Parte III - Crustáceos / Crustaceans

1958

Editors’ note. crustacea collected by Adolpho Lutz in the vicinity of Manguinhos

Jaime L. Benchimol
Magali Romero Sá
Editors’ Note

Crustacea collected by Adolpho Lutz in the vicinity of Manguinhos

In 1955, four years after being founded, the Conselho Nacional de Pesquisas promoted the celebration of the first birth centennial of Adolpho Lutz, with the participation of several institutions, including the Adolfo Lutz and the Oswaldo Cruz Institutes. Bertha Lutz, daughter of the scientist and a zoologist at the Museu Nacional, had long been working to praise her father’s memory; among her efforts were the compilation of documents and works he had published, and the preservation of the biological collections he had prepared. With the help of her brother, Gualter Adolpho Lutz, a professor of legal medicine at the Universidade do Brasil, and of other physicians and scientists who worked with Adolpho Lutz, Bertha began the preparation of his work for publication, counting on the promise or possibility of support by several organizations, including the Editora da Universidade de São Paulo. The work could not be published at that time, and several of its undertakings were left at different stages of development; these tasks we are now bringing to an end as we finally get closer to the conclusion of *Obra Completa de Adolpho Lutz*. Among the remainders of Bertha Lutz’ editorial project is an interesting analysis of Adolpho Lutz’ crustacean collection, made by Dr. Lejeune Pacheco Henriques de Oliveira (1915-83).

The preface was written by Bertha, but the photos she mentions couldn’t be found by the editors of the present edition. Bertha, when thinking about the content of “Trabalhos avulsos de zoologia dos invertebrados” (“Papers on the zoology of invertebrates”) that would become a volume of the commemorative work she was preparing, or perhaps during one of the expositions mounted in Rio de Janeiro and São Paulo as tributes to her father, refers in the preface Portuguese version to the molluscs determined by Dr. Arnaldo Campos dos Santos Coelho, Museu Nacional, or sent by Lutz to the North-American malacologist Henry Augustus Pilsbry (1862-1957). Although not invertebrates, Bertha mentions fishes and highlights those determined in 1933 by the ichthyologist Henry W. Fowler, from the Academy of Natural Sciences in Philadelphia. “There is also a very beautiful preparation of a female adult seahorse, *Hippocampus punctulatus* and her young” – writes Bertha Lutz.
According to Bertha, Adolpho Lutz became interested in the crabs living in mangroves around the Instituto Oswaldo Cruz (IOC) after 1908, when he left the Instituto Bacteriológico in São Paulo and came to the Institute in Rio de Janeiro, at a time when entomological research was at its peak. In “Contribuição para o estudo das ceratopogoninas hematófagas do Brasil” (“A contribution to the study of hematophagous ceratopogoninae in Brazil”), published in Memórias do Instituto Oswaldo Cruz in 1912-1913 (t.4, fasc. 1 p.1-33; t.5, fasc. 1, p.45-73), articles reedited in Adolpho Lutz Obra Completa (v.II, livro 4, p.433-503), the scientist writes about the large population of brachyuran crustaceans living in mangroves, on the margins of the Inhaúma cove. He is mainly interested in crabs that dig burrows that are also used as habitat for larvae of ceratopogonids, dipteran insects commonly known as ‘maruins’.

The material collected by Lutz was analyzed in April and May 1958 by Lejeune de Oliveira, who was responsible for the hydrobiology laboratory at the Ilha dos Pinheiros. The Instituto Oswaldo Cruz was first to conduct studies on hydrobiology in Brazil. The research started in one of the pavilions at the Manguinhos farm, in the 1910s. The gracious building in Art nouveau style had aquariums connected to the sea, which was then very close to the hill where the Moorish castle and other buildings of the Manguinhos architectonic complex, were built. Around 1912, the Estação de Biologia Marinha, linked to the Ministry of Agriculture, was inaugurated in Praia Vermelha. The Estação was closed in 1915 due to lack of funding, and its activities were transferred to the Instituto Oswaldo Cruz.

