

Keeping the Doctors at Home

There were approximately one hundred new PhD's in chemistry in Brazil in 1995. Ten years later, in 2004, there were 320. This number, although expressive, is modest for a country whose gross national product was R\$1.9 trillion in 2005, and has the tenth greatest economy in the world with a population of some 200 million. Notwithstanding, for the number of PhD's in chemistry to continue growing - and this is the tendency - strategies will be necessary to keep these PhD's in Brazil; otherwise, the best prepared among them will emigrate to wealthier countries. There is already quite a considerable number of these PhD's in chemistry leaving the country with post-graduate scholarships and grants from the institutions where they will be employed.

After enduring the loss of their best prepared academicians for so many years, India has taken the path of China and Singapore, promoting the return of many of their own who had been hired by large international pharmaceutical corporations, for key positions in the Indian pharmaceutical industry, which is becoming more and more competitive as the years go by. It is true that the number of Brazilian PhD's now abroad cannot be compared to that of India or China, since the Brazilian PhD's in chemistry, until just five years ago, were absorbed by Brazilian public universities. However, this has no longer been occurring since the number of PhD's has risen and the tendency is to become more serious as wealthier nations aggressively reach out to scoop up our best professionals in order to maintain their scientific supremacy and industrial competitiveness. A recent agreement between the governments of these nations and the Brazilian government was hence drawn up, to grant a double diploma, valid both for the graduate as well as the post-graduate, by nations signing the pact.

What may be considered a prize by Brazilian students - to have their diplomas recognized and, therefore, to be able to exercise their professions in a developed nation, due to their intellectual capacity - may well turn out to be a great disaster for Brazil, which stands to lose the entire investment in the greatest national resource the country has: its brain power.

When one looks at the population growth in countries of the European Union, and the reduced number of young people opting for scientific careers in developed countries, it is not hard to foresee what awaits us in the near future if we do not come up with effective measures to keep our PhD's in Brazil.

There has been some initiative along these lines such as the PROFIX (Special Program to Encourage PhD's to Remain in Brazil) by CNPq (National Counsel of Technological and Scientific Development) and the PRODOC (Support Program for Institutional Projects of recent PhD's) by CAPES (Coordination for Improvement of Higher Level Personnel). Although these initiatives are excellent, they account for very little, especially for a field such as chemistry, which, in an ever-increasing tempo, will

turn out 500 new PhD's in 2010. What, then, should be done to assure that this process of growth not be interrupted, since this interruption, if it should come to pass, would bring serious disadvantages to Brazilian chemistry?

For one example, why not create an extensive specific program of post-doctorate grants in addition to the different types of post-doctorate (PD) funding by CNPq (PD Industrial, PD Junior and PD Senior), to benefit the pharmaceutical and chemical industries, which have not only been investing but also plan to expand their Research and Development sectors? The amount of this funding must not, however, be restricted to one or two *per* company, and must also be of an attraction and value compatible with a PhD's level. There will be cases in which not one, not two, but a package of funding will be necessary. This measure, besides not requiring great investments, is also an omen of things to come. These grants, however, should be awarded to organizations with well developed programs of Research, Development and Innovation, and which are capable of producing significant results.

Brazil has the world's best program for graduating young scientists, the Institutional Program for Scientific Initiation Scholarships (PIBIC). No one doubts the success of PIBIC, responsible, in part, for the rise in the number of Master's and PhD's in Brazil, in all areas of knowledge. Thus, why not create a program of post-doctorate funding targeting, for example, the national pharmaceutical industry, along the same lines as the PIBIC program, in which there is a follow-up of achievement by awardees? The areas of Chemistry and Pharmacology could serve as an experimental model for this type of scholarship, as Brazil has a chemical industry both strong and competitive in certain areas as well as successful initiatives in the pharmaceutical industry which, in order to assure growth and generate a slogan for the country, needs a good scientific basis. The Brazilian pharma-chemical sector has been demonstrating great vitality as well as investing in its programs of Research and Development, while also hiring Master's and PhD holder of recognized academic competency. A bit of initiative and audacity from our academic authorities might very well place our Brazilian pharmaceutical industry on a level worthy of a country occupying the tenth highest placement in world economy. In the Chemical sector, Brazilian science has proven itself to be profitable and therefore is worthy of all the attention that funding agencies may give it.¹

Let's get to work!

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Reference

1. Alves, O. L.; *J. Braz. Chem. Soc.* **2006**, *17*, 215 and 216, Editorial.