The Zibby Garnett Travelling Fellowship Report

by Andrea Walker

A work placement with the
Natural History Museum of the Lesvos Petrified Forest
in Sigri, Lesvos Island, Greece

23 September 2008 to 7 November 2008

Contents

1.0 Introduction

My name is Andrea Walker and I am a Canadian who has lived in the UK since 2003. At the time of my work placement (23 September – 7 November 2008) I was 29 years old and a student at the University of Lincoln, taking a BA Degree in Conservation and Restoration. The degree was the beginning of a change in career path for me, so it was important to me to maximize my exposure and experience in conservation during the holidays and breaks from class when I sought out a variety of conservation experience that I couldn't necessarily get in the classroom.[1]

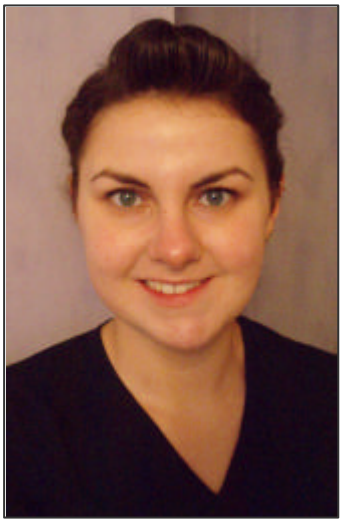

Fig.1 – The author.

As part of my course I was to undertake a work placement for credit, between my second and third year of study, to gain practical experience in the field of conservation and restoration. I chose to do 2 work placements. The first was with the Foundation of Thracian Art and Tradition, in Xanthi, Thrace, Greece, conserving wall paintings and decorative surfaces. The second was a combination of working with the Conservation Department at the Natural History Museum of the Lesvos Petrified Forest (NHM of the LPF), in Sigri, Lesvos Island, Greece, conserving silicified fossils in situ and attending a course (the 2nd International Intensive Course - Geoconservation and Geoparks: Interpretation and Communication) in Mytilene, Lesvos's capital. The Zibby Garnett Travelling Fellowship Trust awarded me a grant of £800.00 to aid in funding of the second trip, the total cost of which was £1312.92.

I heard about the Zibby Garnett Travelling Fellowship when I was in my first year of study. I already knew I wanted a placement that involved travel, so I was very pleased when I came across a brochure posted on a notice board in our building at university. Especially considering, as a mature student, I was fully funding my university education myself.

The following is my report on my experience during the time I spent on Lesvos.

1 – See Biography in Appendix I for further details on work experience.

1.1 Selecting My Placements and My Aims

When researching potential work placements I looked for something where I wouldn't strictly be doing lab work because I was very interested to see how conservation was carried out in situ. I wanted to get experience with a material that we don't have access to at university and to see how conservation worked in a different country. Also to make contacts with other conservators, institutions and groups such as UNESCO because I wanted to work as a freelance conservator doing project based work and some day work with them on their World Heritage Sites and monuments around the world. And of course, I wanted to have a bit of an adventure exploring a different country and culture.

I investigated institutions and companies in Europe and in Canada, but in the end, it was through contact with 2 previous Lincoln graduates that led to my placements.

Once I was approved for my placement with the NHM of the LPF, my goals for what I wanted to gain were more specific:

- Learn about fossils and the conservation of them from a prominent institution that is leading the way in the study and work done on palaeontological material
- Gain experience working in situ
- Become aware of new developments, focuses and trends in fossil and palaeontological conservation
- Learn about the European Geopark Network and the Global Geopark Network and what their views on conservators are
- Explore what role conservators currently play in Geoparks, geoheritage and geoculture
- See how the Head of Conservation, a graduate from the same program as I was taking, applies her knowledge and what she had achieved in her position as Head of Conservation
- Use it as a source of research for the dissertation I would write in my third year, on the topic of fossil conservation

2.0 Locating Lesvos Island and the Natural History Museum of the Lesvos Petrified Forest on a Map

Fig.2 – Location of Greece in Europe.

Fig. 3 – Location of Lesvos Island.

Fig.4 – Location of the village of Sigri, where the museum is situated, and the location of Mytilene, the island's capital.

Fig. 5 – The Natural History Museum of the Lesvos Petrified Forest.

3.0 The Petrified Forest and the Museum

The petrified forest was created 20million years ago by a series of volcanic explosions which covered the then subtropical forest with a thick layer of volcanic ash, locking out all oxygen, preventing decomposition, allowing the circulation of hydrothermal fluids rich in silica and metal ion, thus replacing the carbon molecules in the all organic material with silica molecules (silification) rendering it inorganic (fossilization or petrification).

