



Kew

PLANTS PEOPLE
POSSIBILITIES

Kew
Latin
America
Research
Fellowships



Programme Review 1998-2007

William Milliken & Amélia Baracat

Table of contents

1	SUMMARY	2
2	ACKNOWLEDGEMENTS	2
3	INTRODUCTION	3
3.1	TROPICAL AMERICAN BOTANY AT KEW	3
3.2	THE KLARF PROGRAMME.....	3
3.3	PURPOSE OF THE REVIEW	4
4	METHODOLOGY	4
4.1	DATA COLLECTION AND ANALYSIS	4
4.2	CRITICAL EVALUATION	5
5	RESULTS	5
5.1	CAREER DEVELOPMENT	5
5.2	BENEFITS TO INDIVIDUAL FELLOWS	6
5.3	BENEFITS TO FELLOWS' INSTITUTIONS	8
5.4	SKILL AND KNOWLEDGE TRANSFER	9
5.4.1	<i>Applying new skills in the institutional context: opportunities & challenges</i>	9
5.4.2	<i>Applying new skills and knowledge to teaching</i>	10
5.4.3	<i>Applying new skills and knowledge to research</i>	11
5.5	INTERACTIONS WITH OTHER RESEARCHERS	12
5.5.1	<i>Benefits from Interactions</i>	12
5.6	ACHIEVEMENT OF OBJECTIVES.....	13
5.7	OUTPUTS FROM THE PROGRAMME.....	13
5.8	CHALLENGES AND SOLUTIONS	13
5.9	STRENGTHS, WEAKNESSES AND OPPORTUNITIES	14
6	CONCLUSIONS	18
7	REFERENCES	19
8	APPENDICES.....	20
	APPENDIX 1: QUESTIONNAIRE CONTENTS	20
	APPENDIX 2: RESPONDENTS' DETAILS	21
	APPENDIX 3: SKILLS AND KNOWLEDGE ACQUISITION	24
	APPENDIX 4: LIST OF RESEARCH OUTPUTS	26
	APPENDIX 5: ADDITIONAL COMMENTS BY RESPONDENTS	31
	APPENDIX 6: LIST OF PARTICIPATING INSTITUTIONS	33

1 Summary

This review examines the impact and success of the Kew Latin America Research Fellowship (KLARF) Programme on the basis of feedback from participating scientists. An open-ended questionnaire was distributed to 65 individuals who completed fellowships between 1999 and 2007, 35 of whom responded. Results indicate that the programme is having significant capacity-building impact in Latin America through career development, improved technical skills and knowledge. In practical terms these are contributing to institutional strengthening through improved staff qualification, new opportunities and capacity for fund-raising and increased/improved research outputs, as well as through the transfer of newly acquired skills to graduate and postgraduate students. The establishment of collaborative links with UK-based and other European researchers, and the various benefits derived from interaction with these scientists, were identified as particularly important contributions.

2 Acknowledgements

We would like to acknowledge the **Andrew W. Mellon Foundation** and the **Weston Foundation** (Prance Fellowship in Neotropical Botany) for the substantial financial contributions they have provided to the KLARF Programme. We would also like to thank the KLARF committee and other colleagues at Kew, as well as those in other European institutions, who have contributed to the successful running of the KLARF Programme. Importantly, we would like to thank all the KLARF fellows who took the time to answer the questionnaire, making it possible for us to undertake this review.

3 Introduction

3.1 Tropical American botany at Kew

The biodiversity of the Neotropics (Tropical America) is of immense significance in global terms. The estimated 80-90,000 species of flowering plants in this region, for example, represent some 30% of the world's known genera and species. These occur in a very diverse range of habitats, from deserts and savannas to tropical forests. Kew's work in the Neotropics has for several years been primarily focused on dry and semi-arid ecosystems. These comparatively under-researched biomes are in many cases exposed to severe degradation or conversion to agricultural land, and are currently the subject of high conservation concern.

Kew's primary objectives in Latin America are: 1) to increase access to our collections and data for Tropical American and international researchers; 2) to develop knowledge of taxonomy, phylogeny and conservation status of specific plant families in the region; 3) to make significant contributions to *in situ* and *ex situ* conservation and sustainable use of threatened biomes and species through applied, targeted research and constructive engagement with landowners and other stakeholders; and 4) to disseminate information generated by these activities to a range of audiences in accessible formats. Our work is achieved through a multi-disciplinary, collaborative approach, drawing on the combined expertise and experience of a cross-departmental team (including the Herbarium, Jodrell Laboratory, Seed Conservation and Horticulture & Public Education Departments) and our in-country partners, building on the strengths of our collections and curatorial resources.

3.2 The KLARF programme

Kew's important historical collections and expertise in plant sciences place it in an unrivalled position to meet some of the challenges faced by Latin America countries with high plant biodiversity. The KLARF Programme was established in 1998 with the overall objective of helping to develop capacity for plant science in the region, specifically by funding and facilitating research study visits from Latin America botanists wishing to consult collections or conduct botanical research at Kew, the Natural History Museum and other European research institutions. The programme was designed to support scientists studying a wide-range of subjects including taxonomy, biogeography, micromorphology, cytogenetics, biochemistry, molecular systematics, phylogeny, horticultural science, comparative developmental studies and data repatriation, whilst building collaborations and partnerships with staff from Kew and other European institutions.

The first KLARF programme was supported by a generous donation from the Andrew W. Mellon Foundation. Additional donations from both the Andrew W. Mellon Foundation and the Weston Foundation enabled the programme to continue for a further five years (2003-2008). The latter was specifically awarded to fund a programme of fellowships in recognition of the outstanding contributions made to botanical science and conservation by Professor Sir Ghilleen Prance during his 11 years as Director.

3.3 Purpose of the review

The objective of this review is to explore the benefits and contributions of the KLARF Programme as perceived by participating Latin American researchers. It aims to identify the extent to which the objectives of the programme and individual fellowships have been met, and to evaluate the benefits both to individual researchers and their institutions. Principal questions addressed by the review include:

- How has the programme contributed to individual capacity building and career development?
- What have been the principal benefits of the programme for participating fellows and their institutions?
- What have been the primary research achievements of the programme?
- What are the opportunities and challenges in terms of applying the skills and experiences gained through the programme to the development of Latin American research?
- What are seen as the strengths and weaknesses of the programme?

4 Methodology

4.1 Data collection and analysis

A questionnaire (see Appendix 1) was distributed to 65 current and past KLARF Fellows. Fellows were contacted via email, with a brief explanation of the main objectives of the review. The questionnaire was designed to encourage a thorough exploration of the issues identified, using a combination of direct and indirect open-ended questions to give respondents the flexibility and freedom to answer in their own ways. Where necessary, use was made of deliberate prompts to lead respondents towards supplying an answer or opinion.

Data from questionnaires were transferred to an Access database for analysis. Unnecessary or irrelevant material was removed and the data were organised into themes, based upon issues raised in the questionnaire. Two principles guided the data analysis: documenting exactly how to proceed before beginning, and 'giving evidence to support our conclusions as well as looking for diversity of materials and difference of opinions between different participants while being specific about whether a particular view is of one person or of many' (Finding out Fast, Chapter 6).

Thirty-seven replies were received: eight respondents from a total of 21 fellows from the first programme and 29 from a total of 44 from the second (excluding the ten fellows selected over the last two rounds). Collectively, these respondents comprised a large knowledge and expertise base spanning the principles and practice of a broad range of plant sciences. Details of the respondents are provided in Appendix 2.

4.2 Critical evaluation

This survey was specifically aimed at evaluating the programme from the fellows' perspective, and the findings cannot therefore be taken to represent the views of all those who participated in the KLARF Programme (e.g. UK and other European research collaborators). By sampling from a wider cross-section of people we might have gathered different and wider insights, although to some degree this has already been covered by an internal review conducted in 2006 with the KLARF Committee. Given the relatively low response rate from the fellows from Programme 1 (33%), it is also possible that some aspects of the data (e.g. career development) are biased.¹

Although we adopted an open-ended format to the posed questions, written questionnaires are never as effective as semi-structured interviews for exploring complex subjects comprehensively, lacking the option for probing and adjusting questions in reaction to responses. Such questionnaires also run a greater risk of generating repetitive responses. However, with limited resources this was judged the most effective approach.

5 Results

This section summarises the responses with support from quotations and quantitative evaluations where appropriate. On the whole the analysis follows the outline structure of the questionnaire, although in some cases answers to more than one question are drawn together thematically in order to address the programme's success in meeting its specific objectives.

5.1 Career development

The questionnaire provided participants with the opportunity to volunteer information about their career development since completing their fellowships, and whether or not they regarded the programme as having contributed to that process. Bearing in mind that some respondents had only completed their fellowships recently (with little or no scope for development), the results are broken down by year of completion in Table 1.

Of the respondents who completed between 1999 and 2002 (Programme 1), 71% reported a change in position, all of whom considered their fellowships to have contributed to this process. All respondents from Programme 1 reported increased teaching responsibilities, and 86% reported increased research responsibilities. Of the respondents who completed during the first three years of Programme 2, 36% reported a change in position, of which 75% considered their fellowships to have contributed to this career development. Eighteen percent reported increased teaching responsibilities and 32% increased research responsibilities.

Overall, of the 13 respondents who reported development of their careers since completing their fellowships, 85% considered KLARF to have contributed to that advancement.

¹ For example, they may be weighted towards the opinions of people with a greater interest in botanical research and in maintaining links with Kew by participating in the survey.

Table 1: Career development

Year of fellowship completion	No. Fellows	No. respondents	Changed position	Completed post-graduation	KLARF contribution to changed position
1999-2002	21	8	5	1	5
2003-2006	36	23	8	3	6
2007-	8	6	0	1	0
Total	65	37	13	4	11

Certainly, my CV became much more interesting and the confidence in my work strongly increased. Those aspects did surely play a role when I applied for my current position.

KLARF fellowship increased my expertise in botanical research because I learned a lot about the discussion of phylogeny, I acquired different and new skills to develop molecular biology but I established different contacts to continue the collaboration.

Yes, my position has changed, because I have better qualification into my University and I was nominated... as National Researcher I by the Consejo Nacional de Ciencia y Tecnología (Sistema Nacional de Investigadores).

