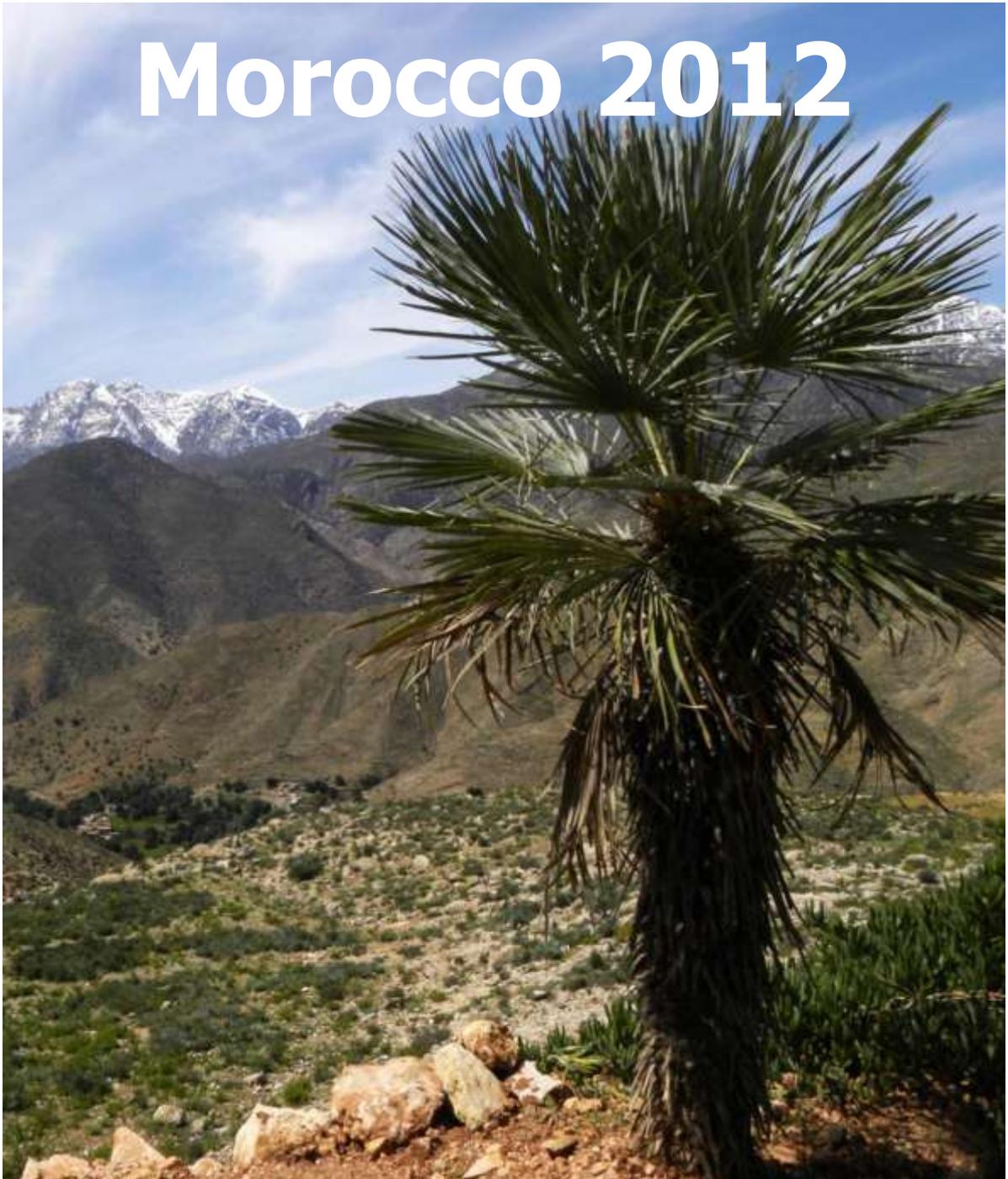


WILDLIFE TRAVEL

Morocco 2012



Morocco – Wildflowers and Natural History

Wildlife Travel Report 10th—17th March 2012

Based at the Atlas Kasbah, close to the city of Agadir we spent a week exploring some of the unique habitats of southern Morocco, from the Atlantic coast to the High Atlas. This area is home to one of the iconic plants of Morocco, the Argan Tree *Argania spinosa*, a plant that accompanied us throughout our journey. It belongs to the primarily tropical family the Sapotaceae and today is confined to southern Morocco, is a relic from the time when this area had a tropical climate.

This winter had been extremely dry in Morocco with only 3 mm of rain since November. The land was parched and whilst the quantity of flowering plants was less than usual we managed to find the majority of species we might expect to see along with some new finds. Summarised in this report are some of the key plants and birds seen on each day of the trip and a full plant, bird and butterfly list is appended. With thanks to all those who contributed to the lists, especially the birds and insects. I have included all species spotted in these lists by the group together with individual sightings for completeness.



The Atlas Kasbah set within the Argan Biosphere Reserve. *Argania spinosa* in fruit and flower

Leader

Tim Upson

Cambridge University Botanic Garden

Day Trip Reports

Day 1, 10th March – Flight from Gatwick.

