

Pacific Horticulture Trip to Sardinia

19th April to 30th April 2008

Saturday 19th April ALGHERO AND CAPO CACCIA

Thanks to an earlier scheduled flight, we took up the slack by taking a bus ride out to Capo Caccia, passing by the Bronze Age ruins of Palmavera on the way. In the Nuraghe crevices, on the walls of the distinctive circular chamber, we found the navelwort *Umbilicus rupestris*, so called because of the umbilical shape of its leaves. The scenic road continued, sometimes flanked by the mastic tree *Pistacia lentiscus* interspersed with the strawberry tree *Arbutus unedo*, other times by cypresses *Cupressus sempervirens*, and we ultimately pulled up in a parking lot close to the upper entrance of the Grotta di Nettuno. Finally we were able to get out and look at the *maquis* close to: apart from dominant shrubs like the mastic tree, we also saw the large branching stalks of the giant fennel (*Ferula communis*), the strap-leafed Sea Squill (*Urginea maritima*), and the small flowering crucifer, *Matthiola Tricuspidata*.

Sunday 20th April ALGHERO

An early morning walk by the beach took us past some fairly degraded but nonetheless interesting dune vegetation. One of the most notable species was *Anthemis maritima*, a white-flowering compositae carpeting much of the dune area. Another species was the pioneer on disturbed ground, *Dittrichia viscosa*, with leaves smelling of mint. Close to the port were a few Judas trees in flower, a *Cercis* native to the Eastern Mediterranean, while the flower beds near the town walls were decked with not-so-native *Pittosporum* and flowering bushes of *Polygala multiflora*. On our walk around the southwest bastion we came across a row of severely pollarded trees of remarkable girth (*Phytolacca dioica*), surprisingly a distant relative of the pokeweed. Apparently they had been planted in the 1960s and had grown very quickly since. Many of us stayed in Alghero in the afternoon to see “our” Augusto, local guide, driver and trouble-shooter, singing Sardinian songs with his local polyphonic choir. Apparently, this genre of music is now classified as by UNESCO as intangible cultural heritage (ICH).

Monday 21st April 2008 – VISIT TO PARCO PORTO CONTE, SELLA&MOSCA AND ANGHELU RUJU

We picked up our local guide Roberto Barbieri at 9.30 at the Park Offices just north of Capo Caccia, retraced our steps for a few miles and then took a left turn (westward) into the forest reserve of Parco Porto Conte, covering about 40 miles of coastline and a total area of over 5000 hectares. Here the flora was much more obliging than the fauna – we saw extensive evidence throughout our walk of the presence of wild boar, but saw none in the flesh. The fallow deer and albino donkeys also failed to put in an appearance.

When we first got off the coach, Roberto pointed out the range of plant communities from climax *maquis* (Holm oak, Phoenician Juniper and Wild Olive), and lower growing shrubs (*Pistaccia lentiscus*, *Cistus* spp., *Euphorbia characias*) to degraded *maquis*, with *Asphodelus microcarpus* and *Urginea maritima*. Climbing up the shrubs was the sharp-tendrilled *Smilax aspera*, known appropriately by the Italians as *strappabraghe* or “trouser-tearer”. Common in this area is also Italy’s one and only native palm, the Dwarf Fan palm (*Chamaerops humilis*).

In some of the clearings we saw the elegant white flowers of the Illyrian Sea Lily (*Pancratium illyricum*), which flowers earlier than the dune-growing relative *Pancratium maritimum*. As we wound up on the path we passed low clumps of *Helichrysum microphyllum*, and found to many people's delight the scarlet pimpernel (*Anagallis arvensis*), and later on its blue congeneric, *Anagallis foemina*. A common dwarf asteracea growing on the path up was the *Evax pygmaea* (we only identified it several days later).

As we continued up the path another much euphorbia appeared on both sides of the path, the *Euphorbia pithyusa*. We eventually passed the vulture feeding station (long since abandoned), coming out onto the top of the cliff, affording fine views over to Punta Cristallo to the south. As the path narrowed we saw bushes of Rosemary (*Rosmarinus officinalis*) and the odd straggly shoot of *Asparagus acutifolius*. This area was home to the prickly Sardinian endemic *Genista sardoa* (unfortunately not yet in flower), and another much lower growing endemic sea lavender, *Limonium nymphaeum*, together with an *Astragalus* similar to *massiliensis*, but a little less woody.

