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Fig 1. Left: Bromeliad: *rodriguesiana*, Rio Marau, Amazonas, by Margaret Mee, 1977, gouache on paper.



Fig 2. Map of Brazil, ©2008 Diana Marques

A Look at Science Illustration in Brazil

—Diana Marques

ABSTRACT: In spring 2008, Diana Marques was invited to teach and present at the 2nd Brazilian Science Illustration Meeting. Prior to this visit, her limited knowledge of the illustration field in Brazil had interfered with needed replies to emails from Brazilian students interested in pursuing a career or curious about the field. When she received the invitation, she saw the visit as a unique opportunity to interact with fellow artists, learn about the work they are creating and find out more about the history of science illustration in Brazil. The trip would be, in addition, a personal exploratory journey to a country that shares so many of her own Portuguese roots.

An early surprise on my trip was discovering that the first acknowledgement of scientific illustration occurred in colonial Brazil. After 1500, when Portuguese explorer Pedro Álvares Cabral's ships reached Porto Seguro on the central Brazilian coast (Fig 2), those first centuries after Brazil became a Portuguese territory were marked by countless visits of European naturalists interested in cataloguing the immense natural biodiversity. French, German, and Dutch settlers joined Portuguese priests and established themselves in different geographical areas, which still reflect the influences of these different cultures. Such natural history expeditions usually included

artists that devotedly documented the landscape, fauna and flora as well as the anthropologic aspects of the native peoples and settlers.

One of the first such natural history explorations was undertaken by Frei Cristóvão de Lisboa, presumably around 1625-1631. His accounts of the Amazon region are known among many European scientific illustrators, having been documented in the book, *History of the animals and trees of Maranhão*, profusely illustrated with plants, fishes and birds of the area. A great boost to the illustrated Brazilian records occurred with the arrival of the Dutch to Pernambuco state (Recife is this area's main city), during the years when



Fig 3. (Left) Executive Committee of the 2nd Brazilian Science Illustration Meeting. Left to right: Leandro de Souza, Rogério Lupo, Diana Carneiro, Marcos Antônio Silva, Fátima Zagone!, Iriam Starling.

nobleman Maurits Nassau governed. The remarkable amount of scientific information they gathered was for an extended period of time the only reference for animals and plants of South America.

Later, in the 18th century, the Portuguese government's goal of inventorying its realm led to a structured scientific effort to conduct such an inventory in Brazil. By then, however, the mineral resources of Brazil's southeastern areas were significantly depleted and the Queen commissioned several Brazilian naturalists, most of them graduates of the University of Coimbra in Portugal, to explore the economic prospects of poorly known areas of the territory of Brazil. These expeditions were designed to replenish Portuguese research institutions with new natural history collections, and they were pragmatic since the naturalists were also asked to document their philosophical and political reactions to the region, in addition to their expected studies of minerals, animals and plants. Alexandre Rodrigues Ferreira led the best known of these ventures, accompanied by two Portuguese illustrators—José Codina and José Joaquim Freire—their drawing skills trained at Casa do Risco in Lisbon, one of the first institutions entirely dedicated to science illustration.

Close to the end of the colonial period, the influence of the Portuguese in Brazil culminated with the arrival of the royal family at Rio de Janeiro in 1808, as they fled the Napoleonic invasions in Europe. This triggered the emergence of several

scientific institutions including the still outstanding Botanical Gardens of Rio de Janeiro and the Natural History Museum, the largest in Latin America. The use of printing presses, which had been forbidden until then, also prospered, and some see this cascade of events as the beginning of the rise to independence of Brazil, which took effect in 1822.

The greatest contribution to the rise of modern science illustration in Brazil, in particular botanical illustration, was the work of the artist and conservationist Margaret Mee. In her 15 expeditions to the Amazon region between 1952 and 1988, Mee produced an outstanding collection of botanical records of the country with over 400 gouache paintings, most of these previously undescribed species painted from life (which she insisted upon). (Fig. 1; see also color plates)

Her several published books argue for habitat preservation, a personal concern based on years of witnessing the impact of colonization and commercial exploitation. Towards the end of her lifetime, Mee dedicated herself to the creation of a foundation that would carry on her goals, but only posthumously did London celebrate the opening of the Margaret Mee Amazon Trust in 1988.

A sister institution was created in Brazil two years later (Fundação Margaret Mee)



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Fig 4. (Above) Discussion Panel at the 2nd Brazilian Science Illustration Meeting on the theme "Science Illustration and Nature Conservation." Speakers included: Paulo Marques, Maria Celeste Correa, Diana Carneiro, Diana Marques, and Marcos Antônio Silva.

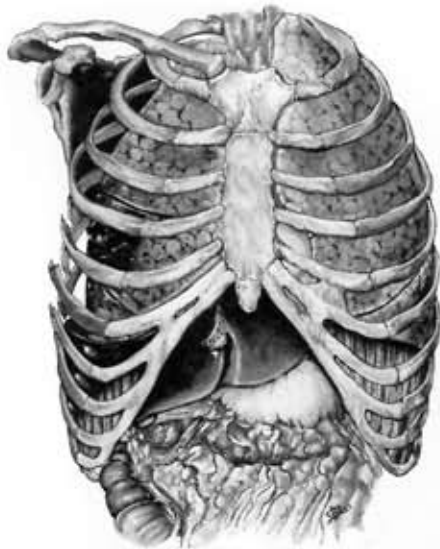


Fig 5. Thoracic trauma with rib fracture, lung contusion and hemothorax; ©2007, Iriam Starling

Right: Fig 6. Fish illustration workshop using colored pencil, taught by Paulo Fiote, II Brazilian Science Illustration Meeting.

and both are dedicated to further education and research in Amazonian plant life and conservation by providing scholarships for Brazilian botanical students and illustrators to study in the United Kingdom or conduct field research in Brazil.

