

# Hanbury Botanic Gardens – moving back towards a sustainable outlook

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Sir Thomas Hanbury made his fortune whilst working as a young businessman in Shanghai, China. He acquired land during the Taiping rebellion and traded in silk, cotton, tea and property. In the second half of 19<sup>th</sup> century he aspired to fulfil one of his dreams, to create a collection of exotic plants in a location sheltered and hot enough for a diverse range of habitats. Choosing the Italian Riviera in a south facing location along a steep decline to the rocky sea shore, he and his brother Daniel set about implementing a terraced design with a view to experimenting with subtropical plants. He bought the estate in a condition of dilapidation and set about renovating the Palazzo Orengo, an 11<sup>th</sup> century house built upon the remains of an ancient Roman villa. At its peak the gardens were worked by 60 staff. He had some cattle and cultivated grapes and wine in what is now the meadow, a kitchen garden growing its own crops, three water-powered stone mills for producing olive oil, and an orchard of citrus and exotic fruit for his own consumption and also to send back to the UK plus others plants selected for their pharmaceutical interest. The scientific basis of the collection was the important element that Thomas' brother, Daniel Hanbury, introduced into the gardens, even though he died shortly after the beginning of the works 8 years later. Thomas created a garden of international importance and great beauty which included many busts and statues. Today the estate ranges over 18 hectares and occupies the whole of the Capo Mortola reaching 214 metres above sea level, half of which was native vegetation and woodland comprising of the dominant *Pinus halepensis*. The original cultivated terraces had olive and citrus trees. There is a part of the Roman Road to Gaul running through the garden, "Via Julia Augusta". Many changes were made by his daughter-in-law Dorothy preceding the Second World War during which time major damage was accumulated. The Italian State purchased the whole property in 1960 due to the unaffordable costs of maintaining it. 27 years later the University of Genoa was entrusted to continue the scientific work that the Hanburys had initiated. The other buildings on site are under the care of the *Soprintendenza ai Beni Artistici e Culturali*. At the moment, there is an old gardener's cottage, available for 4 students to stay in called the *foresteria*. Thomas donated Wisley to the RHS and there continues to be educational links between these Gardens and Kew also.

I came here with a blank canvas, not knowing anything about the history or existence of its protagonists. Walking through the main portal, built at the middle of the 19<sup>th</sup> century, I thought I was entering paradise – it was picturesque. The sweeping curves and ornamental stairways are flanked by raised beds, occasionally broken by ponds, grottos and resting areas. The site mainly levels out on the up side of the Palazzo and further down at the cafeteria in the location of the old kitchen garden. Here and there something of the original olive trees still stand now as huge specimens, unlike the cultivated low mushroom style I am used to in Spain. My host, Dott. Elena Zappa, curator and taxonomist, has a thorough grounding in the history of the garden; she told me that this is the way they grow olive trees here. The gardeners in the past would have to climb up them to great heights and manually crop them but nowadays they do not collect the fruit. Elena tells me that other than the commercial production and maintenance of gardens, local garden businesses have very little knowledge in designing gardens with sensible planting schemes.

I asked her what was the official education system here for training gardeners, as I myself know Britain provides many educational courses within the framework laid out in the RHS guidelines and of the Kew diploma hotly sought after by many international botanists and gardeners. Some of the Italian equivalents for Liguria are the *Istituto Professionale per l'Agricoltura D. Aicardi Sanremo* and the *Istituto professionale per l'Agricoltura Marsano a Genova*. The British climate warmed by the Gulf Stream lies in the same latitude as the frozen hinterland of Norway, and because of this many an accident of plant design can lead to serendipitous results. But as I traversed the south coast of France I reflected on the inexperience, for instance in the application of mulching, which in milder temperate climates is an essential skill to have. It is often thought though, that rugged terrain is linked to a condition of limited social inclusivity, and this has probably carried down through culture over time into the now fast developing institutions of the Mediterranean who cannot yet boast the equivalent moderating influences of the climate in Britain Isles nor have borrowed from the rest of the world.

As Elena drew me around one of the tight bends it became apparent that technology is limited here. The steepness of the slope and the narrow route make for difficult access, and in fact she told me that they prefer to weed by hand and saw and prune manually. I was struck by the beauty of the spring flowers, the variety of agaves, cacti and succulents, palms, edible fruit trees including bergamots, and strawberry guavas, bananas, kiwis, avocados, quince and of course oranges, lemons and grapefruits. I eyed a few of those huge fruits still tentatively clinging to the tree in early March. Tentative is the right description, because within a few days of staying here they were being pruned in preparation for the new growing season. I was informed by the gardeners and confirmed by Elena that these surplus fruits go to a charity, to make into marmalade especially the unused quantities of bitter oranges. As I enquired along this path I would discover that a lot of bureaucracy has been put in place. For instance, it was not considered right that the staff could pick their own fruit since this denuded the trees of any visual representation of their efficaciousness to the public during the mild winter. There are only a dozen or so paid gardeners here, and a few temporary students on work placements or degree courses. The complete team bring the overall number nearer to two dozen. I put it to Elena, why not return the grounds to their former use? There were two replies to this, the first direct, the second indirect. The first referred to the legislation in place of keeping the grounds under scientific and ornamental study only, governed by the University of Genoa; the 20 or so citrus fruits under cultivation including bergamots, cedrats and grapefruits have pharmaceutical and cosmetic applications too. The second response referred to the lack of means to pursue further activities. Ultimately, all the decisions have to go to the director, Prof. Mauro Mariotti. So I put it to Elena that composting can also be scientific research and form part of the curriculum for university study. Financial decisions have to be made according to principle directives. If these gardens are to become financially sustainable perhaps it needs to diversify in various fields. For instance, the café is the only outlet to sell plants (some ornamental cacti not grown on site). They had to be purchased and then sold on for a petty profit. This is a tokenism relating to the conventions of the Rio Summit, and mutually signed to by all the botanical institutes in Europe, that original seed and their plants cannot be sold on, they can only be made available for scientific research to other universities and institutes. Hence, any received seed remains behind closed doors. Only cuttings and seeds are available from plants gathered elsewhere and even then, these are surplus to the garden's requirements and may be sold during special open days. This is a limiting influence upon the sustainability.