The afternoon flight from Gatwick meant arrival in Agadir during the early evening. After transfer to the Atlas Kasbah we were all pleased to sit down for dinner and to bed at a reasonable time

Day 2, 11th March – Oued Tamri and Cap Rhir

The main excursion was to investigate the unique succulent *Euphorbia* scrub along the coast north of Agadir and search for one of the rarest birds in the World, the Northern Bald Ibis. Following our evening arrival the previous day we first spent an hour after breakfast exploring the garden at the Kasbah, a chance to discover some of our first native Moroccan plants. One of the first spots was the native red flowered *Echium horridum*, a relative of borage, the species name referring to the large obvious bristles-like hairs on the stem. Growing with it were several members of the Daisy or Compositae/Asterceae family, a prominent group in the Moroccan flora. This included the blue/violet flowered *Volutaria maroccana*, the yellow/orange flowers and feathery foliage of *Cladanthus arabicus* and a southern Moroccan species *Anvillea garcinii*. In the same family, the low growing plant with a prominent rosette of leaves, yellow flowers with a red centre was *Reichardia tingitana*. We also found a plant with unusual and prominent purple/pink flowers, *Fagonia cretica* in the family Zygophyllaceae. We continued to see this species each day throughout the trip. Also growing in the garden were more widespread 'Mediterranean weeds' included the tall spikes of *Reseda*'s, the red of the long-horned poppy and cultivated Sweet Potato and Coriander.



Cladanthus arabicus



Volutaria maroccana



Echium horridum

Within this dry landscape the Kasbah and its garden was clearly a haven for birds. House Buntings were resident and both House and Spanish Sparrows common including hybrids between the two species. Other common species seen included the Common Bulbul, Blackbirds and Crested Larks with frequent sightings of Greenfinch, Corn Bunting and various doves and warblers. Overhead migrating Swallows and Martins were a common site, joined later in the week by Bee-eaters.



Travelling north from Agadir we took the main coast road towards the town of Tamri passing some of the large villas along the coast belonging to members of the Moroccan Royal family and some from the Gulf States. The first stop was at the mouth of the Oued Tamri a well-known birding spot and with good saltmarsh and dune vegetation. The parasitic plant, *Cistanche phelyphaea*, with its large yellow flower spikes was particularly spectacular growing on the roots of members of the Chenopodiaceae or sea beet family. Right on the foreshore was *Cakile maritima* (Sea Rocket) and just behind good patches of *Polygonum maritimum* (Sea knotgrass) and *Euphorbia paralias* (Sea Spurge). Amongst the more develop dunes were the grey leaved *Polycarpaea nivea* and the pink flowered *Franklinia laevis*. The saltmarsh was dominated by the sea beet family, Chenopodiaceae particularly *Suaeda vera* (Sea Blite).

*Cistanche phelyphaea**Frankenia laevis**Polycarpaea nivea**Euphorbia paralias*

The river (Oued Tamri) forms a lagoon here and amongst the bird highlights were the European Spoonbill, Grey Heron, Coot, egrets and several species of gulls including Audouin's Gull. However, this stretch of coastline is the last major stronghold of the Northern Bald Ibis and several flocks settled on the dry hillsides above and all had good views of these critically endangered birds foraging amongst the scrub. Once widespread across southern and central Europe and North Africa their decline has been due to factors including pesticide poisoning, hunting and disturbance.

We stopped at Cap Rhir lighthouse for a quick tour and lunch around its base. A search behind the lighthouse revealed several typical plants of the area, the pink flowered *Frankenia thymifolia* and the Everlasting Flower or Statice, *Limonium sinuatum* a plant often grown in the UK. A great find was a plant of the Saharan endemic, *Warionia saharae*, a yellow flowered Compositae with strongly scented leaves reaching one of its most northerly points of distribution here.

On the escarpments behind are good examples of the succulent *Euphorbia* scrub thriving due to the ameliorating effect of the sea along this coastline. This type of *Euphorbia* scrub extends along the southern Moroccan coastline down into the Sahara and is also found on the Canary Islands off shore. This is a botanical link between this part of Morocco which shares a flora in common with the North Atlantic Islands which is collectively described as the Macaronesian flora. In the geological past this flora would have been more widespread becoming confined to these climatically favourable areas during recent cycles of glaciation. The first area explored was dominated by *Euphorbia regis-jubae* bearing its lime-green flowers and found together with the Compositae, *Senecio anteuphorbia*, with succulent stems but not in flower. Drought stressed plants of the grey shrub *Lavandula dentata* var. *candicans* were common, an unusual form of this species and the yellowed flowered *Ononis natrix* with sticky leaves, a plant widely encountered. It was clear how severe the drought was here with few other plants found but plenty of snail shells and evidence suggesting this area is a raised beach.

The second area explored close by was dominated by the spiny *Euphorbia officinarum* found with an unusual parasitic plant living on its roots, *Striga gesnerioides*. One of the few other spiny shrubs proved to be *Rhus tripartita* a common component of the Macaronesian flora. Here we had a good view of a Southern Grey Shrike subsequently seen frequently during the week.



Striga gesnerioides on
Euphorbia officinarum



Lavandula dentata var. *candicans*



Frankenia thymifolia



Northern Bald Ibis



Warionia saharae



Rhus tripartita

After making good time on the journey home we made a short detour to the view point above Agadir looking out onto the expanding City rebuilt after the devastating earthquake of 1960.

Day 3, 12th March – Taroudannt, Palmery and Argan Co-operative at Tioute

Today we headed east to the town of Taroudannt driving along the Souss valley, an important area of agricultural production particularly Citrus fruits and salad crops cultivated under polythene for export to northern Europe. The town of Taroudannt is often described as a mini—Marrakech, its mud plastered ramparts an impressive sight on arrival. During the tour of the Medina and Berber market various plant products were encountered including walnut bark used to brush teeth and henna amongst the many herbs and spices. A trip onto the ramparts gave good views over the town, even a White Stork circling in the distance. A stop in the grounds of the Hotel Palais Salem with its luxuriant Gardens showed how mild the climate was here with many sub-tropical species cultivated in the courtyard gardens.

