skimmer dragonfly, before a rustling among the leaves gave away the presence of a magnificent, patchwork-patterned Berber Toad. Among the date palms, plenty of birds were flitting around; including Blackbird, Greenfinch and Chiffchaff, and a Bonelli's Eagle soared overhead.

Our final stop of the afternoon was at the Argan oil cooperative in the village in Tioute. The cooperative was established in 2002 with funding from Prince Albert of Monaco, and combines modern technology with traditional production, from the room of local women cracking the nuts by hand, through to the pressing machine and bottling process. This is the second oldest co-operative in Morocco founded in 2001, with a membership of around 40 women. It takes some 30kg of Argan nuts and around 15 hours of work to produce around 1 litre of pure Argan oil.

Day Four: 22nd December. Souss-Massa National Park. Oued Souss.

Following breakfast, we were met by Mohammed and a supporting cast of 4-wheel drive vehicles, setting off under blue skies for our visit to Souss-Massa National Park, south of Agadir. The National Park was established in 1991, and covers an area of almost 34,000 hectares of sand dunes, steppe, wetlands and Argan forest. Souss-Massa has particular significance for its colonies of Northern Bald Ibis, as well as being an important site for many other breeding and wintering birds. We were of course also here for the mammals: the 'Sahelo-Saharan megafauna' is one of the most endangered assemblages of large animals in the world, threatened by a combination of lack of grazing through competition with domestic livestock (primarily goats and camels), and over-hunting, with increasing numbers of high powered weapons now freely available across large swathes of their former range (such as Libya, Tunisia, Mali and Chad). Once widespread across the arid regions of North Africa, almost all the large mammals of the Sahara are now extremely rare in the wild, and four important members of this megafauna have been 're-wilded' in Souss-Massa National Park.

We drove through two large enclosures that form part of the captive-breeding programme here. In the 2,000ha Rokein reserve we found the handsome Addax, a large and ghostly pale antelope with long twisted horns. Addax are native to arid stony and sandy areas out in the Sahara proper, where they graze on a range of vegetation. In the wild they are critically endangered, with some last individuals possibly clinging on in Mauritania, Chad and Niger; a survey in 2016 of key habitat identified just three wild Addax. Fortunately captive populations including these in Morocco, mean the Addax still persists as a species, but

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its future in the wild at present is far from secure. Sharing the enclosure, were the much smaller and shier Dorcas Gazelle, with their beautiful lyre-shaped horns and intricately marked faces. These antelope too have declined across their North African range; however they are still doing reasonably well in the wild. Joining the antelope was the Red-necked Ostrich; this North African subspecies is the largest of the ostriches, making it the largest bird in the world. It is noticeably more colourful than the sub-Saharan birds, and we encountered several heavily pink-flushed males displaying and a couple of pairs of ostriches busy making new ostriches; clearly spring was on the way! After a tough and dry winter, there was some supplementary feeding taking place, and we had the unlikely site of dozens of ostriches feeding and squabbling together.

As we travelled between the two enclosures a group of birds was spotted among the stones: not one, or even two, but a fantastic flock of 67 Dotterel. No sooner had we driven on but we stopped again to watch a group of 18 Cream-coloured Coursers making their way through the fields. It seemed as good a time as any for some lunch, and as we ate we spotted a Margarita's Fringe-toed Lizard, which had obviously had a close encounter with a predator in its past. A mixed herd of goats and sheep, with two impressive rams in their midst and several hitchhiking Cattle Egrets was driven through, and a Barbary Falcon whizzed overhead in hot (but ultimately unsuccessful) pursuit of a Cream-coloured Courser.

Entering the 1,200ha Arrouais reserve, we were greeted by a Little Owl perched on the fence, followed by the first of many Spur-thighed Tortoises blending out from the rocks, and the first feathery leaves of Giant Fennel *Ferula communis*. Next it was time to meet the third of our antelopes, and the largest, the beautiful Scimitar-horned Oryx with their ginger neck, tear-shaped face marking and swept back scimitar horns. Like the Addax, the Scimitar-horned Oryx has not fared well, and was declared extinct in the wild in 2000. The population here at Souss-Massa is now the largest single herd left on the planet. Scimitar-horned Oryx once grazed extensively across North Africa, migrating seasonally with the rains. There are now ambitious plans from Chad to re-establish this species in the wild, at its former stronghold in Ouadi Rimé-Ouadi Achim Game Reserve. In late summer 2016, the first individuals were released into the wild, with a calf born in September 2016 considered the first 'wild born' Scimitar-horned Oryx for over 30 years. The project aims to have a self-sustaining population of 500 animals within five years.