I understood that in Sanremo (*Istituto Sperimentale per la Floricoltura*, now CRA/FSO – Sanremo) there used to be fruit research at the start of the 20<sup>th</sup> century, for developing new cultivars; the best rootstock for citrus in this area being *Citrus aurantium* where traditionally *Poncirus trifoliata* would have been used. Some of the old citrus orchards around Sanremo have been ploughed up and replaced with flowers which are more commercial.

I asked Elena what she would like to see more of. Firstly, and she must echo many of the opinions of the working staff here, she would like to see the woodland re-opened to the public, the tranquillity of its running stream and network of winding paths were a joy to ramble along. Secondly, she would like to see more ground-cover, since weeding is very time consuming for the gardeners, when they could better employ learning horticultural skills. A knowledge of living mulches, especially those with edible berries, is a prerequisite here. She mentioned *Enchylaena tomentosa*, an Australian scrub plant that scrambles through other vegetation and is growing in the old kitchen gardens among the agaves. The selective use of recycled materials including wood chip, card, straw, leaf mould and kitchen waste, will all have their applications. The cafeteria at the bottom is too small to produce anything other than snacks, it seems a pity that the catering could not be expanded to feed all the staff and students and subsidised from the wages and fees. A good example of this lies with the Centre of Alternative Technology (CAT) in Wales in which its organic restaurant does not receive enough visitors to sustain itself but forms part of the nucleus of student education who expect to be fundamentally treated well with 2 meals a day. Like everything in life, things must be achieved in increments.

The problem with the olive fly here, a factor possibly of the increased humidity near the sea, may in some respects be mitigated within the practice of mixed farming for instance. Where we are in Catalonia we don't see a sign of it; the increased dryness of the regional microclimate must also be a factor of this. But in my travels I have come to learn of some of the properties of *Argania spinosa*, a fruit very similar to olive and endemic to south Morocco. Its success is tailored towards the incorporation of goats that pass the seed through its gut and break down the very hard seed coat, affecting higher germination rates. This supports the fact that animals are an essential part of food grown for human consumption, the most obvious examples I can recall are bees in a fruit orchard and chickens used to scratch and manure the bases of trees. Despite some of their destructive capabilities, all animals must be used intelligently, and this leads to the opportunity to provide something more than a public spectacle, but a real working example of man, domesticated animals and the environment working in unison together. Permaculture embodies these attitudes as a design methodology for real sustainable landscapes and livelihoods.

Biodiversity then, goes beyond flora, and Thomas Hanbury practised this from the beginning. A steep decline is an opportunity to collect falling rain water and to run irrigation systems from the grounds natural spring. The current research laboratory in place could provide a platform for the advancement of science and its practical application in Mediterranean climates. If botanical institutes are not doing this already then one should ask whether they are upholding the principles laid out by the Rio Summit governing the further preservation of species. The CBGI guidelines forward an ethos that the preservation of seed varieties in its practical application should provide for the upkeep of natural habitats, the production of a healthy environment for the harmonious integration of man, and the feeding of the poor, since in this latter case the disparity of food distribution is reflected in the loss of

indigenous habitats that would do better to allow the continued production of endemic species more suited to local and popular knowledge. It is inestimable how far the impact, both technological and political, on the changing environment has left even wealthy nations on the brink of social and economic breakdown, with an impending energy crisis requiring greater and greater draconian measures to mitigate. Though applied science may be the new medium for environmental change its ethos must be governed by the valued use of research beyond the laboratory. So one of the important jobs here at Hanbury Gardens and other institutes, for instance the *Conservatoire National Botanique* in Hyères I visited in my journey, is to save seed, both from the gardens and the wild, in order that should they be required in the future at a time when the planet is currently undergoing one of the fastest extinction rates ever, within these plants may be the properties of future food security and curative medicines. More important though, would be to correlate this research with the actual utilisation of these plants in areas that could benefit from them the most. For instance, I would be interested to see if the indigenous production of *Argania spinosa*, the nutty oil of which is very expensive, forms a natural deterrent against say, olive fly, or even produce a more reliable crop in drier microclimates. Elena took me up to the laboratory, nestled as it is amongst the woodland flora, where she explained that the temperature of the room must be maintained around 16°C. and that the humidity of the seed is reduced to 10-12% of its original content. First though, wild seed must be quarantined for one or two months, and then after it is sealed sent away to the institute in Sanremo where a germination test is conducted. She also showed me to the rooms where seed from the gardens are collected, cleaned and packaged for distribution to other universities and institutes, catalogued in the *Index Seminum* which has about 250 varieties for offer. I will be carrying about 30 species with me to take and offer to other gardens and projects along my route to Palestine. To take an analogy, I am like a wild variety of seed not quite domesticated but who must now traverse the continent where I am needed, like messenger DNA, bringing the genome sequence of my accumulated heritage, both existential and spiritual, to those habitats that may thrive upon it.

In conclusion then, it was suggested I should talk to all the botanical institutes and promote a student exchange system. The interchange of information, knowledge and skills is just as important as that of seeds. It could become one huge experiment in which gardeners are not just cleaners, but messengers.