

Pha Tad Ke Botanic Garden Work Placement and Visit

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Report for the Merlin Trust

With funds from the Merlin Trust and the RHS Rebecca Teasedale-Spink and I were able to fly to Laos to take part in a work placement at Pha Tad Ke Botanic Garden, outside of the large town of Luang Prabang. Rebecca has completed her HNC in Horticulture and I am working towards a BSc in Horticulture with Plantsmanship at the Royal Botanic Gardens in Edinburgh, where this opportunity was proposed to me by the associate director of Horticulture, Leigh Morris.

As a first experience of applying for funding and pursuing a project such as this, it was exciting, challenging at points but overall extremely rewarding.



View across the Mekong from Pha tad Ke jetty

Pha Tad Ke Botanic Garden

After landing in Luang Prabang airport and taking a small tuk tuk through the town, agricultural areas and a small village we arrived at a lean to house on the side of the Mekong River, where chickens ran between our feet and young children looked on curiously at our large rucksacks. Already we were struck by the lush varied vegetation. Small plantations of *Tectona grandis* and *Garcinia mangostana* lined the roads. In gardens we saw many unknown fruit trees, orchids on front porches and vegetable plots filled with long beans and greens.



Communal stilt house where we lived

We were met by Mr B one of the botanists from Pha Tad Ke. He led us onto a small dugout canoe and we crossed the dark brown swirling Mekong to the Garden. This unusual entrance to the garden

reflects its remoteness, tranquillity and harmony with the Lao forest.

The garden was the vision of Rik Gadella, an ex-art dealer and gallery owner from Paris. It covers roughly an area of 14 hectares and encompasses different themed areas. These areas include:

An Arboretum

Palm garden

Bamboo garden

Ethno botanical areas

Children's education garden

Butterfly garden.

Kuang Si Falls Butterfly Park.

Kuang Si Butterfly Park is located 30km out of Luang Prabang. The Park consists of a variety of different areas, the main focus being a 900m² netted area. The Park is located 300m below the Kuang Si Waterfalls, a main visitor attraction in the Luang Prabang area.

The focus of the flora within the park is for pollinators and so there is a large amount of reliable flowering plants such as *Ixora coccinea*, *Tagetes* varieties, *Gomphrena globosa*, *Lantana carnosa* and *impatiens*. There is also a large focus on design within the garden, involving architectural plants. The Park has a small pond and a café. The location also benefits from a series of limestone waterfalls and mature natural forest. This has allowed the owners Olaf and Inneke to collect plant specimens such as *Tacca chanteri* from the surrounding area. It has also meant that some mature trees have been left in the park area, connecting the park to its surrounding vegetation. This includes large specimens of *Tectona grandis* and *Tamarindus indica*.



Butterfly house at Kuang si Waterfall park

The park has been open for under a year however in that time it has become a key visitor attraction. The focus, like many places in the area has been on creating ecologically minded tourist attractions, drawing attention to the variety and diversity of flora and fauna in the area.

Queen Sirikit Botanic Garden.

Queen Sirikit Botanic Garden is a government owned botanic garden outside of the Thai city of Chiang Mai. The garden is the only one of international botanic garden standards in Thailand and is one of the major gardens in South East Asia. The garden covers 1000 Hectares, with landscaped areas of around 50 Hectares.



Glasshouse complex at Queen Sirikit Botanic Garden

The main glasshouse range is reached

through either walking or driving through the forested areas of the garden. Uniquely for the area the garden contains a herbarium housing around 50000 specimens. The garden also has the facilities for micro propagation and tissue culture. The garden has been open since 1993.

The main focus of the garden is on Thai flora and so the large area has been used for arboretum, palms and climber trails. The glasshouse complex has houses focussing on a wide variety of plants. The garden has particularly special collections of native gymnosperms, *Musaceae*, ferns, orchids, bromeliads and bamboo.

