

Some Experiences of North-South Synergy from the New World Tropics

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Abstract

As an example of North South synergy, the setting up of a graduate course in botany at the Instituto Nacional de Pesquisas da Amazônia in Manaus, Brazil is described. Founded in 1975, the course continues to the present and is now extended to many other disciplines than botany. The details behind the production of the Flora of the Reserva Ducke near Manaus, another North-South project, are also given.

Key Words: Amazon flora, Flora da Reserva Ducke, graduate education, Manaus, Instituto Nacional de Pesquisas da Amazônia (INPA)

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I am very glad that the topic of North-South synergy has been included in this symposium and book of proceedings. It is a topic that has been central to my work as a field botanist over the past fifty years, and as can be seen in the other papers of this section in the book, great changes and progress have been made over that time. We have progressed from a colonial relationship to true collaboration. I will present a rather autobiographic approach to the subject here. The first time I began to collaborate with the Instituto Nacional de Pesquisas da Amazônia (INPA) in Manaus in 1965, I was almost refused permission because a recent previous expedition of The New York Botanical Garden had not left any specimens in the Manaus herbarium, poor as it was at that time. I persuaded the Director of INPA to phone the herbarium in Brasília, my base for my 1964 expedition, to confirm that I had left specimens there with duplicates for three Brazilian herbaria. Having been assured of this, I received the fullest possible collaboration from INPA that led to much collaboration over many years, some of which is described below.

Learning from the South

The first important aspect I want to cover is that we in the developed world do not know all. When I first went to the tropics as a novice, I would not have got very far without the help of two well-trained Brazilian botanists; in 1974 João Murça Pires in Brasília and in 1975 William Rodrigues in Manaus (Fig. 1). My collaboration with both of these botanists continued over many years, but the most important time was at the start when I was a novice, learning from two good teachers with an intimate knowledge and experience of the Amazon flora. I have seen too many young botanists from the North arriving in the South thinking that they know it all and ignoring the wise counsel of the local botanists with more experience. Anyone going from the North to the South must be prepared to learn from our counterparts. This is even more so now than in 1964, when I first went to Brazil, because there are now so many more well-trained scientists in the tropical countries of the world.



Fig. 1. The author (right), speaking with João Murça Pires (left) and William Rodrigues (centre), outside the herbarium building of INPA in Manaus. Photograph from the 1970s.

Students from the South

My third visit to Brazil was for a symposium held in Belém on the Amazon biota in 1966, which resulted in one of my early papers on the Chrysobalanaceae (Prance 1967). At this meeting I was precipitated into training students from the south by meeting Professor Alavaro Fernández from the Universidad Nacional in Bogotá, Colombia. He approached me and informed me that the best student he had ever trained had just graduated from the university and that I must take him on as a graduate student in New York. He explained that Enrique Forero did not speak much English, but if he joined my next expedition he would then easily learn enough to pass the TOEFL test, a requirement for study in the City University of New York. I agreed to this, and soon Enrique was in the field with me on my 1967 expedition to Amazonian Brazil. He was a good field assistant and was soon speaking adequate English. So I gained my first graduate student from the South. It was not long before I had another Colombian student and so the training of students became an important aspect of my life.

The ‘Curso de Botânica’ at INPA

Graduate student training increased considerably in my life in 1975 after an evening drinking whiskey with the then director of INPA, Dr. Paulo Almeida Machado, who later became Brazil’s minister of health. Dr. Paulo complained to me that he had just had some bad news. Two of the scientists he had sent abroad for training in the USA had reneged on their promise to return and work at INPA for three years after receiving their doctorates. One planned to remain in the USA and the other to work in São Paulo where the laboratories had the elaborate equipment he needed to continue his research. The director complained that now three people he had financed for training had not returned to INPA. I pondered this over my second glass of a good single malt and then spoke up. I said that what was needed was to train students in Manaus in the Amazon forest. If they trained here and used the forest as their laboratory rather than sophisticated apparatus in the laboratories of the USA, they would fall in love with the forest and not want to leave INPA. Dr. Paulo considered this for a short while and then said to me “Design me such a course.

