

Reviewing the vertebrate fossil record

Darren Naish

Ocean and Earth Science, University of Southampton, UK

The vastness of the vertebrate fossil record and its literature makes any effort to review it in entirety a difficult task; 'a review' is understood to be a work that discusses the evolution and diversity of a group, drawing in knowledge on taxonomy, morphology, ecology and distribution, with representative illustrations. Existing reviews of the entire vertebrate record have mostly been designed with teaching in mind and have focused on groups, trends and processes deemed of interest to students. As goes more specific reviews, some groups (Mesozoic dinosaurs in particular) are frequently reviewed; others are afflicted by their association with idiosyncratic authors, others have only been given partial treatment, and others are woefully under-represented. Biographical information on vertebrate palaeontologists themselves is scattered. An additional issue is that several excellent volumes (notably the Handbook volumes) are prohibitively expensive, rare or otherwise hard to obtain. Cenozoic fishes – in particular actinopterygians, the largest and richest vertebrate radiation – remain essentially untouched and it might not be obvious to non-specialists just how rich the fish record is. Indeed, an enormous number of lineages scarcely known to experts on modern fishes are present in the fossil record.

The result of this skewed coverage is that both popular and technical perception of the vertebrate fossil record is biased. Not only are there a huge number of groups that fail to attract students, a large number of research questions relevant to these groups remain un- or under-investigated because so few researchers are aware of their existence.