After a quick stop at a local coffee shop and ceramic emporium, we started our journey back north towards Agadir, passing a couple of hundred White Storks soaring on thermals as we made our way to our final stop of the day at Oued Souss. The estuary was busy with waders including Black-winged Stilt, Ruff and Curlew, with plenty of Ringed Plover and Dunlin scurrying around their feet. In the water 196 Greater Flamingos stretched and preened in the sunlight, as occasional Cormorants and Little Egrets flew by. Along the shore we had good views of Black Restart, Moroccan Wagtail and a smart male North African Chaffinch, while a more elusive Serin sang from a nearby tree. It was then back to the Atlas Kasbah for goat tagine and ever so slightly festive feeling almond briouats, arranged like a Christmas tree.

Day Five: 23rd December. Anti-Atlas. Ait Baha. Laatik.

Heading south-east, this morning we took the road to Ait Baha, one of the larger towns in the western Anti-Atlas to explore this region. The Anti-Atlas contains some of the oldest rocks in the world; an ancient mountain range that started to form 300 million years ago, and once rivalled the Himalayas in height. Today, they are much eroded, the highest peaks reaching between 2,500 and 2,700m.

As we approached across the river valley of the Souss, we made our first stop to explore a field filled with *Calotropis procera*, a tall plant with greyish leaves. This poisonous plant is the larval foodplant of the Plain Tiger, a butterfly related to the well-known Monarch. We were a little early for the butterfly, but we did spot a Spur-thighed Tortoise skulking in the dead hedge, along with several Stonechats and Moussier's Redstarts vying for the best perch.

After a quick coffee stop in Ait Baha and a visit to the famous local cobblers, we began our climb further into the Anti-Atlas. A Little Owl perched on a roadside rock heralded the start of the spotting, with Barbary Ground-squirrels sunning themselves on rocks or scuttling across the ground, along with the occasional Bibron's Agama and Black Wheatear.

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Clockwise from top left: Scimitar-horned Oryx, Moussier's Redstart, Dorcas Gazelle, Spur-thighed Tortoise, Red-necked Ostrich

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We reached the tiny village of Laatik, to visit its 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 other could be spotted during the day, in various states of repair, perched on high ground with commanding views. We were shown inside by the local trusted custodian to see the structure of the *agadir* with its storage rooms accessed by stepping stones, a well with freshwater for seeing out any siege, and a chance to look inside one of the store rooms. Some doors were protected by more than one lock: security against those relatives who couldn't be trusted, and others bore the black cross to fend off the advances of the beautiful but dangerous *Aisha Kandicha* of Moroccan folklore. A number of Spur-thighed Tortoises roamed around the *agadir*, daubed with red or green paint to increase their visibility: it is a belief here that tortoises will protect your homes from scorpions. House Buntings, traditionally considered a sign that visitors are coming, were also busying themselves around the place.

Around the *agadir* we visited the nearby communal circular pavements, still used every April by a team of six donkeys to thresh the barley. Here we found the hairy *Echium horridum* along with the leaves of *Scilla peruviana* and the scrambling, purple-flowered and spine-bearing *Fagonia cretica*.

From here we started our return journey, stopping to explore an area of Argan-cloaked rocky hillside in the growing heat. The *Euphorbia officinarum* here is in its beautifully tight cushioned *echinarum* form of (considered by some to be a distinct subspecies). After a fill of Anti-Atlas views there was time for more squirrel-spotting and a quick coffee in Ait Baha, before returning back home.

Day Six: 24th December. Atlas Kasbah. Tighanimine El Baz.

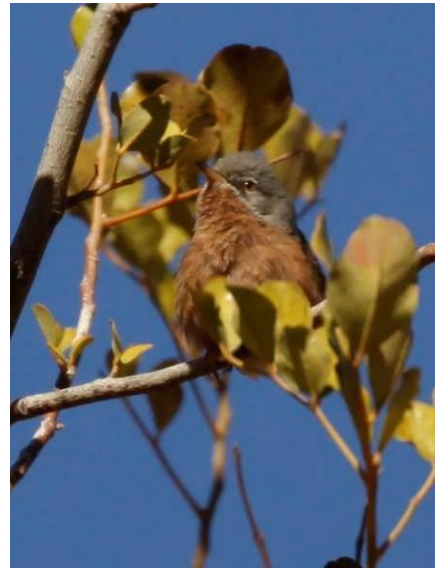
We had a free morning for relaxing around the pool or in the capable hands of Fatima, or exploring the gardens of the Atlas Kasbah. During the afternoon we took a walk to the local village Tighanimine El Baz (Valley of the Eagle), accompanied by local resident Ahmed, a man of few words.