Alípio de Miranda Ribeiro, an ichthyologist at the Museu Nacional, and three IOC scientists, namely José Gomes de Faria, Aristides Marques da Cunha, and Olympio da Fonseca Filho, worked in Praia Vermelha and then in Manguinhos. At first, they counted on the advice by one of the German scientists that Oswaldo Cruz had brought to the Instituto in 1908: Stanislas von Prowazek, a protozoologist from the Institute für Schiff- und Tropenkrankheiten (Institute for Marine and Tropical Diseases), Hamburg. Gomes de Faria, Marques da Cunha, and Fonseca Filho studied the Atlantic Coast plankton, from Pernambuco to Mar del Plata, Argentina. The papers they published between 1913 and 1918 contain the first systematic observations conducted in South-American waters, on that basic food chain element of the ichthyologic fauna. At the Praia Vermelha Station, Gomes de Faria started rearing edible oysters; according to Fonseca Filho, this was the first project of the kind in Brazil and probably in Latin America.

From 1916 to 1919, already in Manguinhos, the scientists at the Estação de Biologia Marinha studied the poisonous fishes on the Brazilian coast.
The Estação seems to have been abandoned between 1920 and 1930, a time at the Instituto Oswaldo Cruz characterized by lack of funding, obsolescence of facilities, loss of institutional autonomy, and by its scientists having two jobs. Under Henrique de Beaurepaire Aragão (1942-1949), the hydrobiology studies had a new start, this time at an adjacent island called Ilha do Pinheiro, with approximately 12 hectares. In 1922, the island was “planted with a vegetable garden and some fruit trees, had a small pier in poor condition, fishponds, a pavilion, and a wrecked building”.1 In the late 1920s, the island received a colony of rhesus monkeys (*Macaca mullata*) from India, as well as Brazilian species to be used for yellow fever research and soon after, for production of vaccine against the fever. In July 1935, Antônio Cardoso Fontes obtained cession of the island for the Instituto (which he directed from 1934 to 1941) and started building the laboratory and other facilities to be used for hydrobiology studies, including a sea aquarium and fishponds.

Aragão brought to Manguinhos a professor from the Faculté des Sciences de l’Université de Paris, Pierre Drach, then director of the Laboratoire Arago, Observatoire Océanologique in Banyuls-sur-mer. According to Fonseca Filho, Drach brought equipment that allowed divers to reach more than 50 meters, for the study of seabed biology, and “several staff members of the Instituto were trained in this kind of submarine expedition”.

Fonseca Filho, who replaced Aragão as IOC director (1949-1954), brought an internationally known scientist, Arni Friedrikson, at the time a member of the International Commission on Marine Resources and director of the marine biology studies in Iceland. The Estação became the Seção de Hidrobiologia do Instituto Oswaldo Cruz, also offering a course on hydrobiology taught by the director, Lejeune de Oliveira.

With the help of Luiza Krau, the limnologist and oceanologist made a significant contribution in quality to a field of knowledge until then only studied in Brazil by Fritz Müller, Adolpho Lutz, and Carlos Moreira. Lejeune de Oliveira researched the Brazilian copepod fauna, a “difficult group to study, which is an important plankton component”; isopods and decapod crustaceans; the biological associations in the mangrove (the ‘mangue’, after which Manguinhos was named), besides the bio-geographic survey at the Guanabara Bay. Many and valuable are the studies by Lejeune de Oliveira on pollution in our coastal lakes (particularly in Lagoa Rodrigo de Freitas, but also in Lagoa Sepetiba, now severely

---

1 Taveira, Albino Antonio. “Arquivo do Instituto Oswaldo Cruz”, 1938, documento datilografado (Casa de Oswaldo Cruz, Departamento de Arquivo e Documentação).
threatened). The effects of pollution on the destruction of marine fauna have important impacts on the fish market in the city of Rio de Janeiro.²

It is mainly from this perspective that Lejeune de Oliveira analyzes the crustacean collection prepared by Adolpho Lutz: as a biological indicator of degradation that the Guanabara Bay and particularly the Inhaúma Cove were going through as a consequence of industrialization, urban growth, and a very recent event, the opening of Avenida Brasil (1941-5), which required that the coastal line were filled with earth and therefore, that the mangroves were destroyed.

By the time Adolpho Lutz was transferred to the Instituto Oswaldo Cruz, the architectonic complex at the Manguinhos farm was concluded; the sophistication of the complex was only comparable to the palaces simultaneously inaugurated on Avenida Central – the backbone of the ‘haussmanian’ reform that downtown Rio de Janeiro had just gone through (1901-1903). In spite of these transformations, the Instituto Oswaldo Cruz was still located in a rural section of town.