Our second stop in the park at Cala Barca was to see a rather different plant community, garigue, consisting of low-growing pin-cushion plants and wind-flattened Phoenician juniper. As we got out of the bus we came across another cluster of Euphorbia, this time *Euphorbia helioscopia*. We walked down an avenue of compacted reddish soil, flanked by pines on one side. In Parco Porto Conte (<http://www.parcodiportoconte.it/>) both Aleppo pines *Pinus halepensis* and stone pines *Pinus pinea* (the ones producing edible *pinoli*) have been planted over the decades by the forestry commission. Our path then turned right up to an area like an amazing natural rock garden with a variety of pin-cushion plants, most notably the endemic *Centaurea horrida*. This was indeed garigue: what that grand doyen of Mediterranean plant life, Oleg Polunin, called "a dwarf shrub community found in the Mediterranean region".

After lunch at La Nuvola and an enthralling visit to the Sella & Mosca winery, we wound up the afternoon with a guided tour of a third-millennium BC burial site, Anghelu Ruiu. Most evident here was the Barbary nut or dwarf iris (*Gynandrisis sisyrinchium*) and the tassel hyacinth (*Muscari comosum*). Some of our members saw one of the smaller and - it must be said - less spectacular orchids, *Serapias parviflora*, a tongue orchid, close to the entrance to one of the chamber tombs.

The highlight of the day? Probably Augusto stopping the bus and disrupting traffic in both directions to let us photograph the delicate wild gladioli *Gladiolus italicus* growing in abundance by the roadside!

Tuesday April 22nd SACCARGIA AND AGGIUS

A blustery day with cool northerly winds, which rather dampened our enthusiasm for the picnic scheduled in Aggius. On our way from Alghero we stopped at Saccargia to fit in a guided tour of a church built under Pisan occupation of the area in the 12th century. Afterwards, the road soon climbed into the heart of the granite massifs of the Gallura where, we learnt, the genuine locals spoke a language much closer to Corsican and were not Sardinian speakers. On our way we passed harvested cork oaks and Spanish broom in flower. The tree composition acquired more variety as we neared Aggius, with the lighter green of almond trees and downy oak *Quercus pubescens*, elder trees in flower, orchards of cherries, and the odd stand of *Ailanthus*, especially in more degraded semi-built up areas. In shady areas there were clumps of *Cyclamen spp.* probably *repandum*.

Around midday we arrived at the village of Aggius, one of only six villages to be awarded a *Bandiera Arancione* (Orange Flag) in Sardinia for its architectural and environmental quality. We had an unscheduled stop at the Ethnographic Museum where we were taken round a reconstructed

Gallurese house, shown the local plants traditional used to make dyes (brown made from onion skins, yellow from saffron, red from madder, and green from ivy). We were also taught the difference between what is referred to as male cork (the first bark of poorer quality) and female cork (outer bark regrowth after 10 years, of higher quality and greater regularity.)

A post-lunch walk in the Valle della Luna, a boulder-strewn valley close to Aggius, produced our first spectacular roadside orchids, dominated by the pink *Orchis papilionacea*, with odd clusters of *Serapias lingua* and some delightful *Ophrys tenthredinifera*. We also saw delicate narrow-leaved lupins (*Lupinus angustifolius*) along the road, yellow-flowering *Urospermum dalechampii*, sometimes known as the Mediterranean daisy, and clumps of *Lavanda stoechas* or lavender. Here the cork trees were almost flattened by the prevailing NE winds funnelled across the valley.

Time to move on: we wound down to the coast, the roadsides often carpeted with the purple Iceplant (*Carpobrotus edulis*) with large retrodune pine plantations and the odd glimpse of beaches and windswept headlands. Finally, after a series of tight manoeuvres we emerged thankfully right in front of the Hotel Da Cecco, our base for the next three nights.