Why are Lesvos fossils unique?

- Indigenous
- Morphological features parts trees, plus leaves, branches, fruit and root systems are perfectly preserved
- Specific stage of development of plants not found anywhere else on earth
- Vast variety of plants (45 species identified to date)
- Oldest vertebrates in Greece
- Fossilized forest ecosystem giving evidence to climate 20million years ago

The conservation of fossils has until recently been handled by palaeontologists, geologists and preperators, there has not been much in depth study or record made of the conservation of fossils and palaeontological material. It is because of this that the museum's conservation department is at the forefront of research and methods of fossil conservation, particularly in situ. To address this issue, the museum has set up an education system to teach and raise awareness of fossil conservation for people of all ages.

The museum sits on a hill in the village of Sigri on the west coast of Lesvos Island, in the Aegean Sea, close to the coast of Turkey. It acts as the interpretive centre for the Lesvos Petrified Forest Geopark and for the protected area declared a Natural Monument by Presidential Decree in 1985 (fig.5). The museum was founded in 1994 for "the study and research of the fossilized remains, their promotion, exhibition, conservation, safeguarding and any appropriate utilization of the Petrified Forest of Lesvos". Today this is represented by its 5 parks, or open-air museums. The museum also has a café and gift shop where it sells and promotes local products. It hosts cultural events in its gallery space and outdoor amphitheater. It publishes guidebooks, leaflets and magazines about the park and the island, and as mentioned above, holds

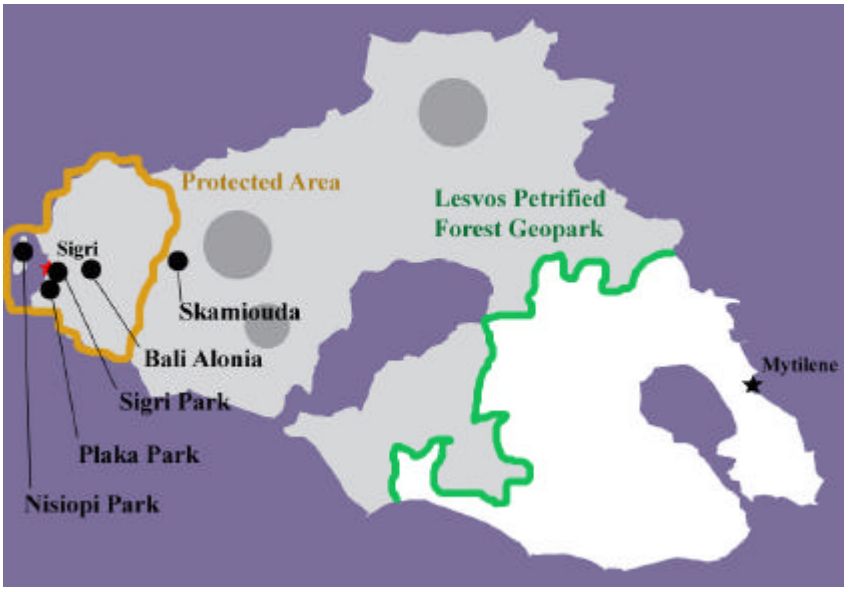

Fig.6 – The Lesvos Petrified Forest Geopark, shown in grey with a green boarder, takes up 2/3 of the island. The Protected Area, outlined in yellow, is the area identified by Presidential Decree in 1985. The NHM of the LPF's 5 parks are indicated by black dots. The dark grey circles indicate the major volcanic craters on the island, the most northerly being that of Vatoussa, the main one responsible for the many layers of petrified forests.

education sessions for school groups from all over Greece, and supports a 400hr vocational college certificate program specializing in conservation.

In regards to funding, the museum is a public-benefit legal entity covered by private law and supervised by the Ministry of Culture. It receives money from the sale of tickets and merchandise, from EU initiatives such as Leader+ and Leader II, and, depending on the research they are doing, they apply for grants for European Programmes funding.

Because of this research, they have strong ties with departments such as the departments of geography and geology at the universities of Athens, Thessaloniki and of the Aegean. They are also 1 of the 4 founding members of the European Geoparks Network (EGN) and a member of UNESCO's Global Geoparks Network (GGN).

What a Geopark is, in short, is an area with special geological and morphological heritage that is set up as a park or a territory to conserve, educate and increase popularity of earth sciences and to promote geotourism. Prof. Nickolas Zurous, the director of the museum is also the Head Partner of the EGN.