Table 2: Teaching and Research responsibilities

Year of fellowship completion	No. Fellows	No. respondents	Teaching responsibilities			Research responsibilities		
			+	=	-	+	=	-
1999-2002	21	8	7	0	0	6	0	1
2003-2006	36	23	4	3	1	7	1	0
2007-	8	6	1	0	0	1	0	0
Total	65	37	12	3	1	14	1	1

My botanical teaching has been improved and updated after my fellowship, mainly in systematics. Therefore, it has increased in quality, not in time. Now, I participate alternately in undergraduate and graduate programmes,

My responsibilities for botanical research have been also increased, as I coordinate a project on phylogenetic analysis of the genus *Mimosa* (Leguminosae), and I am starting collaborations abroad.

Despite my job has not changed, my research in botany has increased significantly after being a KLARF fellow.

5.2 Benefits to individual fellows

Participants were asked to identify the benefits they gained through their participation in the programme. This was an open-ended question, the results of which have been broken into categories and summarised quantitatively in Table 3 below. The most commonly cited benefits included the opportunity to interact with other researchers

(see also Sections 5.5 and 5.9), improved skills and knowledge in research techniques, and access to resources such as herbarium and library collections (see Section 5.4).

This fellowship played a major role in my PhD both by supporting me financially and by covering partial costs of molecular data collection. Both the electronic library and the physical one were fundamental part of my research. The knowledge available from these libraries has allowed me to better understand the organisms and the environment that I am dealing with. Furthermore it allows me to keep updated with scientific developments in my field of work.

KLARF has permitted [me] to improve my knowledge about *Mitracarpus* species by studying of type material and collections worldwide and by access to original descriptions of the species.

Table 3: Benefits of the fellowships to individual fellows

List of Benefits	No. times mentioned
Capacity and knowledge	
Improved skills/expertise/confidence in research field	17
Improved perspective on taxonomy and systematics	7
New techniques in molecular biology and data analysis	7
Improved knowledge of type specimens and patterns of morphological variation	5
Access to and training in new methodologies	4
Improved publications	3
Improved English language	4
Improved analytical skills	2
Experience in seminar presentation	2
Practical experience	2
Increased knowledge of botanical groups	3
Keeping up-to-date with scientific/plant systematic and morphology development.	2
Relationships	
Development/strengthening of interaction/scientific exchange with UK/European researchers	23
New friends	1
Contact with other cultures in different countries	1
Resources	
Access to herbarium collections including historical material	18
Access to literature and protologues	11
Access to Kew's databases	1
Opportunity	
Increased scientific production	7
Academic/professional enrichment	3
Time to spend on research	2
Financial support for molecular data collection	2
Opportunity to analyse large sets of data	1
Participation in international conference	1

5.3 Benefits to fellows' institutions

KLARF fellowships were explicitly acknowledged by 31 respondents as having been beneficial to their institutions. The most commonly reported benefits (see Table 4) were increased research/scientific production and transfer of knowledge to students through the supervision of theses and research, improved opportunities for international collaboration, and increased institutional status (e.g. the National Herbarium of Trinidad & Tobago was designated the National Focal Point for the Global Taxonomic Initiative in November 2006). Direct benefits of status change have included improved success rates for scholarships and research proposals, both nationally and internationally (e.g. tapping into other researching funds: CAPES, DARWIN, U.W.I.), leading in one case to "major refurbishment and expansion of national herbarium".

My coming to UEFS brought with me all experience I got at Kew and publications from this fellowship have been important for applying for money to research thereby helping to get resources for the university.

For each [successful proposal] outside of my country, my university have more benefits, like more scholarships for new students inside of country and improvement on quality made by CAPES.

The preparation of a Checklist played a role in attracting Darwin funding, in collaboration with Oxford University, UK, for building research capacity in our herbarium which, in turn, led to the major refurbishment and expansion of the National Herbarium of T&T in 2006 with match funding from the U.W.I.

My institution has now a specialist of an important group of plants that will contribute to the increase of research quality and to the resource caption.

Table 4: Benefits of fellowships to Latin American institutions

List of Benefits	No. times mentioned
Capacity for teaching and research (human capital)	
Increased/improved research and teaching programme	12
Capacity building of younger students through supervision of theses/research	6
Completion of PhD theses	2
Improved support to institutional postgraduate research programme	1
Infrastructure/management and physical resources	
Implementation of newly learned lab safety procedures, leading to improved work conditions and management of lab equipment and collection (herbarium).	3
Strengthening/development of national herbaria (e.g. increased collection, implementation of new management techniques etc)	1
Opportunity	
Potential and actual access to academic contacts by the institution and students.	8
Increased institutional quality assessment by third parties	4
Increased scientific production/publication (including in collaboration with European researchers)	3
Increased number of publications leading to successful research grant application	2
Contribution to Kew's mission and provision of significant research for Kew's lab	1
Organizations of events and workshops	1

Organization of Kew's bromeliad living collections according to systematic treatment by genera	1
--	---

Training in molecular systematics: we have some equipment but we had not the experience in many parts of the process.

My everyday contact with students permitted me to transmit to them some of the things I learned in Kew. Also I took advantage of the laboratory safety procedures used in Kew Gardens, and now I am trying to put them into practice in my institution to improve our work environment.

I am developing now new research lines by means of collaboration with UK researchers, submitting bilateral projects, as well as the application of some methodologies like fluorescent *in situ* hybridization.

5.4 Skill and knowledge transfer

Respondents were asked to provide examples of any new skills and knowledge that they had gained through their participation in the KLARF programme. Again, this was an open-ended question, the results of which are listed in Appendix 3. Most commonly cited were taxonomic skills followed by molecular techniques, herbarium skills and interpersonal skills.

5.4.1 Applying new skills in the institutional context: opportunities & challenges

Participants were asked how their new skills have been applied to their institutions. For 15 respondents this question did not apply, whilst the remaining participants expressed a range of ways in which they have used these skills to bring opportunities and development. For seven of the respondents, for example, impact is being felt through the writing up of project proposals.

I am writing projects to different programs to improve the Molecular Laboratory at UFRGS.

I am able to write projects and get funds to develop research and supervise undergraduate and graduate students.

For my institution, in my lab we are standardizing the FISH technique to apply in different species and I have submitted a project continuing the collaboration with UK researchers, which is good to have opportunities in external funding agencies.

Now I am recognized as National researcher, SNI by CONACYT [which] is very important because most members of staff in graduate programmes should be SNI in order to maintain a good quality of these programmes and to have available fellowships for the students.

I may say that even though I am currently working in Germany a lot of my research continues to focus on the Venezuelan botany. In this way, at least in an indirect way I do contribute with my home country.

Herbarium techniques learned at Kew and during visits to other European herbaria are, in the words of one fellow, "allow[ing] me to return with new ideas about the general organization of the herbaria, the management of the collections, and the different way to keep the type collections". Other skills and knowledge mentioned in this context included repatriation of images, application of new safety procedures, revision of the names on herbarium sheets and databases, improved graduate and undergraduate programmes in plant sciences, bibliographic resources and increased numbers of international publications.

More broadly, institutions are benefiting from critical scientific information such as the “implementation of a new technique to answer questions regarding species delimitation and conservation of plants”, as well as more knowledgeable and confident staff members. Finally, two respondents felt that their successful application to KLARF had encouraged other students to apply successfully for fellowships, and one noted that the principal output from his study has had a multiplying effect since “supervisors and students [are] users of CARIBE to maintain list of tree biodiversity of the region and teach courses in plant systematics”.

When asked what were the difficulties in applying new skills and knowledge to their home institutions, nine respondents mentioned lack of funds and financial difficulties as a major problem. On a related issue, eight respondents mentioned lack of or poor equipment and/or appropriate laboratories, whereas for five respondents lack of institutional vision was the major challenge to overcome. For three respondents there were no difficulties in applying new skills and ten respondents replied that the question was not applicable in their cases.

All difficulties are due to not enough money from the government to public universities and not much funding to support taxonomy and molecular work in Brazil

Mostly lack of sufficient time and money to implement the changes I envision as important to the botanical collections at my home herbarium (where I am the curator).

My home institution was short of money and my position was cut... [I] found myself unemployed even though I had almost finished my PhD.

Lack of investment to environmental projects, including biodiversity and flora.

Financial problems of the University where I work in, and related lack of support for the Herbarium.

We have problems with equipment, reagents etc, lack of material and other resources.

Lack of national priority in conservation or taxonomic issues.

Reluctance to accept new ways of doing things. It is necessary to adapt things and ideas to our reality. Sometimes it is not very easy

5.4.2 Applying new skills and knowledge to teaching

Although 17 respondents are not yet in a position to apply new skills to the supervision of students², in at least 16 cases new knowledge was said to be contributing directly to improved supervision and teaching. This is a key objective of the KLARF programme, since facilitating transfer of skills and knowledge to future generations of Latin American botanists is crucial for long-term impact and sustainability. More specifically, these benefits included transfer of new scientific knowledge to students for their own research, “working in a systematic form to answer research questions with confidence on phylogeny topics”, input into postgraduate programmes, advice on KLARF applications, safety and organizational procedures as well as advice on the importance of learning English and sharing knowledge.

Perhaps it is one of the most important aspects of the KLARF programme, [since] through my experience with KLARF I can stimulate my students to be more interested in systematics.

² Nevertheless, three of these respondents specifically identified future transfer of their skills and knowledge to students as a significant benefit from their fellowship.

As an instructor I can transmit part of my experience to them not only about my new knowledge on flower structure development but also about how important [it is] to learn English to enhance and share the knowledge.

5.4.3 Applying new skills and knowledge to research

When asked how their newly acquired skills have been applied to their own research, respondents provided a range of answers many of which mirrored their responses to the more general question about benefits gained from the programme (Section 5.1). These ranged from the application of specific technical skills to writing, data availability and improved understanding of the subject:

- Working more confidently and independently
- Confidence in writing papers [including in English]
- Improved manuscripts
- Better management of collections
- Recognition of new plants
- Improved knowledge of species
- Better determination of specimens
- Correction of species determinations
- New ideas how to approach research
- Better organisation and planning of research
- Improved quality of research and widened research possibilities
- New data for research
- Improved perspective on plant taxonomy
- Improved solutions to taxonomic problems
- New views on speciation process
- Application of lab skills [including safety skills] to research
- Horticultural protocol in cultivation of threatened plants in ex-situ collections
- Critical evaluation of phylogenetic studies
- First complete monograph of genus
- Reconstruction of past environments based on taxonomic relationships of fossil material
- Completion of PhD dissertation
- Increased potential to participate in new research projects

I have now [a] better idea to structure collaboration with other people and a new view of the phylogeny and polyploidy-mediated speciation process. In fact my new research line includes a part of the lab-skills learned...

