

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. 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. 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	Fernando Zamudio
Project title	Native Stingless Bee (Apidae: Meliponinae) Diversity and Ethnobiology in the Atlantic Rain Forest of Argentina
RSG reference	26.12.07
Reporting period	March 2008 to April 2009
Amount of grant	£ 5000
Your email address	zamufer@yahoo.com.ar
Date of this report	14.08.2009

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
Generate basic knowledge about Meliponinae diversity (particular objective)			X	I have collected meliponini bees in rural areas during ethnobiological work and in the Iguazú National Park (INP). In the INP I applied standardized samplings and used three methods for capturing bees (Pan Trap; Van Somer Trap, active netting). This sampling was carried out for 4 months. We collected bees of 11 genera and an estimated 15 species.
Study the sociocultural aspects related to the use and management of these bees by local people (particular objective)			X	I undertook 75 semi-direct interviews with 59 people. In many cases I visited the same house several times. I recorded the vernacular name of 15 species of meliponini bees and local uses of their honey and other products (e.g. wax). The use of several potions made with a mixture of medicinal plants and honey as medicine is common in the studied area.
Evaluate the weaknesses and the strengths of local meliponiculture (general objective)			X	The stingless bee called "yateí" (<i>Tetragonisca angustula</i>) is the rarest species in the region. Almost all the interviewed people knew and have bred yateí for medicinal and recreational purposes. Management and technical levels are poor. For example, few people know their propagation techniques.
Develop beekeeping technical knowledge (general objective)		X		We worked with 13 peasants to test two "rational" hive models. In all of them we moved and maintained 34 nests of yateí bees in artificial wooden hives in the peasants' houses (from 2 to 6 hives per family). Then we organized the "First meeting of yateí and other wild bees beekeepers" in the area.

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

The time suggested to draw off the bee nest into hive boxes is from October to February. As the grant funds were received in March, I decided to translate the hives out of time to reach the objectives of the project. This decision had consequences in the efficiency of management measures because some nests never recovered before the winter, the critical time for the colony. In spite of that we could work with a considerable amount of nest hives (N=34).

Other unforeseen difficulties were related to the taxonomic identification of the bees at species level (50% of bees could only be identified at generic level) resulting from the lack of an appropriate magnifying glass and from the inherent taxonomic difficulties of the Meliponini tribe. These difficulties were overcome by doing postgraduate courses (especially one on taxonomy and ecology of wild bees in Colombia) and by consulting with experts.

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

1. Assessment of the richness and diversity of stingless bees in the southernmost (and best conserved) area of the Atlantic Forest. The work is the first systematic and specific survey of meliponini bees in the INP and in the north-east of Misiones province. The entomological collection counts with nearly 10000 bees. The presence of at least 15 species is estimated in the area.
2. Local knowledge of stingless bees. I have recorded the vernacular names of meliponini bees and compiled the local use of honey and other products (i.e. wax). Moreover I have assessed the ecological knowledge and rural people perception of the stingless bees.
3. Exchange of knowledge, acquisition of practical skills and improvement of local management. One of the most relevant outcomes of this project has been the exchange of knowledge and perceptions with a range of local “actors”. On the one side I worked close to the peasants who experimented in their houses with two different hives for breeding yatei bees for more than one year. In the same way I worked with two young women park rangers capturing meliponinis in the Iguazú National Park. The experience and the technical and practical knowledge gained from all these people (including from my own experience) are undoubtedly useful.

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

In this period we exchanged knowledge about plagues and problems on the yatei bee breeding and on the management practices and techniques used in other places like Brazil (i.e. propagation, artificial feeding and proper care). The experience acquired in breeding yatei was transmitted to more farmers in “The 1st Meeting of Yatei and Other Wildlife Bees Breeders” carried out on March 7th 2009 in the biological station of Conservación Argentina, a local NGO in Paraje María Soledad. A guest lecturer who participated in this meeting was a meliponini expert beekeeper from Montercalo city with more than 10 years of experience and 150 yatei hives. Additionally, I presented a lecture related to the information obtained from ethnobiological interviews, bee diversity studies and the local use of honey, and the breeding of other meliponini bees in Brazil, and Paraguay and those found locally in the study area. This meeting gave way to a group discussion about several subjects related to yatei breeding and allowed us to reflect on promising alternatives for small scale family production.

On the other hand the project also allowed two young women park rangers to collaborate in the planning and execution of bee samplings, mounting and identification of bees at genera level (using taxonomical keys), fostering in this way, and the training of local people in an area where there are few professionals that are familiar with this type of activities. I consider this is an important contribution to the local society.