The first inhabitants of the area were the “tupinambá” Indians, who named the mangrove coast as “anhumas” or “inhuma”, noun formed from “nhã” and “um”, meaning black bird, which was then very common. In 1565, Estácio de Sá granted two plots of uncultivated land, or “sesmarias” in the region: one was assigned to the Jesuits and became the Engenho Novo farm, and the other was assigned to Antônio da Costa, which became the Engenho da Pedra. Between the 16th and the 18th centuries, several sugar mills were established, leading to much navigation between the Peixe and the Saúde urban beaches, and the Maria Angu and the Inhaúma ports, and with the rivers Faria, Jacaré and Timbó, where the small “falúas” (sailing ships) and boats entered and reached the far interior of the ‘carioca’ hinterlands.

By land, Inhaúma was crossed by the Estrada Real de Santa Cruz, opened by the Jesuits to link their domains to the urban centres. The road also served demanding travellers and those coming from São Paulo or Minas Gerais.³ In this ‘capitania’, the gold cycle intensified the movement demanding both the road

and coasting bay navigation to expand local businesses, agricultural activities, and increase the population. In the 18th century, most of the Inhaúma farms produced subsistence products to supply the troops and travellers crossing the region, as well as the city of Rio de Janeiro, the viceroy's capital since 1763.

In the mid 19th century, Inhaúma suffered the impact of the new agricultural cycle, the coffee cycle. The substitution of slaves by free workers and the urban growth in the second half of the 1800s led to the expansion of small-scale farming. Small farms and countryside plots were leased or sold to Portuguese, Italian, or Spanish immigrants, who responded for 60% of the Inhaúma population growth between 1838 and 1856.4 In the 1870s, these immigrants were the most important rural consumers in Rio de Janeiro; they also owned some of the leather and clay manufacture industries. Of the 7,190 inhabitants in Inhaúma, 1,200 were farmers that accounted for 3% of the town population. In the following years, the sale of plots from former farm and sugar mill lands, for home developments were intensified, particularly in areas with access to the new means of transportation: railroads and streetcar lines.5

The Engenho da Pedra, Maria Angu, and Fazenda Grande ports, and the roads leading to them (Itaoca, Inhaúma, Manguinhos etc.) gradually lost their function after 1886, with the inauguration of the “Rio de Janeiro Northern Railway Company” line from São Francisco Xavier Station to Meriti. In 1897, the railroad became part of the Leopoldina Railway Company. This being the only railroad near the farm where the Instituto Oswaldo Cruz would be built, four railroad stations were established at the Inhaúma settling: Amorim (belonged to João Dias Amorim, also owner of the coal-pit on the same site; the Estação Amorim was later named Carlos Chagas and nowadays, Manguinhos); the other three railroad stations were Bonsucesso, Ramos, and Olaria.

The Manguinhos farm originally belonged to the huge Engenho da Pedra, which roughly comprised the nowadays called Manguinhos, Olaria, Ramos, and Bonsucesso sections of town. The Manguinhos farm was first so called in 1855, when it was sold by Luis Joaquin Toque Estrada Meier to D. Alexandrina Rosa de Carvel; the farm was expropriated in 1892 under the government of Floriano Peixoto, when it was already completely abandoned. The Federal District Town Hall wanted to build large ovens to

4 Santos, Joaquim J. M., op cit p 90.
incinerate city waste.\(^6\) This project not successful and only a tall chimney remained, which was eventually turned down in the 1930s; several buildings were adapted to house the laboratories of the Instituto Soroterápico, in 1899.

Exequiel Dias, a member of the Institute’s first generation, left us vivid descriptions of the farm in the early 1800s:

In the muddy strip periodically covered by the tides surrounding most of the area, there were green mangrove forests in-between whose tentacular roots moved, unsure, a varied fauna of bizarre crabs and in whose high tree tops landed white herons and grey, sluggish wading birds (“socós”), when not fishing in the shallow waters or bringing life to the solitary and quiet environment of this exceptionally fertile region in the Rio de Janeiro Bay, with their rhythmic and soft flights.