I am now able to critically evaluate phylogenetic studies, adapt techniques to my universe and go further, even developing new strategies to investigate particular themes.

I produced very important new data for my research, which was essential to answer many questions I had when I started my PhD (e.g. which sections were monophyletic, which name to give to some of the species etc.). Besides that, considering I could improve my language skills, nowadays I feel much more confident to write scientific papers in English than I felt before I got my fellowship.

I will use new laboratory techniques to section the palm flowers for my study. The new perspective that the fellowship have gave me, makes me see the research differently, also giving me new ideas about how to approach it.

The intensive botanical field survey in progress is adding new distribution data and revising the conservation status in the checklist which I was working on during the KLARF visit. This will provide a more accurate statement on the conservation status of each species backed up with some of the historical records and geographical data gathered from the specimens at NHM and Kew.

After my experience with KLARF I sent an article to Brittonia (it will publish now in 2007). That was my first paper in English completely written by me.

5.5 Interactions with other researchers

All 37 respondents reported that KLARF provided opportunities for interaction with researchers in the UK and other European institutions, with 11 respondents specifically highlighting this as an important aspect of the KLARF programme. Supporting comments included “it’s the best point”, “particularly helpful”, “most important aspects”, “very important for me and my Department”, “the best benefit of the fellowship” and “most invaluable resource used at Kew”. However, one respondent felt that interaction with specialists at Kew did not seem to be encouraged. For another the contact with various specialists was good, but becoming “more and more weak”.

The interactions with other fellows have not only broadened my knowledge of what is being done (scientifically) in other South American countries, but mostly have given me the opportunity of meeting new colleagues and establishing precious contacts.

Yes, I've been working directly with people at Jodrell Laboratory, especially Mark Chase and his student Mehdi Zarrei. I could also interact with several people at Jodrell. At the herbarium I could interact with Daniela Zappi in planning a near future project involving Kew and USP.

This interaction has become very strong. In an almost daily basis I contact Kew experts for scientific reasons (common papers, advice, common starting projects etc).

Respondents identified a series of benefits from these interactions (see also Section 5.9), ranging from improved skills (nomenclature and taxonomy, checklist preparation, cladistic methodology, phylogeny etc.) to exchange of ideas and information, discussion of common problems and, more generally, broadening the scientific scope of their research. In practical terms this in turn led to improved research quality and outputs. Other benefits mentioned included improved communication, support in the development of theses and dissertations, ideas on publications (books), presentation of collaborative work in symposia, joint publications, opportunities for new or continued research projects, assistance in preparation and delivery of talks and participation in workshops etc. One respondent specifically mentioned that conservation efforts at regional flora level [Atlantic Forest] could benefit from further inputs from Kew.

By the same token, eleven fellows mentioned useful and important interaction with other fellows. Generally, these resulted in broadening their knowledge through meetings and organized seminars/presentations, joint publications, exchange of ideas, new colleagues and contacts and increased knowledge of laboratory techniques. However, three respondents reported no opportunities to contact other fellows.

5.5.1 Benefits from Interactions

Interaction with staff in Kew and other European institutions have generated new opportunities for collaboration as well as concrete actions and outcomes. For example, one respondent mentioned potential collaboration with the Università degli Studi in Italy to work on Raddi's Cyperaceae collection as “another important result from my time at Kew”. Another highlighted collaboration with Kew staff on the description of two new species discovered during the fellowship, whilst suggestions made by scientists from the Jodrell Laboratory prompted another respondent to experiment with new techniques (use of molecular markers) to study genetic diversity and hybridization in Bromeliaceae.

For another fellow, collaborative work with Kew staff resulted in field trips to several areas in Brazil, collecting plants for phylogenetic and taxonomic studies, which “has

also been important to train new students in the field, improving their experience in taxonomy besides giving them opportunity of a contact with other specialists". Likewise in Mexico, collaboration with the University of Oxford through a KLARF fellowship resulted in field collection of DNA samples of *Mimosa*. Other more immediately quantifiable results mentioned by eleven respondents correspond to the current preparation of papers (see also Annex 5).

Valuable contacts in different countries that could work as a network in the future to improve and facilitate the exchange of valuable researching information and travel opportunities.

Besides increased knowledge, plans are underway to publish research in collaboration with some people I have interacted with.

The first phylogenetic work including species from all the subgenus and allies of *Caesalpinia* sensu lato.

Assistance with the development of a format for the publication of an annotated checklist of the vascular plants of Trinidad and Tobago... and the inclusion of the conservation status of each species.

One of the major results is the on-going cooperation with the Federal University of Rio Grande do Sul in Brazil that was born through the interaction between Kew scientists and KLARF fellows. This cooperation has so far produced one publication in a high impact scientific journal and a few more are on the way.

5.6 Achievement of objectives

When asked to assess their levels of success in achieving the objectives of their fellowships, 20 respondents considered themselves to have achieved them fully and four to have exceeded them. The 13 respondents who regarded their objectives as having only been partially achieved attributed this to a range of difficulties of which the most common was lack of time. This was largely a problem with molecular laboratory studies, where technical difficulties had led to delays in the research programme. These included difficulties in processing samples, insufficient data or material to resolve the research question, difficulties in aligning ITS sequences and the need for resampling. In one case this resulted in the cancellation of visits to European herbaria.

Other reasons given for incomplete success included lack of time for studying the large quantities of material in European herbaria (presumably due to unrealistic work plans based on underestimated holdings), unavailability of material in some herbaria at the time they were visited, and taxonomic difficulties and lack of information on the study group (which was acknowledged as being a consequence of the choice of subject!).

5.7 Outputs from the programme

Respondents were asked to list the outputs from their fellowships. These included 42 scientific papers published, 15 in press or submitted, and eight in preparation. Other outputs mentioned included presentation of talks and posters at scientific meetings, completion of postgraduate degrees; contributions to [nine] databases, collaborative proposals and supervision of PhD and Msc students etc. Details of these are provided in Appendix 4. It is important to remember that these by no means represent the sum total of KLARF outputs, but merely those listed on the questionnaire form by the 35 respondents.

5.8 Challenges and solutions

When asked to identify the main difficulties and challenges faced during their fellowships and how these were overcome, five fellows reported that there were no difficulties, five did not respond or indicated that the question was not applicable, and 25 mentioned a variety of challenges of which the most common was lack of time to complete their work programme. The second most commonly mentioned problem related to the technical challenges of molecular sequencing, with comments such as “results do not come out as planned”, “difficulties to find a DNA region variable enough to improve the resolution of relationships in our group”, “finding the correct protocol to get the ITS sequences... and align with those from the outgroups”, “incompleteness of biological material”, “difficulty concerned technical problems in obtaining AFLP markers”.

Other difficulties reported included taxonomic challenges, misidentified herbarium specimens, cultural differences, access to computers, language, travel arrangements and visas. However, respondents noted that they received much help from Kew staff in overcoming particular problems, and in some cases benefited from the challenge of overcoming the technical difficulties they faced. In the words of one respondent, the difficulty “helped me to improve myself and improve my knowledge... after this experience I feel I have learned the AFLP technique extremely well and that I will be able to solve future problems when implementing it in Brazil”.

People always helped and showed the best way to work or study.

No difficulty related to the institution and the staff.

The main difficulties for a KLARF fellow native from Colombia has to do with the visa that many countries require for us to enter European countries. KLARF officers have been very helpful to overcome this difficulty.

The great difficulty was the English...

5.9 Strengths, weaknesses and opportunities

Respondents were asked to provide opinions on the strengths and weaknesses of the programme and suggestions for how it might be improved. The responses have been broken into categories and summarized quantitatively in Table 5.

STRENGTHS

The most widely recognized strengths of the programme were the opportunities it provides for collaboration and interaction with UK and European scientists, the funds and other resources it makes available, the skills, knowledge and experiences that it provides and the flexibility with which it is administered. Some of these strengths are clearly inter-related, e.g. new experience and knowledge gained by visiting fellows is to a large degree linked to the aforementioned interactions. One participant described KLARF as “one of the few fellowships specifically addressed to research in plant systematics in Latin America... especially important because it allows a successful interaction between scientists from Latin America, the Royal Botanic Gardens, Kew and other European institutions”.

The financial significance of the programme is particularly great in countries where botanical research receives little government support. One respondent described it as a “unique and open [programme] to countries where taxonomic studies are almost never financed”, whilst another maintained that “for most Latin America students, this programme probably represents the most significant source of funding for their

research". Particularly significant was the "focus on Latin America students, the most in need of financial support". This last point was clearly highlighted by another respondent who indicated that the strength of the programme lies in its "support to local taxonomists in the Caribbean where such expertise is lacking or under funded [and that] in order to conserve tropical biodiversity such local expertise is crucial for providing leadership for conservation of tropical flora".

Table 5: KLARF's strengths, weaknesses and opportunities as perceived by questionnaire respondents

STRENGTHS	No. times mentioned	WEAKNESSES	No. times mentioned	OPPORTUNITIES	No. times mentioned
Interaction/collaboration	23	Limited number of fellowships	03	Increase number of fellowships offered	04
Financial: funding for research	12	Short period of fellowships	03	More information & support to fellows (info before arrival, tour of institution, visa issues)	04
New experience/skills & knowledge	11	Limited information prior to arrival (visa issues, local transport)	03	Longer period to complete research/preparation of manuscript	03
Resources: expertise/collection/lab/library etc	09	Limited opportunity to interact with other fellows/researchers	02	Additional advertisement & dissemination of programme	03
Flexibility	07	Limited information/dissemination	02	Financial support for fieldwork in Latin America	02
Publication	01	Lack of review of progress & evaluation of success	01	Improve interactions with other fellows	02
Organization and professionalism	01	Lack of direct support for research work in Latin America	01	Support to get fellows into research & teaching after completion	01
		Lack of support for career development after fellowship	01	Allocate fellowships according to professional levels	01
		Transparency selection process & clear criteria	01	Prioritise medium and long term fellowships with close collaboration with UK	01
		Reception of fellowships	01	Collaboration with other European herbaria	02
		Long minimum period of fellowships	01	Reinforce learned skills through engagement in non-project work at host institutions	01
		Difficulty of travel logistic to Europe	02	Visit herbaria outside Europe (i.e. North America)	01

Mechanisms for complaint/support & advice	01	Availability of fellowship for shorter period	01
		Restrict fellowships for those proficient in English	01

This programme functions as a link with Universities in UK and in Latin American countries to form graduate students, getting skills and knowledge in UK, and applying these in the biodiversity of their countries.

