Anais da Academia Brasileira de Ciências
ISSN: 0001-3765
aabc@abc.org.br
Academia Brasileira de Ciências
Brasil

KELLNER, ALEXANDER W. A.
Scientific Integrity, Precambrian Acritarchs from Brazil and Mangroves and Climate Change
Anais da Academia Brasileira de Ciências, vol. 87, núm. 2, abril-junio, 2015, pp. 537-538
Academia Brasileira de Ciências
Rio de Janeiro, Brasil

Anais da Academia Brasileira de Ciências (2015) 87(2): 537-538
(Annals of the Brazilian Academy of Sciences)
Printed version ISSN 0001-3765 / Online version ISSN 1678-2690
http://dx.doi.org/10.1590/0001-37652015872
www.scielo.br/aabc

EDITORIAL NOTE

Scientific Integrity, Precambrian Acritarchs from Brazil and Mangroves and Climate Change

ALEXANDER W. A. KELLNER

Laboratório de Sistemática e Tafonomia de Vertebrados Fósseis,
Departamento de Geologia e Paleontologia do Museu Nacional/UFRJ,
Quinta da Boa Vista, s/n, Bairro Imperial de São Cristóvão, 20940-040 Rio de Janeiro, RJ, Brasil

Next year, the Brazilian Academy of Sciences (ABC) will complete one century. Since its foundation back in May 1916, ABC has lead and fostered scientific developments in the country and abroad. The celebration of this extraordinary date will be an exciting moment for Science in Brazil and many projects and actions are being planned.

The Annals of the Brazilian Academy of Sciences (AABC), of course, is also part of this. We are planning on publishing several special volumes on "hot topics" in distinct fields of Science, whose development are currently in the eyes of researchers throughout the globe. This will also include areas that can foster sustainable development, a major challenge worldwide. Currently we are collecting proposals, which we will be announcing shortly.

With regards to the challenges for the future, one of the main issues that is attracting the attention of scientific institutions, funding agencies and editors is scientific integrity. In a world that somehow lives under the "bakery-effect" (the need for constant production of "fresh" publications at all times, see Kellner and Ponciano 2008), this need for increased scientific productivity in form of papers is leading to inappropriate and unethical behavior (e.g., Anderson and Steneck 2010) and Brazil, unfortunately is also not immune to that (e.g., Esteves 2014). In order to show what the country is doing with regard to research integrity, Sonia M.R. Vasconcelos and colleagues have published in this issue of the AABC a short panorama of the measurements and contributions that are gradually taking place (Vasconcelos et al. 2015). The central idea of this paper is to raise awareness and call attention particularly of students and scientists working at Brazilian universities where most of the research activities are taking place. Such types of articles are quite important, since they provide us with a general idea of how the country is doing in different areas (e.g., Barata et al. 2014, Leta et al. 2006, Meneghini 2013), and helps policy makers in their decisions on how to foster scientific development.

Another interesting paper published in this issue of the AABC is on the occurrence of acritarchs from the Precambrian deposits of Northeastern Brazil (Chiglino et al. 2015). These organic-walled microfossils are very important not only for dating purposes, but also for potentially providing information about the evolution of eukaryotes (Buick 2010), particularly before the Cambrian Explosion (e.g., Budd 2013). Leticia Chiglino and colleagues have found several acritarchs in the Frecheirinha Formation, which is a carbonate deposit of the Ubajara Group (Hackspacher et al. 1988). Based on $^{87}Sr/^{86}Sr$, an Ediacaran age is

suggested for these deposits which shows a microflora with low diversity, regarded by the authors as not being a taphonomic (preservational) artifact (Chiglino et al. 2015). It should be noted that quite recently the first multicellular organisms of the Ediacaran fauna were also reported in Northeastern Brazil, coming from layers that are younger than the Frecheirinha Formation (Barroso et al. 2014). These contributions are quite stimulating since more material from this important geologic timeframe involving Cambrian and Late Precambrian deposits might come to light from this part of Brazil, and this will certainly provide a better knowledge about the evolution and diversification of early eukaryotes.