Fig. 2. The author (back center) mainly with students of the Manaus courses of INPA in November 2013. Extreme right front Michael Hopkins, coordinator of the *Flora da Reserva Ducke*, next to the author in blue shirt, José Ferreira Ramos, mateiro and my long time field assistant.



I will need it tomorrow morning when the head of the National Research Council (CNPq) is coming through Manaus on his way back from Miami". I left the director's house and spent the whole night designing a full two year Master's course in botany with my wife at my side typing it out on paper torn from our daughter's school exercise book as I wrote. In the morning, I handed in a course curriculum and went to our hammock to sleep. By mid-afternoon the director's messenger came to the house and said that Dr. Paulo wanted to see me. When I entered his office he told me "Your course is approved by the CNPq." I replied that it was his course, not mine. He informed me that I would be the director of the course. When I replied that I worked for The New York Botanical Garden and that it would not be possible, Dr. Paulo informed me that he would be in New York in five weeks' time and he would visit Howard Irwin, the President of NYBG.

He did just that and requested a two-year leave of absence for me from New York. This was granted, and as a result, six months later my family and I moved to Manaus for two years to establish a master's course in tropical botany for the twelve initial students. I was

given a generous budget for visiting professors, as there were only two of us with a Ph.D. at INPA in Manaus. Those students were taught by a remarkable faculty of visitors, for example, Theodosius Dobzhansky taught them genetics, Friedrich Ehrendorfer taught cytology and Rolla Tryon pteridology. One of my Colombian graduate students in New York, Eduardo Lleras, taught plant anatomy and microscopy and eventually took over the coordination of the botany course at INPA after I moved back to New York. A collaboration was arranged between INPA and the Universidade de Amazonas for the awarding of degrees. More details of the course are given in Prance (1975).

The result of this first course was that eleven students completed their master's degree in botany, and afterwards most continued on to train for and submit Ph.Ds. More significantly, all of these students remained in the Amazon region to continue their careers in botanical institutions and universities, rather than leave the region, so the initial objective of the course was achieved. During my last few months in Manaus, we were able to add courses in ichthyology, entomology and ecology to the curriculum. These

courses and others continue to the present time and have about 120 students inscribed. At a recent conference in Manaus, I was able to meet some of the students of my students, and even some great grand students (Fig. 2).

Flora of the Reserva Ducke

From my first encounter with William Rodrigues in Manaus, he expressed his desire to compile a flora of the Reserva Florestal Adolpho Ducke that belonged to INPA and is located 25 km east of Manaus. Over the years I made frequent visits to the reserve to collect plants with the flora in mind. It was not until 1990 that I was able to obtain funding from the British Government to support the preparation of a flora of the reserve. Michael Hopkins from the UK was contracted as the coordinator of the project, and all the rest of flora project team was Brazilian. The Field guide, *Flora da Reserva Ducke* (Ribeiro *et al.* 1999), was published in 1999, and the authors of each family treatment were a fine mixture of contributors from the North and the South. What is the most impressive is the number of Brazilian authors involved, indicating how Brazilian plant taxonomy has progressed since the 1970s. Some of these authors were students at one of the Manaus courses at some time.

Conclusions

The course described above was a reaction to the circumstances of the time. Education has always been an important part of North-South relations, but what is so significant is the number of well-trained botanists in Latin America today, and that many of them have been trained in the region. Short-term sandwich courses abroad give experience and are better than long term studies away from the home country. Today we need to concentrate more on the repatriation of the data that we house in our herbaria. I became fully aware of this need through helping the students who chose taxonomy as the subject of their thesis in the first and subsequent courses in Manaus. Teaching has been a rewarding experience for me whether through the course described above or in the many other places in Latin America where I have taught courses or trained students.

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