Wednesday 23rd April CAPRERA AND CAPO D'ORSO

Under clear blue skies and a stiffish wind we set off for the island of Caprera, our first destination being Garibaldi's house La Casa Bianca. We were shown fairly rapidly through the house and its gardens, with the main feature of interest being the massive stone pine *Pinus pinea* without its characteristic umbrella-shaped canopy planted by Garibaldi in 1862 outside the house on the birth of his daughter, Clelia. It was obviously a good omen as she lived to the ripe old age of 92. The real fun started when we drew up in a car park on the island to have our picnic. Right by our picnic spot was a *Serapias* orchid and another of the same family, *Limodorum abortivum*, a saprophytic plant growing under pine trees which was to accompany us, so to speak, for much of our walk after lunch. We soon climbed out of the pine grove, walking up a red tartan road flanked by tree heath *Erica arborea*, cultivated olive – almost reverting to its wild state – and narrow-leaved cistus *Cistus monspeliensis*, seemingly in flower all over the island and a common, if not dominant, plant in the *maquis*. Its root system was being parasitized by a curious white and red plant called *Cytinus hypocistis*. Another plant becoming increasingly familiar to us as we went along was the bugloss *Echium vulgare* with its variable flowers ranging from purple to red and blue. Along the roadside was also *Allium subhirsutum*, and towards the end of the walk, *Allium roseum* or wild garlic. Perhaps the best represented family of all was Leguminosae: we saw the vetch *Vicia cracca* with its purple flowers, the attractive star clover *Trifolium stellatum*, so-called for its calyces that spread out into miniature star shapes after flowering, the lupin *Lupinus micranthus*, different from the *angustifolius* on the previous days. Another plant that livened up the roadside was the thistle, *Galactites tomentosa*, and an orchid which defied identification for about three weeks, *Gennaria diphylla*.

Lavender was once again common here, and shrubs we had seen elsewhere like the mastic tree *Pistacia lentiscus* and myrtle *Myrtus communis* were this time flanked by *Phillyrea*. Our walk took us past an abandoned military installation on the hill, and then wound down once again through head-high *maquis* until we hit the pine groves at the base of the hill.

Here we found the other white *Cistus (salvifolius)*, the stout parasitic *Orobanche crenata*, and *Daphne gnidium* which usually flowers in the autumn (and indeed, it wasn't flowering for us this day, either).

Our final expedition was up to Capo D'Urso or Cape Bear, so called because of the way the eroded granite formation at the very top resembled a bear. Here we found once again the delicate *Centaurium* we had seen during our morning walk, and also saw the flowers of *Fumaria capreolata*, Ramping fumitory. We came across the climbing plant with the ipomoea-shaped leaves, small clusters of white flowers and yellow berries (*Tamus communis*). It was also worth stopping for a delicate pink *Dianthus*. But what has been written here is a mere fraction of all the plant species we saw during these two wonderful, scenic walks.

One of our artists-on-board, Louise Luckenbill, opted out of the walk on Caprera and decided to do some painting. This was the result.



Thursday 24th April – Arzachena prehistoric sites and La Candela

The wind has finally abated. Though the day started out cloudy, the sun soon emerged. Augusto drove us above the town of Arzachena to the famous *fungo*, a granite formation shaped like a mushroom. Growing on the surface was *Sedum caeruleum* in full flower, a low-growing white-and-red bonanza of colours, next to the pale yellow-flowering *Sedum sediforme*. Close to the roadside was *Malva sylvestris*. The visit to the first Nuraghic site of Albucciu was made memorable by our talented guide, Mauro. *Smyrniium rotundifolium* was growing in profusion around the site, together with *Urospermum dalechampii* and *Galactites tomentosa*, and the odd clump of *Arum pictum*.

The second site of Coddu Ecchiu or Tomb of the Giants was excellent for birds. A pair of jays sat on the picnic tables as our bus pulled into the car park, and we watched aerial acrobatics in a skirmish between a hooded crow and a buzzard (*Buteo buteo*), similar in size and the same genus as the red-tailed hawk. We enjoyed a minute of silence to hear a nightingale singing from the middle of thickets. The road to the site was flanked by a profusion of wild flowers, including the poppy *Papaver rhoeas*, a species of *Tragopogon* or salsify and the all-too-familiar *Galactites tomentosa*. Within the site itself was a carpet of *Tordylium apulum*, while just by the visitor's centre was the showy *Bellardia trixago* together with the yellow-flowering *Bartsia Parentucellia viscosa*.

