



History of sciences (History of comparative biology)

## A preliminary biography of Armand de Ricqlès (1938–), the great synthesizer of bone histology

### *Une biographie préliminaire d'Armand de Ricqlès (1938–), l'encyclopédiste de l'histologie osseuse*

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#### ABSTRACT

Armand de Ricqlès has had a long, successful career. From his start as an Assistant in the University of Paris in 1961, he defended his doctoral thesis in 1963, became Maître-Assistant (Assistant Professor) in 1970 (tenured 1971), defended his “doctorat d'état” (habilitation thesis) in 1973, was nominated Professor in the University Paris 7, was promoted to first class (Full Professor) in 1987, and was finally nominated to the prestigious chair “Biologie Historique et Évolutionnisme” (Historical and Evolutionary Biology) of the Collège de France in 1996. He lectured on a wide range of topics, especially in comparative and evolutionary biology, and assumed important administrative responsibilities, including responsibility of various master's programs, leadership of the team “Formations squelettiques” (1973–2002; till Professor Jacques Castanet took over leadership of the team), involvement in various committees, and in organizing scientific meetings. He served on several editorial committees and was co-editor of the “Annales des Sciences Naturelles”, as well as co-editor-in-chief of the “Comptes Rendus Palevol”. His scientific research always emphasized bone histology, especially paleohistology, but he also made contributions to systematic paleontology, phylogenetics, history of paleontology, and biological nomenclature, in decreasing order of importance. He has so far published over 100 scientific papers and 120 semi-popular papers.

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#### RÉSUMÉ

La longue carrière d'Armand de Ricqlès a été couronnée de succès. Nommé Assistant à l'Université de Paris dès 1961, il soutint sa thèse de doctorat de 3<sup>e</sup> cycle en 1963, fut promu Maître-Assistant en 1970 (titulaire en 1971), soutint son doctorat d'état en 1973, fut nommé Professeur à l'Université Paris 7, puis promu en première classe en 1987. Il obtint finalement la prestigieuse chaire de Biologie Historique et Évolutionnisme du Collège de France en 1996. Il enseigna de nombreux sujets, spécialement en biologie comparative et évolutive ; il accepta d'importantes responsabilités administratives, incluant la direction de divers DEA et de l'équipe « Formations squelettiques » (1973–2002, jusqu'à ce que le Professeur Jacques Castanet lui succède dans cette fonction). Il participa à divers comités, qu'il présida souvent, et organisa plusieurs congrès scientifiques. Il est membre de plusieurs comités de lecture

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et fut co-rédacteur des « Annales des Sciences Naturelles », ainsi que l'un des quatre rédacteurs en chef des « Comptes Rendus Palevol ». Sa recherche scientifique porte surtout sur l'histologie osseuse des tétrapodes et, plus particulièrement, sur la paléohistologie, mais il publia également quelques articles en paléontologie systématique, en phylogénétique, en histoire de la paléontologie, et en nomenclature biologique, en ordre d'importance décroissante. Il a pour l'instant publié plus de 100 articles scientifiques et 120 articles de vulgarisation.

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## 1. Introduction

It has been said that many scientists have had a positive influence in their field in the first half of their career, and a rather negative influence in the second half of their career (through an excessively conservative attitude that hampers acceptance of new hypotheses and methods). As this biography will attempt to show, the career of Armand de Ricqlès provides a nice counter-example; Armand remained a leading figure in the field of vertebrate paleohistology, paleobiology, and paleoecology, and fostered the development of new ideas and methods (several of which he incorporated into his work) until his official retirement in 2010. His open-mindedness, thorough knowledge of bone histology and microanatomy, and constant support of various initiatives taken by members of the team “Formations squelettiques” played a significant role in the development of that team for more than 35 years (1973–2008). This biography is necessarily preliminary to the extent that Armand will no doubt remain active as Emeritus Professor of the Collège de France for many more years. Nevertheless, it seems appropriate to include a summary of Armand's career in the Festschrift that celebrates his retirement. Even though Armand is probably best known for his work on paleohistology focusing on growth dynamics and thermal physiology (de Ricqlès et al., 2006), this topic will be evoked only briefly here because it is emphasized in another contribution in this volume (Padian, 2011).

### 1.1. Youth and studies

Armand de Ricqlès was born on December 23, 1938 in Bruxelles (Belgium). He had a broad range of interests in natural sciences, and these led him to study biology at the Sorbonne, in Paris, where he obtained a “Licence” in Natural Sciences from the University of Paris in 1960. The “Licence” is roughly analogous to a BSc in America (no French degree or academic position, especially at that time, has strict equivalents in North America and in many cases, in other European countries). The teachings of Marcel Prenant, Charles Devillers and Yves François strengthened his wish to study vertebrate evolution and to focus on amphibians and reptiles. Simultaneously he took courses on other topics, such as general biology (by Grassé and Panigel), botany (by Eichorn, Plantefol and Chadeauf), geology (by Glangeaud, Durand-Delga, and Caire), animal physiology (by Jost, Morel, and Buser), and plant physiology (by Chouard and Moïse). These courses must have been excellent because Armand subsequently published semi-popular papers on topics fairly remote from his primary research interests, such as botany and insects (especially

dragonflies and damselfishes) (de Ricqlès, 1970; de Ricqlès and Aguesse, 1968). However, his colleagues from the earliest days have always regarded him as a polymath, interested in all fields and able to answer the most obscure questions.

Armand started working as an “Assistant” for the same university in 1961, taking advantage of the “baby boom” that allowed (at that time) good academics to get on tenure-track positions well before obtaining a thesis. Simultaneously, he prepared his DEA (Diplôme d'Études Approfondies; analogous to a Master's), quickly followed by a doctoral thesis (“Doctorat de troisième cycle”, similar to a PhD) in the Laboratory of Comparative Anatomy at the Sorbonne. As part of the coursework for these degrees, he took courses on histology and cytology, including some courses by René Couteaux on cell biology and ultrastructure, that gave him his first advanced technical laboratory experience. His thesis was supervised by Marcel Prenant and focused on histology, especially on long bone morphogenesis of *Pleurodeles*, the topic of his very first scientific paper (see below). His interests in large-scale vertebrate evolution quickly led him to the conclusion that studying only extant forms was insufficient to get a global perspective. This logically led him to take vertebrate paleontology courses given by Jean Anthony, Robert Hofstetter, Jean-Pierre Lehman, and Jean Piveteau. The thesis defense took place in 1963; the jury included M. Prenant, R. Couteaux and Y. François. In the next few years, Armand did his military service (1965–66) and was promoted to the rank of “Maître-Assistant stagiaire” (analogous to Assistant Professor) in 1970. As is typical of the French system, he was tenured the following year (1971). The French tenure-track is not meant to ensure that a scientist can remain productive while working autonomously and teach simultaneously for several years; instead, it is aimed at ensuring that the new Faculty member works in a satisfactory manner in his new environment. By then, Armand had all the basic training that he needed to become a leader in vertebrate paleohistology.

Armand must have found the team “Formations squelettiques” (then led by Y. François) a very good working environment because he remained in that team for most of his career, until the endless bureaucratic quarrel between the presidency of the UPMC (Université Pierre et Marie Curie) and of the Muséum National d'Histoire Naturelle led to its dismantling on January 1, 2009. Ever since his first doctoral thesis defense, Armand had been preparing a second, larger thesis called the “Doctorat d'état” (that he defended in 1973), that was required in France to supervise doctoral students or to advance in an academic career (to the rank of Professor, equivalent to Associate or Full

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