4.0 The Course: the 2nd International Intensive Course – GeoConservation and Geoparks "Interpretation and Communication"

I had timed my placement so in my first week I could attend the 2nd International Intensive Course in Mytilene. I'm really glad I did because, although it was a steep learning curve with all the information about Geoparks, the geological and geographical history of Lesvos Island and conservation with the NHS of the LPF, it provided me with an excellent foundation for the rest of my education about the museum and the fossils there.

The fact that there were only 23 of us on the course worked out well. It gave us the chance to get to know each other throughout the week of meetings, presentations, and field trips around the island. We did things that really helped me understand the concept of a Geopark and its holistic view on preserving history and the landscape and the traditional things the inhabitants of the region do in a sustainable way.

Among the people I met were the founders of the EGN, Prof. Nickolas Zurous (also the director or the NHM of the LPF and Assist. Prof of the Geography Dept at the University of the Aegean), Prof. Guy Martini (Reserve Geologique de Haute Province, France), and Dr. Mari-Louis Frey (Geopark Bergstrasse-Odenwald, Germany). Prof, Juan Poch (Parque Geológico de Sobrarbe, Spain) was in attendance and mediated a number of the discussion sessions, Giuseppe Maria Amato (Parco Culturale Rocca di Cerere, Sicily, Italy), a botanist and a geologist from Italy who were making a bid for their park to become a Geopark, and Heidi Bailey (Florissant Fossil Beds National Monument, Colorado, USA) who returned to America and became part of an organized bid to open the first Geopark in America.

Most of the staff of the Mytilene office of the LPF such as geologists Ilias Valiakos – Head of Research, Study and Validation – and Dimitra Matzouka, palaontologist and geologist, Dr. Katerina Vasileiadou, and education team members were there, but it was nice that other students were also attending (Ewa Welc and Katarzyna Kozina – PhD students in geomorphology from Poland – and Erdal Gumus – geography student from Turkey).

5.0 Conservation Team: Who I worked with

The team is made up of 10 individuals, each working on rotating 8-month contracts. Most days, I worked with Evangelia Kyriazi, the Head of Conservation. Evangelia graduated from the University of Lincoln's BA Conservation and Restoration Degree Program in 2003. She did work placements with the Benaki Museum and with the Byzantine and Christian Museums in Athens, and later an internship in with the Museo Egizio in Turin, Italy, for which she too received a funding from the Zibby Garnett Travelling Fellowship. Her experience in education was gained through her role as an English teacher in Mytilene, so she works closely with the education department at the museum to create and run courses for school groups from all over Greece, as well as a 400hr Vocational Training Course in fossil conservation for adults seeking new skills to enter the work force.

Fig.7 – Evangelia Kyriazi and Anna Nerantzou.

I also worked with Anna Nerantzou, a conservation assistant. At that point, Anna had worked at the museum for 7 years and had initially been educated in fossil conservation through the 400hr vocational training course.

The rest of the conservation team was spread throughout the other museum parks, so I did not have contact with any of them.

6.0 Conservation Treatments: What makes in situ fossil conservation different?

As previously mentioned, the conservation department works primarily in situ on petrified plant fossils. These are trunks, roots and branches, standing or lying in dirt and pyroclastic material, as well as trace fossils. The sites around the fossils are also conserved as they are integral to the history of each fossil or group of fossils that are located in it. The forest as a whole is viewed as the object rather than individual items.

When treating a fossil, they follow the same basic steps as I had been taught at university – mechanical cleaning, chemical cleaning, bonding, filling, consolidating – the difference is that the majority of their collection is outside in a setting more like an archaeological dig, so they also have the steps of excavation, support and base building and water-repelling.

Working in situ brings with it a set of variables that are completely out of your control: wind, temperature and humidity fluctuation, erosion, rain, sea spray, sand, living vegetation, wildlife, and insect infestations just to name a few. And the materials used react, age and breakdown differently than they would in a lab setting.

Fig.8 – Evangelia Kyriazi installing sheets on site to give us shelter from the wind.

On particularly windy days, when bonding or dealing with adhesives, we had to build shelters and to take care when mixing on site not to lose material. Paraloid B67 was used instead of B72 because its glass temperature is high enough to deal with Lesvos's summer temperatures. When something stronger is needed they use Araldite Rapide, a two-part epoxy that would be impossible to use outdoors if they didn't order it in syringe form. And because of the sheer size and weight of some fossils they have to use cement as it is the only material they have found to-date that is strong enough and can withstand the weather. Evangelia developed a method of first applying a layer of Paraloid B67 to each piece prior to adhering with the cement that allowed the treatment to be reversible.