On the edge of the village we found a bank heaving with the beautiful endemic *Narcissus broussonetii*. Passing along the south of the village, the heat had curbed the activity of some birds but we spotted Black Redstart, Spanish Sparrow and Black Wheatear alongside a good number of Greenfinches, before reaching the dry riverbed where a chorus of disgruntled warblers, tits and redstarts were busily alarm calling at something on the ground (presumably a snake or a cat). Climbing up into the old village, we took in the views alongside a disconsolate donkey, waiting for a herd of goats and sheep were driven through to begin our descent back to the river. We had good views of a Bonelli's Eagle soaring overhead in the flawless blue sky and a curious Barbary Ground-squirrel watched us from a rocky promontory. After completing our loop of the village it was back to the hotel for a festive evening with a Berber twist, with an opportunity to learn about local culture, including calligraphy, beauty, herbs and spices, music, and the all important tea ceremony.

Day Seven 25th December. High Atlas. Cascades du Imouzzar.

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, with *Euphorbia officinarum* on the dry slopes, alongside Wild Olive *Olea oleaster* and Mastic *Pistacea lentiscus*. As we climbed higher the vegetation began to change. Our next stop was at around 500m but here the vegetation was noticeably different with open woodland of the Thuja *Tetraclinis articulata*. This conifer is primarily found in Morocco and Algeria, with two small relict 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 a result of 'self-coppicing', a way of coping with wildfires and overgrazing, are much prized by wood-carvers. The resin, sandarac gum, is used to make liquor, taken as a remedy for cramps, insomnia and difficult childbirths. The name refers to the cones, which are split into four, and its finely divided foliage. We also found *Globularia alypum* and *Genista tricuspidata* here, although neither had got as far as flowering, as well as being treated to our third sighting of Bonelli's Eagle for the trip: with a pair gliding effortlessly overhead.

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Clockwise from top left: the agadir at Laatik, Tristram's Warbler, Eurasian Otter, Moroccan Day Gecko, *Narcissus broussonetii*

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Carrying on our way, we reached the palmery at the start of Paradise Valley, for a walk along the river here. The purple flowers of the Chaste Bush *Vitex agnus-castus* were in full bloom, and the area was bustling with birds. Great Tits were busy collecting seeds, with Chiffchaff, Stonechats and Sardinian Warblers flying among the vegetation, and good views of Black Wheatear and a splendid male Blue Rock Thrush gleaming in the sun. Nestled on a ledge among some interesting geology we found some more *Narcissus broussonetii* flowering, alongside *Scilla latifolia* and the endemic *Sedum modestum* tucked into a rock crevice.

Back on to the bus and winding our way along the far reaches of Paradise Valley there was a flurry of excitement as we spotted a Wildlife Travel first for Morocco: a Eurasian Otter mooching in the shallow waters. Realising it had been spotted; it retreated to the shelter of a concrete pipe, where it continued its lazy morning of grooming.

Finally after some spectacular High Atlas views, and with the Argan giving way to Almond *Prunus dulcis*, Carob and Wild Olive, we reached our lunch stop below the Cascades du Immouzer, where there was a distinct lack of cascading. Our next stop was in a valley at around 1300m where the south-facing side was dominated by the glaucous fans of the Dwarf Fan Palm *Chamaerops humilis* var. *cerasifera*, whilst on the cooler north facing side, different vegetation was present, including stunted looking Kermes Oaks *Quercus coccifera*. This is a species of the Mediterranean but can be found this far south only in the cooler and more amenable climate found at altitude in the High Atlas. We also found another local speciality here in the form of Tristram's Warbler, a beautiful rusty-throated warbler endemic to the mountains of North Africa, where it breeds in dry scrub.

One final stop was at a viewpoint over the High Atlas at around 1,550m, where we found a steppe-like dwarf shrub vegetation growing on what was almost limestone pavement. Species here included the rock-rose *Cistus crispus* and the shrubby milkwort *Polygala balensae* just coming into bud. We had a new reptile species here, with several endemic Moroccan Day Geckos basking on the rocks. Then all that was left was to soak up the views, including several snow caps in the High Atlas, before returning back down through quiet back lanes to the Atlas Kasbah.

Day Eight 26th December. Return to the UK.

One final breakfast: now fully confident and familiar with the various offerings under the many tagines gracing our table, then there time for a wander through the garden and listening to Common Bulbuls singing in the sunshine from the terrace, before a last tea and a chance to thank the team at the Atlas Kasbah and Mohamed for all they had done, as we began our return to the UK.