Our third destination of the day was an *Agriturismo*, a working farm offering hospitality. *Antipasti misti* hardly does justice to the spread of food which kept on appearing. This was followed by *Zuppa gallurese* and *gnocchi* in tomato sauce and sausage meat. All the food was sourced from the farm itself, La Candela, situated on a hillside a few kilometres southwest of Arzachena: tasteful low-rise buildings with huge chestnut beams supporting the roofing, and with a 1000-year olive-tree behind the restaurant. A stroll after lunch produced an exciting flock of European bee-eaters, perching on telegraph wires and occasionally swooping down to give us glimpses of their bright plumage.

Saturday April 25th Mont'Albo and Nuraghe Losa

Our undoubted highlight of the day was a short excursion up this remarkable limestone massif. The road twisted and turned up from Siniscola south of Olbia. On our left we past extensive holm oak woods, while more open maquis produced the pink-flowered *Cistus incanus*, with the occasional showy *Iris pseudacorus*, probably a cultivar release into the wild. We noted extensive terracing, some of which had been used for reforesting the steep slopes of the massif with a few incongruous evergreen species. We stopped just below the highest peak at about 800 m (2500 ft) and started walking along the road. The roadcut itself produced spectacular orchids, including *Orchis mascula* and a wealth of *Ophrys*, such as *speculum* and *lutea*, sometimes growing close to *Anemone hortensis* and *Lathyrus articulatus*. Here is a shot of *Ophrys speculum*. Augusto had problems persuading our orchid lady, Kay Klumb, to get back on the bus. Her photograph below will explain why.



While the peaks of Mont'Albo soaring above us were limestone, the geology here was really more complex than met the eye. One of our members (Gail Hall) took a small rock sample up here to have it identified at home: a metamorphic schist.

After a while we finally came across our Holy Grail the Paeony (*Paeonia mascula*), whose flowers ranged from off-white on a more exposed bush to pink on others. Here is a shot of the peony in the same location taken in April 2006 by John Perry.



In the afternoon – fortified by a minestrone made with chickpeas, wild fennel and onions - we toured the site of Losa, a fascinating and extremely well-preserved *nuraghe*. This year there was an amazing growth of giant fennel (*Ferula communis*) on either side of the path up to the site. The fennel was called *narthex* by the Ancient Greeks and the word has curiously filtered down into architecture to mean the porch of a church or basilica.

Probably nesting in the *nuraghe* was the little owl (*Athene noctua*) the only semi-diurnal owl in the Mediterranean, which monitored the members of our group from a safe niche high up on the *nuraghe* wall.

On a separate note, one of our members, Connie Levy, gave us an interesting description of hands-on archaeological experience excavating nearby *nuraghi* some years before.

Saturday April 26th THE SINIS PENINSULA AND THARROS

After such a long day in the bus the day before we were champing at the bit to do some botanising and birdwatching, so at the first opportunity we streamed off the bus around the Lake of Cabras, and noted a profusion of yellows, mainly *Chrysanthemum segetum* with the odd *Asteriscus*

aquaticus. Growing in impressive spikes by the side of the path was *Verbascum spp*, as well as king-size (!) Queen Anne's Lace *Daucus carota*, with the ubiquitous blue-violet of the *Echium vulgare*. Close to the lakeside was the grey, pungent *Artemisia arborescens*, close relative of the *Artemisia absinthium* used for making absinth, that potent concoction drunk in fin-de-siècle cafés in Paris.

The visit to the fish farm at Peschiera in Pontis, besides close-ups of grey mullet used for fish-roe production (*bottarga*), produced some interesting birds. To add to the greater flamingos, whiskered terns, great crested grebes, grey heron and cormorants that some had seen on Cabras lake, there were two obliging purple heron, a great egret, several little egrets, a common sandpiper, Spanish sparrows, and spotless starlings, a different species from the European starling which has so successfully colonised the US.

The site of Tharros: yet another example in the Mediterranean of layers of ancient civilizations, this time Nuragic (up on the hill), and Phoenician and Roman down at sea level. What attracted some of our group, however, were stands of the bush *Thymelaea hirsuta*, creating a little variety in a landscape dominated by the mastic tree. Further east in the Mediterranean on the island of Chios, the mastic tree is actually cultivated for its resin (see <http://en.wikipedia.org/wiki/Mastic> for more information on this). After a break for lunch we hopped on the *Trenino*, an electric powered shuttle that took us over towards the promontory of San Marco.

