

The Rufford Small Grants Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Small Grants 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	Aylin Alegre Barroso
Project title	Cave and karst fauna conservation in the Protected Area Yara-Majayara, Baracoa. Cuba. Strengthening of research and Environmental Education.
RSG reference	9632-2
Reporting period	April 2011- June 2012
Amount of grant	£ 6000
Your email address	aylinalegre@gmail.com
Date of this report	22 nd July 2012

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
Cave fauna inventories			X	
Epigeal invertebrate's inventories. Re-evaluation of the troglobite condition of threatened cave arachnids.			x	
Data collection about the biology of threatened cave arachnids			X	
Training of technicians in monitoring of cave fauna			X	
Environmental education in the communities			X	
Introduction, production and use of compost as fertilizer, instead bat guano		X		The initiative could not be broadly carried out. The principal factor was the lack of water in the zone.
Introduction to the captive breeding sites for hutia and guidance in the searching of funds			X	

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

It was expected that after the workshop to introduce the practice of making compost as fertilizer instead harvest bat guano, all the participants implemented the technique in their properties. Even when almost all farmers were interested they could not made compost because of the lack of water in the zone, which was very marked in this period. However one solution was to do one pile of compost in the property of one farmer that has access to a small spring of water, together with the participation of several farmers and the technicians of the protected area. They are using in small scale the organic compost resulted from this pile.

The marine terraces of the zone are composed by karst, the layer of soil is very thin and the calcareous rock is very porous, for these reasons the water is not retained in the soil, besides the high temperatures of our climate contributes to the water evaporation. The communities of the protected area depend exclusively of rain and springs, because there are not rivers near the place. The compost needs regular irrigation of water but this is a priced resource in this area and the habitants should use it in many other important activities as homelike chores and crops. All of this influence in the fact that some locals continue using bat guano as fertilizer.

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

- Before this project *Jimenziella decui*, an arachnid species from the order Opiliones, was known only from two caves in Cuba, La Majana cave and Los Golondrinos cave, which are inside the protected

area Yara-Majayara. Now we know that this threatened species is also present in two other caves of the protected area, Maximo cave and Perla del Agua cave (**new records of locality**), which increase the distribution of the species and diminish the risk of extinction. This species until now is confirmed as a troglobite species, we gathered new biology data about the particular microhabitat of this species and the feeding behavior as well. Another relevant result was the find that other opilion species *Decuella cubaorientalis* resulted no to be a troglobite species as many previous authors considered before, it is present not only within Los Golondrinos cave, it is also present in the surroundings of the cave, and in some other epigeal localities of the Guantanamo province (resulted from the revision of IES collections). Also the project inventories bring a new record of a family in the arachnid order Pseudoscorpiones from Cuba. Before the project only 40 invertebrates species were known from the protected area, now a total of 155 new invertebrate records are known, 32 endemics, 6 plant plague species were detected, we recorded the presence of the invasive spider *Cyrtophora citricola* in the protected area and the presence of the venomous spider *Loxosceles caribbaea* in some caves of the area. We also found a blind species of Barychelidae a possible troglobite unknown until now for the eastern part of Cuba.

- The implementation, even in small scale, of a practical solution to the cave conservation problem due to the extraction of bat guano. The production and use of compost is one of the most important outcomes of this project and still more important is the total motivation achieved of the local farmers in the use of the compost, although the lack of water stopped the production of this organic fertilizer in a large scale.

-The production of posters, informative pamphlet and the environmental activities made possible the sensitization in the communities with the conservation problems, the increase of the knowledge about the values of the protected area and the consolidation of our good relations with the communitarians. We consider that this is other of our important project results.

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

During the project were involved 6 communities, Boca de Miel, Majana, Majayara, Yara, Boma 1 and Boma 2, the last two were added during the Second RSG project. About 130 children of six schools, 15 teenagers, eight teachers, about 20 farmers, eight technicians and other workers of the protected area were benefited from the project, all of they received specific activities and print materials produced during this project. The children received talks, cave laboratories, guided excursions around the protected area, didactic and interactive environmental games in the back yard of the school as well as printed materials. The farmers and professors received workshops that were supported by informative materials. In the same way the technicians received the training in monitoring the cave fauna plus some notions about the recognition of the epigeal invertebrate fauna of the protected area that was not in the schedule of the project. Through the Care Caves Festival, an activity where students presented all the experiences accumulated during the project, was involved the rest of the community people. Some posters about the cave fauna values of the area, the use of compost and the charismatic endemic species that inhabit in the area (*Phyllonycteris poeyi*, *Jimenezilla decui*, *Polymita picta*, *Ciclura nubila nubila*, *Epicrates angulifer*, *Capromys pilorides*), were located in markets and other public spaces in order to involve the major number of persons with the project.

