

## Professor José Vicente Gonçalves

José Martins Vicente Gonçalves was born on 26<sup>th</sup> August 1896 in the city of Funchal. The insularity of his environment had already moulded his character, when, in 1913, he moved to Coimbra, attracted by the beauty and rigour of Mathematics and the tradition and fame of the University of the Mondego. Four years later, he graduated in Mathematical Sciences with brilliant marks, and was immediately contracted as 2<sup>nd</sup> Assistant for a group working in Mechanics and Astronomy.

The scientific career of Vicente Gonçalves, which was the name by which he became known in the academic world, began to take shape in 1919, when he was transferred to the group of Analysis and Geometry. In

well-known, and consequently, the Instituto Superior de Ciências Económicas e Financeiras of the Lisbon Technical University sought his collaboration in 1947. He lectured there for thirteen years.

The level and style of his lectures and course material were not always easy for students to absorb, since they were naturally required to study the material meticulously and in depth. Gonçalves was as demanding with his students as he was with himself, and consequently, was affectionately dubbed 'the wild animal' in the university world. Nevertheless, he was greatly respected by everyone.

When he reached the age limit in 1966, Vicente



1921, he did his Doctorate, presenting a thesis entitled *Sobre Quatro Proposições Fundamentais da Teoria das Funções Inteiras* (Coimbra, Imprensa da Universidade, 1921). Although he was only 25 at the time, his dissertation contained not only original results, but also new demonstrations of familiar propositions.

His progression throughout the academic career was swift, due to his uncontested merit: in 1922, he was promoted to 1<sup>st</sup> Assistant, and five years later had achieved the grade of Full Professor, presenting a dissertation entitled *Teoria Geral da Integração Riemanniana* (Coimbra, Imprensa da Universidade, 1926). He continued to teach at the Faculty of Science, University of Coimbra, until 1942, and during all this time, his lessons were noted for their brilliance, rigour and elegance.

Then, in 1942, he moved to the capital, and the Faculty of Science, University of Lisbon, was privileged to have him on their staff. His competence was

Gonçalves retired from the Faculty of Science at Lisbon after a career spanning almost half a century. He left a vast and varied corpus of scientific work: ten or so books, and almost a hundred articles. Having developed an interest in secondary education early on (perceiving it as the basis of future knowledge), he also wrote five coursebooks for use at that level, published by Livraria Cruz in Braga: -*Compêndio de Álgebra*, Part 1, for the 3<sup>rd</sup> Class, 1935; -*Aritmética Prática e Álgebra*, 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Years (1<sup>st</sup> cycle), 1937; -*Compêndio de Álgebra e Geometria*, 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> Years (2<sup>nd</sup> cycle), 1937; -*Compêndio de Álgebra*, 7<sup>th</sup> Year (3<sup>rd</sup> cycle), 1937; -*Compêndio de Aritmética*, 7<sup>th</sup> Year (3<sup>rd</sup> cycle), 1939.

Within the area of university teaching, the textbooks written by him were noted for their rigour and organisation. His *Lições de Cálculo e Geometria* (Vol.1)

(Coimbra, Imprensa da Universidade, 1930) were written with great care, as was the *Curso de Álgebra Superior* (Coimbra, Atlântida Editora, 1933), which was re-published on a number of occasions, each time with updates and additions.

His *Curso de Álgebra Superior* was an exceptional work, an authentic treaty of algebra and analysis, compared to similar published works in Portugal and abroad. He therefore moulded generations of students, inculcating them with contemporary mathematical rigour. His writing style was precise and elegant, and he appreciated economy of language, a feature that was difficult to encounter in the textbooks available in Portugal at the time.

His research activities are well documented in the articles he published in scientific journals and selected works, and in conference proceedings. Much of his work is to be found in the section *Historiae ac Pedagogiae de Minutis* of the *Revista da Faculdade de Ciências de Lisboa* (2<sup>nd</sup> Series), which he founded in 1950 and edited until his retirement. These focus principally upon themes three areas of Mathematics: Analysis, Algebra and History. His scientific output in the areas of Analysis and Algebra was very creative, and he introduced simplifications of demonstrations of familiar propositions, improving results or achieving original results. Also, within the area of History of Mathematics, he displayed an exceptional talent for astute analysis, and contributed towards a better understanding of the work of some of the great Portuguese mathematicians. His first published work, 'Análise do Livro VIII dos Principios Mathematicos de José Anastácio da Cunha' (Congresso do Mundo Português, 1940, Vol.I) is noteworthy. In this essay, which is perhaps the best-known of his historical works, Vicente Gonçalves proved that, in 1790, Anastácio da Cunha correctly defined the convergence of a numerical sequence, something that was

only presented much later by the renowned Cauchy (born 1789) in his *Cours d'Analyse de l'École Polytechnique* (1821).

He wrote many other works of a historical nature, even after retirement. Most is published in the *Boletim* and *Memórias* of the Academia das Ciências de Lisboa, for which he was elected *sócio correspondente* in 1941 and *sócio efectivo* in 1945.

Vicente Gonçalves clearly was both a brilliant teacher and a prolific and determined researcher. He introduced the results of his research into his lessons, and his research was always regulated by his obvious desire to improve the quality of teaching, making it more profound and more stimulating.

His death on 2<sup>nd</sup> August 1985 did not extinguish his reputation. He left behind an important legacy of scientific and pedagogical work, and the image of a competent and honest teacher will remain in the memory of those who had the privilege to be taught by him, or to have made his acquaintance.

The centenary of his birth was commemorated on 4<sup>th</sup> December 1996 by former students, assistants and colleagues. The ceremony took place in the Department of Mathematics, University of Coimbra, in the room that bears the name of José Anastácio da Cunha, the Portuguese mathematician whom Vicente Gonçalves helped to raise to prominence. All contributions were of excellent standard, and displayed respect and admiration for the man and his work.

I myself had the honour of being a disciple and assistant of Vicente Gonçalves during his period at the Instituto Superior de Ciências Económicas e Financeiras. Thus I can personally vouch that José Vicente Gonçalves had a profound impact upon the scientific community, both as a mathematician and as a man, and left his mark not only upon generations of students, but also upon his closest collaborators.

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