When consolidating, Paraloid B48-N was used in varying solutions with acetone. Paraloid B48-N is commonly used to treat outdoor metal sculptures. Evangelia explained her rationale was that it would work well with their fossils due to the untreated metals inherent in their composition.

For water-repelling, a combination of a product I had not heard of before called Rhodorsil RC70 and RC90 was used. These are ethyl silicates typically used in stone and building conservation.[2]

All of the above mentioned treatments are recorded in detail on daily record sheets for each object, in a daily summary per object per team, in a weekly record sheet describing what each conservator did personally, and by photography (including scales and compases) before, during and after each step, including a record of each photograph on a photographic record sheet. This information helps the head conservator to track progress of the projects at hand, to track inventory of materials and to build each object's report and record card, and the monthly conservation report of the work done by the department.

Any excavation work is normally done by the works department, but the final revealing and cleaning of the fossils is done by conservators, because they are trained to quickly address situations that may arise when the fossils are exposed.

When not on site, the team works in the lab on leaf or fruit fossils, such as pinecone baring rocks, removing the excess pyroclastic matrix by mechanical means with bushes, scalpels, hammers and chisels, then consolidating them.

7.0 Conservation Projects: What I worked on

I spent the 6 weeks after the Geocourse working with the Conservation team in the parks and labs of the museum. In total I worked on 6 fossil sites within 2 of the parks and on 1 leaf bearing rock in the lab, revealing leaves from their excess pyroclastic matrix.

7.1 In the Parks

Each of the sites I worked on had different conservation challenges. The 5 in Plaka Park had previously been conserved and were in bad condition due to the parks location next to the sea, so the wind and weather erosion were the worst in those areas. I dealt with a variety of petrifaction - textures, densities, porosities – lichen and moss growth and collapsing root systems.

2 – See Appendix II for a further list of the conservation treatments used while on placement.

The first tree I worked on required a lot of consolidating, bonding and crack and hole filling.

When filling cracks and holes, a mixture of Paraloid B67 40% w/w in acetone with silica sand, pigment (depending on the colour of the fossil) was used. If the fossil was a softer or less hard one, fumed silica was added to the mix. I used a number of mixtures in varying quantities, applying each with metal spatulas.

Fig.9 – Removal of lichen and biological growth with hydrogen peroxide 50%.

Another tree, published and celebrated as the only pink tree in that park, was pink due partly to the colour of the silica deposits its exterior, but mainly to the lichen that was growing on it. The lichen was affecting the exterior of the fossil, causing spalling, so the lichen needed to be removed with hydrogen peroxide 50% (fig.9). When filling holes and cracks we mixed a selection of pigments to create a pink colour, to be sure to put back some of the colour we had removed by having removed the lichen.

On the site I worked in on the west side of Plaka Park, the fossils were in the worst condition due to their proximity to the water and being so exposed to the elements. Root systems were breaking apart due to the erosion of the pyroclastic material that supported them, allowing dirt, clay and contemporary vegetation to grown in all the cracks. Roots had broken into many pieces so they were removed, cleaned, consolidated, bonded, and bonded in place in situ. Cracks and holes were filled. Supports and bases were built to replace the missing pyroclastic material, and a layer of consolidant and water repellent was applied to protect them.

The site at Sigri Park was a freshly revealed extension to an existing root system that had previously been conserved. It required immediate attention because, just

as with archaeological digs, newly revealed items begin to react with the new environment quite quickly, sometimes in a very negative way.

I was told on many occasions that I was lucky that the weather was so good until so late in the year. It was windy, however, normally by October and November it is cold and raining, and the conservation team moves indoors to the labs in the museum, or work on projects on the museum grounds.

7.2 In the Lab

Fig. 10 – Exposed leaves, before chemical cleaning and consolidation.

A really exciting project I worked on was the revealing of leaves from their pyroclastic matrix in the lab. The challenges involved with it are that there are an unknown number of leaf fossils inside, it is very easy to damage them and at that time, they were looking to collect examples to use in a future exhibition. The treatment entailed cleaning the rock, then, with a hammer and chisel, chipping away the rock covering the leaves, chemical cleaning with industrial methylated spirit 40% in deionised water and consolidating with Primal AC532K 5% v/v in deionised water.