5. Are there any plans to continue this work?

Yes, we would like to go on with this project although we consider the reformulation of certain of its aspects. Regarding the job with the communities, we think it is necessary to strengthen links with local institutions to be able to do a closer follow up with more beekeepers and at the same time work with the organizational patterns that are essential to carry out any activity related to local development.

In relation to our research we need to further samplings of the ASA in order to broaden the species register and check other species existence. More interviews to more informants are needed as well as the enlargement of the study area. This is particularly important to perceive the differences that may exist among areas with different cultural influences (Border with Brazil and border with Paraguay)

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

The acquired knowledge will be shared by publishing the results in research magazines as well as in publications of general distribution. We plan to participate with an oral presentation in the First Latin-American Congress of Ethnobiology that will take place in Mexico (2nd-6th November 2009, Tapachula) where we will present a part of the results.

On the other hand through brochures, workshops and/or meetings as the one organised during the first part of this project we will provide widespread information specially directed to local communities, young people and children.

We have enough information to write two articles at medium term and a third one later. The first one will deal with the use of ASA products and sub products, emphasizing on their medicinal use. The second will be focused on ASA species richness and on certain aspects of their ethnobiological identification. The systematic ASA samplings in the INP and the bees collected during the ethnobiological work made with local people are providing important data about ASA species richness in the northern part of Misiones. This data will allow us to publish at medium term another article, probably with the collaboration of taxonomers, on less known aspects of ASA distribution and its presence in this area.

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

The resources provided by the grant were used according with the initial Project scheme.

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
Entomological material (entomological box and pins, chemicals like ethyl acetate and	2000	1000	0	

preservatives)				
300 salary* for field assistances that help in diversity samples of stingless bees. (1 salary = £5.44)	1632	700	-250	Due to unexpected climate change (rain and cloudy days) some samplings had to be repeated with a subsequent wage increase (45 additional wages).
200 salary* for laboratory assistances that help in montage and preserving stingless bees. (1 salary = £5.44)	1102	400	0	
Gasoline and field truck maintenance.	3000	1000	-300	Expenses on petrol and maintenance were higher than those expected due to new itineraries and the increase on petrol prices.
Supplies (batteries, bibliography, etc.) and field expenses	1000	450	0	With part of the funds we bought specialized literature on bee taxonomy (Silveira et al., 2000; Michenner, 2000)
Hives (wood) construction (1 hive: £15).	450	200	0	
3 digital scales (min: 0.5gr, max: 5000gr) (1 scale: £90.70)	272.1	100	0	
Trips from Misiones to many Universities entomological collections of the country (e.g. Buenos Aires, Tucumán, Corrientes) and Southern Brasil (Universidade Estadual de Maringá,	900	400		I visited the collections at the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires; Museo de La Plata, La Plata and in October 2009 I will visit the Colección Entomológica Padre Jesus Santiago Moure del Departamento de Zoología da Universidad Federal de Paraná. With part of the funds I participated in the II Curso Internacional en Ecología, Sistemática y Manejo de Abejas silvestres (II Internacional Course in Ecology, Systematics and Management of Wild Bees) (Professors: PhD Allan H. Smith P., Universidad Nacional de Colombia Sede Medellín, PhD Claus Rasmussen, University of Illinois, USA, and PhD Antonio J. C. Aguiar,

				Universidad de San Paulo, Brasil).
Image bank and brochures	1800	750	0	The money allotted to this item was partially transferred to the expenses on petrol and unexpected field work. We now count with more than 1000 images of bees that will allow us to develop the brochure we have planned.
Total	14605	5000	200	

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

1. To continue with ASA samplings in different environments and areas of the province (i.e. in different natural reserves or in areas with varied degrees of human disturbance).
2. To enlarge the number of informants in order to get a better representation of the local knowledge about ASA.
3. To continue with the exchange of knowledge and the training of local people by experts and beekeepers experimented in the breeding of stingless bees from other regions like the south of Brazil (near to the study area).

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?

Yes, in the invitation to the “The 1st Meeting of Yatei and Other Wildlife Bees Breeders” and in a meeting with the members of the advising commission of my PhD, in the National University of Córdoba (UNC).

In the next months I will use the logo in the work I will present in the First Latin-American Congress of Ethnobiology and other scientists meetings.

11. Any other comments?

I am very grateful for your support to this project and for making it possible for me to turn this personal objective in an opportunity to foster the conservation and management of stingless bees. Thank you!