Newton Freire-Maia (1918-2003) – from Boa Esperança to the world[1]

I have registers of at least three formal presentations I made of my dear friend and almost brother Newton Freire-Maia, in 1959, 1968, and 1989. I never imaged that one day I would make an appreciation about him after his death. I will start this paper in a not very original way with the same words of 44 years ago. "Once upon a time a boy was born in Boa Esperança, southern Minas Gerais, who with effort and tenacity overcame the limitations of his environment and despite many problems and difficulties became a world-renowned scientist."

So much has been written or spoken about Newton that truly, it is difficult to say something new. Happily, he was duly appreciated and honored during his 84 years of life. Therefore, I decided to first mention our personal relationship. As long ago as 1951 I had just finished my undergraduate studies and had received a fellowship from the University of São Paulo to work in the Biology Department at the School of Philosophy, Sciences and Letters. It happens that the desk that I occupied in the famous old, large house of the Glette alley was exactly the one that Freire-Maia had used before me. He was leaving the Department to found a Genetics Laboratory at the Federal University of Paraná, in Curitiba. On one side of the room there was a closet with a series of Newton's reprints, that I naturally started to examine. In a quick visit to the room, in my absence, he noticed my interest and immediately separated a whole autographed set for me, a delightful surprise for a young beginner.

One year later I had already returned to Porto Alegre, where the IV Annual Meeting of the Brazilian Society for the Advancement of Science was going to be held, and the mission I received from one of my São Paulo's mentors, Antonio Brito da Cunha, was just to defend the proposal developed mainly by Theodosius Dobzhansky, that the chromosome inversions in *Drosophila* were adaptive, that had been questioned by Newton. The discussion occurred in a friendly atmosphere, as would happen on many other occasions, since we generally had different opinions about scientific matters (as occurred in the 1970's and 1980's on questions related to the mutational load and the selectionist vs mutationist controversy).

Our friendship became closer when we stayed together for about one year in 1956/57 at the Human Genetics Department of the University of Michigan in Ann Arbor, USA. This was my first extended stay in a foreign country, which was much facilitated by Newton, who had preceded me by three months there. The first person I met at Ann Arbor's railroad station was him, and he had arranged that an apartment in the wooden house where he lived with his first wife and two small daughters (there were three apartments altogether, one for each floor) would be immediately available to me. Frequently our talks would extend beyond the normal office hours, and they were so lively that our American colleagues would come to see if we were not fighting!

After our return to Brazil an intense interchange began between the Curitiba and Porto Alegre groups, that continues up to the present. The specific publications coauthored by Newton and myself were not numerous, namely a common paper, Salzano *et al.* (1962); two versions, in Portuguese and English, of a book, Salzano and Freire-Maia (1967, 1970); and his contribution with one chapter each to two books I edited derived from international conferences, Freire-Maia (1971a, 1975). But our interaction in personal and professional terms transcended by far these written records.

Newton Freire-Maia liked to write. His first book, entitled "Heredity and life" was written in Portuguese when he was just a high school boy in Varginha and Belo Horizonte, and published (with his father's financial help) when he was 19 years old. Five hundred copies of the book were printed, that were widely distributed among relatives, friends, the press, and scholars from different areas, both from Brazil and outside the country. Therefore, Newton received neutral or encouraging letters from persons as important as Julian Huxley, Alexis Carrel and Auguste Lumière (the co-inventor, with his brother Louis, of cinema). The following is Newton's opinion about his first book, mentioned in his autobiography (Freire-Maia, 1995): "Rereading it now I am perplexed. How could I make so many elementary errors in such a few pages? Actually, it is a book that has more mistakes than letters. This fact made me a violent enemy of self-instruction. Frankly, nobody (except a genius) can study alone and produce something of worth"!

After this youthful sin, however, our hero produced an enviable (both in terms of quality and quantity) work. More than 200 full scientific papers, 19 books (two published in the USA), 22 book chapters, and a large number of articles for newspapers and magazines. I am happy to remember that I had sent to Ciência Hoje what could have

[1]A Portuguese version of this paper was read at the Opening Session of the XV Brazilian Congress of Clinical Genetics, held in Porto Alegre from July 19 to 22, 2003.

been one of his last articles for lay people (Ribeiro and Freire-Maia, 2002).

Which were the subjects that most interested Newton in his career? In terms of human genetics (he also worked with *Drosophila*) Freire-Maia performed several investigations about genetic demography and the variability of normal characteristics, but of special interest to clinical genetics were his studies about: (a) the genetic effects of consanguineous marriages on early mortality and on morbidity; (b) the genetic effects of ionizing radiation; (c) reductional arm malformations; (d) mental retardation; and (e) ectodermal dysplasias. In relation to these last conditions, when he started his studies about them the number of described ectodermal dysplasias varied between one and eight. In 1999 this number had reached almost 160, and 12% of them were new syndromes, described by him and his coworker Marta Pinheiro (general evaluation in Freire-Maia and Pinheiro, 1984). The first article of this series is Freire-Maia (1971b); about it he wrote a note to me as follows: "Dear Salzaninho (he always called me in this friendly way). Newton da Costa said that each scientist publishes, in general, just one important paper in all his/her life. Mendel published one; Einstein arrived at four. This one, in my opinion, is the most important of all my 50 years of work. Small (four pages) but important since it changed the area's paradigm".

Any evaluation about Newton Freire-Maia's life would not be complete if it did not mention his charming personality. Eleidi, his second wife, recently stressed that a remarkable aspect of this personality was his respect for the others' liberty, be him/her his relative, student, colleague or an unknown person. Additionally, he always proclaimed his ideas in defense of social justice, even during the military regime. According to her, at home he was a loving and understanding husband, father (he had four children, one prematurely deceased) and grandfather (nine grandchildren), who always turned the family meetings into happy gatherings with his ability to tell stories. "His capacity of making friends and cultivate friendships was remarkable. Newton was a truly good human being, of an excellent nature", concluded Eleidi.

After his death Freire-Maia received many honors. The Federal University of Paraná's Rector decreed a three-day official mourning, and the State of Paraná's parliament expressed a vote of sorrow at this same time; while the State governor, Roberto Requião, informed on May 22 that the Science Park, in that State, will reopen with Newton Freire-Maia's name.

To this official recognition should be added that of his friends and admirers. Newton was a marked example of an irresistible vocation for science (against what he would call the resistible vocations!). He will always be remembered by his disciples and colleagues, scientists or non-scientists, not only due to his remarkable personality but also because, as Octavio Paz asserted (Paz, 1990) if the memory dissolves humanity will also disintegrate.

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