It forms a multicultural environment to work with common problems and to put together people that otherwise would work isolated in their own country.

Most scientists supported by KLARF are bringing home technological knowledge that will hugely benefit many students and institutions in Latin America.

It contributes to enlarge the knowledge about a highly threatened resource: plant biodiversity in the tropics.

Unique opportunity for Latin America students to access the unique scientific collections of botanical specimens, including historical and type material and laboratories.

Bringing together the Latin American botanical community to share the experiences of Kew and other leading herbaria of Europe. These experiences can only help the study of botany and the implementation of conservation programmes in the most biodiverse region of the world. Indirectly it must also assuredly help the study of Neotropical flora by European botanists.

WEAKNESSES

Twelve respondents replied that they could not see any weaknesses in the programme. In the words of one, "I did not detect any weaknesses of the KLARF programme. Is well organized group of people that make easy and nice the experience of KLARF fellow". Seven did not reply, and two did not wish to provide an opinion. For those who did respond, however, the range of issues identified was broad. Although some of these perceived weaknesses have already been addressed (some of the respondents having completed their fellowships eight years previously), they are nonetheless important indicators of priorities both for KLARF and other, similar fellowship programmes.

Five issues were raised by more than one person, including the limited number of fellowships (obviously determined by available funding), the length of the fellowships (initially 12 months maximum but subsequently reduced to nine), limited availability of information (now provided via the programme website and a detailed visitors information guide), limited publicity/knowledge of the existence of the programme³, and limited interaction between fellows and researchers. This final point is important to clarify, given that opportunity for interaction with other researchers has been highlighted by most fellows as one of the principal benefits of

³ This was identified during the internal review as an issue to be addressed. Leaflets were produced for distribution at Latin American botanical congresses and the programme website was updated, but it was recognised that with financial resources currently expiring, active programme publicity should be balanced with funding realities. A targeted outreach and publicity programme has been written into the draft proposal for funding extension.

the programme. This refers specifically to interactions with other KLARF fellows and with researchers outside their direct collaborative relationship.

Actually I do not see any weaknesses in the fellowship. Since the moment I learned about it everything was positive and challenging and the day I left was very hard to me because I was full of great experiences, a new attitude was seeded in me.

KLARF does not provide direct support for botanical work carried out in Latin America.

One point is the number of fellowships. There are many appliers and not so many fellowships. It should be desirable to improve the number of fellowships... Another question is the transparency of selection. The selection should be more transparent and the criteria should be very clear, objective and homogeneous.

The [timeframe] to undertake the study is too short (most of KLARF fellows do study for about 12-14 hours per day to complete what they have to do in time record.

No formal introduction of KLARF fellows: the fellows meet each other through informal ways [and] limited opportunity to know and interact with specialists in Kew, other than the direct project supervisor.

The more attention in the organization of the trips in the other countries.

OPPORTUNITIES

When asked how the KLARF programme could be improved, 25 participants responded with a series of suggestions listed in Table 5. Naturally, many of these correspond to the concerns raised under weaknesses, e.g. more fellowships, more information, longer fellowships and wider dissemination of the programme. Whilst KLARF's objectives (see Section 3.1) are clearly focused on facilitating access to UK and European resources for Latin American researchers, it is interesting to note that some respondents highlighted provision of funding for fieldwork in Latin America and visits to North American herbaria among potential improvements. Also, whilst some respondents were calling for longer fellowships, one was suggesting shorter (current minimum one month).

The KLARF programme could also finance fieldwork or extend study for students after or before being in England (which would be at a much lower cost than in London) like a sandwich programme. I think the output could be much greater.

All scholarship should receive an explanation and tour about the facilities in Kew Gardens, not only the facility the person will work. It is important because when [you] visit and know Kew Gardens, you could have a better idea about it.

Closer communication between the institutions and immigration service at the airport to make the entrance easier and less stressful to visitors.

Include direct support for botanical work in Latin America.

If possible, to increase the budget for each project, in order to allow longest stays.

For me, everything worked pretty well after the fellowship, but I guess this luck is not the same for everybody. I believe that the programme might help after the fellowship by supervising the fellows to get into the research field in their countries. At least, to evaluate their success and this is the first time KLARF asked me a feedback of the programme.

I believe that KLARF could invest a little more in advertising itself. This would not only benefit Latin America's scientists/institutions but could also give KLARF a better stand in acquiring new sources of funding.

By creating forms of fellowship according to professional levels. A postgraduate student will be always at a disadvantage when applying together with a teacher or a senior researcher [who] has other possibilities to raise funds.

Better dissemination of applications and guidelines for the programme. It seems like just very few people know about this opportunity (mainly in Brazil) and they know about it by "word-of-mouth". Could you use an open call for applications in the web or list servers?

Include collaboration with other European herbaria so accommodation costs can be low...

It will be helpful to have access to appointment book of the KLARF keeper.

The KLARF programme would be directed to more taxonomic studies in European herbaria.

6 Conclusions

Although this review is largely intended to provide insight into the degree to which the KLARF programme is, from the perspective of its participants, meeting its objectives, it is also an important lesson-learning opportunity. It is evident from the discussion of the results that the programme is having a positive impact on the development of careers of Latin American botanists. Although it is difficult to make a quantitative assessment of this impact, it is significant that of the 13 participants who reported career development since completing their fellowships (in most cases accompanied by increased teaching and research responsibilities), 85% considered KLARF to have contributed to this process.

Benefits derived from these fellowships evidently vary considerably from one participant to another. However, interactions with scientists in the UK and other research organisations, and associated knowledge and skill transfer, were most commonly highlighted in this context. Thus, although access to collections and library resources were ranked highly among the key benefits, Kew's and other institutions' 'human capital' appears to be the principal resource on which the programme is drawing.

This programme is seen as particularly important in the context of countries where funding opportunities for overseas visits of this nature are often very limited. This highlights the important contribution that programmes such as KLARF can make to institutional strengthening and botanical research capacity: not only are participants benefiting from newly acquired skills and resources not available in their home countries, but they also identified a range of benefits to their respective institutions as a result of their fellowships. Amongst these are increased capacity for teaching and high-quality research,⁴ opportunities to tap into a wider network of academic contacts, improved institutional quality assessment by third parties and a greater ability to write project proposals and generate funds for research. However, several noted that their ability to capitalise on this was hampered by limited funding, poor equipment and lack of institutional vision.

Most participants considered their fellowships to have been successful in terms of achievement of their objectives, and in a few cases regarded their expectations as having been exceeded. Prominent amongst the fellows who felt they had been less successful were those whose laboratory studies had been hampered by technical

⁴ This will increase over time: many of the questionnaire respondents are still completing their PhDs.

difficulties, resulting in delays to their work programmes. Such problems are not uncommon in laboratory-based molecular studies, and it is clearly important that such contingencies are accounted for in the planning process.

Participants identified a number of areas in which they felt the programme could be strengthened, some of which had already been addressed since they completed their fellowships. Principal among these were increased numbers of awards to meet the demands of Latin America researchers for botanical research fellowships, longer periods of study for completion of manuscripts, wider knowledge of the programme's existence and higher levels of support for visiting fellows. Participants also identified a need for financial support for in-country (field-based) research

The principal conclusion of this review is that the KLARF Programme is making a significant contribution to capacity building in Latin American botanical research, both at individual and (indirectly) institutional levels. Further development of the programme offers scope for increasing this impact, but additional factors such as institutional funding resources are also important in determining long-term uptake and development.

7 References

Thomas, A., Chatway, J. & Wuyts, M. (1998). *Finding out Fast*. Open University.

8 Appendices

Appendix 1: Questionnaire contents

CHANGE OF SITUATION

- Has your position/job changed since you took up your fellowship? [if yes, please give details]
- Have you completed a postgraduate degree since you completed your fellowship? [if yes, please give details]
- If your job has changed, have your responsibilities for botanical **teaching** increased, decreased or remained the same
- If your job has changed, have your responsibilities for botanical **research** increased, decreased or remained the same?
- If your job has changed, do you feel that your experience from the fellowship was helpful in this?

BENEFITS FROM THE FELLOWSHIP

- What were the main benefits of the fellowship for you?
- What were the main benefits of the fellowship for your institution?
- Did the fellowship provide opportunities to interact with other fellows and other specialists at Kew and abroad? [Please give details]
- What have been the results of this interaction, if any? Is it continuing?

YOUR PROJECT OBJECTIVES AND CHALLENGES

- What were the main objectives of your KLARF proposal? [summarise as bullet points]
- How successful do you think you were in achieving your objectives? Were any of your objectives not completed?
- What were the main difficulties and challenges, if any, and what was done by you or by others to overcome these?

YOUR PROJECT OUTPUTS

- Please list all publications, theses, databases, websites or other outputs that have benefited from your fellowship [including those you have already submitted to KLARF]

SKILL AND KNOWLEDGE TRANSFER

- What new skills and knowledge, if any, did you acquire during your fellowship?
- How have these new skills and knowledge been applied in your home country?
 - to your own research?
 - to your students?
 - to your institution?
- What difficulties have you faced in applying these new skills or knowledge in your institution? What caused these difficulties?

THE KLARF PROGRAMME

- What do you consider to be the strengths of the KLARF Programme?
- What do you consider to be the weaknesses of the KLARF programme?
- How do you think the KLARF Programme might be improved?