Lastly, among the several interesting papers of the present issue of the AABC, I would like to highlight the contribution by Mario D.P. Godoy and Luiz D. de Lacerda, who have analyzed the development of mangrove vegetation and climate change (Godoy and Lacerda 2015). Mangroves are comprised of a typical coastal vegetation of various middle sized trees and shrubs (e.g., Spalding et al. 2010) with great economic impact (e.g., Scavia et al. 2002). Changes in sea-levels, which have been the focus of several studies in recent years (e.g., Castro et al. 2014), as have the changes in vegetation during the Quaternary (e.g., Castro et al. 2013), have an obvious potential impact on such vegetation. Godoy and Lacerda (2015) show that the future of mangrove vegetation is more dependent on direct human intervention (e.g., resource exploitation) than on any other factor, and this needs to be taken into account when mitigating efforts related to climate changes that are going to affect the sea-levels worldwide are decided upon.

REFERENCES

Anderson MS and Steneck NH (Eds). 2010. International research collaborations: much to be gained, many ways to get in trouble. New York: Routledge, 296 p.

Barata RB, Aragão E, De Sousa LEPF, Santana TM and Barreto ML. 2014. The configuration of the Brazilian scientific field. An Acad Bras Cienc 86: 505-521.

Barroso FRG, Viana MSS, De Lima Filho MF and Agostinho SMO. 2014. First Ediacaran Fauna Occurrence in Northeastern Brazil (Jaibaras Basin, ?Ediacaran-Cambrian): Preliminary Results and Regional Correlation. An Acad Bras Cienc 86: 1029-1042.

Budd GE. 2013. At the origin of animals: the revolutionary Cambrian fossil record. Current Genomics 14: 344-354.

Buick R. 2010. Early life: ancient acritarchs. Nature 463: 885-886.

Castro DF, De Oliveira PE, Rossetti DF and Pessenda LCR. 2013. Late Quaternary Landscape evolution of northeastern Amazonia from pollen and diatom records. An Acad Bras Cienc 85: 35-55.

Castro JWA, Suguio K, Seoane JCS, Cunha AM and Dias FF. 2014. Sea-level fluctuations and coastal evolution in the state of Rio de Janeiro, southeastern Brazil. An Acad Bras Cienc 86: 671-683.

Chiglino L, Gaucher C, Sial AN and Ferreira VP. 2015. Acritarchs of the Ediacaran Frecheirinha Formation, Ubajara Group, Northeastern Brazil. An Acad Bras Cienc 87: 635-649.

Esteves B. 2014. Punição tardia. Revista Piauí, Feb 12, 2014. Available at: http://revistapiaui.estadao.com.br/blogs/questoes-da-ciencia/geral/punicao-tardia.

Godoy MDP and Lacerda DD. 2015. Mangroves Response to Climate Change: A Review of Recent Findings on Mangrove Extension and Distribution. An Acad Bras Cienc 87: 651-667.

Hackspacher PC, Soares JS and Petta RA. 1988. Geologia do Grupo Ubajara, região de Frecheirinha (CE). In: Congr Bras Geol 35. Anais, Belém, 1988, SBG 6: 2661-2677.

Kellner AWA and Ponciano LCMO. 2008. *H*-index in the Brazilian Academy of Sciences - comments and concerns. An Acad Bras Cienc 80: 771-781.

Leta J, Glänzel W and Thus B. 2006. Science in Brazil Part 2. Sectorial and institutional research profiles. Scientometrics 67: 87-105.

Meneghini R. 2013. The Low Academic Profile of Brazilian Economists. An Acad Bras Cienc 85: 431-435.

Scavia D et al. 2002. Climate change impact on U.S. coastal and marine ecosystems. Estuaries 25: 149-164.

Spalding M, Kainuma M and Collins L. 2010. World atlas of mangroves. Earthscane. UK and USA, 336 p.

Vasconcelos SMR, Sorenson MM, Watanabe EH, Foguel D and Palácios M. 2015. Brazilian Science and Research Integrity: Where are We? What Next? An Acad Bras Cienc 87: 1259-1269.