The Portuguese Academic Community and the Theory of Relativity[1]

Augusto José dos Santos Fitas
Centro de Estudos de História e Filosofia da Ciência
Universidade de Évora
afitas@evora.pt

Abstract

The theory of relativity was a scientific subject that interested a small number of Portuguese scientists in the first decades of the twentieth century. Portugal was associated with the observational confirmation of general relativity — observations of the solar eclipse were carried out on the island of Príncipe; however, no Portuguese astronomers took part in the scientific expedition. International seminars, led by foreign scientists and held in Portugal at the beginning of the 1920s and 1930s, were important. A few Portuguese mathematicians, rather than physicists, were first attracted to this theory and the few academic papers dealing with it were published abroad by two members of this group.

Keywords

History of Science, Science in Portugal, Theory of Relativity

One of the areas of greatest interest to researchers in the field of the history of science is the study of the process of appropriation of new scientific theories in countries that can be classified as peripheral in terms of their scientific output. Peripheral countries are those whose academic community is distanced from advanced centers in terms of the research they produce and that have participated to a lesser extent in the process of scientific creation. Like many other countries, the Portuguese academic community finds itself in this situation. Recent studies on the history of relativity have extended to comparative studies on its early reception in various countries (GLICK, 1987 and EINSENTAEDT, 1992). In this article, we do not present a comparative study, but report the principle facts regarding the way in

[1] Funded by the research project, «Historical Studies on Modern Physics in 20th-century Portugal», POCTI/HCT/37742/2001 FCT, III Community Support Framework and FEDER.

which the Portuguese academic community began learning about the arguments presented by the new theory of relativity, which gave rise to a new paradigm in contemporary physics. And what better occasion is there to do this than in the centennial year of 2005?

Introduction

At the beginning of the twentieth century, physics was taught at the only university in Portugal, the *Universidade de Coimbra*, an institution which jealously guarded its privileges and staunchly defended its monopoly on university education at the *Faculdade de Filosofia* and the *Faculdade de Matemática*. At the former, the physics course was phenomenological and experimental in character, which accentuated its applied nature, while the latter courses did not cover general physics, but only specific disciplines such as mechanics and its application to astronomy. Meanwhile, there were other schools of higher education in Portugal, the *Escola Politécnica* in Lisbon and the *Academia Politécnica* in Oporto, which trained engineers and taught physics and mathematics. During this period, the role of the university and the other schools of higher education was essentially to transmit knowledge, to train senior technical officers working in public administration and education, and to provide training to the standards required by certain professions. University professors were not expected to carry out scientific research as part of their job, and there were no incentives for them to do so.

With the advent of the Republic in 1910, important reforms were introduced in higher education: the Decree of 12 May, 1911 provided for the establishment of the two new universities of Lisbon and Oporto, and the creation of *Faculdades de Ciências* at both the new universities and at the old *Universidade de Coimbra*. The Lisbon Faculty of Sciences replaced the *Escola Politécnica*, and the Oporto Faculty replaced the *Academia Politécnica*; in Coimbra, the new Faculty brought together the former Faculties of Philosophy and Mathematics. Besides the creation of these new Faculties, the reforms aimed at fostering scientific research at the university level. Within a very short period, university teaching was reorganized to a certain extent. This arose from the need to grant scholarships to some teachers in order for them to update their scientific training at laboratories in scientifically advanced countries.

During the period between the two world wars, the theory of relativity was not ignored: various articles either referred to it or discussed it; the theory was the subject of academic reports, university courses, some papers presented at congresses and also a very small number of pieces of research carried out in the field of mathematics; ideas were expressed both for and against the theory.

Preliminaries of the Expedition to the Island of Príncipe

In a dissertation which was presented with his application in 1912 for the post of Lecturer in Philosophy at the new *Faculdade de Letras da Universidade de Lisboa*, Leonardo