Itinerary/areas covered

The main focus of our project was to be involved in the horticultural work of Pha Tad ke Botanic garden in Laos. Primarily looking at how the garden has developed with the aim of becoming a centre for botanical study and a tourist attraction. We wanted to see first-hand how a new botanic garden operates, what the day to day work there was and how it is progressing towards opening to the public. We were mainly involved in the practical work in the nursery. This allowed us to work with common and rare tropical plant species, see the similarities and differences between our horticultural training and the techniques used in Laos and pass on some of our botanical knowledge to the staff. We also wanted to understand and learn about the different projects that the



Veo, head of the nursery working on Salvia cuttings

garden is working on, these included, schools projects, a butterfly garden, a medicinal garden and creating herbarium specimens of the flora of Laos.

We were able to put more of our knowledge in to application at Kuang si Butterfly park, where we photographed and identified the major plant species within the park. This will be used by the owners to label their plants to inform visitors of the plants most attractive to pollinators. We also worked on taking cuttings and planting in the garden. Whilst we were there we were also able to talk to the owners about the establishment, design and future prospects for the garden.

Our visits to Queen Sirikit Botanic Garden and Phuping Garden provided contrast and context for what we had observed at Pha tad Ke. We drew many comparisons between the gardens, looking at what their aims and methods were, and how long established gardens operated in contrast to a newly established one. Seeing that the aims of both QSBG and Phuping were very similar to those at Pha Tad Ke was also very interesting. We were able to recognise the common aims behind botanic gardens, for conservation and education.

Details of the work programme.

Our Work programme at Pha Tad Ke was one which we had to proactively design. Initially we joined the nursery staff and worked on a wide range of tasks such as:

Compost mixing
Potting up
Taking cuttings
moving plants in the nursery

These were all really engaging tasks and allowed us to get to know the nursery staff, work with a range of plants we have never worked with before, and see the improvisations in tools and techniques which they have made.

We were also given time to walk around the gardens and talk to members of staff about their work. The language difference proved very difficult at first but a common understanding of plants and work being done allowed us to pick up on people's feelings about their work and general attitude about the project. We also taught a few of the more interested nursery staff some of the botanical names of common plants around the garden. This was really rewarding as it allowed us to pass on some of our knowledge.



Nursery area with Pinus Kesia under polythene

Diary Excerpt 20th July

Potting up impatiens, moss/peat mix

Moss is rehydrated from a dried state with hot water, which they boil in a kettle at the nursery.

Potting up of *Globba sinensis* and *Curcuma parviflora*

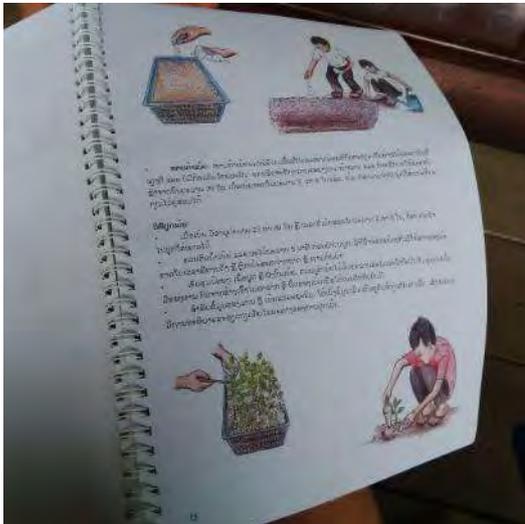
Looked through the seed collection, some collected from PTK. Many planting trials had been unsuccessful due to lack of peat/ fine growing medium.

What could be an alternative?

Rik showed us the manual for schools, it included 10 plants they could grow, beneficial and non-beneficial insects. Games for them to play and tools to make from bamboo.



Globba sinensis



Booklet for schools

He plans to distribute them to schools via NGO's and teacher training courses.

Taking salvia cuttings.

Discussed the environmental issues around PTK purchasing plants from Thailand.

Potting mix of sand and burned rice husks. Sydney Botanic Garden visited and conducted ph tests on different mediums they used at PTK.