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Morocco December 2019: some highlights

E - endemic species; P - planted; H - heard not seen

	SCIENTIFIC NAME	ENGLISH NAME	NOTES
FERNS			
Pteridaceae (Maidenhair Fern Family)			
	<i>Adiantum capillus-veneris</i>	Maidenhair Fern	Along the water channels at Tioute palmery
	<i>Adiantum cf. ceterach</i>		In the Anti-Atlas
ANGIOSPERMS: DICOTYLEDONS			
Aizoaceae (Ice Plant Family)			
	<i>Aizoon canariense</i>	an iceplant	Low growing with tiny flowers, at the ruined Kasbah in Agadir
P	<i>Carpobrotus acinaciformis</i>	Hottentot Fig	Atlas Kasbah garden, roadsides around Agadir
Anacardiaceae (Sumac Family)			
	<i>Pistacia lentiscus</i>	Mastic	High Atlas
Apiaceae (Carrot Family)			
	<i>Ferula communis</i>	Giant Fennel	Souss Massa National Park, Anti-Atlas
Apocynaceae (Dogbane Family)			
	<i>Apteranthes europaea</i>		Squarer stemmed, fleshy succulent, at the base of dead hedges along the goat track
	<i>Calotropis procera</i>	Apple of Sodom	The large Saharan shrub, food plant of the Plain Tiger
	<i>Nerium oleander</i>	Oleander	Tighanimine El Baz, dry river beds
	<i>Orbea decaisneana</i> var. <i>hesperidum</i>		Purple-spotted, fleshy succulent with hook-shaped leaves, at the base of dead hedges along the goat track
Aracaceae (Arum Family)			
	<i>Arisarum simorhinum</i>	a friar's cowl	Widespread including the Anti-Atlas and High Atlas
Aristolochiaceae (Birthwort Family)			
	<i>Aristolochia baetica</i>	Andalusian Dutchman's Pipe	Vine with 'Dutchman's pipe' flowers, food plant of the Spanish Festoon, Tioute Palmery
Asteraceae (Daisy Family)			
	<i>Anvillea garcinii</i>		Yellow-flowered with fragrant leaves on the grain thresh at Laatik
E	<i>Asteriscus (Nauplius) imbricatus</i>		Fragrant leaves, bush around Cap Rhir
E	<i>Kleinia anteuphorbium</i>		The succulent shrubby 'groundsel' around Cap Rhir
	<i>Launaea arborescens</i>		The 'chicken wire bush' with yellow flowers
Bignoniaceae (Bignonia Family)			
P	<i>Tecoma stans</i>	Yellow Trumpetbush	Atlas Kasbah garden
Boraginaceae (Borage Family)			
	<i>Echium horridum</i>		The hairy purple-flowered bugloss at Laatik
	<i>Heliotropium crispum</i>		Laatik, attracting lots of Painted Ladys
Cactaceae (Cactus Family)			
P	<i>Austrocylindropuntia subulata</i>		The cylindrical cactus, introduced from Peru
P	<i>Opuntia ficus-indica</i>	Fig of the Berbers/Prickly Pear	An invasive domesticated cactus originating in Mexico and common around villages
Cistaceae (Rock Rose Family)			
	<i>Cistus crispus</i>	Curled-leaved Rock Rose	In the High Atlas, not flowering
Convolvulaceae (Bindweed Family)			
	<i>Convolvulus althaeoides</i>	Mallow Bindweed	In the High Atlas, not flowering
	<i>Cuscuta</i> sp.	a dodder	Tighanimine El Baz, on <i>Ziziphus lotus</i>
P	<i>Ipomoea batatas</i>	Sweet Potato	Atlas Kasbah garden and the goat track

