

Ruy Luis Gomes - A Portuguese Mathematician in Recife¹

The Institute for Physics and Mathematics of Recife University (presently the Pernambuco Federal University, UFPe)

In early February 1953, Prof. Alfredo Pereira Gomes, at the invitation of then University Rector Prof. Joaquim Amazonas, came to Recife to establish a Mathematics Department in the Philosophy, Science and Humanities School, newly created at the UFPe. This was an attempt at following the example of the University of São Paulo (USP), which in the 30s had invited foreign professors, mostly Italians, to create departments in the basic sciences in its Philosophy, Science and Humanities School, keeping at the same time the tradition of teaching the exact sciences in the Engineering School. Shortly afterwards, and before the start of the academic year, Prof. Manoel Zaluar Nunes, at the indication of Pereira Gomes, came from Lisbon to Recife. At the beginning of the academic year, Pereira Gomes and Zaluar Nunes were also hired, at the suggestion of its dean and Mathematics professor Newton Maia, by the Engineering School, which traditionally had better students in the exact sciences, specially Mathematics.

In the Philosophy, Science and Humanities School, Pereira Gomes taught courses on Mathematical Analysis, including the courses on Differential and Integral Calculus, while Zaluar Nunes taught the Geometry courses. This effort led to the creation of the Mathematics degree. In the Engineering School, on the other hand, Zaluar was charged with the courses on Numerical Analysis and Probability, while Pereira Gomes had the Calculus courses.

The most important fact, meanwhile, was the announcement by Luis Freire, a Physics professor in the Engineering and Chemistry Schools, that in 1954 an Institute for Physics and Mathematics (IFM) would be created at the UFPe, where extra-curricular activities on Mathematics and Physics would be carried out, in

complement to those in the official program, as post-graduate studies to enhance the scientific training of young graduates and assistants. The IFM had the support of the recently established (1951) National Council for Research (CNPq), based in Rio de Janeiro, and its Director would be Luis Freire, with Newton Maia, Pereira Gomes and Zaluar Nunes as Mathematics professors, the latter also charged with the acquisition of the first collection of books for the Library, which he later managed. The first book donation by the CNPq, in 1953, consisted of 38 crates of books and journals, and the first book was registered on September 19, 1953.



Ruy Luis Gomes

In the first years of its existence, IFM was visited by renowned mathematicians, mainly French, who gave a series of lectures at the invitation of Pereira Gomes. Among them we should mention Arnaud Denjoy, of the Institut de France, Roger Godement, of the University of Paris, and François Bruhat, of the University of Nancy. The latter two produced lecture notes (on Differentiable Manifolds and Lie Algebras, Lie Groups and Applications, respectively) which were published as

¹ Previously published, in Portuguese, in the Proceedings of “Um dia com o Centro de Estudos Matemáticos do Porto”, Centro de Matemática da Universidade do Porto, 2001. We thank CMUP and the author for their permission to publish this article in the CIM Bulletin.

numbers 2 and 3 of the series “Textos de Matemática”, initiated by Pereira Gomes in 1955 with a course on Linear and Multilinear Algebra (the second part of the course on Multilinear Algebra was not published). Numbers 4 and 5 of *Textos de Matemática*, both by S. S. Chern, were titled “Differentiable Manifolds” and “Complex Manifolds”, respectively.

In the beginning of 1960, UFPe hired, at the suggestion of Pereira Gomes, the Portuguese mathematician José Cardoso Morgado Júnior, who would play an important role, for 14 years, in the Mathematics Department of the Philosophy, Science and Humanities School, and above all in the IFM, where he was the supervisor of Wolmer Vasconcelos and Aron Simis, today professors at Rutgers University and at UFPe, respectively, and well-known experts on Commutative Algebra. At that time, the activity of the Portuguese mathematicians in Recife was already getting the attention of other academic centers, so that Pereira Gomes was a member of the organizing committee of the first and second Brazilian Mathematical Colloquia, held in Poços de Caldas (Minas Gerais) in 1957 and 1959, respectively. In 1960, the CNPq made Pereira Gomes a three-year member of the Governing Board of the Institute for Pure and Applied Mathematics (IMPA), and in 1961 Pereira Gomes and José Morgado were designated for the Advisory Board of the Central Mathematics Institute in the recently established University of Brasília. As a consequence, the IFM’s connections with the various mathematical centers in Brazil became stronger, which facilitated the coming to Recife of many mathematicians visiting other centers. As a witness to this fact we have the publication of number 6 of “Textos de Matemática”, whose authors were: Leopoldo Nachbin, from the IMPA, Luiz Mendonça de Albuquerque, of the University of Montpellier, Charles Ehresmann, from the University of Paris, and Frederico Pimentel Gomes, from the University of São Paulo. In the following years, Laurent Schwartz and François Trèves came to give talks, in both cases after visiting IMPA. Still in 1960, Leopoldo Nachbin gave a three months course in Recife, leading to volume 7 of “Textos de Matemática”, on the Haar Integral, later translated into English and published by Van Nostrand.