We headed south from Taroudannt towards the edge of the Anti-Atlas, a much lower and older range of mountains than the High Atlas that tower to the north above Taroudannt. Argan trees continued to dominate the landscape until we reached Tioute and its Palmery. After lunch beneath the canopy of a subtropical climber *Podranea ricasoliana* or Pink Trumpet-vine we set off on a short 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. Beneath the palms crops are grown including Broad Beans, Barley and Lucerne cultivated as a forage crop and green manure.

Lining the irrigation channels was the familiar Maidenhair Fern, *Adiantum capillus-veneris*, and above other watering demanding plants including White Poplar, *Populus alba* and the Carob tree, *Ceratonia siliqua*. Along the field edges

we found well grown plants of Dutchman's Pipe, *Aristolochia baetica* in both flower and fruit along with several individuals of the Spur-thighed Tortoise. Above the crowns of the palms we had views to the Glaoui Kasbah the setting for the film Ali Baba and the forty thieves. The star bird seen was the Black-crowned Tchagra enticed into view by our guide and rather incongruously a Great Spotted Woodpecker. It is perhaps the atmosphere, smells and sounds of the Palmery that remains an equally vivid memory.



The Tioute Palmery and Glaoui Kasbah



Irrigation channel lined with Maidenhair Fern



Aristolochia baetica

Returning we stopped 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.

Day 4, 13th March - Oued Massa and Souss

The Atlantic coastline is well known for its wetland reserves, the estuaries of major rivers draining into the ocean creating a mosaic of water channels, reeds and mud flats. From Agadir we first journeyed south to the reserve at Oued Massa before returning to the Oued Souss.

The approach to Massa is through a coastal steppe of low growing drought resist plants before reaching the river lined with *Tamarix*, reeds and the occasional date palm. At the first stop we were able to find three key plants amongst the cultivated fields whilst the occasional fodder laden donkeys passed by. Close to the bus a large bright green leaved plant was *Pistacia atlantica* the source of the actual pistachio nut. A grey-leaved rather scruffy shrub is a rarity in the family Nitrariaceae, *Nitraria retusa*. Formerly placed in the Zygophyllaceae, *Nitraria* is a genus of about nine salt-tolerant species found mainly in the Sahara region across to Central Asia. Here on the Atlantic coast it reached its most westerly outpost. Further along and after some searching we found the parasitic plant, *Cynomorium coccineum* with its deep-purple, phallic-like inflorescence covered in minute flowers nestled beneath its host plants *Suaeda* and *Arthrocnemum*. This plant is a speciality of these wetland habitats in Morocco and southern Europe.



Nitraria retusa



Cynomorium coccineum



Limonium mucronatum

This area proved an excellent spot for birds with many warblers, a Kingfisher and passing flock of Glossy Ibis seen by some. The group had particularly good views of a number of birds including the colourful Moussier's Redstart, Zitting Cisticola, Northern Wheatear and Woodchat Shrike. Above the fields were spotted a Blue Rock Thrush and sheltering beneath a shrub, a Barbary Partridge.

After lunch walking from the car park we enjoyed some of the dune flora although the drought meant it was rather sparse this year. A Sea Lavender, *Limonium mucronatum* with papery petals and winged stems was in flower an example of a species confined to these sandy coastal areas. We were rewarded with some good birds spotted on the river including Glossy Ibis, the local subspecies of Cormorant with a white patch on its breast, Grey and Purple Herons, egrets and a Black-winged Stilt. On the way out we stopped to explore the succulent *Euphorbia officinarum* scrub. Again the drought meant plants were fewer than expected but the varied clump shapes of the *Euphorbias* here was astounding. A final find was the horn like fruits of a *Caralluma* growing within the protection of a *Euphorbia* plant.

Returning to Agadir our final visit was to the Souss River reached after an unpromising drive through suburban Agadir and golf courses. We were rewarded with Greater Flamingo's some feeding others flying to reveal their bright pink wings. Other waders included Black-winged Stilt, Black-tailed Godwit, Oystercatchers, a Grey Plover and on the sands Kentish Plover. Just beyond a flock of Sandwich Terns on a sandbank, a highlight was an Osprey perched on an old tree. As we left most saw a Little Owl sitting on the wall surrounding the golf club before it flew to a nearby Eucalyptus tree.

During the evening we were treated to even more spectacular sights with all taking part in star gazing from the hotel roof with amazing views of Jupiter and its four moons, the rings of Saturn and chance to handle some of the rare meteorites for which Morocco is famed.

Day 5, March 14th - The Western High Atlas

We headed into the foothills of the western High Atlas, the area to the north-east of the Kasbah, exploring along Paradise Valley and towards the Cascades du Immouzer.

Our first stop was opportune coinciding with a flock of goats being driven along the river bed, where plants of the native *Nerium oleander* (Oleander) were growing in their typical habitat. On the roadside we found plants of the native *Acacia gummifera*, one of the many spiny small trees and shrubs noted along with *Argania* and *Zizyphus lotus* with its arching spiny branches. As we gained altitude the vegetation changed and our next stop was amongst the open woods of the Juniper-like, *Tetraclinis articulata*, a conifer found only in Morocco and southern Spain. Its name

refers to the cones which are split into fours and its finely divided foliage. It is commonly called the Thuya of the Berbers who use the butt or base of the trunk to carve wooden objects with a distinctive grain to the wood. Amongst the open woodland were many good plants including a shrub with bright red fruits – *Rhus pentaphylla*, the blue flowered *Globularia alypum*, the typical variant of *Lavandula dentata* var. *dentata* and scrambling through shrubs, a toadflax-like plant *Nanorrhinum heterophyllum* (known as Betty's plants). It was pleasing to find an annual Compositae, *Catanchae arenaria*, with attractive white florets and a red centre if rather diminished in size with the drought.