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	SCIENTIFIC NAME	ENGLISH NAME	NOTES
Crassulaceae (Stonewort Family)			
E	<i>Sedum modestum</i>	a stonecrop	Paradise Valley, High Atlas
	<i>Umbelicus rupestris</i>	Navelwort	Tioute Palmery alongside the water channels
Cynomoriaceae (Desert Thumb Family)			
	<i>Cynomorium coccineum</i>		The dark red parasitic plant in sandy soil at Cap Rhir, pollinated by flies
Euphorbiaceae (Spurge Family)			
	<i>Euphorbia officinarum</i>	a spurge	The 'cactus'-like succulent around Cap Rhir (var <i>officinarum</i> , growing tall, columnar, endemic to Morocco_ and in the Anti Atlas (var <i>echium</i> , growing in dense cushions, also found in Mauretania)
	<i>Euphorbia paralias</i>	Sea Spurge	Oued Tamri
	<i>Euphorbia regis-jubae</i>	a spurge	Lime green, shrub-forming Euphorbia around Cap Rhir, endemic to Morocco and the Canary Islands
	<i>Ricinus communis</i>	Castor Bean	Roadsides
Fabaceae (Pea Family)			
	<i>Acacia ehrenbergiana</i>	Desert Acacia	The spiny bush around the edges of Souss Massa National Park
E	<i>Acacia gummiifera</i>	an acacia	
P	<i>Acacia saligna</i>	Golden Wattle	Australian tree planted in the garden and common in Souss Massa National Park
	<i>Ceratonia siliqua</i>	Carob	Atlas Kasbah garden, Tioute Palmery, High Atlas
	<i>Genista tricuspidata</i>		The 'broom' all over the High Atlas hillsides, not flowering
E	<i>Hesperolaburnum platycarpum</i>		The common 'gorse' in the Anti-Atlas - stems used for basket weaving
	<i>Ononis natrix</i>	Yellow Restharrow	Smelly, sticky leaves, various locations
	<i>Retama monosperma</i>	White-flowered Broom	Various locations, not flowering
Fagaceae (Beech Family)			
	<i>Quercus coccifera</i>	Kermes Oak	The spiky-leaved shrubby oak in the High Atlas
	<i>Quercus ilex</i>	Holm Oak	High Atlas
Lamiaceae (Mint Family)			
	<i>Lavandula dentata</i>	French Lavender	The 'standard' variety in the High Atlas
	<i>Lavandula multifida</i>	Egyptian Lavender	Pinnate leaves, medium-large flowers, Laatik
	<i>Vitex agnus-castus</i>	Chaste Bush	Along the river bank in Paradise Valley, used to make a tea to control the urges of monks
Lythraceae (Loosestrife Family)			
P	<i>Punica granatum</i>	Pomegranate	Various locations
Malvaceae (Mallow Family)			
P	<i>Hibiscus rosa-sinensis</i>	Chinese Hibiscus	Atlas Kasbah garden
Moraceae (Drumstick Tree Family)			
	<i>Ficus carica</i>	Common Fig	Eg Palais Salalm, Tioute Palmery
P	<i>Ficus elastica</i>	Rubber Plant	Palais Salalm
P	<i>Ficus lyrata</i>	Fiddle-leaf Fig	Palais Salalm
Moringaceae (Fig Family)			
P	<i>Moringa oleifera</i>	Moringa/Horseradish Tree	White-flowered tree in the Atlas Kasbah garden
Musaceae (Banana Family)			
	<i>Musa</i> sp	banana	Palais Salalm
Nyctaginaceae (Four O'Clock Family)			
P	<i>Bougainvillea</i> spp.		Various locations

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	Oleaceae (Olive Family)		
	<i>Olea europaea</i>	Common Olive	Atlas Kasbah garden
	<i>Olea oleaster</i>	Wild Olive	High Atlas
	Orobanchaceae (Broomrape Family)		
	<i>Striga barthlottii</i>		Anti-Atlas, parasitic on the <i>Euphorbia officinarum</i>
	Plantaginaceae (Plantain Family)		
	<i>Globularia alypum</i>		High Atlas
	Plumbaginaceae (Leadwort Family)		
E	<i>Limonium mucronatum</i>	a sea-lavender	Small pink flowers, Cap Rhir
	Polygalaceae (Milkwort Family)		
	<i>Polygala balansae</i>		The shrubby milkwort in the High Atlas, near-endemic with one other population near Granada in Spain, in bud
	Primulaceae (Primrose Family)		
	<i>Samolus valerandi</i>	Brookweed	Along the water channels at Tioute palmery
	Rhamnaceae (Buckthorn Family)		
	<i>Ziziphus lotus</i>	Jujube	Very spiny hedging bush, food plant of the Common Tiger Blue
	Rosaceae (Rose Family)		
	<i>Eriobotrya japonica</i>	Loquat	Palais Salalm
	<i>Prunus dulcis</i>	Almond	Blossoming in the High Atlas
	Salicaceae (Willow Family)		
	<i>Populus alba</i>	White Poplar	Tioute Palmery
	Sapotaceae (Milkwood Family)		
E	<i>Argania spinosa</i>	Argan	Various locations
	Scrophulariaceae (Figwort Family)		
	<i>Scrophularia auriculata</i>	Water Figwort	Tioute Palmery
	Solanaceae (Nightshade Family)		
	<i>Hyoscyamus niger</i>	Black Henbane	Laatik, inside the agadir
	<i>Lycium imbricatum</i>		Tubular, purple flowers, Cap Rhir
	<i>Nicotiana glauca</i>	Tree Tobacco	Tighanimine El Baz
	Urticaceae (Nettle Family)		
	<i>Urtica pilulifera</i>	Roman Nettle	Roadsides
	Zygophyllaceae (Caltrop Family)		
	<i>Fagonia cretica</i>		Scrambling plant with violet flowers and seed heads that turn downwards on fruiting, Laatik
	ANGIOSPERMS: MONOCOTYLEDONS		
	Amaryllidaceae (Amaryllis Family)		
E	<i>Narcissus broussonetii</i>	a narcissus	Tighanimine El Baz, Paradise Valley
	Arecaceae (Palm Family)		
	<i>Chamaerops humilis</i> var. <i>cerifera</i>	Dwarf Fan Palm	The glaucous form in the High Atlas
	<i>Phoenix dactylifera</i>	Date Palm	A common roadside tree, some wonderful old trees in the palmery at Tioute
	Asparagaceae (Asparagus Family)		
	<i>Asparagus acutifolius</i>	Wild Asparagus	The scrambling wild asparagus, Cap Rhir and Tioute Palmery
	<i>Drimia (Urginea) maritima</i>	Sea Squill	Tulip-like leaves, not flowering, Cap Rhir, the Anti-Atlas and High Atlas
	<i>Scilla latifolia</i>	a squill	Paradise Valley, not flowering: native to the Canary Islands, Morocco to Western Sahara
	<i>Scilla peruviana</i>	Portuguese Squill	Laatik, not flowering

