

The Rufford Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Milay Cabarroi Hernández
Project title	Conservation status of Cuban Fungi: Diversity and distribution of <i>Ganodermataceae</i> (Basidiomycota)
RSG reference	14695
Reporting period	Mars 2014-February 2015
Amount of grant	£6000
Your email address	cabarroi80@gmail.com
Date of this report	February, 9 th 2015

1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
To collect and preserve fungi species		X		We made field and herbarium studies of <i>Ganodermataceae</i> from Cuba Western (Pinar del Rio, Matanzas, Mayabeque and Havana) and we collected and increased the fungal collections with <i>Ganodermataceae</i> and other fungi. But we expected to carry out six expeditions in the year but two field trips are not achieved cause bad weather and some problems with the enter permission.
To make a correct identification fungi and plants species		X		We identified nine <i>Ganodermas</i> species of which two are new from Cuba and Caribbean but we collected two more species not identified because we have some problems with current literature. We are working with other colleagues from Belgium to get good results. Some plants were died, some tree stump, not good to identify.
To take photographs to fungi and plants species			X	We took good pictures from field and herbarium specimens.
To study the relationships of fungi and their hosts		X		We found some interesting relationships between fungi and plants like <i>Ganoderma zonatum</i> and palm species but some plants were not identified because they died.
To make a database			X	We made a database with information about the habitat, distribution and ecology of several species including photographs. We can't include threat criteria according to UICN because we found there is no information about species distribution from the eastern areas of the country, for instance.
Publication of three scientific papers and a pocket identification guide of fungi		X		We made two scientific papers that will be published in National Botanical Garden Journal this year and a pocket identification guide of fungi, the first in Cuba. The presentation of this guide will be in March

<i>(Ganodermataceae).</i>				2015. We are working on Viñales Guide. We published the first little colour book about fungi in my country. The scientific information was presented in scientific events (Latin American Congress of Mycology, Colombia and Mycological Meeting, Cuba)
Environmental education program			X	We made lectures and expositions; we worked with rural communities, including field activity with children and their parents, explanation and pictures, colour and design activities. We created The Mycological Section within the SOCUBOT (Cuban Botanical Society) for the first time since 20 years.

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

During the project we had a little problem with two optical microscopes; they broke and we fixed them with contingency money. The optical microscopic is essential to fungi work. We couldn't explore two areas because we had problems with obtaining permission and there was bad weather; we decided change our field plan and extended our stay in the other area explored. We had some problems with the design and species of fungi included in our Viñales Guide and this event took more time than the proposal but we decided to postpone the date of publication to second quarter of this year. We had some problems with current literature but we asked for help from some colleagues from other countries.

3. Briefly describe the three most important outcomes of your project.

The first most important outcome is the field guide for identification of some Cuban species of Fungi. We made a guide book of National Botanical Garden Fungi, **the first fungi guide published in Cuba**. The presentation will be in March 2015. This book will be useful to develop conservation actions and will provide valuable environmental education material. At the same time we continued working in the field guide from Viñales National Park. All books published have the foundation logo.

Our second outcome: Environmental education with young people. We celebrated many activities with children between ages of 5 and 14 in Havana communities like the science festival in Havana (May 31st). The second festival was on February 7th 2015 with university students. We decided to make some special literature for children because the fungi world is very complicated for them. We printed 200 little books with pictures of fungi to colour and they were distributed free among the children. The English book name was *Fungi a Different World*, and it is **the first colour book about fungi in Cuba**. The distribution was in some communities activities, for instance, on June 1st (children's day), on July 5th (environmental

day) and on August 10th (in summer activity). The participation of university students was very important in all celebrations.