Our next stop was in Paradise Valley, the river reduced yet still filled with some water. Good views were had of Oleander, *Nerium oleander*, in flower and the giant grass *Saccharum ravennae*. Walking up the road we came across a couple of High Atlas specialities – *Lavandula maroccana* and more floriferous plants of *Lavandula dentata* var. *dentata*.



Tetraclinis articulata



Lavandula dentata var. *dentate*



Rhus pentaphylla

At our next stop at about 850–900m a typical High Atlas scene greeted us with cultivation taking place amidst Almonds trees, a certain indication of our increasing altitude. Here growing above the road was one of the special plants of the High Atlas, the endemic *Polygala balansae*, a small spiny shrub with spectacular deep ruby purple and yellow flowers. We may be familiar with the herbaceous Milkwort from chalk grasslands in the UK but most members of this group are small shrubs as this species.

Passing over a hill top the trees became sparser and replaced with a scrub of the Dwarf Fan Palm, *Chamaerops humilis* var. *cerasifera*, the variant with glaucous foliage. The occasional tree of the Holm Oak, *Quercus ilex*, was another indication 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 provided at altitude in the High Atlas. We were advised that the Cascades had run dry in the drought so we returned down the winding road to Paradise Valley.



Nerium oleander



Chamaerops humilis var. *cerasifera*



Polygala balansae

Day 6, March 15th – 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 Himalaya 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.

As we approached across the river valley of the Souss we spotted large plants of a grey leaved fleshy plant upto 3—4 metres tall. This was a primarily Saharan species, *Calotropis procera* in the Asclepiadaceae, which is associated with dry river beds. On our return we were able to stop and photograph this plant. Climbing into the Anti-Atlas we made our first stop at the top of the escarpment which happened to offer the first chance for all in the group to see and hear a flock of Bee-eaters pass overhead. The yellow-flowered broom-like plant seen on the roadside driving up proved to be *Hesperolaburnum platycarpum*. Exiting the bus the air was filled with the sweet scent of *Retama monospermum* previously seen at Oued Massa. Amongst the Argan trees we found a few bulbous plants including *Dipcadi serotinum* and the leaves of Autumn Squill, *Urginea maritima* plus another nice flowering specimen of *Nanorrhinum heterophyllum*.

Our next stop was just beyond Ait Baha at a reservoir with feeding House Martins, Barn Swallows and Red-rumped Swallows over the water. There were good views of a Northern Wheatear, Common Sandpiper, shrikes and a richly coloured Blue-headed Wagtail a fine spot.

Travelling further into the Anti-Atlas our aim was to stop in an area with prominent bluffs and explore amongst the Argan Trees and rocks. Scrambling up the slopes there were few plants but we saw plenty of Barbary Ground Squirrels jumping amongst the rocks above us, with empty Argan nuts at our feet all expertly opened by these rodents. Here we had a view of the Saharan plants, *Warionia saharica* first seen at Cap Rhir but here growing in its typical habitat on cliff faces. Slightly surprising were several Great Tits amongst the Argan's, prominent this year but not recorded previously. Moving on a few kilometres we stopped for lunch under the shade of Argan trees, above a valley giving a panoramic view to the village below and mountains beyond, a sight that perhaps captured the atmosphere of the Anti-Atlas perfectly. Here we were serenaded by a Woodchat Shrike and with good views of a Southern Grey Shrike.

From here we turned back towards Ait Baha searching several side roads for good sites but thwarted by the drought conditions. Our last main stopped did prove fruitful, a plain to the west of Ait Baha with some of the largest Argan Trees I have seen. A ploughed field was full of *Asphodelus fistulosus* and the roadside covered the yellow flowered spiny shrub, *Genista tricuspidata*. Our final find of the day was one of the most special – a plant of *Convolvulus valentinus* – a spiny shrubby plant with white flowers and special to the Anti-Atlas.



Nanorrhinum heterophyllum



Calotropis procera



Convolvulus valentinus

Day 7, March 16th – Atlas Kasbah and environs

This morning offered the chance to further explore the garden of the Atlas Kasbah and walk to a view point above the nearby village of Tighanimine El Baz. The grounds are planted with a range of ornamentals including several subtropical species indicating how amenable the climate is here. Several were in full flower including a white flowered shrub close to the front door, a member of the *Acanthaceae*, *Justicia adhatoda*. The colourful red leaves of *Acalypha wilkesiana* were noted by many along with the dwarf bushy *Bougainvillea* cultivars which were widely planted and in several colours. The use of *Carpobrotus acinaciformis*, the Hottentot Fig from South Africa as a groundcover was discussed, a plant that thrives and remains green during the hot dry summers but recognised by the group as a potentially invasive species.

The cultivated area is full of many native plants, the recycled water used for irrigation making it an oasis for botanising in an otherwise parched landscape. In addition to the native Moroccan species seen at the beginning of the week we spent a little time looking at some of the other Mediterranean herbs. A particularly prominent family is the Fabaceae/Leguminosae (peas and beans) and we spent time looking at the diversity of fruits particularly noting: *Scorpiurus muricatus* with spiny coiled legumes; *Coronilla scorpioides* with scorpion tail-like fruits; and the pinkish flowered *Onobrychis caput-galli* with spiny fruits. Bulbous plants are a common life form in this area and here we found good flowering specimens of *Muscari comosum*, the Tassel Hyacinth. The lower area included several large flowering plants of the white Heliotrope, *Heliotropium crispum*.

