

Ctba., 10 7 98.

Querido xará:

Tenho recebido suas cartinhas e seu material. Leio tudo e, mesmo o que não entendo, acho formidável!

Em suma - sou sua macaca de auditório! O seu livro foi um dos mais notáveis que já li em toda a minha vida...

Pulei algumas coisas, mas o que entendi achei maravilhoso.

V. é uma glória do país. E mais: da Lógica mundial.

Um abraçoíssimo do seu amicíssimo e admiradorzíssimo e xarazíssimo - N.

## CREATION AND EVOLUTION

I read with the utmost interest the report on recent investigations confirming that the vertebrate embryo drawings made by Haeckel in the XIX century had severe mistakes (Elizabeth Pennisi, Research News, 5 Sept. 1997, vol. 277, p. 1435). This is an excellent example of the self-correction mechanism of science. Sooner or later, mistakes are corrected and frauds are denounced. I read also – but now with a certain surprise – that these findings had been used in a TV program against the theory of biological evolution (Michael K. Richardson et al., Letters, 15 May 1998, vol. 280, pp. 983-985).

Excepting in simple and elementary propositions, science generally does not find and recognize complete truth. Their theories are mere attempts to interpret and explain phenomena; these theories can never be proved, but only corroborated. However, they may be falsified if important counter-examples are found and do not permit ad hoc adjustments, as important counter-examples generally do not. The theory of evolution is extensively corroborated by facts from all biological disciplines; these facts are the same that falsified its rival theory (fixism).

Science certainly looks for truth, but it does not possess a perfect criterion to find and recognize it. That is why science generally only tries to find likelihoods (in the sense of Popper) or quasi-truths (in the sense of da Costa). These concepts derived from a purely pragmatic criterion of truth, and therefore may sometimes camouflage fallacies.

Scientific theories never attain religious concepts because they occupy different areas of knowledge. Creation is a religious belief; evolution is a scientific theory. That is why a person can accept both creation and evolution without contradiction. Creation describes the beginning of reality; evolution describes what follows it as regards living beings. Therefore, creationists may be subdivided into two categories: those who advocate fixism of species (a formerly widely accepted but now falsified theory), and those who accept evolution (the now prevailing theory which is likely true). Therefore, evolution is not opposed to creation. The so-called “scientific creationism” should be honestly called anti-scientific fixism.

Newton Freire-Maia  
Department of Genetics, Federal University of Paraná  
P.O.Box 19071, 81531-990 Curitiba, PR, Brazil  
e-mail: evbranco@bio.ufpr.br