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From genomics to samba, a scientific view

Pesquisa FAPESP reaches its third print edition in English. This issue brings together what we believe to be some of the most important stories of the Brazilian scientific and technological production published in Portuguese by the magazine during the last two years.

A careful search among the texts published from February 2004 to December 2005 allowed us to select 20 delightful stories on science, technology, humanities and scientific and technological policy. They provide an overview of the vigor and the diversity of the Brazilian scientific production, that has been on the rise since the 1980's – it leaped from 0.44% of the world production in 1981 to 1.55% in 2003. A comprehensive story about how the Brazilian research has changed scale and has become professional is on page 18.

This special issue of Pesquisa FAPESP also reports the discovery of a new neurodegenerative syndrome. Named SPOAN (acronym for Spastic Paraplegia, Optic Atrophy and Neuropathy), this genetic disorder stiffens the joints and weakens first the legs and then the arms, affecting posture in general, and to a lesser degree, vision and speech. It was identified in a small town in the northeastern region of the country by the group lead by the geneticist Mayana Zatz, coordinator of the Human Genome Research Center, in the city of São Paulo. Besides this discovery, Mayana actively participated of the campaign for the approval of the Biosafety Bill in the Chamber of Deputies in Brasília in 2005 – read the interview with her on page 12.

A recent technological breakthrough in Brazil is the production of carbon nanotubes, tiny tubes that possess excellent electrical conductivity and a mechanical resistance one hundred times greater than that of steel. Since 2005, laboratories of the Federal University of Minas Gerais have been producing and selling carbon nanotubes, material of important applications in science and technology, to other universities, research institutes or Brazilian companies.

In São Paulo researchers at the Applied Toxinology Center (CAT) synthesized molecules of the rattlesnake (Crotalus



February 2004



March 2004



April 2004



June 2004



October 2004



January 2005



April 2005



May 2005



July 2005



September 2005



October 2005



November 2005



December 2005

terrificus) and of the jararaca (*Bothrops jararaca*) venom that have shown great pharmacological potential for alleviating pain and controlling blood pressure.

These achievements result from solid scientific bases brought to existence by the effort of many Brazilian researchers during the last 60 years. In this sense, a remarkable example is the one of César Lattes. This internationally known physicist developed a method to detect a subatomic particle called pi meson and was the Brazilian scientist closest to winning a Nobel Prize. But his genius went far beyond: he worked to set up competitive teams and laboratories for physics work in Brazil, as one can read on page 8.

There is no doubt that these recent scientific accomplishments definitely contribute to the country's image – here and abroad – as much as some singular creations

of the Brazilian people. This connection between science and culture becomes more noticeable when one analyzes – with the help of scientific methods of the humanities, in this case – powerful and singular expressions of the Brazilian soul, such as samba. On page 102 a study that analyzed 7,000 sambas tries to understand how this musical genre became the most important one of Brazilian music in the 20th century.

Enjoy *Pesquisa FAPESP*, the science news magazine of the State of São Paulo Research Foundation (FAPESP), one of the most important research funding agencies in Brazil. We talk from science to samba – scientifically, of course.

MARILUCE MOURA – EDITOR IN CHIEF