5. Are there any plans to continue this work?

The protected area still possesses other caves less accessible that are not explored yet and could rendered new information of the cave fauna from the area. For example those caves located in the headland of the marine terraces were not visited previously for other investigators with fauna inventories purpose. We detected another possible entrance for Majana cave, a hot cave very difficult to explore because of the big hot tramp in the first part of the cave. This other cave access could be important to gather information about the invertebrate species *Pseudocellus pachysoma*, order Ricinulei, *Cubacantozomus rowlandi*, order Schizomida, *Jimenezella decui* order Opiliones and the isopods *Jimenezia heteroclita*, *Cubanoscia primitiva*, that had not been collected during this project in this cave. Meantime the continuation of the invertebrate inventories could render new information about the fauna of the protected area.

On the other hand we have plans to continue the work with farmers producing compost in large scale to continue diminishing the extraction of bat guano in the caves, offering them some facilities and maintaining the environmental education support.

With the epigeal inventories conducted during the project we detected some invertebrates that constituted pests in the agricultural ecosystems, like some lepidoptera. The protected area, as we mentioned previously, possesses particular features different to other protected areas, because there are a lot of private properties throughout the three marine terraces with different kind of crops like tomatoes, coffee, beans, peppers, coconuts, among others. Here the farmers use traditional methods of insecticides to fight against plagues. The chemical elements that compound these substances pass easily through the soil because of its nature (karstic zone), polluting the subterranean medium and possible affecting the cave fauna and contaminating the subterranean water, which is a precious resource that the communities depend closely, besides these chemical elements have also some undesirable effects over the wild fauna and human health. For that reason we want to work in the establishment of an ecological method to avoid or diminish the use of insecticides, this method is based in the use of spiders as pest control in the agricultural ecosystems. From the knowledge about the spider fauna present in the protected area (achieved from the epigeal inventories during this project) we strongly think that this group could function as biological control of plagues, a management of crops that propitiates a high diversity and abundance of spiders could cause a decrease in the insects biomass pests helping to avoid the use of insecticides.

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

The information gathered during the project will be at the disposition of other researchers and national projects through fauna lists, a geo-referenced database and a bank of images in the Institute of Ecology and Systematics, as well as all the specimens collected were deposited in the zoological collection of the Institute of Ecology and Systematic, for the revision of other specialists. Meantime part of this information will contribute to 3 scientific publications under preparation.

The environmental education experiences will be presented in national events organized by the Cuban Zoological Society and the Cuban Speleological Society.

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

The proposed date frames for the project were February 2011 until April 2012, however the funds were available since April 2011. That's why the real frames of the project moved to April 2011-June 2012.

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.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Transportation (Havana - Baracoa)	1020.00	1020.00		
Food	1840.00	1800.00	40.00	We found a cheaper offers
Fuel	720.00	758.00	38.00	The fuel prices varied
Batteries	100.00	70.00	30.00	We found a cheaper offer
Battery charger	40.00	41.00	1.00	
Rechargeable lamps	80.00	74.10	5.90	
Head lamps	120.00	117.80	2.20	
Litter reducer	300.00	300.00		
Malaise traps	140.00	145.00	5.00	
Printer toner	150.00	148.20	1.80	
Photocopier toner	150.00	150.00		
Sheets	100.00	96.70	3.30	
Office and school materials	150.00	151.94	1.94	
Fauna guide and posters printing	700.00	750.00	50.00	The price of printing varied
Pamphlets printing	390.00	340.15	50.15	We found a cheaper offer
Total	6000.00	5963.04	36.96 transference	Bank taxes

Exchange rate: 1.57199

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





To apply for new funds to continue with the cave and epigean fauna research, to keep the environmental education program and to carry out other conservation actions regarding the protection of caverns, karst landscapes and associated fauna of the protected area Yara-Majayara Natural Monument. To keep researching, publishing, sharing and presenting all the results to the scientific and local community.

