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FAPESP

ISSN 1519-8774

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PRINTER RR Donnelley

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CEP 05415-012, Pinheiros, São Paulo-SP – BrasilFAPESP
RUA PIO XI, Nº 1.500, CEP 05468-901
ALTO DA LAPA, SÃO PAULO-SP – BrasilDEPARTMENT FOR ECONOMIC DEVELOPMENT, SCIENCE
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LETTER FROM THE EDITOR

Advancing knowledge through long-term financing

Mariluce Moura

EDITOR IN CHIEF

The cover story of this first international issue of *Pesquisa FAPESP* in 2014 (page 6) examines the National Biodiversity Research System (Sisbiota). Sisbiota comprises 38 networks of researchers scattered among 14 Brazilian states. It is coordinated by the National Council for Scientific and Technological Development (CNPq), a federal agency that sponsors research, and brings together bodies from three ministries and 14 state research foundations. With the objective of increasing knowledge of Brazilian biodiversity, it is currently involved in 39 projects, 14 of which are led by scientists from the state of São Paulo and co-financed by FAPESP. The projects encompass all the Brazilian biomes. The report by assistant editor Bruno de Pierro in this issue demonstrates the richness and variety of the research, which ranges from seeking plant extracts with cancer-fighting ability to cataloguing fungi that produce enzymes that may be used in the production of bioethanol.

The inspiration for Sisbiota came from the Biota-FAPESP program launched in São Paulo in 1999. Over the past 15 years, the program has brought together 1,200 professionals focused on studying the biodiversity of São Paulo. During its first decade, Biota-FAPESP lent its support to more than a hundred research projects and promoted advances in measurable knowledge, including the identification of 1,766 species; the database registry of 640 natural products; and the publication of 1,145 scientific articles, books and maps that have been used to guide public policy. The future of Sisbiota is under discussion, but the consensus among scientists is



Scinax machadoi
tadpole, found
in Minas Gerais
by a research group
of the Sisbiota network

that maintaining its financing is essential because increasing the knowledge of biodiversity requires long-term research, as demonstrated by the success of the Biota-FAPESP program.

Another example of long-term financing of studies with ambitious goals involves the Center for Cell-Based Therapy (CTC) at the Ribeirão Preto School of Medicine of the University of São Paulo (FMRP-USP). A study conducted by a team from that institution has characterized the role that a special type of ribonucleic acid (RNA) plays in spreading cancer (*page 24*). A gene located on human chromosome 12 and known as HOTAIR generates a very long RNA transcript, comprising 2,200 nucleotides, but it does not give rise to any protein. However, recent studies indicate that this region of the genome appears to play an important role in regulating metastasis, and research performed by a team from São Paulo has shown in detail how HOTAIR RNA is involved in this process. The CTC is one of the 17 Research, Innovation and Dissemination Centers (RIDCs) through which FAPESP provides funding for up to 11 years to interdisciplinary teams investigating topics on the cutting edge of knowledge. The CTC, which is coordinated by the recently named

dean of USP, Marco Antonio Zago, was included in the first round of the RIDC program in 2001. It later gained international recognition for advances in the use of cell therapy to treat diabetes. During the second round of the RIDC program announced in 2013, another project presented by the CTC was approved, thereby ensuring a new period of funding.

Finally, I would like to highlight the report that describes the research and development efforts by Brazil and other countries to develop a renewable source of aviation kerosene that will release fewer harmful gases into the atmosphere (*page 36*). Known as biokerosene, this fuel could once again make Brazil a reference center for the development and production of biofuel, as it was for ethanol back in the 1970s. This trend is highlighted in a study sponsored by two of the largest aircraft manufacturers in the world – Boeing and Embraer – with FAPESP funding and coordination by the Interdisciplinary Center for Energy Planning (NIPE) at the University of Campinas (Unicamp). The study presents several technological routes to biokerosene production from raw materials such as sugarcane, algae, animal fats, vegetable oils, cellulose, starches and urban waste.

Enjoy!