ADDITIONAL COMMENTS

Appendix 2: Respondents' details

Candidate	Status	Year Fellowship	Duration Fellowship	Country	Area of study
Programme 1: 1999-2002					
Alessandro Rapini	Postgraduate teacher (now Lecturer at Universidade Estadual de Feira de Santana, Brazil)	2001-2002	12 months	Brazil	Systematic studies in Apocynaceae-Asclepiadoideae
Cecilia Ezcurra	Postgraduate teacher (now Director of the Herbarium)	2000	3 months	Argentina	Systematics of <i>Justicia</i> (Acanthaceae) in southern South America
Favio Gonzalez	Postgraduate teacher-researcher	2000-2001	9 months	Colombia	Systematics of the family Aristolochiaceae and the genus <i>Aristolochia</i>
Flávio França	PhD student (completed PhD in 2003 and now teaching at UEFS)	2000-2001	6 months	Brazil	Systematic studies in the genus <i>Aegiphila</i> (Verbenaceae)
Fred Stauffer	PhD student (completed PhD in 2004 and now assistant curator Botanic Gardens, Switzerland)	2001	3 months	Venezuela	Systematic studies in <i>Geonoma</i> and <i>Asterogyne</i> (Palmae)
Paulo Sano	Postgraduate teacher (permanent position since 2003 University of Sao Paulo, Brazil)	1999	4 months	Brazil	Systematic studies in the genus <i>Paepalanthus</i> (Eriocaulaceae)
Rosaura Grether	Postgraduate teacher (nominated and nominee as National Researcher I by the Consejo Nacional de Ciencia y Tecnología (Sistema Nacional de Investigadores).	2001-2002	12 months	México	A phylogenetic analysis of <i>Mimosa</i> sect. <i>Batocaulon</i> , series <i>Leucaenoideae</i> Leguminosae – Mimosoideae
Gloria Estela Barboza	Postgraduate teacher	2000	6 months	Argentina	On some taxonomic problems in Solanaceae (revision of the genus <i>Browallia</i> , and revision of Argentine species of <i>Solanum</i> sect <i>Solanum</i>)
Programme 2: 2003-2007					
Ana Claudia Araujo	Postgraduate student	2006	9 months	Brazil	Phylogenetic Studies in Cyperaceae Tribe Rhynchosporae
Argelia Cuenca	PhD student	2004	1 month	México	Taxonomic and Pollen Studies of the Palm tribe Hyophorbeae
Ary Oliveira-Filho	Postgraduate teacher	2006	3 months	Brazil	Geography, Diversity and Conservation of the Tree Flora of the South American Atlantic Forest Domain
Carlos Vinício Vieira	PhD student	2007	9 months	Brazil	The re-induction of desiccation tolerance in germinated seeds of <i>Tabebuia impetiginosa</i> Mart.
Carolyn E. B. Proença	Postgraduate teacher	2005	3 months	Brazil	A systematic study of the genus <i>Psidium</i>
Clarisse Palma da Silva	PhD student	2006	6 months	Brazil	Genetic structure and variability in populations of <i>Vriesea gigantea</i> Gaud. (Bromeliaceae)
Elnatan Souza	PhD student	2007	6 months	Brazil	Phylogeny and taxonomic revision of <i>Mitracarpus</i> Zucc. Ex Schult. & Schult.f. (Rubiaceae – Spermaceae)
Fiorella Fernanda Mazine	PhD student (now post-doc)	2005	12 months	Brazil	Taxonomic and Phylogenetic Studies in <i>Eugenia</i> L., mainly <i>Eugenia</i> sect. <i>Racemosae</i> and <i>Eugenia</i> sect. <i>Racemososae</i> (Myrtaceae) sensu Berg.

Candidate	Status	Year Fellowship	Duration Fellowship	Country	Area of study
Ivon Mercedes Ramirez-Morillo	PhD researcher	2006	2 months	México	Floristics of Mexican Bromeliaceae and Systematics and phylogeny of <i>Hechtia</i> Klotzsch (Bromeliaceae)
Jeny Solange Sotuyo	PhD student	2007	6 months	México	Phylogenetic analyses in the legume genus <i>Caesalpinia</i> sens. Lat.
Jesus Rodrigo Botina-Papamija	MSc student	2005	6 months	Colombia	Taxonomy and Phytogeography of the genus <i>Smilax</i> L. (Smilacaceae) in Colombia
Jesus Rodrigues Lemos	Postgraduate researcher	2006	4 months	Brazil	Biogeography of the caatinga plants from the Aiuaba Ecological Station, Ceará, Brazil
Jomar Jardim	PhD student	2007	9 months	Brazil	Phylogeny of <i>Faramea</i> Aubl. (Rubiaceae) and revision of sect. <i>Hypochasma</i> Müell. Arg
Kazue Matsumoto	PhD student	2005	2 months	Brazil	Systematic studies of <i>Marierea</i> Camb. (Myrtaceae) with emphasis on South Eastern Brazil
Laura Calvillo Canadell	Postgraduate student (now member of staff)	2006	2 months	México	Taxonomic affinity of Leguminosae Miocene Flowers and Eocene/Oligocene fruits and leaves
Lorena Guevara	PhD teacher	2006	3 months	Venezuela	Floral structure and systematics in Mauritiinae Meisn. (Arecaceae)
Lorenzo Felipe Sanchez	Postgraduate researcher (technician and now Associated researcher)	2006	10 months	México	Molecular Cytogenetic Studies in Agaves: Clones, Hybrids and Polyploids
Marcelo Sellaro	Undergraduate	2005	12 months	Brazil	Bromeliaceae: Management of living plant collections and information dissemination.
Maria Natividad Sánchez de Stapp	PhD student	2006	3 months	Panama	Evaluation of the infrageneric classification of <i>Cordia</i> L. (Boraginaceae) and taxonomic revision of <i>Cordia</i> Sect. <i>Myxa</i> (Engl.) DC.
Mario Blanco	PhD student	2007	4.5 months	Costa Rica	A taxonomic revision of <i>Lockhartia</i> , and annotation of Maxillariinae specimens (Orchidaceae)
Monica Carlsen	PhD student	2005	2 months	Venezuela	Systematics, Classification and Evolution within the genus <i>Anthurium</i> (Araceae) with emphasis on species with palmately-lobed leaves
Natalia Calderon	MSc student (now completed and an Associated researcher)	2005	9 months	Peru	Taxonomic Studies of the genus <i>Haageocereus</i> in Peru for the Conservation of its species and natural habitats.
Peter Hargreaves	PhD student (completed in 2005)	2003	2 months	Brazil	Tree flora of the forests of the middle and upper Rio Grande: evaluation of vegetative morphological characters and of automated systems for the description and identification of species.
Renato Mello-Silva	Postgraduate teacher	2007	8 months	Brazil	Systematic, phylogenetic and molecular study of Velloziaceae
Rodrigo Duno de Stefano	Postgraduate researcher	2005	2 months	México	The family Leguminosae in the Yucatan Peninsula Biotic Province in Mexico.
Samantha Koehler	Postgraduate researcher	2006	12 months	Brazil	Species Limits and Phytogeography in the <i>Maxillaria acicularis</i> – <i>M. madida</i> Group (Maxillariinae: Orchidaceae)
Thelma Barbará Santos	PhD student	2004	9 months	Brazil	Molecular population genetics of selected Bromeliaceae (<i>Alcantarea/Vriesea</i> spp.) adapted to inselbergs in the Atlantic Rain Forest of Brazil.
Ximena Londono	Postgraduate researcher	2004	3 months	Colombia	Monographic studies of <i>Guadua</i> (Poaceae: Bambusoideae)
Yasmin Shaheeda	Curator Herbarium	2005	2 months	West-Indies	Updating the Flowering Plants of

Candidate	Status	Year Fellowship	Duration Fellowship	Country	Area of study
Baksh-Comeau					Trinidad & Tobago (T&T)

Appendix 3: Skills and knowledge acquisition

List of skills and knowledge acquired by Fellows (as quoted in questionnaire)

Herbarium skills

Barcoding and float-bed scanning

Practice of herbarium use for research

Mounting plant samples at the herbarium

Knowledge of the way a leading herbarium work

Management of herbarium (e.g. skills required by mounters, organization of the different levels of curatorial functions)

Good herbarium practices, new technologies and equipment that may be appropriate for improving the operations of local herbarium, health and safety issues, new herbarium policies, access and intellectual property and information sharing.

Better knowledge of herbarium specimen identification

Image management skills

Scanning images

Drag images into TOAD [i.e. storage on server]

Data-base, GIS & map production for the geographical distribution of the species

Interpersonal skills

Meeting with specialists and colleagues from several parts of the world

Confidence about research

New approach to the international scientific community

New vision and other ways of working with other KLARF fellows and supervisor

Confidence

Discussion with staff and researchers

Language skills

English language (x4)

Language skills

Laboratory management skills

Laboratory safety procedures

Management of lab (team work, common equipment operation, safety procedures and collaboration with different people with same interests)

Microscopy skills

Use of microscopy connected to the computer

SEM [scanning electron microscopy]

Molecular biology skills

Work with different primers

Different programmes for alignment and sequencing

Attendance to workshops about molecular studies

Laboratory and computational skills in molecular phylogeny expertise

Molecular techniques

Analysis of AFLP markers and species delimitation studies

Technical molecular systematic skills that include primer design and sequencing

DNA fingerprinting techniques and population genetics data analyses

Sequencing and analysing ITS & Cloning ITS sequences

Palynology skills

Palynological techniques updated (acetolysis, preparation of samples and photos from SEM)

Taxonomic skills

Botanical nomenclature

Knowledge of all the type specimens of the Neotropics and some of their geographical distributions

Improved expertise of family group and the history and ways of functioning of other herbaria

Increased knowledge of family from herbarium material and Kew library

Increased knowledge of species identification and geographical distribution

Recognition of group I am working with, and working with preserved materials plus morphology of family studied

Knowledge of nomenclatural taxonomy

Taxonomic treatments

Additional knowledge of the plant family I am working with through collections (especially types and historical collections) and library

Type specimens and general collection in the herbaria

Better understanding of the group I am working with

Large collection at NHM allowing knowledge of the morphological variation in the genus

Increased knowledge through the studies of large collection in European herbaria and information on subject by European specialists

Increased information on plant taxonomy through library

Contact with historical materials – broadening of mind

New literature on taxonomy, cladistics and palynology of legumes

Management of collections and knowledge of historical type collections

Appendix 4: List of research outputs

NB – this list is taken directly from the respondents' questionnaire forms. It does not represent the complete list of programme outputs, which will be compiled at a later date.

Books

- Londoño, X.** 2005. Bambúes Exóticos en Colombia. 74 pgs. ISSN No. 1794-6336.
- Oliveira-Filho, A. T.** 2006. Catálogo das Árvores Nativas de Minas Gerais – Mapeamento e Inventário da Flora Nativa e dos Reflorestamentos de Minas Gerais. Editora UFLA, Lavras, 423 p. (ISBN 85-87692-37-2).