With the aid of our guide Renzo who seemed in his element among the garigue, we got positive IDs on several plants. One of the first "new" plants we saw was the low -growing sea lavender or statice, *Limonium tharrosianum*, yet another endemic (which somewhat resembled *L. nymphaeum* we saw near Alghero). Close by was the greyish shrub Mediterranean saltbush (*Atriplex halimus*) used as a herb in some Sardinia recipes, the honeysuckle *Lonicera implexa*, the bladder campion (*Silene vulgaris*), an Inula with leaves almost like succulents (*Dittrichia graveolans?*) and the brown phallic-shaped *Cymnomorium coccineum*, actually a rare parasitic plant found only in Sicily, Basilicata and Sardinia. Apparently it can be eaten (tastes like an apple, apparently) and can be ground down to use for making a red dye (Bedouin practice). The locals call it "*Fungo di Malta*" because in the times of the Crusades, the Knights Hospitallers of St John, later to become the Knights of Malta, were intimately aware of its curative properties (dysentery, ulcers, haemorrhages, and infections), an excellent all-purpose first-aid kit in medieval times - and they guarded their secret jealously. Brightening up the vegetation close to the shoreline was the stock *Matthiola tricuspidata*. Again there was a bewildering biodiversity of plants along the way, including a grey *Senecio*, fringed rue *Ruta chalepensis* (actually in flower), and the clinging plant *Rubia peregrina*, known as wild madder. Since time immemorial in the Mediterranean the roots of its close relative (*Rubia tinctoria*) have been used for making red dye. As we climbed to the top of the headland to stop by a small Carthaginian temple, we encountered once again the small asteraceae *Asteriscus aquaticus*, saw the ground-hugging tiny annual *Evax pygmaea*, and noted the presence of *Ruscus aculeatus*, butcher's broom, which was obviously suffering from over exposure either to Mediterranean sunlight or to salt spray. This plant is a holly substitute for many Italians at Christmastime, when holm oak woods are sadly stripped of their understorey. Forcing its way up through the shrub cover was the small labiate *Prasium majus* with its white flowers, and sporadic splashes of yellow were created by the flowers of the broom *Calicotome villosa*.

The headland has a remarkable flora, of which we saw just a small part. You can find a list of the species in the Sinis peninsula as a whole at the following site (abstract in English): <http://webdeptos.uma.es/biolveg/03Rev/00HRev/33-PENINSULA-DEL-SINIS.pdf>.

While many of us were botanising, several others visited the remarkable Palaeochristian church of San Giovanni, while our artist-on-board, Louise, produced this:



Sunday April 27th GIARA DI GESTURI AND BARUMINI

Our destination today was an isolated volcanic plateau ringed by nuraghi rising to an altitude of just over 500 m at its highest point. We picked up our guide Roberto Sanna outside Tuili, a well-preserved village lying at the foot of the plateau. Our drive up took us past olive groves and almond trees, with the occasional splash of colour created by the crimson forage crop *sulla* (*Hedysarum coronarium*). At the top we looked down on a weird landscape of plains interspersed with conical hillocks suggesting breasts, at least, that is, for the locals. The three oaks found widely at the top were our old friends the holm oak and the cork oak, joined here by the deciduous downy oak (*Quercus pubescens*). The plateau fell in the territory of several *comuni*, and dry stone walls marked out individual property rights. The whole plateau is policed by forest rangers employed by the Sardinian Regional Authority (seen by some as the local equivalent of a gravy train dispensing jobs and subsidies in abundance).

While walking silently and in single file, we had an excellent view of a wood lark, performing its cascading song from the top of an oak tree. However, our quest today was for both plants and wild *giara* horses, of which there are several hundred on the plateau, thought to descend from horses brought over by the Arabs. They receive no feed supplement, and are wild to all intents and purposes. The only intervention to safeguard the stock is the supply of extra water during serious droughts. In one of the dried-up lakes at the heart of the Giara we sighted, through a field of waist-high *Asphodelus microcarpus*, a family of horses (Roberto told us it consisted of one male, two females and a foal, though the second female had perhaps foaled a short while before and was nowhere to be seen). Here is a picture of the horses taken by John Perry in 2006.



