Rowing in a sea of obstacles

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The name Alpha Crucis is evocative enough to be the main character of a saga, but the combination of the two Latin terms, roughly translatable as "alpha cross", is the name of the brightest star in the Southern Cross. It is also the star that represents São Paulo state in the symbolic sky on the Brazilian flag. In this case, the words refer to the new oceanographic ship of the University of São Paulo (USP), which arrived in the port of Santos in May 2012 after spending months as the focus of a series of mishaps that included countless technical and bureaucratic obstacles, from the vessel's renovation at a US shipyard to its arrival in the country to which it now belongs. The narrative illustrates the difficulties that must be overcome to establish a sound, modern research infrastructure in Brazil. This attempt accompanied colossal personal efforts and persistence to overcome these obstacles.

Not long ago, Alpha Crucis was called Moana Wave, bore the US flag and was used by the University of Hawaii. Today, it is an important platform for Brazilian research into biodiversity, climate change and the exploration of the pre-salt layer. This adventure, along with its protagonists and antagonists, is well described beginning on page 12.

Another highlight in this issue suggests that some doubt remains among neuroscientists regarding the need to determine the exact number and spatial distribution of neurons to learn more about one of the most fascinating objects in scientific research: the human brain. Quantifying and mapping these cells may help us to understand how the brain works. But it seems insufficient to limit oneself to these data to reveal what is intriguing about this organ. An organ which a scientist like António Damásio, for example, passionately aims to unravel in his *Self Comes to Mind,* resorting – regardless of discipline frontiers – to the full realm of knowledge available. This is indicated in the article beginning on page 26, which explains that what is most important, more than the neurons themselves, are the effective connections that these cells establish as they create networks to process information in a well-distributed manner. Thus, the Brazilian technique that facilitated the precise counting of neurons and other human brain cells, which is the focus of the article, is put into a scientific context, although it conflicts with some neuroscientific dogmas.

Brazilian research on astrophysics (page 44), geology (page 48) and biodiversity (page 32), as well as technological advances in the biological control of agricultural pests (page 62), are additional subjects that FAPESP, the São Paulo State Research Foundation, brings to its readers worldwide to provide them with a consistent overview of the production of scientific and technological knowledge in Brazil.