

MASSERA, ONE OF THE GREATEST MATHEMATICIANS OF LATIN AMERICA

OF ALL TIMES

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EDITOR'S NOTE: Leopoldo Nachbin has been awarded the 1982 Houssay Science Prize by the Organization of American States (OAS). The award is made annually in one of four fields (biological sciences, exact sciences, agricultural sciences, and technical sciences) having a \$30,000 dollars value. The award was presented in 14 October 1982 at a ceremony in Washington DC, USA. In the announcement of the selection of Nachbin, which was made by the OAS in 28 July 1982 in Washington, he was cited for his research contributions in harmonic analysis, functional analysis, topology, topological vector spaces, approximation theory, and infinite dimensional holomorphy, and for training scientists, editorial activities, international ties, and contributions to the creation, support and strengthening of scientific institutions in the American continent. In the ten years since its creation in 1972, this was the first award of the Houssay Prize to a mathematician.

1. THE MATHEMATICIAN. I met José Luís Massera for the first time in 1948, in Rio de Janeiro, Brazil, when he was in his way back to Montevideo, Uruguay, after an extended stay in the USA as a Rockefeller Fellow. He was then invited to deliver a lecture at University of Brazil (now Federal University of Rio de Janeiro), and spoke about his beautiful research on the existence of periodic solutions of differential equations, his work while visiting the USA. I was at the age of 26, and never left Brazil before (I went to the University of Chicago in the USA shortly after Massera's 1948 Rio de Janeiro visit). In spite of my limited international experience at that time, having personal contact only with mathematicians from abroad who visited Brazil, I could ascertain that Massera was to be ranked at a high level as an authentic researcher and a fine lecturer. He was influenced by the famous and enterprising mathematician Solomon Lefschetz. My initial appraisal of Massera's talent was gradually confirmed and strengthened as the years went by. On 09 November 1982, I wrote to the Rockefeller Foundation's President to obtain as many as possible informations on Massera as a candidate to, and a holder of, a Rockefeller Fellowship, for the purpose of writing about him. The reply of 22 November 1982 from an Associate Director of the Rockefeller Archive Center reads as follows: "Your inquiry about José Luís Massera has been referred to the Rockefeller Archive Center because we hold the inactive records of the Rockefeller Foundation. Until recent years, the Foundation's practice was to discard files relating to fellows ten years after the termination of the fellowship. Therefore, the only information we have about Massera is in the Foudation's fellowship register, which consists of brief extracts entered in a card file. This register indicates that Massera was born in Genova, Italy, on 08 June 1915, and that

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he held the degree of Ingeniero Industrial, Facultad de Ingenieria, Montevideo, 1943. A fellowship for him was first approved on 27 December 1944. This was for a one-year period of study at Stanford University during 1945-1946. This fellowship was ultimately cancelled because Massera was unable to obtain a visa to come to the US. At the time he was Professor of Mathematical Analysis, Faculty of Engineering, Montevideo. A fellowship for Massera was again approved on 29 October 1946. Beginning 07 April 1947, Massera studied under Professor Gabor Szego at Stanford. During the latter part of his stay in the US he also studied at Princeton and New York University and his fellowship was extended through 31 May 1948. Sometime after that, he returned to the Faculty of Engineering, University of the Republic, Montevideo." I got to know personally two of the most distinguished students whom Massera inspired directly, namely Gunter Lumer (now professor at Université de l'État, Mons, Belgium) and Juan Jorge Schäffer (a professor at Carnegie-Mellon University, Pittsburgh PA, USA), at the time both were undergraduate students at the Faculty of Engineering, Montevideo, but already at mathematical graduate level intellectually speaking. It was in 1951, after my visit of two years to the University of Chicago and my return to Rio de Janeiro. I got well acquainted with the famous and dynamic mathematician Paul Halmos at Chicago. He next spent an academic year at Montevideo during 1951. Halmos, Laguardia, Massera and others inspired the Montevideo UNESCO office to hold a first Latin American Symposium of Mathematics in Punta del Este (near Montevideo), Uruguay, November 1951, to which I was invited at the recommendation of Halmos. It was at Punta del Este that I saw Massera again, and that I became a close mathematical and personal friend of his then very young students Lumer and Schäffer. I had on their careers a subsequent influence paralel to, and in harmony with, those of Halmos and Massera. By the way, the series of such Latin American Symposia sponsored by UNESCO continued with the second in Villavicencio (near Mendoza), Argentina, July 1954, and the third in Buenos Ayres, Argentina, July 1959. The proceedings of these three conferences were published by the Montevideo UNESCO office, and materialize in a significant way an aspect of Massera's pioneering role in the development of mathematics in Latin America. As a consequence of our 1951 personal contact, I invited and got Lumer and Schäffer to lecture at a Functional Analysis Symposium that I organized in Porto Alegre RS (near the Brazil and Uruguay border), Brazil, December 1952, during an annual meeting of the Brazilian Society for the Progress of Science. Their/ appeared subsequently in the Annals of Brazilian Academy of Sciences, to which I presented them. Lumer and Schäffer, with support and assistance of Laguardia and Massera, arranged that