In the dried-up lake itself was a carpet of *Ranunculus aquatilis*, which we later saw close-to in the botanical gardens. Along the paths were a number of orchids, the most distinctive being *Orchis longicornum*. We also ran into *Orchis papilionacea* and *Orchis provincialis*, and found *O. saccata* growing in the botanical garden.

We saw the usual gamut of *Cistus* (*salvifolius* and *monspeliensis*), the hawthorn in flower *Crataegus monogyna* and also *Eryngium corniculatum*. The botanical garden (called *Morisia* after the local endemic crucifer) was helpfully arranged into families, and seemed to contain almost all the species of the Giara, including the *Ranunculus aquatilis* growing in its own miniature lake. The information panels were in Italian and English (well, a sort of English) and gave helpful information on the main features of several plants together with their local uses.

Our afternoon was spent visiting the World Heritage site of Su Nuraxi at Barumini. Like several of the archaeological sites on Sardinia, the entrance was landscaped with Mediterranean shrubs and trees. In amongst the ruins of 3000-year-old dwellings we found a bright *Ophrys* (*tenthredinifera*?). Most of our energies, however, were taken up manoeuvring round inside the *nuraghe*, walking down steep dark corridors with high irregular steps wedged between thick basalt walls. There was a recent local project to build a tunnel which would have emerged in the middle of the central tower, starting in the fields to the south. However, UNESCO were apparently far from pleased with the project to tunnel under the Nuraghic complex (the only World Heritage Site on Sardinia). Though ultimately UNESCO don't protect it (the Italian heritage ministry does that), they could strip it of its World Heritage status, which would be a real *brutta figura* for the Sardinians.

Monday April 28th – GROTTA DI SAN GIOVANNI AND ANTAS

Today we struck out westward towards the unremarkable town of Domusnovas, passing on the way a number of eucalyptus plantations, originally planted to supply pulp for a large paper mill at Arbatax on Sardinia's east coast, now seemingly used for firewood. We picked up our guide Giovanni Paulis at the main crossroads in Domusnovas, and after a time-honoured coffee stop,

headed round in the bus to the north side of the cave of San Giovanni, one of only three caves in the world with roads running through (the others being the cave of Mas D'Azil in Ariège France, the third being in Australia).

Our first stop however was up a dirt track, with the first grassy bank along the track producing four different orchid species: *Barlia robertiana*, *Ophrys apifera*, *Serapias parviflora* and *Orchis* (or *Aceras) anthropophorum*, so-called because the flower's yellow and pink lip bear a striking resemblance – supposedly – to a naked man. Along the way we saw the Sardo-Corsican endemic thistle *Ptilostemon casabonae*, which we would run up against in the Botanical Garden in Cagliari. Giovanni – an extremely knowledgeable guide and self-appointed environmental steward – explained that we would have seen a lot more flowers if we had come before the last public holiday (April 25th) when, sad to say, the roadsides are stripped of any bright-looking flowers. That said, we did find about 12 species of orchids, including *Ophrys chestermanii*, *Ophrys normanii*, and *Ophrys apifera*, together with the *Serapias* we had seen elsewhere. (Giovanni has some interesting photos on his website <http://www.longufresu.it> - just click on “Gallerie”).

We saw evidence of grafting cultivated olive onto its wild ancestor, apparently organised by the local municipality to provide future olive oil yields to the needy in the town of Domusnovas. At shrub level we saw what at first sight looked like a joint-pine (*Ephedra*) but actually turned out to be an endemic *Polygonum scoparium*, only identified with hindsight when we visited the endemic corner of the Cagliari Botanical Garden. Other plants noted on the walk back to the cave, especially in the shadier parts of the walk in the holm oak forest, were *Arisarum vulgare*, and the two endemics: *Cymbalaria sardoa*, *Vinca sardoa*. On more open disturbed soil was the white-flowering umbellifer *Tordylium apulum* and *Parentucellia viscosa*, seen in the north-east of the island.