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Asphodelaceae (Asphodel Family)			
	<i>Asphodelus fistulosus</i>	Hollow-stemmed Asphodel	The finer-leaved asphodel in the Anti-Atlas
	<i>Asphodelus ramosus</i>	Branched Asphodel	The broader-leaved asphodel, various locations
Poaceae (Grass Family)			
	<i>Arundo donax</i>	Giant Reed	Various locations
GYMNOSPERMS: CONIFERS			
Cupressaceae (Cypress Family)			
P	<i>Cupressus sempervirens</i>	Mediterranean Cypress	Atlas Kasbah garden and around Immouzer
	<i>Juniperus phoenicea</i>	Phoenicean Juniper	High Atlas
	<i>Tetraclinis articulata</i>	Thuja	Common higher up in the High Atlas
Pinaceae (Cypress Family)			
P	<i>Pinus halepensis</i>	Aleppo Pine	Planted around Immouzer



Clockwise from left: Anti Atlas landscape, Bonelli's Eagle, Dotterel

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BIRDS										
Family Ratidae (Ratites)										
	Red-necked Ostrich	<i>Struthio camelus camelus</i>				◆				
		<p>This sub-species is now Critically Endangered: 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.</p> <p>This subspecies has also been introduced to a national park in Saudi Arabia and to Israel, within the range of the now-extinct <i>syriacus</i> subspecies.</p>								
Family Anatidae (Ducks, Geese, Swans)										
	Ruddy Shelduck	<i>Tadorna ferruginea</i>		◆						
	Mallard	<i>Anas platyrhynchos</i>		◆						
	Pintail	<i>Anas acuta</i>		◆						
	Shoveler	<i>Anas clypeata</i>		◆						
	Ferruginous Duck	<i>Aythya nyroca</i>		22						
Family Phasianidae (Pheasants, Partridges)										
	Barbary Partridge	<i>Alectoris barbara</i>	◆		◆	◆	◆			
Family Podicipedidae (Grebes)										
	Little Grebe	<i>Tachybaptus ruficollis</i>		◆						
Family Sulidae (Gannets)										
	Gannet	<i>Morus bassanus</i>		◆						
Family Phalacrocoracidae (Cormorants)										
	Great Cormorant	<i>Phalacrocorax (carbo) carbo/sinensis</i>		◆		◆				
Family Ardeidae (Hérons)										
	Western Cattle Egret	<i>Bubulcus ibis</i>			◆	◆	◆			
	Little Egret	<i>Egretta garzetta</i>		◆		◆				
	Grey Heron	<i>Ardea cinerea</i>		◆		◆				
Family Ciconiidae (Storks)										
	White Stork	<i>Ciconia ciconia</i>			◆	◆	◆			
Family Threskiornithidae (Ibises, Spoonbills)										
	Northern Bald Ibis	<i>Geronticus eremite</i>		29						
		<p>Currently categorised as Endangered, during the 2018 breeding season a record count of 147 nesting pairs was made, and by the start of 2019 the total wild population in Morocco was 708 individuals, up from 433 at the end of 2013.</p> <p>Outside of Morocco, around 100 birds live in semi-captivity at Birecik in Turkey. By 2015 just a single bird survived at the recently discovered and seemingly doomed colony near Palmyra in Syria, from where there has been no news since the civil war.</p> <p>A recently reintroduced population in southern Spain now numbers around 80 released birds, and the first breeding took place in 2008.</p>								
Family Phoenicopteridae (Flamingoes)										
	Greater Flamingo	<i>Phoenicopterus roseus</i>				◆				
Family Accipitridae (Hawks, Eagles, Vultures)										
	Bonelli's Eagle	<i>Aquila fasciata</i>			◆			◆	◆	
	Marsh Harrier	<i>Circus aeruginosus</i>		◆						