Leaving the grounds of the Kasbah we briefly headed down the road to see a plant of *Periploca angustifolia* in flower. This was a scrambling shrub seen at several other sites but nowhere else found in flower. Grazing is heavy in this area and plants tend to either be spiny such as the wire-net bush *Launaea arborescens*, *Zizyphus lotus* of which the cut branches are used to fence arable fields and of course the *Argania* trees. Other plants tend to be poisonous and unpalatable: the small-flowered *Asphodelus fistulosus* and larger leaved *Asphodelus ramosus* subsp. *nervosus* (not in flower) have needle-like crystals in the leaves; the yellow flowered and highly viscid *Ononis natrix* full of unpalatable oils; *Withania somnifera* in the Solanaceae, a rather scruffy small shrub seen without flowers is extremely poisonous. One of the few plants flowering profusely was the introduced South American *Nicotiana glauca* with blue/green leaves and tubular yellow flowers. This plant has become invasive here, able to root deeply to find underground water and hence often finding a home along roadside ditches where it is frequently seen. As we walked into the environs of the village *Emex spinosa* dominated, a dock relative with very spiny fruits.

The village of Tighanimine El Baz gives an insight into life for many Moroccans, often hard but here tourism providing a new income for families enabling the village to expand. Our route passed through this new part of the village with the local school in session and past the women's Argan co-operative but here acting as a central meeting place with both carrots and bread being prepared. Dropping down to the river and past the mosque we followed a rocky path up into the old village, now largely abandoned and to a view point just beyond. From here we could see the older houses being taken over by the introduced Cactus, *Opuntia ficus-barbarica* with views along the river to plots of onions, beans and the large reed *Arundo donax*, lining the river bank. Returning for lunch the afternoon gave time to relax and explore individually.



Day 8, 17th – Atlas Kasbah and flight home

Our last day before the evening flight was a free day, a chance to explore the Kasbah and local area, take a cookery class or relax by the pool. We ended our trip with a glass of mint tea at the hotel and a chance to thank Helene and her staff at the Atlas Kasbah.



Greater Flamingoes at Oued Souss

Plant list - Morocco

Tim Upson

Family

Genus & species

Common Name

cf. Indicates identifications which are tentative

Sunday 10th and Friday 16th March - Atlas Kasbah

Cultivated Plants - Garden and Crop Areas

Acanthaceae	<i>Justicia adhatoda</i>	Nr hotel entrance. White flower spikes with red veining
Aizoaceae	<i>Carpobrotus acinaciformis</i>	Hottentot fig from South Africa.
Araucariaceae	<i>Araucaria heterophylla</i>	Norfolk Island Pine
Casuarinaceae	<i>Casuarina equisetifolia</i>	Planted along drive
Compositae/Asteraceae	<i>Argyranthemum frutescens</i>	White-flowered
Compositae/Asteraceae	<i>Argyranthemum maderense</i>	Yellow-flowered
Convolvulaceae	<i>Ipomaea batatus</i>	Sweet potato - climber near pottery area & in garden
Cupressaceae	<i>Cupressus sempervirens</i>	Pencil cedar
Euphorbiaceae	<i>Acalypha wilkesiana</i>	Ornamental with red coloured leaves
Labiatae/Lamiaceae	<i>Ocimum spp.</i>	Several cultivated including common Basil, <i>O. basilicum</i> ,
Labiatae/Lamiaceae	<i>Rosmarinus officinalis</i>	Rosemary
Malvaceae	<i>Hibiscus rosa-sinensis</i>	Cultivated with large red flowers
Myoporaceae	<i>Myoporum laetum</i>	Used as a hedge - white flowers
Nyctaginaceae	<i>Bougainvillea hybrid</i>	Dwarf shrub with coloured bracts
Palmae	<i>Washingtonia filifera</i>	Palm along driveway
Phytolaccaceae	<i>Phytolacca americana</i>	Tree near front door

Native Plants - Garden and Crop Area

Asphodelaceae	<i>Asphodelus fistulosus</i>	Small-flowered and much branched inflorescence
Boraginaceae	<i>Echium horridum</i>	Red flowers
Caryophyllaceae	<i>Paronychia argentea</i>	Prostrate herb with papery bracts
Compositae/Asteraceae	<i>Anvillea garcinii</i>	Yellowed flowered - southern Morocco species
Compositae/Asteraceae	<i>Calendula stellata</i>	Native weed
Compositae/Asteraceae	<i>Chondrilla nudicaulis</i>	Yellow flowered daisy with nearly leafless stems
Compositae/Asteraceae	<i>Chrysanthemum or Glebonis coronarium</i>	Crown daisy
Compositae/Asteraceae	<i>Cladanthus arabicus</i>	Moroccan endemic - widespread & very common
Compositae/Asteraceae	<i>Sonchus tenerrimus</i>	Sow thistle with pinnate leaves
Compositae/Asteraceae	<i>Volutaria cf. maroccana</i>	Blue/mauve flowers
Convolvulaceae	<i>Convolvulus althaeoides</i>	Native with bright pink flowers