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

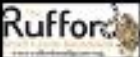
The RSGF logo was used in the presentations of talks, workshops, in the printed materials like posters and the informative pamphlets that support the environmental education.

Cave and epigeal invertebrate fauna of the Protected Area Yara-Majayara, Baracoa, Guantánamo, Cuba

The protected area Yara-Majayara possesses a great number of caves with a high species richness and endemism, some of these species are restricted only to caves and some other are exclusive of this locality. Also the epigeal fauna of the area shows a high diversity and endemism. Protect all of them.

		
<i>Decusella cubaorientalis</i> Opilion (arachnid) Endemic of Cuba Los Golondrinos Cave and epigeal	<i>Rowlandius baracoae</i> Schizomiel (arachnid) Endemic Majana and Los Golondrinos caves	<i>Lavoiselles caribaeae</i> Venomous spider (arachnid) Maximo and Los Golondrinos Caves
		
<i>Polymita picta</i> Cuban national snail Endemic of Cuba	<i>Argiope argentata</i> Spider (arachnid)	Orthoptera Cricket (insect)
		
<i>Rhinoscirus</i> sp. Millipede Majayara forest	<i>Parides gundlachianus</i> Butterfly (Lepidoptera)	<i>Cubierius formi</i> Scorpion Endemic

Total of species registered in the protected area Yara-Majayara: 196, 155 are new records for the area, 32 are endemics.



Compost o abono orgánico

El compost no es más que el humus obtenido por la descomposición en caliente de residuos orgánicos como:



Hojas y ramas secas

Residuos de la cocina



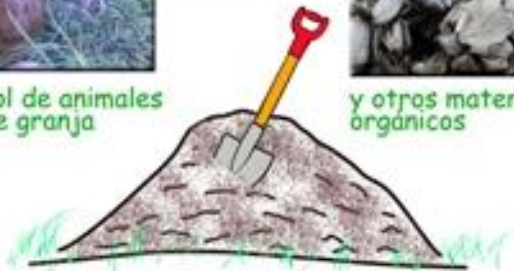
Residuos de jardines y huertos



Estiércol de animales de granja



y otros materiales orgánicos



A partir de los 3 o 4 meses se obtiene un abono natural, libre de químicos, que puedes utilizar en tus sembrados y jardines.

¡Haz tu propio abono y verás los resultados!



Aylin Alegre
Instituto de Ecología
y Sistemática

Opilión troglobio

Jimeneziella decui

Arácnido endémico de Cuba, estrictamente cavernícola (troglobio), o sea está adaptado a vivir solo dentro de las cuevas.

Esta especie habita únicamente en cuevas del Área Protegida Yara-Majayara.

Protege las cuevas y contribuirás a conservar este invertebrado y la fauna que vive en ellas.



Aylin Alegre
Instituto de Ecología
y Sistemática

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Murciélago de Poey o de cuevas de calor

Phyllonycteris poeyi

Murciélago nectarívoro, endémico de Cuba y estrictamente cavernícola, o sea depende de las cuevas calientes para refugiarse, reproducirse y cuidar de sus crías.

Esta especie habita en cuevas del Área Protegida Yara-Majayara y juega un papel importante en la polinización de las flores.

Protege las cuevas y
contribuirás a conservar
este mamífero.



Foto Carlos A. Mancina

Aylin Alegre
Instituto de Ecología
y Sistemática

List of invertebrate fauna of the Protected Area Yara-Majayara, Baracoa, Guantánamo, Cuba.