The landscape spreads to the Leopoldina suburbs, still sparsely inhabited and in its agricultural stage, and only stops at the Penha hermitage, with its pleasant and picturesque design, on the top of a large granite block and very popular amongst its people, particularly the Portuguese during the traditional October pilgrimages.\(^7\)

To arrive at the Instituto Soroterápico de Manguinhos, its technicians took a boat provided by the fishing inspection department. According to Dias, in low-tide days, “the first part of the trip (had) to be in a tiny boat, wallowing in the low-tide mud until it reached the larger boat that waited for the passengers at a distance”\(^8\). The most common trajectory involved taking the Central train, then the Leopoldina train to the Amorim stop. Then, a walk to the hill where the laboratories were located, through mangroves infested with mosquitoes (“maruins”); these walkways could not be used during the high-tides, when a long walk around the Bonsucesso area had to be taken.

The farm had two hills separated by forested lowlands. The plain areas were used for pasture, vegetable gardens and grassland, and the hills housed the buildings. The first Laboratório Soroterápico was installed on the hill closer to the coast, where the Manguinhos architectonic complex was later build.

During four decades, the Instituto directors made several agreements – or disagreements – with the City Hall and the federal

---


governments, attempting to define the Manguinhos farm area and to ensure the legal jurisdiction over the land. These attempts were intertwined with the often conflicting relationships with those occupying the farm and its surroundings, as the urban areas became more densely inhabited in the Leopoldina periphery.

Marine communications came to an end after the inauguration of the Rio-Petrópolis road, which passed behind the Institute, during the government of Washington Luiz (1926-1930). The urbanization of Bonsucesso, the nearest quarter, had a new impulse during the First World War, when Engineer Guilherme Maxwell sold the huge pieces of land he owned as landlord of former Engenho da Pedra and its surroundings. Plazas and streets traced with rulers and setsquares were given names of cities in the allied countries, namely the Praça das Nações, the Londres, Paris, Bruxelas, Roma, and Nova York avenues, and the road to the Inhaúma port was improved and named Maxwell Street. Across the Estrada de Ferro Leopoldina, a French descendent, Frontin, opened the Clemenceau, Marechal Foch, Saint Hilaire, Humboldt, and the General Galieni streets. Sometime later, the Darke de Matos, owners of Café Globo, transformed the old Fazenda do Botelho into a new district with the suggestive name Higienópolis. In 1930, the Herm Stoltz company built a runway for tourism airplanes on the seashore earthwork; in 1934, the runway became the Aero Clube. In the same decade, the Abrigo do Cristo Redentor for the helpless old was founded on the Morro do Frota, separated from Manguinhos by the Morro do Amorim.

Several of the so-called ‘subordinate’ workers at the Instituto Oswaldo Cruz lived on the farm or in Bonsucesso, whose Italian colony brought the builder and several construction workers of the Manguinhos architectonic complex.

By means of former workers’ testimonies, we can retrace the changing regional landscape: the property of Luiz da Fazenda, next to the Instituto, where melons, figs and vegetables were produced and shipped to the market, down the Faria River; the people who bathed and fished in the canal clear waters, next to the bridge where the Institute boat anchored; the women who went down to the beach, to pick up wood and crabs.

With the help of fishermen, of whom Adolpho Lutz was also the “free and caring doctor”, Lutz studied the habits of several

---

9 The Manguinhos land was officially marked only in 1935, by the Comissão de Saneamento da Baixada Fluminense; in 1948, it was formalized with the incorporation of two plots, for a total of approximately 238,000 square meters, between the sea and the just inaugurated Avenida Brasil. “Termo de entrega ao IOC de duas áreas de terreno em Manguinhos”, 27.04.1948, Casa de Oswaldo Cruz, Departamento de Arquivo e Documentação.
crustacean species living in those beaches and mangroves, and the curious adaptive relationships between these species and the mosquito species that interested him at the time. In 1958, four to five decades after the collections were prepared by Lutz, and as trucks, buses ad cars already ran in Avenida Brasil and the dejects of the Manguinhos refinery were added to those from other industrial plants that were installed in the area, Lejeune de Oliveira registered, with clear apprehension, the very recent disappearance of the “very clear and pure” waters on that coast. The degradation became worse after the 1950s earthworks, when the Cidade Universitária was built, to unite the Ilha do Fundão to other nearby islands, such as Pindaí do Ferreira; Pindaí do França; da Sapucaia; do Bom Jesus; do Baiacu; das Cabras and do Catalão.

Between 1953 and 1958, in articles published in the *Memórias do Instituto Oswaldo Cruz*, Lejeune de Oliveira analyzed the degradation of the part of the Guanabara Bay and the impossibility to continue with the hydrology studies under those conditions.