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Bruce J. MacFadden, 1994. *Fossil Horses. Systematics, Paleobiology and Evolution of the Family Equidae* (Cambridge University Press. Price: £15.95 Paperback, 2nd edition, 369 pp. ISBN 0521 47708-5)

The second edition, in paperback, of MacFaddens book on fossil horses has just been published. During the time between the first hardback edition and this one, a number of reviews have appeared (Court, 1993; Forsten, 1993; Janis, 1993; Lister, 1993; McKenna, 1993; Sondaar, 1994).

All reviewers praise the modern layout of the book but they differ strongly in the evaluation of its content. Court, Janis, Lister and McKenna are quite positive, Forsten and Sondaar outspokenly negative. In particular Forsten and Sondaar have enumerated errors that should have been corrected in a second edition; they were not.

A new and modern approach to paleontology and evolution should be especially attractive to teachers and students; therefore one would like to pass on without paying too much attention to errors. But here the errors seem to play an important role and it is therefore necessary to ask the question: Which errors are minor, which are not?

In this book, various concepts, definitions, and classifications coexist without explanation. In MacFadden's phylogeny in figure 5–14, obviously adapted from Simpson's famous tree of horse evolution, *Astrohippus* is indicated as ranging between 12 and 6 Ma, but in figure 8–9, its time range is 6 to 4.5 Ma, in accordance with the "modern classification" (appendix, pp. 335, 336). Perhaps this is just a matter of editorial carelessness, just as might be the contradiction between the text on page 184 claiming "Clarendonian maximal diversity" and what appears with careful examination to be Barstovian maximal diversity on fig. 8–9.

But what if there are errors at the very base of the cladograms? McKenna, one of the positive reviewers, finds "fascinating" the various conflicting cladograms and phylograms, but Forsten, one of the leading equid paleontologists of today (who obviously took the pain to thouroughly read and analyse MacFadden's book) thinks that "the shared-derived character states of table 5.2 and pp. 102-117 are a peculiar blend of trivia and errors". In that case, errors cannot be considered as trivial.

McKenna wonders if there is not a deeper problem about how "we best express phylogenetic concepts in words rather than diagrams". McKenna leaves this question unanswered, but in our opinion, the phylogeny of horses, whether expressed in words or in diagrams, has been – and still is – one of the clearest examples of evolution. That is because of an evident relation between functional morphological changes selected by the changing environment, the evolution of horses makes sense; MacFadden's cladograms do not.

Just as Forsten, we wonder if MacFadden's book reflects "a real belief in evolution without selection". For us, looking at animal evolution without paying attention to its ecological context boils down to ignoring the fact that animals are living beings subject to and reacting to selective pressures. It denotes a lack of attention to animals and their natural history. We think that errors, big or small, contradictions, inconsistencies, as well as the lack of a true evolutionary framework, all reflect a loss of contact between the author and the fossils, resulting in a divorce from reality and an irrelevant exercise in abstraction.

That may also explain why the praises for the book come mostly from people without experience in horse studies, while those who have spent years on the subject are not really enthusiastic.

Nowadays, many people seem to feel happier about abstractions than about solid facts (Eisenmann and al., 1987). Is this a symptom of a more profound disease? A disease caused by the selective pressures exerced on researchers in the form: "publish (rapidly) or perish"?

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P. Sondaar, Utrecht
V. Eisenmann, Paris

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