The birdwatchers in the group got pleasing close-ups of the cirr bunting and noted the crag martins at the southern entrance to the cave (at one stage during the Nuragic period it was blocked off and used as a refuge in time of need).

After a rough-and-ready lunch in a small *trattoria* on the south side of the cave, we headed westward round a thousand bends past the town of Iglesias to the Carthaginian-Roman temple site of Antas, set in dramatic wooded hills 10 miles north of Iglesias on the road to Fluminimaggiore. Again, it was pleasing to see some landscaping with Mediterranean shrub cover close to the site entrance, and many of us were too busy drinking in the numinous location of the partly reconstructed (but atmospheric) Roman temple to focus on vegetation cover at ground level.

Our return to Cagliari took us through the disused lead-zinc mining area of Monteponi. Before going back to the hotel, Augusto took us on a brief excursion through the Lagoon of Santa Gilla, where we had good close-ups of the flamingos. Two days later, apparently, the birds would disrupt air traffic for two hours at the nearby airport of Elmas – fortunately our flights were unaffected. Besides flamingos, we also got fair views of avocets, while the gulls feeding in the brackish lagoons were a mix of black-headed gulls and (primarily) slender-billed gulls. Some of our group saw terns, and indeed, there was a pair of little terns nesting on a tiny hillock of mud out in the lagoon.

Tuesday April 29th – THE VILLA OF TIGELLIUS AND THE BOTANICAL GARDENS OF CAGLIARI

Our last full day in Sardinia started with a short tour of Tigellius's Villa. Actually it was not a villa (rather, a cluster of houses in the residential area), nor is there any evidence it belonged to Tigellius, a contemporary of Cicero's from Sardinia. We noted the baths complex and saw the entrances of

two of the houses. In the atrium of the western one was the attractive star-of-Bethlehem relative, *Ornithogalum arabicum*, while poking up on some fairly disturbed banks close to the entrance to the site were patches of the parasitic broomrape *Orobanche spp.*

Our next destination was almost opposite the Roman villa, the Cagliari botanical gardens. After an inauspicious start (it's never good for guides to read from brochures), our guide for the morning was persuaded to modify his brief and take us to the top of the garden near the Roman amphitheatre, the area devoted to conserving regional endemics. It was good to see the thorny *Ptilostemum casabonae*, a dune plant *Santolina insularis*, and once again the *Ephedra*-lookalike, *Polygonum scoparium*. Some of us were then shown round the archaeological site forming part of the garden, including the large dome-shaped cistern reminiscent of similar constructions in the Phlegraean Fields to the west of Naples. Uphill of the garden was the amphitheatre, for the most part carved out of the local limestone, functioning up until a hundred years ago as a huge water catchment area, with the water being stored in cisterns below. Such multi-purpose building was common in the Roman world, especially where an aqueduct was either insufficient or non-existent, and where rainfall might be scarce and/or irregular.

Elsewhere in the garden were the greenhouses (sadly closed), our old friend from Alghero *Phytolacca dioica* growing in symbiosis (and probably losing out!) with a large *Ficus*. Another impressive alien species was the *Erythrina caffra*, sometimes called the coral tree.

We dispersed for lunch close to the Botanical Gardens and then regrouped, heading uphill past the amphitheatre, along an avenue lined with a Mediterranean native, the smooth-barked nettle tree (*Celtis australis*), seemingly a great favourite with town-planners in Cagliari, towards our final destination the archaeological museum up in the Cittadella or Pisan fortress.

We had arrived in Sardinia in what felt like the tail-end of winter, and were leaving with summer definitely on its way in. Daytime temperatures had varied as much as 15 °C between the start of the tour in the northwest (and northeast) and the end of the tour in Cagliari.

Overall, it would seem that the Sardinians of the 21st century are doing a good job preserving their natural and cultural heritage. Aided by special regional laws (the governor's "coast-saving" legislation passed in January 2006) and by a reduced frequency of bush fires, both the *maquis* on the island and the remarkable ring of coastal lagoons especially in the south and west are major beneficiaries of stricter environmental laws, together with the flora and fauna that they support. It was good meeting such highly committed naturalists and environmentalists like Roberto Barbieri, Roberto Sanna and Giovanni Paulis, who also knew their flora, so often a neglected dimension in nature conservation.

Mark Walters May 23rd 2008

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