In the evening we looked up plants from the day we did not know and played petanque with one of the gardener's children.

Some plants seen today:

Pachystachys lutea

Ixora coccinea

Hymenocallis littoralis

Acalypha wilkesiana

Acalypha hispida

Strobilanthes dyerianus

Sanchezia speciosus

Asplenium nidus

Codiaeum variegatum

Gloriosa superba

Ficus pumila

Heliconia rostrata

Syngonium podophyllum

Trapa bicornis

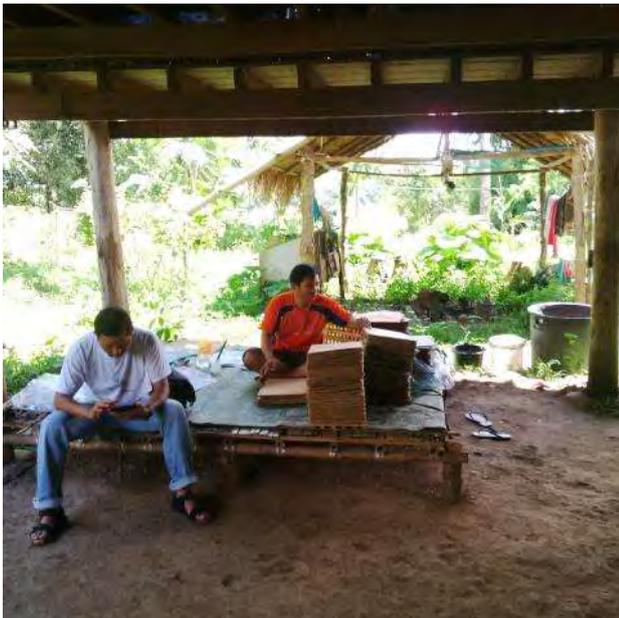
Ravenala madagascarensis

Phyllostachys sulphurea

Cuphea hyssopifolia

Problems encountered

The main problem encountered during our time at Pha Tad Ke was a seeming lack of structure to our work programme. At points it was difficult to communicate our desire to be more involved with the work and to get to see a wider variety of work other than that which was happening in the nursery. We overcame this challenge by actively seeking out people working on different areas and talking or getting involved in some way. We also taught some botanical names and created a slideshow for the nursery staff, showing images of the botanic gardens in Edinburgh and some of the similarities between our work. We found it difficult to understand why the director of the garden dissuaded us



Mr B working on herbarium specimens

from teaching Botanical names to the nursery staff, however we felt that it was a useful skill that we were happy to share.

We had arranged to climb Pha Tad Ke mountain which lies within the grounds of the garden. The mountain is home to some endemic orchid species and other interesting Laos vegetation. However on the day when we had planned to climb it there was a death in the nearby village. In Laos culture this means that the day is one of rest and so the garden staff do not work and our climb was cancelled.

Although this was disappointing, it also allowed us to see how the structure of work differs to that in the UK. The Buddhist culture influences a lot of the way of life within the garden. Deaths, Birthdays

and auspicious holidays are respected, meaning that often there will be unexpected rest days. The

staff of the garden are also extremely respectful and welcoming, this made the work environment peaceful and relaxed.

The cost of staying at Pha Tad Ke had been raised and so we ran out of money after two weeks in the garden. We had to make some changes to our schedule and arrived in Chiang Mai in Thailand earlier than predicted. This was an unfortunate turn of events, however we made the most of our time in the gardens and felt that in the time we were there we saw and achieved our main objectives. We also felt that our time in Chiang Mai visiting Queen Sirikit Botanic Garden was very productive and gave us insight and understanding of the work involved and development of a larger Garden in Asia. Visiting QSBG highlighted the difference between the pace of work in Laos and Chiang Mai, it also showed how far Pha Tad Ke will have to develop if it plans to emulate QSBG in its ambitious size and international status. I think that they both offer fairly different perspectives on similar aims. They both have the main aims of conservation and education, however QSBG has the funds and the capabilities to create a



Discussing compost in the Nursery

herbarium, a glasshouse range, education facilities and a wide diversity of garden areas. Pha Tad ke is still in the early stages of development, however it shows a different more relaxed and slow paced approach. Where there are no advanced tools or facilities and the garden feels very integrated in the surrounding forest vegetation.

