



EDITORIAL NOTE

Heavy metals partitioning in the Rodrigo de Freitas lagoon; larvicidal potential of a new essential oil against *Aedes aegypti*; and the socioeconomic impact of tourism due to wild dolphins provisioning

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Pollution is one of the main concerns for humanity, having a variety of causes (e.g., Ferraz et al. 2005, Lacerda et al. 2012). Hardly disputable, urbanization can be regarded as the leading factor in introducing pollutants to the environment, and due to the actual population growth, will continue to be so in the foreseeable future. Despite the mounting general willingness of governments and policymakers to establish programs that can mitigate some of the negative side effects of urbanization, in many cases there is still a lack of knowledge regarding the processes that enable pollutants to spread and increasingly develop a negative role in the long term, such as the contamination of water by heavy metals.

In the last publication of the year of the *Anais da Academia Brasileira de Ciências* (AABC), Estefan M. da Fonseca (LAGEMAR - Universidade Federal Fluminense, RJ) and colleagues address the issue on how heavy metals are being fractioned in a specific polluted area situated directly in the heart of the city of Rio de Janeiro: the Rodrigo de Freitas lagoon. That the pollution in this mix of salt and fresh water body is a constant concern to authorities is not a novelty, but several details particularly regarding the distribution and dissemination of heavy metals are still unknown. Fonseca et al. (2013) collected core samples in four distinct points of the Rodrigo de Freitas lagoon and analyzed the degree in how the sediments, particularly the humic compounds, affect the fractioning of heavy metals. This is a start in trying to understand the potential impacts including the potential export of heavy metals to areas nearby this lagoon, and how this might affect the biota, as has been documented in other areas (e.g., Wang et al. 2004, Oliveira et al. 2011).

Another article published in this issue of the AABC concerns dengue. This tropical disease is becoming increasingly lethal in Brazil. As known, the main vector of dengue is *Aedes aegypti* whose distribution is not limited to the country but widely found in the Americas (Costa et al. 2005). Several attempts to develop substances with larvicidal effects against this mosquito have been published, including studies on essential oils obtained from *Piper* (e.g., Leyva et al. 2009), a flowering plant that belongs to the so-called pepper family. Gisele L. Oliveira (Universidade Federal do Rio de Janeiro, RJ) and colleagues have determined the major constituents of the essential oil obtained from the species *Piper aduncum* and examined its potential larvicidal activity against *Aedes aegypti*. The oil was extracted from leaves collected from northern

Minas Gerais, from the typical Brazilian Cerrado. This plant is commonly employed by local inhabitants for the treatment of a variety of diseases ranging from respiratory problems to gynecological disorders (e.g., Coimbra 1994). Oliveira et al. (2013) were able to establish the effectiveness of the essential oil obtained from this plant in different concentration that might be a start for the development of a natural product against *Aedes aegypti* and which would help in the control of dengue.

A last contribution that I would like to highlight from the present issue of the AABC, is the study by Luiz C.P.S. Alves (Universidade do Estado do Rio de Janeiro, RJ) and colleagues that deals with what is increasingly becoming an interesting tourist attraction: swimming with wild dolphins. Although studies to understand how natural resources are being used by local communities are not uncommon (e.g., Rocha et al. 2012), in this case the authors try to determine how local inhabitants of the Central Amazon region feel about the socioeconomic advantages of developing a tourist activity which has great negative impact on the wild life (Alves et al. 2013), as has been shown with regards to dolphins before (e.g., Orams 2002). This result is somewhat surprising and might help policymakers rethink the use of the natural resources in some national parks.

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