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I stayed a month at the Institute of Mathematics and Statistics of the University of Montevideo, during June-July 1953, to lecture on topological vector spaces. The Institute's building was new, but not completed, without central heating. It was a cold southern hemisphere Winter. While lecturing and walking in front of the blackboard to write on it, I had my heavy overcoat on. My trembling audience, Laguardia, Massera, their students Lumer, Schäffer, Villegas, etc, all sitted, had also their heavy overcoats on. In that month at Montevideo, I got to know Massera professionally and as a person much better. I met his wife Carmen Garayalde, and I was a guest of them at their home. Massera is a truly powerful mathematician, a pioneeringly dedicated teacher, and a smoothly educated human being. On 20 December 1975, I delivered at the Pontifical Catholic University, Lima, Peru, the First Peruvian Mathematics Colloquium opening lecture on "The development of Mathematics in Latin America". I gave my testimony since around 1940, having started in 1939 my undergraduate studies in Rio de Janeiro. When it came to mentioning Uruguay, I said that "Uruguay of that epoch" also had a strong mathematical school, although a small one, in which excelled Laguardia, Massera, etc. There resulted from this period some mathematicians of international reputation, among them Lumer and Schäffer. Afterwards, Uruguay lost its mathematical level, for internal reasons that above all were economical and political too, which I regret a lot, without detaining myself to analyse them, although I render in this opportunity my homage to Massera, one of the greatest mathematicians of Latin America of all times, who was a victim and a martyr of such a situation in his country." My lecture was published in "Science and Culture" 33 (1981), 649-651, a journal of the Brazilian Society for the Progress of Science. In 1982, there was an international conference at the Federal University of Rio de Janeiro in my honor, as I reached the age of 60 years in 1982, and due to my retirement from that university to join the Brazilian Center of Physical Research starting 1983. At that conference, 35 participants signed a statement "Concerning José Luís Massera" which was prepared in its final form by myself (having the privilege of being the first to sign it) and the famous and energetic mathematician Jean-Pierre Kahane (the last to sign it). It reads as follows: "We, mathematicians of several countries as participants of an International Analysis Seminar held in Rio de Janeiro, Brazil, during 02-06 August 1982, send our best greetings to Professor José Luís Massera, a pionner in the study of differential equations in Latin America and one of the principal founders of the school of mathematical research in Uruguay. As Professor Massera has been in prison since 1975, we urge the Uruguayan Government to set him free again, so that he can continue to perform his remarkable

teaching and his high quality research, whose importance is acknowledged by the international community of mathematicians." I very firmly believe that holding in prison such an internationally outstanding researcher and teacher in mathematics as well as a wonderful human being, namely José Luís Massera, without an open fair trial made available to the world opinion, is entirely against the good and well intentioned nature of such a remarkable, educated and advanced community as the morally noble Uruguayan people!!!

2. HIS FAMILY. I cannot refrain from closing with some personal notes (accurate up to December 1982) about Massera's family, because of the high importance that I attribute to the relationship between a family and one of its members. Massera was born in Genova, Italy on 08 June 1915 from Uruguayan parents. He was immediately registered in the Genova an Uruguayan Consulate. Hence he is a citizen of Uruguay, in spite of being born abroad by mere chance. The names of his mother and father were Ema Lerena and José Pedro Massera. His mother was a person of a fine culture and great sensibility and intelligence. She devoted her life to her family, the husband and three children, Mercedes, José Luís (the mathematician) and Maria Julia. His father, a person of a wide culture, was a noted Uruguayan philosopher, an esteemed university professor, a lawyer, a member of the House of Representatives and of the Senate of the Uruguayan Republic. The mathematician Massera married Carmen Garayalde. Of this marriage, he had two children, José Pedro (who already died) and Ema Julia (who lives in Brazil). Massera has four grandchildren, Francisco (18), Carmen (15), José Miguel (10) (who are children of Ema Julia Massera and her husband José Miguel Aroztegui), and Pablo (12) (a child of the late José Pedro Massera second and Marta Klinger). Subsequently, Massera divorced Carmen Garayalde and married Martha Valentini. This new marriage did not lead to a child, but Martha Valentini already had a daughter of her former marriage, Moriana Hernandez. The members of this family, Carmen Garayalde (who lives presently in Spain, to where she went because she was violently persecuted due to her political ideas), Martha Valentini (who was arrested over a year for the same reason), Moriana Hernandez (in exile in Mexico at present, having written about Massera a long and impressive letter to Javier Pérez Cuellar, Secretary General of the United Nations, New York NY, USA), his sisters Mercedes Massera and Maria Julia Massera, the daughter-in-law Marta Klinger, his daughter Ema Julia Massera and son-in-law José Miguel Aroztegui, etc, are full heartedly engaged in getting Massera out of prison and free again. They do have an overwhelmingly international support, and all united look this approaching goal!!!

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