TAXA	LOCALITY	Comments
IXODIDA		
<i>Carios marginatus</i> (Banks)	Cueva La Majana	Collected in bat guano.
OPILIOACARIDA		
Opilioacaridae genus 1 sp. 1	Cueva La Majana	Collected in bat guano.
Opilioacaridae genus 2 sp. 2	Majayara forest First and second terrace	In the litter of forests.
SCORPIONES		
<i>Cazierius torrei</i> (Moreno)	Surroundings Cueva Los Golondrinos	Endemic. Collected under stones.
<i>Rhopalurus junceus</i> (Herbst)	Majayara forest	Endemic. Collected under stones.
AMBLYPYPGI		
<i>Charinus cubensis</i> (Quintero)	Cueva La Majana Cueva Los Golondrinos (NR) Cueva Perla del Agua (NR)	Endemic. Collected under stones.
<i>Paraphrynus robustus</i> (Franganillo)	Cueva La Majana Cueva Los Golondrinos (NR) Cueva Perla del Agua (NR) Cueva de Maximo (NR)	Endemic. Collected under stones and walls of caves.
<i>Phrynus hispaniolae</i>	Cueva Perla del Agua (NR) Cueva de Cueva San Justo (NR) Majayara forest (NR) Near Pipi's property,	Collected under stones.
ARANEAE		
<i>Phormictopus</i> sp.	Majayara forest	Collected under stones.
Barychelidae genus 1 sp. 1	Cueva Los Golondrinos (NR) Cueva Perla del Agua (NR)	Blind cave species probably a new species. It is the second known blind species of the family.
<i>Trichopelma</i> sp. 1	Cueva Los Golondrinos	Collected under stones.
<i>Trichopelma</i> sp. 2	Surroundings Cueva Los Golondrinos	Collected in the litter.
Dipluridae genus 1 sp. 1	Cueva Perla del Agua	Collected under stones.

<i>Fageceira cubana</i> (Emeryi)	Cueva La Majana Cueva Los Golondrinos Cueva Perla del Agua (NR) Cueva de Maximo (NR) Cueva del Cacique (NR) Near Pipi's property, first terrace (NR) Surroundings of Cueva los Golondrinos (NR) Majayara forest (NR)	Endemic. Previously only known for the first two caves, collected under stones. Outside caves it can be collected under stones and litter.
<i>Loxosceles caribbaea</i> Gertsch	Cueva Los Golondrinos (NR) Cueva de Maximo (NR)	Collected walking in the ground and under stones. It is a venomous species that provokes necrosis in
Pholcidae genus 1 sp. 1	Cueva Los Golondrinos (NR) Surroundings of Cueva Perla del Agua (NR)	
Pholcidae genus 1 sp. 2	Maximo's property (NR) Pipi's property (NR) Majayara forest (NR) Surroundings of Cueva los Golondrinos (NR)	Collected in the litter.
Pholcidae genus 1 sp. 3	Cueva del Cacique (NR)	Collected under stones.
<i>Scytodes longipes</i> Lucas	Cueva del Cacique (NR) Near Pipi's property, first terrace (NR)	Collected under stones.
Theridiidae genus 1 sp. 1	Cueva Los Golondrinos Surroundings of Cueva los Golondrinos	Collected under stones in the cave and outside in the litter.
Theridiidae genus 2 sp. 1	Cueva del Cacique	Collected under stones.
Theridiidae genus 2 sp. 2	Cueva del Cacique	Collected under stones.
Theridiidae genus 3 sp. 1	Cueva del Cacique	Collected under stones.
Oonopidae genus 1 sp. 1	Majayara forest Near Pipi's property, first terrace Surroundings of Cueva los Golondrinos Maximo's property	Collected in the litter.
Oonopidae genus 1 sp. 2	Majayara forest Surroundings of Cueva	Collected in the litter.
Caponiidae genus 1 sp. 1	Near Pipi's property, first terrace	Collected in the litter.
Ctenidae genus 1 sp. 1	Majayara forest Maximo's property	Collected in the litter.