Published Papers

- Adams, C.D. & **Baksh-Comeau, Y.S.** (2005). A Checklist of the Vascular Plants of Chacachacare Island, Trinidad & Tobago. Living World- Journal of the T&T Field Naturalist's Club. pp 1-10
- Barbará, T.; Palma-Silva, C.;** Paggi, GM.; Bered, F.; **Fay, MF.;** **Lexer, Cristian.** Cross-species transfer of nuclear microsatellite markers: potential and limitations. *Molecular Ecology*, 2007
- Barboza, G.** & A. T. Hunziker. 2005. Revision of *Solanum fiebrigii* and *Solanum sinuatiexcisum*, and their inclusion in sect. *Campanulisolanum*. En R. C. Keating, V. C. Hollowell & T. B. Croat (eds.), *A Festschrift for William G. D'Arcy, The legacy of a taxonomist, Monogr. Syst. Bot. (USA)* 104: 51-67.
- Barboza, G.** 2000. Rehabilitación del género *Quincula* (Solanaceae: Solaneae). *Kurtziana* 28 (1): 69-79.
- Barboza, G.** 2005. Revision of *Solanum* sect. *Chamaesarachidium*. *Nordic Journal of Botany* 23 (2): 155-168.
- Blanco, M.A.,** Kurt M. Neubig & W. Mark Whitten, 2007. A New *Maxillaria* (Orchidaceae) from Panama and Colombia, and Brazilian species found in Ecuador. *Lindleyana* June 2007 Orchids.
- Blanco, Mario A.** Whitten, W. Mark Williams, Norris H & **Koehler, Samantha.** 2006. Capillitial extrusion from fruits of *Maxillaria nardoides* (Orchidaceae: Maxillariinae). *Lindleyana* (September): 677-683
- Dokkedal, A. L. & **Sano, P. T.** 2004. Chemistry in *Paepalanthus* and taxonomic implications. *Bioch. Syst. Ecol.* 32(5):503-504.
- Duno de Stefano, R., L. Rico Arce,** A. Martínez Bernal & C. Gutiérrez Báez. 2006. Notes on the Flora of the Yucatan Peninsula VII: New Records and Miscellaneous Notes for the Family Leguminosae. *Bol. Soc. Bot. Méx.* 78: 43-46.
- Ezcurra, C.** 2002. El género *Justicia* (Acanthaceae) en Sudamérica austral. *Annals of the Missouri Botanical Garden* 89: 225-280.
- Filippa, E. & **G. Barboza.** 2001. Novedades en Gentianaceae de Argentina. *Kurtziana* 29 (1): 79-83.
- Filippa, E. & **G. Barboza.** 2003. Novedades en Gentianaceae de Argentina. II. *Kurtziana* 30 (1-2): 65-67
- Flores-Cruz, M., H.D. Santana-Lira, S.D. Koch & **R. Grether.** 2004. Taxonomic significance of leaflet anatomy in *Mimosa* series *Quadrivalves* (Leguminosae, Mimososideae). *Systematic Botany* 29(4): 892-902.
- Giulietti, A. M.; Scatena, V. L.; **Sano, P. T.,** Parra, L. R., Queiroz, L. P.; Harley, R. M.; Manezes, N. L., Iseppon, A. M. B.; Salatino, A.; Salatino, M. L. F.; Vilegas, W.; Santos, L. C.; Ricci, C. V.; Bonfim & Miranda, E. B. 2000. Multidisciplinary studies on neotropical Eriocaulaceae. Wilsno, K. L. & Morrison, D. A. (eds.) *Monocots: Systematics and Evolution*. CSIRO. Melbourne.
- Gonzalez, F.** 2000. Notes on the Central Andean species of *Aristolochia* (Aristolochiaceae) with the description of a new species from Bolivia. *Kew Bulletin* 55: 905-916.
- Gonzalez, F.** 2004. in A. Henderson et al. (eds.), *Aristolochiaceae, Balanophoraceae, Begoniaceae, Coriariaceae, Juglandaceae & Valerianaceae*. In: *Neotropical Flowering Plant Families*. Princeton University Press,
- Gonzalez, F.** & L.M. Kelly. 2003. Phylogenetic relationships in *Aristolochiaceae*. *Systematic Botany* 28: 236-249.
- Gonzalez, F. & P. J. Rudall.** 2001. The questionable affinities of *Lactoris*: evidence from branching pattern, inflorescence morphology and stipule development. *American Journal of Botany* 88: 2143-2151.
- Gonzalez, F. & P.J. Rudall.** 2003. Structure and development of the ovule and seed in *Aristolochiaceae*, with particular reference to *Saruma*. *Plant Systematics and Evolution* 241: 223-244.
- Gonzalez, F., P. J. Rudall & C. Furness.** 2001. Microsporogenesis and systematics of *Aristolochiaceae*. *Botanical Journal of the Linnean Society* 137: 221-242.
- Gonzalez, F. & D.W. Stevenson.** 2002. A phylogenetic analysis of the subfamily *Aristolochioideae* (*Aristolochiaceae*). *Revista Academia Colombiana de Ciencias Exactas, Físicas y Naturales* 26 (98): 25-60.
- Grether, R.,** a. Martínez-Bernal, M. Luckow y S. Zárate. 2006. Familia Mimosaceae, Tribu Mimoseae: *Calliandropsis, Desmanthus, Mimosa, Prosopis*, In: Fascículo 44. *Mimosaceae. Tribu Mimoseae: 1-*

108. ISBN: 970-32-3866-1. Flora del Valle de Tehuacán-Cuicatlán. ISBN: 968-36-3108-8. Ed. Instituto de Biología, UNAM. México.
- Hargreaves, P.** (2005). Forest trees of the middle and upper Rio Grande in southeast Brazil: evaluation of vegetative characters and of automated systems for the description and identification of species. Thesis. Universidade Federal de Lavras. 135 p.
- Hargreaves, P.** (2006). Vegetative morphology for species identification of tropical trees: family distribution. *Cerne*, 12(1), 1-7. (Acknowledges only FAPEMIG)
- Konno, T.U.P., **Rapini, A.**, Goyder, D.J. & Chase, M.W. 2006. The new genus *Minaria* (Asclepiadoideae, Apocynaceae). *Taxon* 55(2): 421-430.
- Liede-Schumann, S., **Rapini, A.**, Goyder, D.J. & Chase, M.W. 2005. Phylogenetics of the New World subtribes of Asclepiadeae (Apocynaceae - Asclepiadoideae): Metastelmatinae, Oxypetalinae, and Gonolobinae. *Syst. Bot.* 30: 183-194.
- Niño, M., L. Dorr y **F.W. Stauffer.** 2005. Una nueva especie de *Aiphanes* (Arecaceae) de la Cordillera de Mérida, Venezuela. *Sida* 21: 1599-1606.
- Palma-Silva C.**, Cavallari MM, **Barbará T**, **Lexer C**, Gimenes MA, Bered F, and Zanettini MH. In press. A set of polymorphic microsatellite loci for *Vriesea gigantea* and *Alcantarea imperialis* (Bromeliaceae) and cross-amplification in other bromeliad species. *Molecular Ecology Notes* (Online), 2007
- Proença, C.E.B.** 2006. Proposal to conserve the name *Myrcianthes edulis* against *Psidium amygdalinum* (Myrtaceae). *Taxon* 55(2):536-537
- Rapini, A.** 2003. Sistemática: Asclepiadoideae (Apocynaceae) do Brasil. Thesis required for application to Full Professor position at the Universidade Estadual de Feira de Santana, Feira de Santana.
- Rapini, A.**, Berg, C. & Liede-Schumann. 2007. Diversification of Asclepiadoideae (Apocynaceae) in the New World. *Ann. Missouri Bot. Gard.* 94(in press).
- Rapini, A.**, Chase, M.W. & Konno, T.U.P. 2006. Phylogenetics of South American Asclepiadeae (Apocynaceae). *Taxon* 55(1): 119-124.
- Rapini, A.**, Chase, M.W., Goyder, D.J. & Griffiths, J. 2003. Asclepiadeae classification: evaluating the phylogenetic relationships of New World Asclepiadoideae (Apocynaceae). *Taxon* 52: 33-50.
- Rapini, A.**, Fontella-Pereira, J., de Lamare, E.H. & Liede-Schumann, S. 2004. Taxonomy of *Peplonia* (including *Gonioanthea*) and a reinterpretation of Orthosieae (Asclepiadoideae, Apocynaceae). *Kew Bull.* 59(4): 531-539.
- Rapini, A.**, Goyder, D.J., Konno, T.U.P., Farinaccio, M.A. 2005. Progress in asclepiad taxonomy: species number in Brazilian Asclepiadoideae (Apocynaceae) through time. *Kew Bull.* 60(1): 111-115.
- Sano, P. T.** 2004. *Actinocephalus* (Körn.) Sano (*Paepalanthus* sect. *Actinocephalus*): a new genus of Eriocaulaceae, and other taxonomic and nomenclatural changes involving *Paepalanthus* Mart. *Taxon* 53(1):99-107.
- Sousa S., M. & **R. Grether.** 2002. *Swartzia mexicana* (Fabaceae, Swartzieae), a new species from the state of Oaxaca, Mexico. *Novon* 12(1): 115-119.
- Stauffer, F. W.**, and P.K. Endress. 2003. Comparative morphology of female flowers and systematics in Geonomeae (Arecaceae). *Plant Systematics and Evolution* 242: 271-203
- Stauffer, F. W.**, W. J. Baker, J. Dransfield, and P. K. Endress. 2004. Comparative floral structure and systematics of *Pelagodoxa* and *Sommieria* (Arecaceae). *Botanical Journal of the Linnean Society* 146: 27-39.
- Stauffer, F.W.** y J. Fariñas. 2006. The identity of *Attalea macrolepis* (Burret) Wess. Boer (Arecaceae). *Candollea* 61(1): 83-88.
- Stauffer, F.W.**, C. Asmussen, A. Henderson and P. K. Endress 2003. A revision of *Asterogyne* (Arecaceae). *Brittonia* 55: 326-356.
- Stauffer, F.W.**, R. Duno, L. Dorr, F. Jacquemoud y N. Fumeaux. 2006. Contribución del Dr. José María Vargas a la ciencias botánicas en Venezuela. *Acta Bot. Venez.*29: 135-164.