Our third most important outcome: How the information obtained thanks this project was presented in national and international scientific events. We called a meeting of the different mycologists of Cuba because we needed to know what kind of work about fungi is doing in Cuba. The majority of work was about pathogenic species in Cuba and their effects in agriculture and the human health. Only two presentations were about fungi conservation because there are many problems, in part, in applying IUCN conservation criteria, and the poor knowledge on the diversity and distribution of some groups. We created The Mycological Section within the SOCUBOT (Cuban Botanical Society). We don't have a National Mycological Society so this is the first step to make something like this. The Cuban Mycologists wish to make own association in the future, separate from the Botanical Society, but this second step needs time and government permission. During this time we created the slogan: *Fungi a Different World* and we made our logotype graphic design that will be accompany our Mycologist Section.

4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

We visited some communities in Havana and we appreciated the low knowledge about fungi; even some of them didn't know that fungi are neither plant nor animal. We organised some workshops where we showed some pictures and a short film about the five kingdoms. We spoke with these people and they understood everything. We made two scientific festivals where we included field activity with children and parents, explanation and pictures, colour and design activities.

5. Are there any plans to continue this work?

We did our goals and we have many ideas because we want that Cuban people know about fungi. We saw there is no information of fungi from the majority areas of Eastern Cuba, for instance, and this is one of reason the species can't be evaluated. We want to extend this work to Eastern Cuba; this area of Cuba is less accessible and more remote with different communities and many unexplored areas with rich and especial vegetation. We need more information on the subject and show the importance of these organisms, if people don't know about fungi they won't be able to conserve.

6. How do you plan to share the results of your work with others?

The results were and will be presented in scientific events and as part of the subject "Fungi" of the career Biology at University of Havana. Moreover, this project will be able to provide a long-lasting benefit to the Cuban population (through lectures, expositions) which has a poor knowledge about fungi. The publication of papers, field guide, manuals and special children literature are another important way.

7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?

On March 2014, I began my Project thanks to Rufford Foundation, who help me to achieve the proposed goals. We finished obtaining our results on February 2015, but we will publish the second guide in the second quarter of this year. Sometimes we proposed a specific time but when the work beginning some unforeseen difficulties can arose during the project.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.

Local exchange rate used: 1£ = 1.5238 CUC

Item*	Budgeted Amount	Actual Amount	Difference	Comments
Laptop computer	600	550	50	
Printer and Photocopier	350	304	46	
Office materials	250	310	-60	We used money from difference of other items because we need to offer some office materials (colour, pencils, eraser, colour papers, watercolour) to festivals and children activities.
Digital Camera	499	467	32	
Guide publishing (500 copies)	1750	1750		Included design work
Travel	350	350		
Diesel	450	310	140	Two field trips are not achieved cause bad weather and some problems with the enter permission.
Food	350	350		
Sleeping Pad (2)	26	26		
Backpacks (2)	134	130	4	
Head torch (2)	25	22	3	
Soil Knife (2)	35	35		
Pruning shears (2)	25	20	5	
Fine pointed tweezers (2)	15	14	1	
Magnifying glass(2)	25	20	5	
Electric drier	300	300		

Projector (datashow)	300	300		
Educational material: Printing posters, shorts items, pictures	300	550	-250	We used money from difference of other items because we made a little colour book
Contingences	100	100		Two optical microscopic brokered and fixed. We bought some elemental pieces.
Total	5884	5908	-24	

***To obtain some items (laptop computer, printer, photocopier, for instance) in Cuba is more expensive than other country**

9. Looking ahead, what do you feel are the important next steps?

I feel lively, happy to provide knowledge to people. I think that's we need to keep teaching and educating because it is the only way to learn to see the wonders of our nature and all organisms inhabiting it. Knowing each of the creatures we know how to keep them. We want that Cuban people know about fungi. Fungi are an important part of our ecosystems and we cannot ignore them.

10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?

Yes, the RSGF receive publicity during our work, all books published as the activities making showed the foundation logo.

11. Any other comments?

When we started this project we knew we had gaps in information about fungi in Cuba and *Ganodermataceae* family, but never suspected there was so much ignorance about fungi in the population, more than we imagine. We need to keep obtained currently information about ecology and distribution of fungi that for many reasons those are not available in Cuba. We have to keep working because fungi are very important and we are wasting this natural resource in our country. The Cuban people need to know about the importance of fungi and their conservation. We must work harder and better.