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Family Falconidae (Falcons)										
	Peregrine	<i>Falco peregrinus</i>				◆				
	Barbary Falcon	<i>Falco pelegrinoides</i>				◆				
	Kestrel	<i>Falco tinnunculus</i>	◆	◆	◆	◆	◆			
Family Recurvirostridae (Avocets, Stilts)										
	Black-winged stilt	<i>Himantopus himantopus</i>				◆				
Family Scolopacidae (Sandpipers)										
	(Ruddy) Turnstone	<i>Arenaria interpres</i>				◆				
	Dunlin	<i>Calidris alpina</i>				◆				
	Ruff	<i>Philomachus pugnax</i>				◆				
	Curlew	<i>Numenius arquata</i>				◆				
	Bar-tailed Godwit	<i>Limosa lapponica</i>				◆				
	Redshank	<i>Tringa tetanus</i>				◆				
	Greenshank	<i>Tringa nebularia</i>				◆				
	Common Sandpiper	<i>Actitis hypoleucos</i>				◆				
Family Charadriidae (Plovers)										
	Ringed Plover	<i>Charadrius hiaticula</i>				◆				
	Kentish Plover	<i>Charadrius alexandrinus</i>		◆						
	Grey Plover	<i>Pluvialis squatarola</i>				◆				
	Dotterel	<i>Charadrius morinellus</i>				67				
Family Laridae (Gulls)										
	Black-headed Gull	<i>Chroicocephalus ridibundus</i>				◆				
	Mediterranean Gull	<i>Larus melanocephalus</i>				◆				
	Audouin's Gull	<i>Ichthyaeetus audouinii</i>		◆						
	Yellow-legged Gull	<i>Larus michahellis</i>	◆	◆	◆	◆	◆	◆	◆	
	Lesser Black-backed Gull	<i>Larus fuscus</i>		◆		◆				
Family Columbidae (Pigeons, Doves)										
	Rock Dove/Feral Pigeon	<i>Columba livia</i>	◆	◆	◆	◆	◆	◆	◆	
	Woodpigeon	<i>Columba palumbus</i>			◆	◆	◆	◆		
	Collared Dove	<i>Streptopelia decaocto</i>	◆	◆	◆	◆	◆	◆	◆	
	Laughing Dove	<i>Streptopelia senegalensis</i>	◆	◆	◆	◆		◆		
Family Apodidae (Swifts)										
	Pallid Swift	<i>Apus pallidus</i>		◆						
Family Upupidae (Hoopoes)										
	Hoopoe	<i>Upupa epops</i>	◆							
Family Alcedinidae (Kingfishers)										
	Kingfisher	<i>Alcedo atthis</i>		◆						
Family Alaudidae (Larks)										
	Crested Lark	<i>Galerida cristata</i>	◆	◆	◆	◆	◆	◆		
	Thekla Lark	<i>Galerida theklae</i>				◆	◆			
Family Hirundinidae (Swallows , Martins)										
	Crag Martin	<i>Ptyonoprogne rupestris</i>		◆						
	Barn Swallow	<i>Hirundo rustica</i>	◆		◆	◆	◆	◆	◆	
Family Motacillidae (Pipits, Wagtails)										
	Grey Wagtail	<i>Motacilla cinerea</i>			H					
	White Wagtail	<i>Motacilla alba alba</i>	◆	◆	◆	◆	◆	◆	◆	
	Moroccan Wagtail	<i>Motacilla alba subpersonata</i>		◆		◆				
		The very distinctive <i>subpersonata</i> form is endemic to Morocco and split by some authorities from the White Wagtail as <i>Motacilla subpersonata</i>								
	Meadow Pipit	<i>Anthus pratensis</i>		◆						