Papers in press or submitted

- Araujo, A. C.**; Cesar E. A. & **Simpson, D.A.** Preliminary list of the Cyperaceae in north-eastern Brazil, *Kew Bol* in 2006
- Araujo, A. C.**; Thomas, W. W. & Alves, M.V. A Preliminary Molecular Phylogeny of the Rhynchosporeae (Cyperaceae). Submitted to *Botanical Review* in 2005, accepted 2006
- Araujo, A.C.**; Thomas, W. W.; Wagner, H. M. L & **Simpson, D. A.** Taxonomic novelties in Rhynchosporeae Vahl (Cyperaceae) from South America, Submitted to *Kew Bull.* 2006
- Barbará T**, Martinelli G, Fay MF, **Mayo SJ**, and **Lexer C.** In press. Population differentiation and species cohesion in two closely related plants adapted to neotropical high-altitude 'inselberg', *Alcantarea imperialis* and *A. geniculata* (Bromeliaceae)
- Calderón N.**, **Zappi D.**, **Taylor N.** & Ceroni A. "Taxonomy and Conservation of the genus *Haageocereus*". *Bradleya* 2007. ("in press", to be published in mid 2007)
- Carlsen, M.** and Croat, T.B. 2007. Taxonomic revision of *Anthurium* section *Semaeophyllum* (Araceae). *Harvard Papers in Botany* (submitted, in revision).
- Duno de Stefano, R.** 200x. *Emmotum harleyi* (Icacinaeae), a new species from Bahia (Brazil) and lectotypification of some other Brazilian species. Sent to NOVON.

- Ezcurra, C.** In Press. Acanthaceae. En F. O. Zuloaga y O. Morrone (eds.), Catálogo de las Plantas Vasculares del Cono Sur de Sudamérica, Monographs in Systematic Botany from the Missouri Botanical Garden.
- França F.** Aegiphila (Lamiaceae) Flora Neotropica Monograph, Submitted 2007.
- Hargreaves, P. & Oliveira-filho, A. T.** (2007). Identifying tropical trees using comparisons with single specimens of species. (Journal article ready for publication in February 2007).
- Jardim, J.G. & Zappi, D.** Two new species of *Faramea* (Rubiaceae) for Eastern Brazil – *F. atlantica* and *F. bicolor* (subm.)
- Londoño, X & Renvoize S.A** New Sections in the genus *Guadua* (Poaceae: Bambuseae: Guaduiniae) (in press).
- Mazine, F. F. & Souza, V.C.** A New Species of *Eugenia* (Myrtaceae) from Northeastern Brazil. Botanical Journal of the Linnean Society (Submitted in November 2006).
- Sotuyo, J.S., Alfonso Delgado-Salinas, Mark W. Chase, Gwilym P. Lewis** and Ken Oyama. "Cryptic speciation in the *Caesalpinia hintonii* complex (Leguminosae: Caesalpinioideae) in a seasonally dry Mexican forest" (submitted to Annals of Botany).
- Stauffer, F.W., L. Pappaterra-Stauffer, **R. Duno de Stefano**, R. Riina, G. Orsini y O. Huber (in press.). Tipos de Monocotyledonae depositados en el Herbario Nacional de Venezuela (VEN). Acta Bot. Venez.

Papers in preparation

- Araujo, A.C.;** Wagner, H. M. L & Thomas, W. W. Synopsis of *Rhynchospora* Vahl Sect. Pluriflorae Kuk. (Cyperaceae).
- Argelia Cuenca, John Dransfield** and Conny B. Asmussen-Lange. Phylogeny and evolution of morphological characters of tribe Chamaedoreae (Arecaceae)
- J.G. Jardim & Zappi.** *Psychotria viridicephala* sp. nov., a new species from Eastern Bahia, Brazil (em prep.)
- Jeny Sotuyo & Gwill Lewis.** We are working on the paper of the *Caesalpinia* sensu lato phylogeny.
- Lorenzo Felipe Sanchez.** Manuscript to report the diversity of *Agave* species belonging to Rigide section by AFLP.
- Renato Mello-Silva,** A combined analysis of the *Vellozia hemisphaerica* group (Velloziaceae)
- Renato Mello-Silva,** A combined analysis of Velloziaceae
- Torres Colín, R., **R. Duno de Stefano** y Lilia Lorena Can. 200x. Notas en la flora de la Península de Yucatán. XX: El género *Bauhinia* L. (Tribu Cercideae, Caesalpinioideae) en la Península de Yucatán (In preparation).

Presentations/talks at scientific meetings

- Species delimitation, phylogenetic relationships and systematics of the '*Maxillaria madida*' alliance. Talk presented at the First Scientific Conference on Andean Orchids, Gualaceo, Ecuador, November 11-15 2005. (**S. Koehler**)
- El complejo *Guadua paniculata* en América. Simposio Internacional GUADUA 2004, Pereira, Colombia, Septiembre 2004. Conferential. (**Ximena Londono**)
- Talk "taxonomic and Phylogenetic Studies in *Eugenia* L. (Myrtaceae) by **Fiorella Mazine**, RBG Kew workshop February 2005.
- Palma-Silva, C.;** Paggi GM; Bered F; Barbara T; Lexer C.; Bodanese-Zanettini MH. Genetic structure and variability in populations of *Vriesea gigantea* Gaud. (Bromeliaceae). 2006. In: 17 International Symposium of biodiversity and Evolutionary Biology, 2006, Bonn - Germany. 17 Simposium International of biodiversity and Evolutionary Biology, 2006.

KLARF input into PhDs

- Thesis defended in 15/09/06: Estudos Taxonômicos e Filogenéticos em *Eugenia* L. (Myrtaceae), com ênfase em *Eugenia* sect. Racemosae. Instituto de Biociências da Universidade de São Paulo, Departamento de Botânica. 239p (**Fiorella Mazine**).
- My Ph D thesis was updated with the new results and part of my Ph D and finished during my fellowship (**Jenny Solange Sotuyo**).
- PhD thesis in progress and in its final stages: three chapters 1) Tratamento taxonomico da sect. *Hypochasma* Mull. Arg.; 2) Combined phylogeny in *Faramea* Aubl. (Rubiaceae); e 3) New combinations and synonymization in *Faramea* Aubl. (Rubiaceae) (**Jomar Jardim**).
- Increasing sampling of the closely related genus *Pothos* to include in my PhD research project (molecular phylogeny) (**M. Carlsen**).
- Ph.D. thesis: Systematics, biogeography and evolution of morphological characters of the palm tribe Chamaedoreae. (**Argelia Cuenca**)

PhD. Thesis: Revisão do gênero *Aegiphila* e seu posicionamento taxonômico. Doctoral Thesis. São Paulo University 2003 (**Flávio França**)

KLARF input into Masters degrees

Thesis: Master in Philosophy "*Haageocereus*: Taxonomy for the Conservation of the genus in Peru". Open University and Kew Royal Botanic Gardens (**Natalia Calderon**).

KLARF input into databases

International collaboration: Currently the National Herbarium of Trinidad & Tobago is collaborating with Oxford University, UK, on a Darwin funded project to develop a Plant Biodiversity Monitoring System for T&T. The data compiled for the flora checklist of T&T before and during the KLARF study have been transferred to the BRAHMS Database recommended by our collaborators from Oxford. My other Access databases on the ferns, orchids and grasses of T&T have also been converted to BRAHMS. (**Yasmin S. Baksh-Comeau**)

Horticulture & Public Education (HPE) at Kew: database (**M. Sellaro**)

Oliveira-Filho, A. T. 2006. TreeAtlas 1.0: Tree flora of Eastern South American Forests – A database aiming at geography, diversity and conservation. Universidade Federal de Lavras, Lavras, MG, Brazil, & Royal Botanic Gardens, Kew, U.K.

P. T. Sano. Database of neotropical *Paepalanthus*. (in prep.)

Hargreaves, P. Our taxonomic description and identification system CARipé has since been elaborated and grown to 800 tree specimen descriptions of over 600 species, linked to scanned images. Automatic character correlation using a choice of several similarity indices can now be employed to identify trees purely from their vegetative characteristics. Large botanical keys that used PANKEY in their construction have now been implemented in CARipé as interactive keys and are awaiting further work to perfect them.

Database of images of *Psidium* being built into a BRAHMS (**C. Proença**)

My colleagues at UAM and I are starting a database on *Mimosa* which will be used in the phylogenetic and phylogeographic study of the genus, along with other database in preparation by Marcelo Simon and Colin Hughes at Oxford. Material examined at Kew will be included. (**Rosaura Grether**)

Personal database of *Anthurium* living collections at Kew. To be submitted in a paper to Aroideana in the near future in collaboration with **Simon Mayo and Anna Haigh (Monica Carlsten)**.

Construction of database of c. 3000 entries (400 entries before the project), including the specimens from Africa. There are c.400 more photographs of herbarium material from B, BR, L and M to be added to the database (**Renato Mello-Silva**)

Posters at national/international congresses

R. Grether, G. P. Lewis & M. Luckow. Testing the monophyly of selected infrageneric taxa within genus *Mimosa* (Leguminosae, Mimosoideae). XVII International Botanical Congress. Vienna, Austria, July 17-23, 2005.

Folder presented in Botanical Congress in Brazil (**Kazue Matsumoto**)

A. Martínez-Bernal & **R. Grether.** Pollen diversity in Mexican and Central American species of *Mimosa* (Leguminosae, Mimosoideae). XVII International Botanical Congress. Vienna, Austria, July 17-23, 2005.

Koehler, Samantha; FAY, Michael F.; Amaral, Maria do Carmo E. Delimitação de espécies e filogeografia do complexo '*Maxillaria acicularis* – *M. madida*' (Orchidaceae : Maxillariinae) baseado em marcadores AFLP. Poster presentation. 57o National Botanical Congress, Porto Alegre, Rio Grande do Sul, Brazil. 6-10 November 2006.

S. L. Camargo-Ricalde, **R. Grether**, A. Martínez-Bernal & M. E. Fraile. Diversity of *Mimosa* in Mexico, its second geographical distribution center. Diversitas OSCI: Integrating biodiversity science for human well-being. Oaxaca, Mexico. November 11, 2005.

Collaboration

The work accomplished during my visit to Kew and the NHM supported by the KLARF grant is further supported by the Darwin Initiative. The Darwin funded project which goes from July 2005 – July 2008 allows us the opportunity to undertake an extensive and intensive botanical survey of the islands. This is adding new data on species distribution and conservation status of various species. It will build on the existing data to publish the revised Checklist of the Vascular Flora of Trinidad & Tobago (**Yasmin S. Baksh-Comeau**)

Project proposed and accepted to generate complementary molecular data (i.e. the location of different regions in chromosomes by FISH) in order to prepare publication (**Lorenzo Felipe Sanchez**).