7.3 Other Experience

In addition to work on fossils I learned about the environmental monitoring of the museum, when I changed and regenerated silica beads in the museum display cases. I began an inventory of the conservation lab's materials and chemicals and assisted Evangelia in putting together an order for the supply company. Through that I learned about the back and forth that goes on between the conservation department, the supply company and the museum's financial department in order to get an order approved. For a couple of days I worked with Evangelia in the lab as she carried out a variety of lab tech duties and made weight for weight

solutions of adhesives and consolidants for the teams in all the parks. I made headway in getting over my secret fear of colour mixing when we spent a day trying to come up with a mix of pigments that mimicked the colour of an original pigment that we had run out of on site and would not be receiving in an order for another few weeks. And I also learned about the previous conservation techniques used on the fossils in the parks, how they've reacted over time, why they've changed and how they are affecting current conservation decisions.

8.0 Village Life

I grew up in a city of 1million people so the smallest place I had ever lived in was Lincoln in England until I came to Sigri. You have to get used to relinquishing your anonymity when it is just you and 200 other people. Everyone knows you, remembers you (mainly because you are the only English speaking person there), knows what you are up to and, if you're there for long enough, may include you as a character in part of the "rumour mill".

Fig.11 – Sigri, as seen from Plaka Park.

Fig.12 – The village's "mobile boutique".

Sigri village is on the western most tip of Lesvos, 92km or a 2hour drive from Mytilene, the island's capital. The next closest village is over the hills 30km away. The village itself has 2 minimarkets, 1 post office, but no other shops or banks. Clothes are bought in the bigger villages or towns on the island if you can get to them, (there are only 2 buses in/out of the village a week,

leaving/returning on a Monday and a Thursday.) or from the gypsy who sells out of the back of his van. The same goes for fresh meats, fruit and vegetables. The people of the village tend to grow their own vegetables in their gardens or, I was told, have a friend, brother, father or uncle who is a fisherman or sheepherder, so don't have the need for the conveniences of city life.

Fig.13 – Cooking in my make-shift kitchen.

My accommodation was clean and comfortable and was located on the museum grounds. There weren't any laundry facilities, so I did my washing by hand. There weren't any kitchen facilities, but the museum allows their students to keep food in their café's fridges. Partly out of preference to cook my own food and partly out of a need to save money, I invested in a single burner camping stove, a pot and a minimal amount of other equipment. Having done a lot of hiking and camping growing up, I didn't have much trouble coming up with a variety of quick and easy solutions for meals everyday, but there are a number of tavernas and cafes in the village, so it wasn't always necessary.

9.0 The Island of Lesvos

The result of volcanic activity from 20million years ago is evident all over the island. The west is barren and rocky with low growing, hearty shrubs. The middle is a mix of barren slopes, olive groves and some pines forests on hills, mountains and valleys. The east is mainly olive groves, chestnut and pine forests. There are two large gulfs, one of which has an enormous salt production plain. There are also wildlife reserves and walking trails all over the island, so it is growing in popularity with bird watchers from all over Europe.

From what I learned from speaking with people on Lesvos, traditional industries of the island such as chestnut harvesting, leather tanning, the production of

cheeses, yogurt and olive oil are on the decline. Mainly because it's not as profitable to work in these areas as it once was, but also because young people from recent generations have moved away from the island. 30years ago the population was 140,000, today it's roughly 80,000. The sheep population is 140,000.

The Lesvos Petrified Forest Geopark is addressing this issue by celebrating the island and its traditions by raising awareness of the work being done by various village cooperatives and local businesses in its publications, conferences, Agrotourism Festival and by selling and serving local products in the museum's store and café. They want to encourage them to continue their work and to get young people from the villages involved as well.

At the time of year that I was on Lesvos, there are very few tourists, so many shops, cafes, tavernas and local attractions had limited hours of operation or were closed until the follow spring.

9.1 Travelling the Island

The second week I was there my work schedule changed because Evangelia, the head conservator and my supervisor, was accepted to begin her MSc at the University of the Aegean in Mytilene, so from then on I worked Saturday to Wednesday and had Thursdays and Fridays off. This was perfect for me because it coincided with 1 of the only 2 buses out of the village a week, allowing me access to the other inter village/town buses and to visit the rest of the island.

My weekly routine developed so that every Thursday I caught the bus out of Sigri at 6.15am to either Kalloni or Mytilene where I could then catch another bus to other areas of the island. I found accommodation for Thursday night and had Friday to continue exploring. Evangelia had kindly offered up the spare room in her house in Mytilene for me to stay in on Friday nights, so every Saturday morning we drove back to Sigri together in time to go to work.[3]
The villages and sites I visited included:

3 – See Appendix III for an itinerary of all travel and daily events.