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Family Muscicapidae (Flycatchers, Chats)										
	Black Redstart	<i>Phoenicurus ochruros</i>			◆	◆		◆	◆	
	Moussier's Redstart	<i>Phoenicurus moussieri</i>	◆	◆	◆	◆	◆	◆	◆	
	Stonechat	<i>Saxicola torquata</i>	◆	◆	◆	◆	◆		◆	
	Black Wheatear	<i>Oenanthe leucura</i>		◆			◆	◆	◆	
	Blue Rock Thrush	<i>Monticola solitarius</i>		◆	◆				◆	
Family Turdidae (Thrushes)										
	Blackbird	<i>Turdus merula</i>	◆	◆	◆	◆	◆	◆	◆	
Family Sylviidae (Sylviid Warblers)										
	Blackcap	<i>Sylvia atricapilla</i>			◆	◆			◆	
	Western Subalpine Warbler	<i>Sylvia cantillans</i>	◆							
	Tristram's Warbler	<i>Sylvia deserticola</i>							◆	
	Sardinian Warbler	<i>Sylvia melanocephala</i>	◆	◆	◆	◆	◆	◆	◆	
Family Phylloscopidae (Leaf Warblers)										
	Common Chiffchaff	<i>Phylloscopus collybita</i>	◆	◆	◆	◆	◆	◆	◆	
Family Cisticolidae (Cisticolas)										
	Zitting Cisticola	<i>Cisticola juncidis</i>				◆				
Family Paridae (Tits)										
	Great Tit	<i>Parus major</i>			◆	◆			◆	
Family Laniidae (Shrikes)										
	Southern Grey Shrike	<i>Lanius meridionalis</i>	◆	◆	◆	◆	◆			
Family Malaconotidae (Tchagras)										
	Black-crowned Tchagra	<i>Tchagra senegalus</i>			H			H		
Family Pycnonotidae (Bulbuls)										
	Common Bulbul	<i>Pycnonotus barbatus</i>	◆	◆	◆	◆	◆	◆	◆	
Family Corvidae (Crows)										
	Maghreb Magpie	<i>Pica (pica) mauritanica</i>	◆	◆	◆	◆	◆	◆	◆	
		The distinctive <i>mauritanica</i> form from North Africa has bare blue skin around the eye, smaller white shoulder patches, a matt black (rather than oily glossy black) tail and seems smaller bodied and longer tailed than the European Magpie, from which it is split by some authorities as <i>Pica mauritanica</i> .								
Family Sturnidae (Starlings)										
	Spotless Starling	<i>Sturnus unicolor</i>	◆	◆	◆	◆	◆	◆		
Family Passeridae (Sparrows)										
	House Sparrow	<i>Passer domesticus</i>	◆	◆	◆	◆	◆	◆	◆	
	Spanish Sparrow	<i>Passer hispaniolensis</i>						◆		
Family Fringillidae (Finches)										
	North African Chaffinch	<i>Fringilla coelebs africana</i>	◆		◆	◆			◆	
	Greenfinch	<i>Carduelis chloris</i>			H	◆	◆	◆	◆	
	Goldfinch	<i>Carduelis carduelis</i>				◆				
	Linnet	<i>Carduelis cannabina</i>					◆			
	Serin	<i>Serinus serinus</i>				◆	◆			
Family Emberizidae (Buntings)										
	House Bunting	<i>Emberiza sahari</i>			◆	◆	◆	◆		
	Cirl Bunting	<i>Emberiza cirius</i>	◆			◆				
	Rock Bunting	<i>Emberiza cia</i>							◆	

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	Barbary Ground Squirrel	<i>Atlantoxerus getulus</i>					◆	◆	◆	
	Eurasian Otter	<i>Lutra lutra</i>							◆	
	Red Fox	<i>Vulpes vulpes</i>	◆							

LEPIDOPTERA - Butterflies

Family Pieridae (Whites)

	Large White	<i>Pieris brassicae</i>	◆						◆	
	Small White	<i>Pieris rapae mauretanica</i>			◆					
	Bath White	<i>Pontia daplidice</i>						◆		
	Greenish Black-tip	<i>Euchloe charltonia</i>	◆		◆		◆	◆		

Family Lycaenidae (Blues, Coppers, Hairstreaks)

	African Grass Blue	<i>Zizeeria knysna</i>			◆			◆		
	Long-tailed Blue	<i>Lampides boeticus</i>	◆					◆		

Family Nymphalidae (Nymphs, Fritillaries, Browns)

	Painted Lady	<i>Vanessa cardui</i>	◆	◆	◆	◆	◆	◆	◆	
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MISCELLANEOUS

	Darkling Beetle	<i>Blaps</i> sp.		◆			◆			
	Oleander Seedbug	<i>Caenocoris nerii</i>						◆		
	Hummingbird Hawk-moth	<i>Macroglossum stellarum</i>			◆			◆		
	cf Mediterranean Mantis	cf <i>Iris oratoria</i>	◆		◆					
	Vagrant Emperor	<i>Anax ephippiger</i>		◆		◆	◆	◆		
	Scarlet Darter	<i>Crocothemis erythraea</i>						◆		
	Epaulet Skimmer	<i>Orthetrum chrysostigma</i>			◆					
	the small yellow scorpion	<i>Buthus</i> sp								