2004a. Floral morphology and development in Aragoa (Plantaginaceae) and related members of the order Lamiales. International Journal of Plant Sciences 165(5): 723-738. (with M. A. Bello, **P. J.**

Rudall & J. L. Fernandez). This was a collateral project of one of my former students (Maria Angelica Bello), who visited Kew for a few months to finish her undergraduate thesis while I was there. Latter, she enrolled the PhD joint programme between Reading University and the Royal Botanic Gardens, Kew. **(Favio Gonzalez)**
2005. Approval (as a KLARF project) of the proposal "Floral ontogeny and morphology of Metteniusaceae and the evolution of the gynoecium in the Lamiid clade". **(Favio Gonzalez)**

Student supervision (Masters & PhD)

External examiner for Fiorella Mazine (Myrtaceae) **(C. Proença)**
Martínez-Bernal, A. Revisión taxonómica del género *Mimosa* en los estados de Puebla y Tlaxcala, México. Master thesis. UNAM. Dissertation: June 30, 2003. **(R. Grether)**
Flores-Cruz, M. Contribución a la revisión taxonómica de *Mimosa* serie Quadrivalves (Leguminosae, Mimosoideae). Doctorate thesis. IRENAT, Colegio de Postgraduados. Dissertation: July 16, 2004. **(R. Grether)**
Thesis benefiting from my studies of ITS in Kew: 1. sistemática molecular de *Oxypetalum* (Asclepiadoideae, Apocynaceae), 2. sistemática de *Pseudotrimezia* com análise da tribo trimezieae (Iridaceae), 3. Filogenia e revisão do complexo *Ocotea indecora* (Lauraceae), 4. Fologenia da tribo Bocageeae (Annonaceae) baseada na análise combinada de dados: importância dos caracteres moleculares e químicos. **(Renato Mello-Silva)**

Other Products

Identification of an 1833 Argentinian species described in the guava genus (*Psidium*) **(C. Proença)**
Horticulture & Public Education (HPE) at Kew: website, students' reports, articles **(Marcelo Sellaro)**

Appendix 5: Additional comments by respondents

NB – minor grammatical or spelling errors have been corrected, but otherwise verbatim

The incentive to make us to give a talk is great. It improves even more our qualifications, skills and permits us to exchange information, interact with our colleges, clarify doubts about our research and discuss important points which always results in giving us an idea on how to carry on our work when we are back at home.

I would like to take this occasion to thank the KLARF program for the opportunity that I received to complete my academic preparation. I am certain that this experience is and will have an important influence in my personal and academic life. I am happy to recognize the close guidance and helpful discussion with Dr Lourdes Rico, who acted as my supervisor during my visit. All members of the Herbarium were really kind to me and made my visit a very pleasant experience, thanks to everyone. People at the Jodrell Laboratory also facilitated my work at Kew.

The KLARF Programme is very important to botanist researchers from America Latina because in our countries is difficult to obtain funds to work in European herbaria, where there are historic collections from the Neotropics. It is impossible to do taxonomy about any plant group without examining the type collections, and most of these are in European herbaria; to study the images in the websites of many herbaria is not enough.

This programme gives the opportunity to do basic research. Taxonomic studies using morphological and anatomical characters are becoming more difficult to fund. This programme offers the possibility to do this basic and important research, almost extinct and very necessary for the development of botany in Latin America.

I just wanted to tell you that my KLARF fellowship was definitely critical for my career. My current activities do take advantage of all the professional and personal experiences lived during my stage at Kew. Moreover, my life as a botanist can be clearly divided into before and after my KLARF experience.

Thanks guys for maintaining this programme alive. Latin American botany does improve every day thanks to your efforts.

I was very pleased to be awarded a fellowship to visit Kew. It gave me the opportunity to study one of the largest plant collections in the world, exchange ideas with researchers, use the library facilities as well as visiting collections in Vienna. There is no other financial support for botanists to do such a trip with all expenses paid. The staff at Kew is a key factor for the success of the visit. My especially thanks to Paul Willkin, Simon Mayo, Amelia Baracat, Jovita Yesilyurt, Marylin Ward and Craig Brough, and very specially thanks to Lourdes Rico

The KLARF programme provides possibly the best research experience abroad for young Latin American botanists. It introduces them to a world-class research institution and makes them aware of the resources that are available. Finally, it gives them the opportunity to know and interact with experts in their field. I sincerely hope the program continues as strong as it is now.

Thank you very much. I wish a long and fruitful life to the KLARF programme.

I would like to thank the Andrew W. Mellon Foundation for the KLARF fellowship. The fellowship was a excellent opportunity to improve my work and vision.

The inception of The Kew Latin American Research Fellowship Programme (KLARF) is in my opinion a long reach policy.

I would like to stress the need to support and widen programmes such as KLARF, because it is a strategic policy to train botanists, mainly those originating from biodiversity-rich countries such as Brazil. The fellows trained through collaboration with European researchers will be contributing to development of botanical research and sustainable use of biodiversity.

My congratulations for this important programme!

I think the experience in Kew Gardens with the KLARF Programme was really satisfactory; I could achieve what I was looking for in terms of research experience, although planned time was not enough to complete the research.

I would like to thank to Amelia Baracat, Mike Fay, Andrew Leitch, Iliá Leitch, Mark Chase, Yoong Lim and all the people in Kew to gave me such opportunity the make science in a first world, which is a big jump to my career.

Just to thank again the KLARF programme and the people involved to make it possible. In the present case the KLARF programme made possible my research, enhancing the plant conservation efforts in Peru.

I would like thank to everyone at Kew and BM; the help and support of everyone made my visit one of the most wonderful working times in my life.

It is more important to have more students/researchers granted with fellowships for shorter periods of time (up to 6 months) than to have a smaller number for longer periods.

I would like to commend Ms Amelia Baracat, Kew Latin America Research Fellowship Programme (KLARF) Tropical America Project/Fellowship Coordinator for the hard work she puts into coordinating this project.

She was very accommodating and efficient and quickly responded to any problems or requests. We were able to amicably sort out minor administrative glitches at the beginning. Most of all she is very good at following up with past participants in the programme and keeps us on our toes with patient reminders!

I would also like to thank Dr Lourdes Rico at Kew and Mr Alex Munro at the NHM for their invaluable advice and support during my visit.

I hope the KLARF programme continues to support Caribbean taxonomists working in local herbaria so that they can make a direct impact on the conservation of biodiversity in their country.

I deeply acknowledge the KLARF programme for all the support to the academic community and to the proposals devoted to plant systematics.

Considero extremamente louvável a nobreza de instituições britânicas em proporcionar, através de auxílio financeiro, a possibilidade a jovens estudantes e pesquisadores de países mais carentes de recursos direcionados à pesquisa, em conhecer, aprimorar e aprender com pesquisadores de excelência, vivenciar novos métodos e tecnologias e muitos outros pontos. Às vezes não se tem estes atributos no próprio país de origem. Este 'investimento' em recursos humanos traz retornos incalculáveis, o que faz com que torçamos para a permanência do Programa Klarf por muito tempo ainda.

My experience with KLARF programme was central in my professional life, without that I'd never finish my doctoral project, and the programme gave me ideas and objectives to my professional future.

Appendix 6: List of participating institutions

Latin America institutions	European institutions visited	Others
Instituto de Geología UNAM – Ciudad Universitaria Del Coyoacan, México, DF, México	Botanic Garden, Naples, Italy	Faculty of Life Sciences, University of Copenhagen, Denmark
Universidade Estadual de Feira de Santana (UEFS), Brazil	Botanischer Garten und Botanisches Museum Berlin-Dahlem, Zentraleinrichtung der Freien Universität Berlin, Germany (B)	Jardin Botánico Lankester and University of Florida, USA
Jardín Botánico Lankester, Universidad de Costa Rica	Natural History Museum Herbarium, London (BM)	Missouri Botanical Garden, USA
Universidad Nacional Agraria La Molina, Lima, Peru	Brussels Herbarium (P), Belgium	New York Botanical Gardens, USA
Universidade Federal de Brasília, DF, Brazil	Conservatoire et Jardin botaniques de la Ville de Genève, Switzerland (G)	Queen Mary University of London
Instituto Multidisciplinario de Biología Vegetal (IMBIV), Conicet-Universidad Nacional de Córdoba, Argentina	Ghent University (GENT)	Royal Veterinary & Agricultural University, Denmark
Smithsonian Tropical Research Institute, Panama	Herbarium Haussknecht, Jena, Germany	Uppsala University, Sweden.
Escola Superior de Agricultura 'Luiz de Queiroz', Universidade Estadual de São Paulo (Esaq-USP), Brazil	Jardin Botanique of Nancy	
Centro de Investigación Científica de Yucatán, Mexico	Komarov Botanical Institute, St Petersburg, Russia	
National University of Colombia - Institute of Natural Sciences, Bogota, Colombia	Linnaean Society of London (LINN)	
Centro de Investigaciones en Ecosistemas, UNAM, Mexico	Madrid Herbarium (MA), Spain	
Universidad del Valle, Cali, Colombia	Martin-Luther Universität Herbarium, Germany (HAL)	
Universidad Central de Venezuela	Meise Herbarium, Nationale Plantentium van België, Belgium	
ERM Perú S.A., Peru	München Herbarium, Botanische Staatssammlung, München, Germany (M)	
INCIVA, Cali, Colombia	Museum Botanicum Hauniense, University of Copenhagen, Denmark	
Universidade de São Paulo, Brazil	Museum National d'Histoire Naturelle, Paris (P)	

Universidade Estadual de Campinas (UNICAMP), Brazil	Nationaal Herbarium Nederland, Leiden University branch	
Centro de Estudios en Ecosistemas, Universidad Nacional Autónoma de México	National Museum in Prague	
Sociedad Colombiana del Bambú/ Instituto Vallecaucano de Investigaciones Científicas INCIVA, Cali, Colombia	Naturhistorische Museum Wien and Universitat Wien, Austria (W)	
Universidad Autónoma Metropolitana-Iztapalapa. Departamento de Biología, División de Ciencias Biológicas y de la Salud, México.	Oxford University	
Universidade Federal do Rio Grande do Sul, (UFRGS), Brazil	Royal Botanic Garden Edinburgh.	
National Herbarium of Trinidad & Tobago, West-Indies	ULM and Heidelberg (ULM, HEID)	
Universidade Federal de Lavras, Brazil	Universitat Basel, Switzerland, Basel (RENZ)	
Universitario Bariloche, Universidad Nacional del Comahue, Bariloche, Argentina	Utrecht, Netherlands (U)	