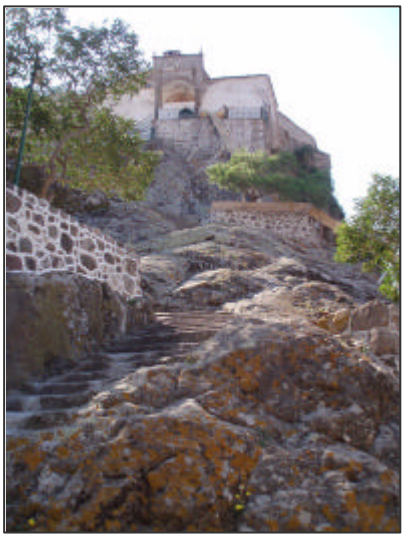

Fig.14 – Steps up to the church of Panagia Glycofilousa, Petra.

The church of Panagia Glycofilousa perched atop a volcanic neck in Petra (fig.13), built in the 17th century, the village's neoclassical architecture and it's famous mansion of Vareltzithenais, built in the late 19th century, now restored and open to the public.

I walked from Petra to the little hill village of Petri through varied terrain of rocks, forests and olive groves to Molyvos to visit the castle there.

Fig.15 – Crane in Vryssa's natural history collection.

The Natural History Museum of Vryssa houses a small roughly kept collection of natural history specimens and geological pieces. I particularly enjoyed the conservation efforts taken to restore a large crane they had on display (fig.14).

In Vatera I experienced the true meaning of "low-season" in regards to travel. I had the entire 6km beach to myself. Around Vatera there are ruins of a Temple dedicated to Dionysus and a small church on Cape Fokas, and lots of sheepherders and fishermen.

When I had time in Mytilene, I explored the old town, residential areas, the castle, churches and market streets.

Agiassos was a beautiful, colourful little village nestled in the hills, where I visited two churches – one

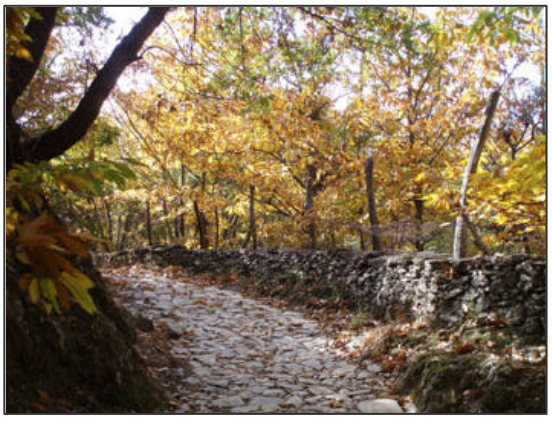

Fig.16 – Chestnut forest turning colour along trekking path up Mt.Olympos.

of which had an *amazing* wood carved screen (photos not allowed) – before I began my ascent of Lesvos's Mt. Olympos and had a picnic lunch in the autumn sun at a spot overlooking Agiassos below.

Fig.17 – A demonstration by the potter at this wheel.

The monastery of Taxiarches and the icon of the Archangel Michael is the big attraction in Taxiarches-Mandamatos, as well as the village's production of ceramics and yogurt. This is where I spent an hour in a pottery with a local potter – whose family had been making ceramics for generations in the same house – showed me how he turned his pots (fig.16) and around his studio. All in Greek, but we managed to communicate with the few words both of us knew.

One of my last trips was to Plomari, known for it's production of ouzo.

But I also made a point of walking the area around Sigri (fig.17) where I walked for hours and didn't see another soul.

Fig.18 – View from trekking trail between Sigri and Eressos.

10.0 An Evaluation

10.1 What I Achieved

Soon after my return to England, someone asked me if in going to Lesvos, I was taking a bit of a risk being "in the middle of nowhere," working on a material I had never even touched before, in a completely different country. I didn't think so at the time, but I guess it was in a way. Without risk there is no growth and I believe strongly in seeking out new experiences to challenge myself. I feel I gained a lot from both my placements, but much more from the one with the NHM of the LPF. Having met all my goals I began to set some new ones through the development of my dissertation topic, to further research conservation that is being done in Geoparks and what their views on conservation are.

10.2 If I would recommend it

I definitely recommend doing a work placement with the NHM of the LPF. I really enjoyed the work that I did there and I know I learned things there that I could not have learned anywhere else. The type of person it would suit is someone who:

- Can handle working in situ – sun, wind, insects, wildlife
- Doesn't mind physical work – carrying supplies out to site, crawling, kneeling, lying in the dirt, whatever it takes to get close to your fossil
- Is an independent worker
- Is looking to apply their knowledge in a new way
- Is interesting in something a little different

Speaking another language can help but is not necessary, but learning the basic please, thank you, numbers and questions in Greek can be fun and locals are always pleased when you show you are making an effort. The village of Sigri is fairly remote and I found it difficult relinquishing my anonymity, however, the people there are lovely and do make you feel welcome. Travel on Lesvos is not easy, but it is worth making the effort and, as with many things, the best way to get around and to learn things is to talk to people. Whether or not they speak English you will still be able to communicate.