Ctenidae genus 1 sp. 2	Majayara forest Surroundings of Cueva los Golondrinos	Collected in the litter.
Ctenidae genus 1 sp. 3	Surroundings of Cueva los Golondrinos	Collected in the litter.
Linyphiidae genus 1 sp. 1	Majayara forest	Collected in the litter.
Linyphiidae genus 1 sp. 2	Majayara forest Near Papi's property, first terrace	Collected in the litter.
Linyphiidae genus 2 sp. 1	Maximo's property	Collected in the litter.
Linyphiidae genus 2 sp. 2	Maximo's property	Collected in the litter.
Salticidae genus 1 sp. 1	Majayara forest	Collected in the litter.
Salticidae genus 2 sp. 1	Majayara forest	Collected in vegetation.
Thomisidae genus 1 sp. 1	Surroundings of Cueva los Golondrinos Maximo's property	Collected in the litter and in the Malaise trap.
<i>Alcimosphenus licinus</i> Simon	Boca de Miel, first terrace (NR)	Species well represented in all the area.
<i>Argiope argentata</i> (Fabricius)	Playa Blanca	
Araneidae genus 1 sp. 1	Majayara forest	Collected in the litter.
Araneidae genus 1 sp. 2	Surroundings of Cueva Perla del Agua	Collected in the litter.
<i>Cyrtophora citricola</i> (Forsskäl)	Boma forest	Invasive species.
Clubionidae genus 1 sp. 1	Cueva La Majana (NR)	Collected under stones.
Clubionidae genus 2 sp. 2	Surroundings of Cueva los Golondrinos Maximo's property	Collected in the litter and in the Malaise trap.
Clubionidae genus 2 sp. 2	Cueva del Cacique	Collected under stones.
OPILIONES		
<i>Jimenezella decui</i> Avram	Cueva Los Golondrinos Cueva Perla del Agua (NR)	Endemic troglobite species. Collected under stones. Previously only known from two caves (Cueva
<i>Decuella cubaorientalis</i> Avram	Cueva Los Golondrinos Surroundings of Cueva los Golondrinos (NR)	Endemic. Species previously known from caves, reported as a Cuban troglobite, but we confirmed that it
<i>Turquinia</i> sp.	Majayara forest (NR) Near Papi's property, first terrace (NR) Surroundings of Cueva los Golondrinos (NR)	Endemic. Collected in the litter.
<i>Metakimula</i> sp.	Majayara forest (NR) Near Papi's property, first terrace (NR)	Endemic. Collected in the litter.
<i>Cynorta</i> sp.	Majayara forest (NR)	Endemic. Collected in the litter.
PSEUDOSCORPIONES		

<i>Tyrannochelifer cubanus</i> Hoff	Near Pipi's property, first terrace (NR) Playa Blanca (NR)	Collected under bark. Previously only known from the type locality (Camaguey province).
<i>Lustrochernes</i> sp.	Majayara forest (NR)	Collected under bark.
<i>Epactiochernes insularum</i> Muchmore	Maximo's property (NR)	Malaise trap.
<i>Bituberochernes mumae</i> Muchmore	Majayara forest (NR)	Collected under bark.
Chthoniidae genus 1 sp. 1	Cueva Los Golondrinos (NR) Cueva Perla del Agua (NR)	Collected under stone.
Chthoniidae genus 2 sp. 1	Majayara forest (NR)	Collected in the litter.
Lechytiidae genus 1 sp. 1	Majayara forest (NR)	First record of the family for Cuba.
Withiidae	Cueva Los Golondrinos (NR)	Collected under stone.
Olpiidae genus 1 sp. 1	Surroundings of Cueva los Golondrinos (NR) Majayara forest (NR)	Collected in the litter.
SCHIZOMIDA		
<i>Rowlandius baracoae</i> (Armas)	Cueva La Majana Cueva Los Golondrinos (NR)	Endemic. Collected under stone.
<i>Stenochrus portoricensis</i> Chamberlin	Cueva Los Golondrinos (NR) Surroundings of Cueva los Golondrinos (NR)	Collected under stone and in the litter.
THELYPHONIDA		
<i>Mastigoproctus baracoensis</i> Franganillo	Cueva Perla del Agua (NR) Cueva San Justo (NR) Majayara forest (NR) Surroundings of Cueva los Golondrinos (NR)	Endemic. Collected under stone.
PLATYHELMINTHES		
Genus 1 sp. 1	Cueva Perla del Agua	Collected under stones and over
ISOPODA		
<i>Trichorhina</i> sp. (<i>heterophthalma</i> ?)	Cueva La Majana (NR)	Collected in bat guano.
DECAPODA		
<i>Macrobrachium lucifugum</i> Holthuis	Cueva del Agua, Majana (NR)	Collected in water.
MOLLUSCA		
<i>Polymita picta roseolimbata</i> Torre	First and second terraces	Endemic.
<i>Subulina octona</i> (Brugière)	Cueva La Majana (NR) Los Golondrinos (NR)	Introduced.

