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## Jorge Zorzópolos, *Microbiología Evolutiva (Historia de la Vida sobre la Tierra)*

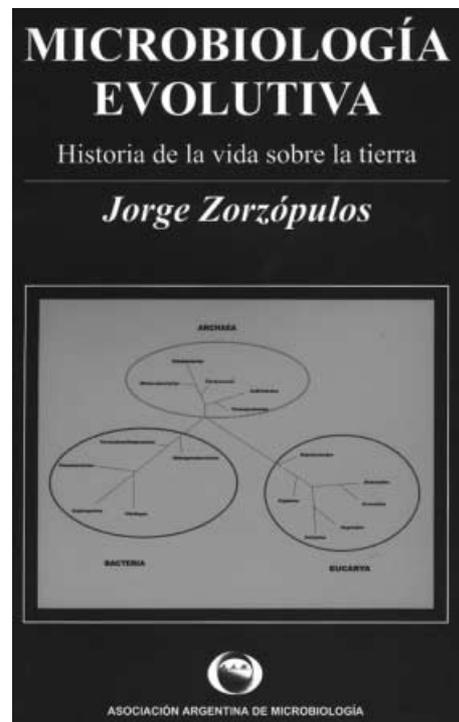
Asociación Argentina de Microbiología, Buenos Aires, 2001. 140 pp, 23 × 15.5 cm  
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This is a great little book that, in the space of 140 pages and a small format (23×15.5 cm), displays, concisely and clearly, the major events of the history of life on Earth. This second edition of *Microbiología Evolutiva* by Jorge Zorzópolos has awoken in us, microbiologists, a feeling of pride in recognizing the work carried out by a colleague in our academic and research field. In addition to developing topics suitable for a textbook, the author, following the most essential scientific tradition, proposes his own hypotheses on the evolution of the genome and cellular lineages. Like most experimental sciences, microbiology and related disciplines have undergone dramatic changes over the second half of the twentieth century, due mainly to the development of new technologies that have allowed scientists to reach goals they had never imagined were possible. The future of scientific research is both an ethical challenge and a festival for the scientifically curious.

The book describes the evolution of the universe, more specifically the evolution of Earth, by explaining the processes involved according to the laws of physics and chemistry. A discussion of life as we know it is integrated into a discussion of the natural history of the planet where it originated, evolved and has persisted. Starting from the concept of surface metabolism – related to geothermic energy and the nature of the surfaces that must have allowed retention of the molecules of life – the author describes all derived hypotheses and theories, including his own.

The classification of living beings, and not only bacteria, is demonstrated according to the concepts of both phylogenetic and molecular taxonomy and that of a universal phylogeny based on the analysis and comparison of ribosomal 16S RNA sequences. Zorzópolos describes the inconsistencies found in the universal



phylogenetic tree, which can be explained by the growing evidence of horizontal transfer of large genetic blocks among organisms of different lineages. To explain those facts, Zorzópolos agrees with the currently most widely accepted hypothesis: the existence of an earliest population of cells rather than a single universal ancestor. He launches the hypothesis that cellular fusion must have been the preferred mechanism for horizontal transfer, not only among individuals from different domains, but also involving the earliest cell population.

*Microbiología Evolutiva* comprises five chapters: “The origin of life” (Chap. 1), “Taxonomy and phylogeny” (Chap. 2), “Bacteria” (Chap. 3), “Archaea” (Chap. 4)

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and “Eukarya” (Chap. 5). An appendix includes the history of Earth from a geological point of view, and short biographical notes on Carolus Linnaeus, Charles Darwin and Carl Woese. Photographs and illustrations accompanying the text help the reader to understand the concepts and ideas that have been presented.

This is a major work on the topic published in Spanish. In fact, it is hard to find such a complete work in any other language. The book is aimed at students

and instructors of general microbiology; however, it is of interest also to all microbiologists, even those skeptical microbiologists who disregarded the first edition, and who now must deal with advanced, nucleic-acid-based techniques to identify bacteria. The book is also recommended to all researchers with open, curious minds, who cannot resist the temptation to understand – and then either accept or reject – the hypotheses of the author on microbial evolution.