Personal Analysis and outcomes.

Being able to take part in the work of a tropical/sub tropical botanic garden has been a goal of mine from a very young age. The opportunity to do achieve not only this goal but to experience the workings of a relatively new botanic garden was amazing.

The flora of Laos is not widely studied or known and although we did not get the opportunity to go on a collecting field trip, we did see plants that had been recently brought back. I was particularly impressed by the improvisation being used at the garden in order to preserve herbarium specimens. Within the nursery we worked with a wide variety of tropical plants, unfortunately there was little botanical understanding of the nomenclature of the plants and so I definitely found that my identification skills were put to the test! This was a really important lesson that I could draw from the experience. I really found that the knowledge I had gained from studying for my BSc in Horticulture with Plantsmanship at RBGE was invaluable. I created a small Ident for the nursery staff and taught the botanical names for some common plants within the garden. This was really rewarding for me and I hope that it will be of use to the nursery staff in the future.



Botanists and staff in the office. Drying tent for herbarium specimens in the foreground (left)

I felt that my aims and objectives for the journey were achieved, although I gained other more unexpected lessons from this experience. We were definitely closely involved in the work being done at Pha Tad Ke and were living closely with the staff, seeing what their daily life in the garden was like. We also spent a lot of time talking with Rik Gadella who is the director of the garden. From this close contact we were able to learn about the beginnings of the garden and his vision for the future. We were also able to see areas where the garden was struggling. For me these conversations showed the difficulties faced by someone who did not have a botanical background trying to establish a botanic garden but also the support that can be gained from the wider community of botanic gardens. It also showed the attractiveness of a new botanic garden to specialists from around the world.

My plant knowledge increased greatly through working at the garden as I was exposed to new plants on a daily basis and was able to use Rik's small library to identify them as best I could. I found that by using my understanding of plant classification and morphology I could determine most plant families and some genera, in a few cases I was also able to identify specific epithets from previous knowledge.

Conclusion

My experience at Pha Tad Ke inspired me on many different levels. I gained a huge amount of confidence in my knowledge of tropical plants as well as practical horticulture work, when faced with an unknown plant. I am really keen to return to Pha Tad Ke in the future to see how it develops but I have also been inspired to visit more botanic gardens around the world, and hopefully once I have finished my degree, become involved with their work. I think that the establishment of Botanic gardens is vital to the future of plant conservation, especially in countries like Laos where there are few programmes in place to protect the flora for the future. The overriding thought that remained with me throughout our visit and even now, is the desire to pursue my work within botanical horticulture and build a future where I can help gardens such as Pha Tad Ke and RBGE with their vital work in conservation and horticulture.



Potting up in the Nursery

Acknowledgements

The Merlin Trust

The RHS Bursary fund

Pha Tad Ke garden staff and Rik Gadella

Inneke and Olaf at Kuang si Waterfalls butterfly park.

Budget Breakdown

The total cost of the flights for the trip was £2,311.85. We received a £1,400 bursary from the RHS which contributed greatly to this cost but left £911.85 to be accounted for. The combined amount of £900 (£450 each) we received from the Merlin Trust covered the majority of the remaining amount and the outstanding amount of £11.85 was paid out of our personal finances.

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| Total for Services incl. VAT | 2,311.85 |
| Total for Services | 2,304.30 |
| Total for Services VAT - 20.00% | 7.55 |
| Amount for this Receipt | 2,311.85 |
| Payer: roseann c teasdale | |
| Paid By: Credit/Debit Card *****9672 | |
| Payment Type: Advance | |
| No Outstanding Balance | 0.00 |
| Passenger(s): MISS GALENA WOODHOUSE, MISS REBECCA TEASDALE SPINK | |