<i>Caracolus sagemon</i> (Beck)	First and second	Endemic.
CHILOPODA		
<i>Newportia heteropoda</i> Chamberlin	Cueva La Majana	
<i>Scolocryptops rubiginosus</i> (Coch)	Cueva La Majana	
<i>Polycricus floridanus</i> (Cook)	Cueva Los Golondrinos	
DIPLOPODA		
<i>Amphelictogon</i> sp.	Cueva Los Golondrinos	Collected on the ground.
<i>Rhinocricus</i> sp.	Majayara forest	Collected in the litter.
COLEMBOLLA		
<i>Lepidocyrtus pseudofimetarius</i> Gruia	Cueva La Majana	Endemic. Collected in bat guano.
<i>Folsomina onychiurina</i> Denis	Cueva La Majana	Collected in the soil.
OPHTOPTERA		
<i>Otteius velutinus</i> (Bonfils)	Cueva La Majana	Endemic. Collected in the wall.
<i>Otteius thoracicus</i> Scoussure	Cueva Los Golondrinos Cueva Perla del Agua (NR)	Endemic. Collected in the wall.
<i>Maysintes</i> sp.	First terrace	Collected in the vegetation.
COLEOPTERA		
<i>Euspilotus sterquilinus</i> (LeConte)	Cueva La Majana	Endemic.
Tenebrionidae Genus 1 sp. 1	Cueva La Majana	
<i>Alphitobius laevigatus</i> (Fabricius)	Cueva La Majana (NR)	
<i>Epieurus</i> sp.	Cueva La Majana	
<i>Pyrophorus noctilucus</i> Linnaeus	Cueva La Majana	
<i>Phyllophaga</i> sp.	Maximo's property	Collected in Malaise traps.
<i>Pseudodisonycha chlorotica</i>	Maximo's property	Collected in Malaise traps.
HEMIPTERA		
<i>Rhytidoporus indentatus</i> Uhler	Los Golondrinos (NR)	
HYMENOPTERA		
<i>Evania appendigaster</i> (Linnaeus)	Cueva La Majana	
<i>Hypoconera ergatandria</i> (Forel)	Cueva La Majana	
<i>Solenopsis geminata</i> (Fabricius)	Cueva La Majana	
<i>Trichoscapa membranifera</i> (Emergi)	Cueva La Majana	
<i>Centris</i> sp. 1	Maximo's property	Collected in Malaise traps.
<i>Atta insularis</i>	Maximo's property	Collected in Malaise traps.
<i>Camponotus gilviventris</i>	First terrace	
<i>Pseudomyrmex pallidus</i>	First terrace	
<i>Anoplius americanus</i>	Maximo's property	Collected in Malaise traps.
<i>Coccygominus marginellus</i>	Maximo's property	Collected in Malaise traps.
<i>Nesolinoceras ornatipennis</i>	Maximo's property	Collected in Malaise traps.
<i>Theronia bicincta</i>	Maximo's property	Collected in Malaise traps.
<i>Stictia signata</i>	Maximo's property	Collected in Malaise traps.
<i>Hyptia poeyi</i>	Maximo's property	Collected in Malaise traps.
DIPTERA		