Euphorbiaceae	<i>Euphorbia helioscopia</i>	Native weed
Graminae/Poaceae	<i>Avena sterilis</i>	Grass with large spikelets
Graminae/Poaceae	<i>Lamarckia aurea</i>	One-sided flower spikes
Hyacinthaceae	<i>Muscari comosum</i>	Grape hyacinth
Leguminosae/Fabaceae	<i>Coronilla scorpioides</i>	Scorpion tail-like fruits
Leguminosae/Fabaceae	<i>Hippocrepis unisiliquosa</i>	Fruits with horse-shoe shaped segments
Leguminosae/Fabaceae	<i>Lotus creticus</i>	Yellow flowered legume
Leguminosae/Fabaceae	<i>Melilotus indicus</i>	Native weed
Leguminosae/Fabaceae	<i>Onobrychis caput-galli</i>	With spiny fruit
Leguminosae/Fabaceae	<i>Scorpiurus muricatus</i>	Coiled warty fruits
Leguminosae/Fabaceae	<i>Vicia lutea</i>	Yellow vetch
Papaveraceae	<i>Glaucium corniculatum</i>	Long-horned poppy - red flowered
Polygonaceae	<i>Emex spinosa</i>	Spiny fruits
Polygonaceae	<i>Rumex vesicarius</i>	Dock with red flushed fruits
Primulaceae	<i>Anagallis arvensis</i>	Scarlet pimpernal
Resedaceae	<i>Reseda lutea</i>	yellow or wild mignonette
Resedaceae	<i>Reseda alba</i>	white mignonette
Solanaceae	<i>Heliotropium crispum</i>	Heliotrope - white flowered
Solanaceae	<i>Solanum dulcamara</i>	
Verbenaceae	<i>Verbena supina</i>	Blue flowers with cut foliage
Zygophyllaceae	<i>Fagonia cretica</i>	Common purple flowered herb

Sunday 11th March - Tamri & Cap Rhir

Salt marsh and sand dune vegetation at mouth of Oued Tamri.

Caryophyllaceae	<i>Polycarpea nivea</i>	White tomentose leaves in dunes
Chenopodiaceae	<i>Suaeda vera</i>	Dominant succulent plant in salt marsh
Euphorbiaceae	<i>Euphorbia paralias</i>	Sea Spurge
Cruciferae/Brassicaceae	<i>Cakile maritima</i>	Sea Rocket
Frankeniaceae	<i>Frankenia laevis</i>	Pink flowered prostrate herb
Leguminosae/Fabaceae	<i>Lotus creticus</i>	
Leguminosae/Fabaceae	<i>Ononis diffusa</i>	Pink flowered
Orobanchaceae	<i>Cistanche phelypaea</i>	Large yellow flower spike - parasitic on chenopodiaceae
Polygonaceae	<i>Polygonum maritimum</i>	Sea Knotgrass
Umbelliferae	<i>Eryngium maritimum</i>	Sea Holly

Cap Rhir - Euphorbia scrub

Anacardiaceae	<i>Pistacia lentiscus</i>	Mediterranean species at southern end of its distribution
Anacardiaceae	<i>Rhus tripartita</i>	3-lobed leaves
Compositae/Asteraceae	<i>Warionia saharae</i>	Endemic - yellow flowers and strongly scented leaves
Compositae/Asteraceae	<i>Senecio anteuphorbia</i>	
Euphorbiaceae	<i>Euphorbia officinarum</i>	Main species of succulent Euphorbia
Euphorbiaceae	<i>Euphorbia regis-jubae</i>	Lime-green flowered species
Leguminosae/Fabaceae	<i>Ononis natrix</i>	
Frankeniaceae	<i>Frankenia thymifolia</i>	Pink flowered prostrate herb - small leaved
Labiatae/Lamiaceae	<i>Lavandula dentata</i> var. <i>candicans</i>	With grey leaves
Orobanchaceae	<i>Striga gesnerioides</i>	Parasitic on Euphorbia scrub
Plumbaginaceae	<i>Limonium sinuatum</i>	Everlasting flower

Monday 12th March - Tioute Palmery & Argan oil co-operative

Palmery - planted Date Palms and cultivated fields

Aristolochiaceae	<i>Aristolochia baetica</i>	
Euphorbiaceae	<i>Euphorbia helioscopia</i>	In cultivated field
Euphorbiaceae	<i>Mercurialis annua</i>	
Labiatae/Lamiaceae	<i>Marrubium vulgare</i>	White Horehound
Leguminosae/Fabaceae	<i>Ceratonia siliqua</i>	Carob - few trees by side of path
Palmae	<i>Phoenix dactylifera</i>	Common date palm
Polypodiaceae	<i>Adiantum capillus-veneris</i>	Fern on side or irrigation channel
Primulaceae	<i>Samolus valernadi</i>	On side of irrigation channel - white flowered
Rubiaceae	<i>Rubia peregrina</i>	
Salicaceae	<i>Populus alba</i>	White Poplar

Tuesday 13th March - Oued Massa and Souss National Park

Cultivated area

Anacardiaceae	<i>Pistacia atlantica</i>	Medium tree at first stop
Nitrariaceae	<i>Nitraria retusa</i>	White flowers with grey foliage. Related to the Zygophyllaceae

Rivers margins and wetland areas

Balanophoraceae	<i>Cynomorium coccineum</i>	Parasitic plant
Chenopodiaceae	<i>Arthrocnemum macrostachyum</i>	Listed as <i>Arthrocnemum glaucum</i> at park.
Chenopodiaceae	<i>Suaeda vera</i>	Listed as <i>Suaeda fruticosa</i> at park

Frankeniaceae	<i>Frankenia laevis</i>	Pink flowered herb
Graminae/Poaceae	<i>Arundo donax</i>	Very tall grass used as shelter belt and along river margins
Graminae/Poaceae	<i>Phragmites altissima</i>	Reedmace
Juncaceae	<i>Juncus acutus</i>	Pointed sedge
Palmae	<i>Phoenix dactylifera</i>	Occasional along river edge
Tamaricaceae	<i>Tamarix gallica</i>	Pink flowered shrub