Diana Carneiro was one of the Fundação Margaret Mee award-winning artists who

traveled to The Royal Botanical Gardens, Kew (UK), in 1997, and she studied watercolor techniques under the guidance of Christabel King for several months. The connection with the Margaret Mee Trust and the rising importance of botanical illustration in Brazil led to the creation of the Center of Botanical Illustration of Paraná (CIBP), in Curitiba, which offers long-and-short duration courses, promotes events and holds exhibitions. The CIBP, with Diana Carneiro as chair, organized the 2008 summer meeting in Curitiba (Fig 3) in association with some other illustrators from throughout Brazil.

The first Brazilian Science Illustration Meeting took place in 2006 in Belo Horizonte and marked the earliest organized attempt of scientific artists to come together to assess common interests, share ideas and techniques. As with many first such efforts, there was a certain amount of disorganization which may have reflected the problems of a group formed from an initial online social network, whose members had never before met in person.

The 2008 meeting was very different, which was acknowledged by all present. With a high attendance of 180 participants, it offered diversity and quality in its three days of lectures and workshops. Marcos Antônio Silva (science illustrator), Maria Celeste Correa (science journalist), Paulo Marques (professor of ecology



Photo: Theo Marques/Divulgação ©2008



Fig 7. Unidentified grasshopper, pen and ink on paper, Leandro de Souza, ©2008. Included in GNSI 2008 Member Exhibit in Ithaca, NY

and environmental management), and I participated in a discussion panel on the meeting's theme of "Science illustration and Nature Conservation" (Fig 4) which followed the opening sessions and triggered lively audience discussions that continued over the following days. Another popular panel was a debate on common concerns such as freelancing business and legal issues, assisted by the presence of lawyer Petrus Barreto, and by medical illustrator Iriam Starling (Fig 5).

Additional workshops covered other subjects and techniques: Basics of Zoological and Botanical Illustration—Rogério Lupo; entomological illustration—Marcos Antônio Silva; fish illustration using colored pencils—Paulo Fiote (Fig 6); stippling with pen and ink—Leandro de Souza (Fig 7); watercolor in Botanical Illustration—Fátima Zaganel and Dulce Nascimento; and a number of others, including my own Digital Science Illustration workshop.

The meeting included a poster session (Fig 8) and the opening of the 2nd National Science Illustration Exhibition (Fig 9). The



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exhibition showed immense talent, and although botanical artwork predominated, there was nonetheless an adequate diversity of techniques and subjects covered, including pieces from internationally recognized artists Tomas Sigrist, bird painter, and Álvaro Nunes, one of 2008's Focus on Nature X (New York State Museum) award-winning artists. The exhibit pieces are now in a traveling exhibition and the organizers are striving to get it to as many public locations in Brazil as possible, and hope to produce a catalogue that would simultaneously serve as an education tool about science illustration.

The science illustration field in Brazil is on the verge of expanding rapidly, and aware of the long path ahead, considerable energy is being expended to promote it. The first step was taken with the creation of the National Union of Scientific Illustrators (UNIC) and these efforts are being directed towards the construction of a website to disseminate and promote the field, and to research the best legal structure and strategy to adopt. UNIC members continue to use online tools to communicate (through their Yahoo Group <<http://br.groups.yahoo.com/group/ilustradorescientificosbr/>>, within which Portuguese is the official language). Their 2010 meeting is already on their minds, and Brazil's capital, Brasília, inaugurated in 1960 and famous for its urban planning, will host the event.

The interest and curiosity of Brazilian illustrators regarding GNSI was evident and was the impetus for their request

for a lecture about the Guild, its history, methods and members. Confident that I transmitted its significance and elevated professional standards, I believe this to be the beginning of valuable exchanges and a promising partnership.



Diana Marques completed a Biology degree and several drawing and science illustration certificate programs in Portugal before graduating from the Science Illustration Program at the University of California in Santa Cruz. She did practical training in Australia and at the American Museum of Natural History in New York and is currently based in Washington DC freelancing for clients in the US and in Portugal. She often collaborates with departments of the National Museum of Natural History, Smithsonian Institution and has worked for several of the museums' temporary and permanent public exhibitions. Diana has been involved with the GNSI since 1999, being part of the organizing committee of the annual conference in 2000 in Portugal, and acting now as Program Coordinator for the GNSI-DC Chapter. Her online portfolio can be seen at www.dianamarques.com and her work was highlighted by Science Careers <http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2007_07_13/credit.a0700101>.

Note: The dual founding of organizations in Britain and Brazil following Mee's death is chronicled in greater detail on The Royal Botanic Gardens Kew website: <http://www.kew.org/scihort/tropamerica/Meebackground.htm>. Some of Margaret Mee's works are being exhibited at the Shirley Sherwood Gallery of Botanical Art in Kew Gardens in 2008-2009.

The information regarding the history of science illustration in Brazil was partially compiled by botanical illustrator Diana Carneiro and medical illustrator Iriam Starling.

Above: 2nd Brazilian Science Illustration Meeting. Fig 8 (left) Poster session; Fig 9 (right): National Science Illustration Exhibition opening.

GNSI Journal Gallery: A Look at Science Illustration in Brazil—Marques



Neoregelia margaretae L.B. Smith collection, Amazonas Rio Icana, Rio Marau, Amazonas, Margaret Mee, 1979, gouache on paper. Courtesy of and © The Royal Botanic Gardens, Kew (UK)



White-tailed Trogon, *Trogon viridis*, ©2004, Tomas Sigrist; acrylic on paper; male (on lower branch) offering food to female (above) in pre-mating ritual.

Sardina pilchardus, digital,
©2007, Diana Marques