11.0 Appendices

11.1 Appendix I – Biography of Andrea Walker

To help put some of the comments in this report into context, the following is a bit about my background.

As stated in the Introduction, at the time of my work placement, I was 29-years-old and had been living in England since 2003 and conservation was a change in career for me. I had previously studied and worked as a freelance designer (graphic and event) and an event coordinator, primarily for corporate companies in Vancouver, Canada and in London, England.

My interest in history and science, along with my need to work with my hands rather than on the computer, are a large part of what lead me to making a change to conservation and restoration. My conservation experience, prior to the 2 work placements was mainly, but not limited to, what I had done at university. During the previous summer I had volunteered for 5 weeks with an archaeological company in London (AOC Archaeology Group) doing finds and environmental processing, using a flotation tank system to extract items from site samples, cleaning, labelling and bagging finds to be sent to appropriate museums, entering finds records into a database. I also volunteered for 4 weeks with the Lincoln Cathedral in Lincoln doing the cleaning, repairing and consolidating of the limestone exterior of cathedral, re-pointing, cleaning with brushes and the JOS cleaning system, in all weather conditions atop multilevel scaffolding.

I grew up in Vancouver and Calgary, Canada with a very active lifestyle of hiking, biking, walking and other sports. I enjoy experiencing and living in different places, so travel has been an important part of life. Ideally, I am looking to combine those 2 things (an active lifestyle and travel) with conservation and restoration, and do on site and in situ project work in different countries as part of my career.

11.2 Appendix II – List of Conservation Treatments used while on Placement

Mechanical Cleaning – of fossils and sites, using scalpels, brushes, "pears" (miniature bellows), toothbrushes, hand brooms, full sized brooms, trowels, spikes, buckets

Wet and Chemical Cleaning – using tap water, deionised water, organic solvents, 50% solution of hydrogen peroxide, applied by brush, toothbrush and/or syringe. Sepiolite, diaminoethanetetraacetic acid (EDTA) and Mora paste are also used.

Bonding – Paraloid B67 20-60% w/w in acetone applied with a cocktail stick

Filling – to fill cracks, cavities and holes, a filling material was made from a mix of Paraloid B67 40% w/w in acetone, silica sand, pigments and fumed silica (proportions and ingredients dependent on porosity, strength and colour of the fossil) applied with metal spatulas

Support and Base building – either with filling material or with cement layered with pyroclastic rock to help support overhanging or leaning fossils

Consolidation and water-repelling – Paraloid B48-N 4% or 2% w/w in acetone applied by injection using a needle and syringe, or by syringe and toothbrush to agitate – this solution cleaned and consolidated at the same time, so was used when the fossil was too fragile for normal chemical cleaning to take place. To help strengthen the fossil and make it more resilient to the environment post-treatment, Rhodorsil RC 70, an ethyl silicate, and Rhodorsil RC90 a silicic acid ester were applied.

For a list of further list of treatments used by the conservation team at the NHM of the LPF, refer to Evangelia Kyriazi's paper *Conserving the Lesvos Petrified Forest,* presented at the 22nd biennial IIC Congress, London, 15-19 September 2008.

