

Obituary: Edmundo Ferraz Nonato (1920–2014)

PAULO LANA¹, CECÍLIA AMARAL², MONICA PETTI³ AND PAULO PAIVA⁴

¹Centro de Estudos do Mar – Universidade Federal do Paraná, Paraná, Brazil, ²Instituto de Biologia – Universidade de Campinas, São Paulo, Brazil, ³Instituto Oceanográfico – Universidade de São Paulo, São Paulo, Brazil, ⁴Instituto de Biologia - Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

Taxonomy is an arid discipline, but it may leave some comfort and consolation too. The truly great persons gone are not just memories, but have permanence. They are often engraved in the species names used to describe the biological diversity that gives full meaning to our own life on this planet. But much more than that, they persist in the people formed by them and who will continue to describe the fascination of life around us. This is the case of Edmundo Ferraz Nonato, a naturalist, researcher and teacher who has contributed to the formation of dozens of Brazilian polychaetologists and oceanographers for about 70 years.

Edmundo Ferraz Nonato has always received the unique identification of ‘Professor’ in the spaces of the Oceanographic Institute of the University of São Paulo. There was no need for any other nominal complement. All of us knew who the ‘Professor’ was. Several generations of young people entered his laboratory with a glass vial, a Petri dish, a piece of paper, or just a question in their heads. They invariably came out with the name of a species, with a smile of satisfaction and an even more interesting question to be worked on. Vocations were discovered and established in a few minutes or a few hours of pleasant conversation. Moving easily in this great intellectual space, the Professor has become one of the great pioneers of Brazilian marine biology and oceanography.

Nonato was not only the guardian of an immense scientific culture, but he also had an intuitive and self-contained intelligence, which gave him an incomparable originality. Anyone who has had an informal conversation with him knows what we are talking about – the dragon’s eye that had not blossomed this year; the trips to France and Italy; Ingrid Bergman in Casablanca; Saint-Exupéry; the distribution of species of *Arenicola*; Japanese musical instruments; the origin and etymology of all words and names. In short, any and all subjects were good for his fascinating curiosity and wisdom. Everyone who has known him will always remember the intense way in which he expressed his personal and scientific interests and passions, with his tics and mannerisms, but mainly with his lucid and generous enthusiasm, making jokes at the usual academic formalities and deeply captivating all who listened to him.

Nonato was born in Campinas, in São Paulo State, on 1 June 1920. He completed his academic training in 1946, still very young, with a PhD in Zoology from the University of São Paulo, under the supervision of Ernest Marcus. Soon



Fig. 1. Edmundo Ferraz Nonato. For a list of species described by Edmundo Ferraz Nonato, see <http://www.neglectedscience.com/alphabetical-list/n/edmundo-ferraz-nonato>.

after, invited by Pierre Drach, he spent two years in Roscoff, France, where he met Pierre Fauvel, and began his passion for polychaetes. He also brought back to Brazil his lifelong interest in oceanographic equipment and technology. The ‘Van Veen grab’ mentioned in dozens of Brazilian theses and papers, is in fact a ‘Nonato grab’. He was one of the introducers and pioneers of scuba diving in Brazil. With Crodowaldo Pavan (1919–2009) and other colleagues, Nonato was also (a somewhat unaccredited fact), one of the discoverers of the polytene chromosomes and regulated amplified puffs, first observed in the glandular cells of the fruitfly *Rhyncosciara angelae*. With this discovery, he was part of the history of world genetics during the first half of the 20th century.

In 1952, Nonato joined the newly created Paulista Institute of Oceanography, and future Oceanographic Institute of the University of São Paulo. In 1958, he published his first work on polychaetes, with the description of *Arenicola brasiliensis*, and thus inaugurated modern polychaetology in Brazil. Nonato lived at the Ubatuba Base, on the northern coast of São Paulo, for almost 15 years. The true isolation to which he was subjected there led to intensive fieldwork and reading, and thus to his broad multidisciplinary understanding of many oceanographic and biological issues. In 1973,

Corresponding author:
P. Lana
Email: lane@ufpr.br



Fig. 2. The Professor on the beach.

he returned from Ubatuba to São Paulo and began his activities as a graduate supervisor. His first student was Cecília Amaral. Next, he directed the theses of Teresa Temperini, Paulo Lana, Paulo Paiva and Monica Petti. His direct orientations were not many, but from his firm and serene guidance there arose a 'Brazilian polychaetological school' that today brings together literally dozens of polychaetologists and benthic ecologists. Brazilian polychaetologists are joined in a so-called Nonato network, and have built the Nonatobase, the largest database on polychaetes from the South-western Atlantic.

Professor Nonato always remained active, even after his compulsory retirement at age 70. As a result, several papers were published throughout his third and perhaps better age, with the permanent collaboration and support of Paulo Paiva and Monica Petti. At that time, he had only formally ended his activities as a mentor. He always continued to encourage dozens of young students, who made real pilgrimages to his lab, carrying strange animals and immense doubts.

Until the last day of his life, Nonato remained active and immensely present in the polychaetology life of Brazil, gathering people around his serene wisdom and his shy and collected enthusiasm. He maintained his regular research routines and his work space at the Oceanographic Institute, with the permanent and loving support of Monica Petti and Cecília Amaral (Paulo Lana writing here). Every morning he arrived in his laboratory and almost religiously updated his calendar, after ringing a bell he had brought from Japan to greet each new day of work. In the same way, when he left for home, he would ring the bell again and say, 'See you tomorrow, if heaven permits.' He suffered a brain stroke in the parking lot of the Oceanographic Institute on 14 April 2014 at the age of 93, just after leaving his lab on the way to get his car and drive home, where he was awaited by a stable and happy family. Driving in São Paulo at 93 years old says much about him. Who could wish for a fuller scientific and personal life?

By the harsh contemporary standards, Professor Nonato may not pass into the history of polychaetology as a prolific and competitive researcher. Nevertheless, he still described 39 species and 4 subspecies of polychaetes, one leech and

one dipteran insect. He never took on and never wanted to take on the prominence he probably deserved in a global perspective. Most of his work was published in Portuguese, a language not readily accessible in the context of contemporary science. His great originality came from his eccentric intelligence, from his immense wisdom and from his particular personality, marked by an absolute lack of pretension – a certain kind of precaution – that always allowed him to listen to, but to question, everything around him. His work was always elegant and full of meaning and simplicity. These qualities influenced and marked three generations of Brazilian polychaetologists, who today coexist and interact in a scientifically generous climate of permanent partnership and deep personal harmony. This is his main legacy, this is the mark that Professor Nonato has left, far beyond numbers and usual indicators of production.

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Correspondence should be addressed to:

P. Lana
 Centro de Estudos do Mar – Universidade Federal do Paraná,
 Paraná, Brazil
 email: лана@ufpr.br