100.	<i>Mallophora macquarti</i>	Maximo's property	Collected in Malaise traps.
101.	Tipulidae Genus 1 sp. 1	Maximo's property	Collected in Malaise traps.
102.	<i>Meromacrus pinguis</i>	Maximo's property	Collected in Malaise traps.
103.	Micropezidae Genus 1 sp. 1	Maximo's property	Collected in Malaise traps.
104.	Tephritidae Genus 1 sp. 1	Maximo's property	Collected in Malaise traps.
NEUROPTERA			
105.	<i>Chrysopa</i> sp.	First terrace	Collected in Malaise traps.
HETEROPTERA			
106.	Cicadellidae Genus 1 sp. 1	Maximo's property	Collected in Malaise traps.
LEPIDOPTERA			
107.	<i>Tinea decui</i> Capuse & Georgesco	Cueva La Majana	
108.	<i>Acrolophus</i> sp.		
109.	<i>Strobisia iridipennella</i>		
110.	<i>Brenthia</i> sp.		
111.	<i>Battus polydamas cubensis</i>		Endemic.
112.	<i>Battus devilliers</i>		
113.	<i>Heraclides pelaus atkinsi</i>		Endemic.
114.	<i>Heraclides andraemon andraemon</i>		Citrus plague.
115.	<i>Parides gundlachianus</i>		Endemic.
116.	<i>Asbolis capucinus</i>		
117.	<i>Cabares potrillo potrillo</i>		
118.	<i>Choranthus radians</i>		
119.	<i>Cymaenes tripunctus</i>		
120.	<i>Eantis papinianus</i>		
121.	<i>Ephyriades brunnea brunnea</i>		
122.	<i>Panoquina corrupta</i>		Endemic.
123.	<i>Parachoranthus magdalia</i>		
124.	<i>Polites baracoa baracoa</i>		
125.	<i>Polygonus leo leo</i>		
126.	<i>Pyrrhocalles antiqua orientis</i>		Endemic.
127.	<i>Urbanus dorantes santiago</i>		
128.	<i>Urbanus proteus domingo</i>		
129.	<i>Wallengrenia otho misera</i>		
130.	<i>Abaeis nicippe</i>		
131.	<i>Anteos clorinde</i>		
132.	<i>Ascia monuste eubotea</i>		Plague.
133.	<i>Glutophrissa drusilla poeyi</i>		
134.	<i>Kricogonia cabrerai</i>		Endemic.
135.	<i>Kricogonia lyside</i>		
136.	<i>Phoebis avellaneda</i>		Endemic.
137.	<i>Phoebis philea philea</i>		
138.	<i>Phoebis sennae sennae</i>		
139.	<i>Pyrisitia dina dina</i>		Endemic.
140.	<i>Pyrisitia lisa euterpe</i>		

141.	<i>Pyrisitia messalina</i>		
142.	<i>Cyclargus ammon ammon</i>		
143.	<i>Eumaeus atala</i>		
144.	<i>Leptotes cassius theonus</i>		
145.	<i>Strymon bazochii gundlachianus</i>		
146.	<i>Agraulis vanillae insularis</i>		
147.	<i>Anartia jatrophae guantanamo</i>		
148.	<i>Anartia chrysopelea</i>		Endemic.
149.	<i>Atlantea perezi</i>		Endemic.
150.	<i>Calisto herophile herophile</i>		Endemic.
151.	<i>Danaus gilippus berenice</i>		
152.	<i>Danaus plexippus plexippus</i>		
153.	<i>Dryas iulia nudeola</i>		Endemic.
154.	<i>Euptoietia hegesia hegesia</i>		
155.	<i>Heliconius charithonius ramsdeni</i>		
156.	<i>Junonia evarete zonalis</i>		
157.	<i>Lucinia sida sida</i>		Endemic.
158.	<i>Marpesia eleucea eleucea</i>		Endemic.
159.	<i>Marpesia chiron</i>		
160.	<i>Siderone galanthis nemesis</i>		
161.	<i>Siproeta stelenes biplagiata</i>		
162.	<i>Desmia recurvalis</i>		
163.	<i>Desmia sp.</i>		
164.	<i>Diacme mopsalis</i>		
165.	<i>Omiodes indicata</i>		Plague.
166.	<i>Pyrausta sp.</i>		
167.	<i>Anticarsia gemmatalis</i>		Plague.
168.	<i>Ascalapha odorata</i>		
169.	<i>Composia fidelissima fidelissima</i>		
170.	<i>Ctenuchidia virgo</i>		
171.	<i>Empyreuma pugione</i>		
172.	<i>Matigophorus parra</i>		
173.	<i>Utetheisa ornatrix</i>		
174.	<i>Anomis erosa</i>	Leonardo's property Maximo's property	Plague. Malaise traps.
175.	<i>Condica sp.</i>	Leonardo's property	Malaise traps.
176.	<i>Elaphria sp.</i>	Maximo's property	Malaise traps.
177.	<i>Melipotis sp.</i>	Leonardo's property	Malaise traps.
178.	<i>Spodoptera frugiperda</i>	Maximo's property	Plague. Malaise traps.