11.3 Appendix III – Itinerary

Date	Event
22 Sept	**Travel:** London > Thessaloniki > Lesvos
23 – 28 Sept	**Course:** 2nd International Intensive Course – GeoConservation and Geoparks "Interpretation and Communication" Sites: Drove from Mytilene > Limnos Monastery > lava "Candles" > columnar lavas > Vatoussa crater > Chythera > Digital museum > winery > Sigri > Mytilene. Drove from Mytilene > Limnos Monastery > Sigri. Tour of Bali Alonia Park. The Archaeological Museum of Mytilene. Press launch of new educational tools. Pitch of new ideas for tourist baskets for Geoparks.
29 Sept	**Travel:** Mytilene > Sigri (bus) Induction with Evangelia Kyriazi to the Conservation Department of the Natural History Museum of the Lesvos Petrified Forest
30 Sept – 4 Oct	**Conservation work** Plaka Park: site = aPPL 022 and in lab = fAB 087 - Drove to Mytilene with Evangelia to see theatre performance that night. - went to cafes, walked village, took photos, went swimming.
5 Oct	**Day off – stay in Sigri:** Walked village, took photos, went swimming, read LPF bookes
6 – 8 Oct	**Conservation work:** Plaka Park: site = aPPL 026, Sigri Park: PSI 005 - went to cafes, sorted photos
9 – 10 Oct	**Days off - Travel:** Sigri > Kalloni > Petra (bus), stay overnight in Petra. Sites: The church of Panagia Glycofilousa, mansion of Vareltzithenais Petra > Petri > Molyvos (walk) Sites: Molyvos Castle, beaches Molyvos > Mytilene (bus)
11 – 15 Oct	**Conservation work** Plaka Park: site = aPPL 022, dPPL 001, and in the lab = lab tech duties - went to cafes, sorted photos - drove to Eressos & Andissa with Evangelia
16 – 17 Oct	**Days off - Travel:** Sigri > Mytilene > Vryssa (bus), Vryssa > Vatera (walk), stay overnight in Vatera. Sites: Natural History Museum of Vryssa, in Vatera longest beach on Lesvos Vatera > Mytilene (bus)
18 – 23 Oct	**Conservation work** Plaka Park: aPPL 022, aPPL 025 *21 Oct – full day in the museum because Anna was off sick and Evangelia was out of town*
24 – 25 Oct	**Days off** – stay in and around Sigri Sites: walked towards Eressos, around village, took photos. Began finalizing written assignments require for university and for the museum.
26 – 27 Oct	**Conservation work** Plaka Park: aPPL 018
28 Oct	**National Holiday (Oxi Day) = Day off**

29 Oct	**Conservation work** Plaka Park: dPPL 001
30 – 31 Oct	**Days off - Travel:** Sigri > Mytilene > Agiassos > Mytilene (bus), stay overnight in Mytilene Mytilene > TaxiarchesMandomatos > Mytilene (bus)
1 – 5 Nov	**Conservation work** Plaka Park: aPPL 022, aPPL 025, dPPL 001
6 – 8 Nov	**Days off - Travel:** Sigri > Mytilene (bus), stay in Mytilene, Mytilene > Plomari > Mytilene (bus) Sites: ouzories
9 Nov	**Travel:** Lesvos – Athens – London

Fig.19 – (same as Fig.4) Location of the village of Sigri on Lesvos Island, where the museum is situated. Note towns and villages marked are the ones I visited.

12.0 List of Figures, Illustrations and their Sources.

Title Page – The author applying Rhodorsil RC90 to the pink tree described in Section 7.1. – By the author.

Fig.1 – The author. – By the author.

Fig.2 – Location of Greece in Europe. – Downloaded from www.enchantedlearning.com/geography/europe/ and retouched by author.

Fig.3 – Location of Lesvos Island in Greece. – Downloaded from www.enchantedlearning.com/geography/europe/ and retouched by author.

Fig.4 – Location of the village of Sigri on Lesvos Island, where the museum is situated. – Created by author.

Fig.5 – The Natural History Museum of the Lesvos Petrified Forest. – By the author.

Fig.6 – The Lesvos Petrified Forest Geopark, shown in grey with a green boarder, takes up 2/3 of the island. The Protected Area, outlined in yellow, is the area identified by Presidential Decree in 1985. The NHM of the LPF's 5 parks are indicated by black dots. The dark grey circles indicate the major volcanic craters on the island, the most northerly being that of Vatoussa, the main one responsible for the many layers of petrified forests. – Created by the author.

Fig.7 – Evangelia Kyriazi and Anna Nerantzou. – By the author.

Fig. 8 – Evangelia Kyriazi installing sheets on site to give us shelter from the wind. – By the author.

Fig.9 – Removal of lichen and biological growth with hydrogen peroxide 50%. – By Evangelia Kyriazi.

Fig.10 – Exposed leaves, before chemical cleaning and consolidation. – By the author.

Fig.11 – Sigri, as see from the museum's Plaka Park. – By the author.

Fig.12 – The village's "mobile boutique". – By Evangelia Kyriazi.

Fig.13 – Cooking in my make-shift kitchen. – By the author.

Fig.14 – Steps up to the church of Panagia Glycofilousa, Petra. – By the author.

Fig.15 – Crane in Vryssa's natural history collection. – By the author.

Fig.16 – Chestnut forest turning colour along trekking path up Mt. Olympos. – By the author.

Fig.17 – A demonstration by the potter at this wheel. – By the author.

Fig.17 – View from trekking trail between Sigri and Eressos. – By the author.

Fig.19 – (same as Fig.4) Location of the village of Sigri on Lesvos Island, where the museum is situated. Note towns and villages marked are the ones I visited. – Created by the author.

13.0 Bibliography

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