Sandy dune areas

Leguminosae/Fabaceae	<i>Lotus creticus</i>	Yellow flowered & grey leaves
Leguminosae/Fabaceae	<i>Ononis natrix</i>	Very viscid sub-shrub
Leguminosae/Fabaceae	<i>Retama monosperma</i>	White scented flowers on leafless shrub
Plumbaginaceae	<i>Limonium mucronatum</i>	Papery petals & winged stems
Euphorbia scrub		
Asclepiaceae	<i>Caralluma cf. europaea</i>	Horn-like fruits in Euphorbia clump
Compositae/Asteraceae	<i>Senecio anteuphorbia</i>	Succulent stems
Euphorbiaceae	<i>Euphorbia officinarum</i>	Dominant succulent in community

Wednesday 14th March - Western High Atlas. Paradise valley and Immouzer

Anacardiaceae	<i>Rhus pentaphylla</i>	Shrub with red berries
Apocyanaceae	<i>Nerium oleander</i>	Oleander with pink flowers - in river bed
Asclepiaceae	<i>Periploca angustifolia</i>	Scrambling plant not in flower
Caryophyllaceae	<i>Paronychia argentea</i>	Prostrate herb with papery bracts
Compositae/Asteraceae	<i>Catanache arenaria</i>	White flowers, dark red centre
Cupressaceae	<i>Tetraclinis articulata</i>	Thuja de Berbérie
Fagaceae	<i>Quercus ilex</i>	Trees restricted to top of pass following red shales
Globulariaceae	<i>Globularia alypum</i>	Blue flowered sub-shrub
Graminae/Poaceae	<i>Saccharum ravennae</i>	Tall grass along river
Labiatae/Lamiaceae	<i>Lavandula dentata</i> var. <i>dentata</i>	Shrub with bracts at top of flower
Labiatae/Lamiaceae	<i>Lavandula maroccana</i>	endemic to the High Atlas
Labiatae/Lamiaceae	<i>Lavandula multifida</i>	A few plants at one stop
Labiatae/Lamiaceae	<i>Marrubium vulgare</i>	White Horehound
Leguminosae/Fabaceae	<i>Acacia gummifera</i>	
Palmae	<i>Chamaerops humilis</i> var. <i>cerasifera</i>	Glaucous leaved variant of dwarf fan palm
Pinaceae	<i>Pinus halepensis</i>	Planted
Polygalaceae	<i>Polygala balansae</i>	Purple/yellow flowered spiny bush - High & Anti Atlas
Rhamnaceae	<i>Zizyphus lotus</i>	Spiny shrub - used for hedging

Sapotaceae
Umbelliferae

Argania spinosa
Deverea scoparium

Argan

Thursday 15th March - Anti-Atlas, Ait-Baha

Asphodelaceae
Compositae/Asteraceae
Convolvulaceae
Leguminosae/Fabaceae
Leguminosae/Fabaceae
Leguminosae/Fabaceae
Liliaceae
Liliaceae
Rhamnaceae
Scrophulariaceae
Urticaceae
Verbenaceae

Asphodelus fistulosus
Centaurea calcitrapa
Convolvulus valentinus
Acacia gummifera
Hesperolaburnum platycarpum
Genista tricuspidata
Dipcadi serotinum
Urginea maritima
Zizyphus lotus
Nanorrhinum heterophylla
Forsskaolea tenacissima
Verbena supina

Small-flowered and much branched inflorescence - common
Star thistle
Shrubby white flowered convolvulus

By river
Yellow gorse-like shrub
Brown 'Bluebell'
Leaves only

Yellow flowered climbing toadflax
Nettle relative
Blue flowers with cut foliage in field

Friday 16th March - Atlas Kasbah

Atlas Kasbah environs & walk to local village of Tighamine El-Baz. Semi-desert of Argania scrub.

Asclepiaceae
Asphodelaceae
Cactaceae
Compositae/Asteraceae
Graminae/Poaceae
Graminae/Poaceae
Iridaceae
Leguminosae/Fabaceae
Palmae
Polygonaceae
Rhamnaceae
Sapotaceae
Solanaceae
Solanaceae

Periploca angustifolia
Asphodelus ramosus subsp. *nervosus*
Opuntia ficus-barbarica
Launaea arborescens
Arundo donax
Hyparrhenia hirta
Gynandris sisyrinchium
Ononis natrix
Phoenix dactylifera
Emex spinosa
Zizyphus lotus
Argania spinosa
Nicotiana glaucum
Withania somnifera

In hedges along road
Large flowered species
Fig of the Berbers - Invasive around village and environs.
Wire-net bush with yellow flowers
Along river
Common in area across from drive
Iris like flowers opening late afternoon
Sticking viscid shrub
By mosque along river bank
Extremely common around village
Spiny shrub - used for hedging
Argan
Glaucous leaves with yellow tubular flowers. South America
Pale yellow green flowers - poisonous