The arrival of Ruy Luis Gomes in Recife

In February 1962, Professor Ruy Luis Gomes came to Recife at the invitation of Pereira Gomes. He had been at the Universidad Nacional del Sur, in Bahia Blanca, Argentina, where he was a colleague of his old friend of the University of Porto, Professor António Aniceto Monteiro. As we shall see, his 12-year presence in Recife had a decisive importance for the future of the Mathematics Department of the UFPe (the name given, from

1968 onwards, to the IFM’s Mathematics Section), as well as for the Physics Department. According to Ruy Luis Gomes’ plan of work within the UFPe, his main activities in the university should be to do research, to run a seminar at the IFM, and to teach a course in Mathematics in the Philosophy, Science and Humanities School. I was his first graduate student (and, for a few months, the only one) at the IFM. At the time, I was in the fifth and last year of the Engineering School, and I had already decided to do a PhD in Mathematics abroad. With the help of Leopoldo Nachbin, I tried to persuade the board of the Engineering School to authorize me to spend the 1962 year at the IMPA, in Rio de Janeiro, returning in the middle and in the end of the year to do my final exams. The School’s resistance to my request led me to give up that plan, and I stayed in Recife. After Pereira Gomes’ departure to France, in April 1962, to become a professor at the University of Nancy, Professor Ruy Luis Gomes became my supervisor. I remember that, at his suggestion, I settled in his office, in a desk next to his own, and so we began talking about Mathematics almost daily, with me often preparing talks about subjects chosen by him. This was a rich and important experience in my mathematical training, which lasted until my departure to the USA in September 1963, to study for a doctorate at the New York University. That way, I also had the chance to know and enjoy other aspects of Ruy Luis Gomes’ fascinating personality: his admirable militancy and his ethical view of politics, his irreprehensible character, his commitment to the mathematical training of young people, his contagious enthusiasm in persuading us of the need to establish a quality Mathematics center in northeastern Brazil, his optimistic attitude towards life and his deep humanism. Naturally, Ruy Luis Gomes immediately concerned himself with the IFM. Together with José Morgado, he took over the series *Textos de Matemática* from volume 14 onwards, and a little later they created two new series, “Notas e Comunicações de Matemática” and “Notas de Curso”, the first aiming at the preliminary publication of research articles and the second at advanced lecture notes. These new series quickly started circulating both in Brazil and abroad, and were used in exchanges to improve the IFM’s Library. For several years, we exchanged our series with, for example, the journal *Annales de l’Institut Fourier*, published in Grenoble, France.

During my stay in New York, from September 1963 to December 1967, new students, specially from Engineering, began receiving the influence of Ruy Luis Gomes. In that period, he taught Mathematical Physics to a group of five students who later got their PhDs in Physics in centers in southern Brazil or abroad, and who eventually became the founding group of the UFPe’s Physics Department. The recognition of this influence is found in the main conference room at the Physics

Department, which is called Ruy Luis Gomes Auditorium.

Throughout the years, a considerable effort was made to develop and improve the quality of the Library of the Mathematics Department, not just in books but also in journals and collections, so that it could become, as it did, one of the best in the country. Professor Ruy Luis Gomes always paid attention to this matter and, with his prestige, he managed to obtain substantial funding, both from Brazilian agencies and from foreign institutions such as the Gulbenkian Foundation (that's why our Library carries its name).

The UFPe Master course in Mathematics, another initiative by Ruy Luis Gomes and José Morgado, started in 1967. In 1970, the CNPq recognized the UFPe as a Center of Excellence for the Master course in Mathematics; in 1979, the Master course was accredited by the Federal Education Board. The first assessment by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), carried out in 1980, gave the Master course the A mark, the highest possible, and this mark has been maintained ever since. From 1967 to December 1999, 133 Master students have completed their courses, more than 30 of which went on to do their PhDs, 22 abroad.

In April 1974, for reasons known to all, Professors Ruy Luis Gomes and José Morgado returned to Portugal to work at the University of Porto, leaving us with the huge responsibility of continuing the dream that they, and their Portuguese predecessors, Pereira Gomes and Zaluar Nunes, initiated in Recife, the dream of building a high level Mathematics center in the northeast of Brazil.

The PhD program, started in 1984, was accredited in 1991. 16 candidates have already finished the program, and their theses have been published in international journals. The graduate and research activities in Mathematics can count on one of the best libraries in the country (the third largest, after the ones in the USP and the IMPA), with more than 35.000 volumes. There are 274 journal subscriptions in the areas of Mathematics, Computer Science and Statistics. The teaching staff in the Mathematics Department is composed of 29 professors, 25 of which have a doctoral degree, obtained in the best European and American centers, while the others have Master degrees.

Those who knew Ruy Luis Gomes remain grateful for the great work he carried out at the Mathematics Department of the UFPe, and, above all, they keep the same regard for the exemplary citizen that he was. Alongside the political activism he demonstrated so well all his life, Professor Ruy Luis Gomes was a militant for Science, in particular Mathematics, a not too common fact even among great mathematicians. Wherever he went, he played a role in creating or consolidating teaching and research centers, he stimulated the training of young researchers, he fought to keep the best people in the universities.

Because of all this, the IFM of the UFPe, while regretting the deep sorrow of Professor Ruy Luis Gomes in having to leave his beloved country and his many friends, was really the main beneficiary of that separation, taking advantage, to the profit of Brazil, of his valuable knowledge and character.

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