Bird List

Phasianidae

Barbary Partridge

Alectoris barbara

Podicipididae

Little Grebe

Tachybaptus ruficollis

Sulidae

Northern Gannet

Morus bassanus

Phalacrocoracidae

“Moroccan” Cormorant

Phalacrocorax carbo maroccanus

Ardeidae

Cattle Egret

Bubulcus ibis

Little Egret

Egretta garzetta

Grey Heron

Ardea cinerea

Purple Heron

Ardea purpurea

Ciconiidae

White Stork

Ciconia ciconia

Threskiornithidae

Glossy Ibis

Plegadis falcinellus

Northern Bald Ibis

Geronticus eremita

Eurasian Spoonbill

Platalea leucorodia

Phoenicopteridae

Greater Flamingo

Phoenicopterus roseus

Pandionidae

Osprey

Pandion haliaetus

Accipitridae

Black Kite

Milvus migrans

Montagu’s Harrier

Circus pygargus

“North African” Long-legged Buzzard

Buteo (rufinus) cirtensis

Falconidae

Peregrine

Falco peregrinus

Common Kestrel

Falco tinnunculus

Lesser Kestrel

Falco naumanni

Rallidae

Moorhen

Gallinula chloropus

Coot

Fulica atra

Recurvirostridae

Black-winged Stilt

Himantopus himantopus

Haematopodidae

Oystercatcher

Haematopus ostralegus

Scolopacidae

Dunlin
Little Stint
Sanderling
Black-tailed Godwit
Redshank
Common Sandpiper

Calidris alpina
Calidris minuta
Calidris alba
Limosa limosa
Tringa tetanus
Actitis hypoleucos

Charadriidae

Ringed Plover
Kentish Plover
Grey Plover

Charadrius hiaticula
Charadrius alexandrinus
Pluvialis squatarola

Laridae

Yellow-legged Gull
Audouin's Gull
Lesser Black-backed Gull
Black-headed Gull

Larus michahellis
Larus audouinii
Larus fuscus
Chroicocephalus ridibundus

Sternidae

Sandwich Tern

Sterna sandvicensis

Columbidae

Feral Pigeon
Woodpigeon
Stock Dove
Collared Dove
Turtle Dove
Laughing Dove

Columba livia
Columba palumbus
Columba oenas
Streptopelia decaoto
Streptopelia turtur
Streptopelia senegalensis

Cuculidae

Great Spotted Cuckoo

Clamator glandarius

Strigidae

Little Owl

Athene noctua

Apodidae

Common Swift
Pallid Swift
Little Swift

Apus apus
Apus pallidus
Apus affinis

Upupidae

Hoopoe

Upupa epops

Alcedinidae

Kingfisher

Alcedo atthis

Meropidae

European Bee-eater

Merops apiaster

Picidae

Great Spotted Woodpecker

Dendrocopos major

Alaudidae

Crested Lark

Galerida cristata

Hirundinidae

House Martin
Sand Martin
Rock Martin
Barn Swallow
Red-rumped Swallow

Delichon urbica
Riparia riparia
Ptyonoprogne fuligula
Hirundo rustica
Cecropis daurica

Motacillidae

White Wagtail
Grey Wagtail
Yellow Wagtail
Blue-headed Wagtail

Motacilla alba
Motacilla cinerea
Motacilla (flava) flavissima
Motacilla (flava) flava

Turdidae

Common Redstart
Black Redstart
Moussier's Redstart
Common Stonechat
Northern Wheatear
Western Black-eared Wheatear
Blue Rock Thrush
Blackbird

Phoenicurus phoenicurus
Phoenicurus ochrurus
Phoenicurus moussieri
Saxicola torquata
Oenanthe oenanthe
Oenanthe (hispanica) hispanica
Monticola solitarius
Turdus merula

Sylviidae

Blackcap
Sardinian Warbler
Western Subalpine Warbler
Cetti's Warbler

Sylvia atricapilla
Sylvia melanocephala
Sylvia cantillans
Cettia cetti

Cisticolidae

Zitting Cisticola

Cisticola juncidis

Paridae

Great Tit

Parus major

Laniidae

Southern Grey Shrike
Woodchat Shrike

Lanius elegans
Lanius senator

Malaconotidae

Black-crowned Tchagra

Tchagra senegalus

Pycnonotidae

Common Bulbul

Pycnonotus barbatus

Corvidae

Carrion Crow
"Maghreb" Magpie

Corvus corone
Pica pica mauritanica

Sturnidae

Spotless Starling

Sturnus unicolor

Passeridae

House Sparrow
Spanish Sparrow

Passer domesticus
Passer hispaniolensis

Fringillidae

“North African” Chaffinch
Greenfinch
Linnet
Goldfinch
Serin

Fringilla coelebs africana
Carduelis chloris
Carduelis cannabina
Carduelis carduelis
Serinus serinus

Emberizidae

Cirl Bunting
House Bunting
Corn Bunting

Emberiza cirrus
Emberiza sahari
Miliaria calandra

Mammals

Camelidae

Dromedary

Camelus dromedaries

Sciuridae

Barbary Ground Squirrel

Atlantoxerus getulus

Reptiles

Testudinidae

Spur-thighed Tortoise

Testudo graeca sousensis

Butterflies

Pieridae: Whites

Large White
Moroccan Orange Tip
Pale Clouded Yellow
Brimstone
Bath White

Pieris brassicae
Anthocharis belia
Colias hyale
Gonopteryx rhamni
Pontia daplidice

Lycaenidae: Blue, Coppers & Hairstreaks

Green Hairstreak	<i>Callophrys rubi</i>
Small Copper	<i>Lycaena phlaes</i>
Common Blue	<i>Polyommatus Icarus</i>
Small Blue	<i>Cupido minimus</i>
Long-tailed Blue	<i>Lampides boeticus</i>
Lang’s Short-tailed Blue	<i>Sytarucus pirthos</i>
African Babul Blue	<i>Azanus jesous</i>
Common or Mediterranean Tiger Blue	<i>Tarucus theophrastus</i> or <i>T.rosaceus</i>



Long-tailed Blue



Lang's Short-tailed Blue



African Babul Blue

(butterfly photos thanks to Ailsa McKee)