Org. Divers. Evol. 6, Electr. Suppl. 16, part 1: 1 - 82 (2006) © Gesellschaft für Biologische Systematik http://senckenberg.de/odes/06-16.htm URN: urn:nbn:de:0028-odes0616-5 Org. Divers. Evol. 6, Electr. Suppl. 16, part 1 (2006) Malchus, N. & Pons, J.M. (eds) International Congress on Bivalvia: Abstracts. Electr. Suppl. 16, part 1. – to: Malchus, N. & Pons, J.M. (2006): Abstracts and Posters of the "International Congress on Bivalvia" at the Universitat Autònoma de Barcelona, Spain, 22-27 July 2006. Org. Divers. Evol. 6(4): 327.

POLYMORPHISM AND SHELL RESHAPING IN PINNA NOBILIS L., 1758: THE RELIABILITY OF SHELL DIMENSIONS FOR ONTOGENETIC AGE AND POPULATION GROWTH RATE ESTIMATES García-March, J.R. and Márquez-Aliaga, A. (1*) Marine Biology Laboratory, University of Valencia. C/Dr. Moliner 46100 Burjassot (Valencia), Spain; jose.r.garcia-march@uv.es (2) Instituto Cavanilles de Biodiversidad y Biología Evolutiva. Departamento de Geología, Universitat de Valencia. Campus de Burjassot. C/ Dr. Moliner 50, 46100 Burjassot (Valencia) Spain; ana.marquez@uv.es Generally, the age of Pinna nobilis specimens and population growth rates (PGR) are estimated from maximum shell length measured from the umbo. However, shells show different morphologies, mainly straight and wide, straight and narrow, and combed, whose originating factors are still unknown. We wanted to know how reliable shell maximum length is as an estimator of age and PGR and studied the morphology of 178 specimens, collected during the last decade, under this aspect (1). The pinnid shells were found to undergo a continuous process of abrasion and reconstruction (termed reshaping herein) which made us hypothesise that this is the cause of the observed polymorphism. All valves show signs of abrasion in their dorsal, ventral and anterior borders, as well as the external surface. This abrasion, more important along the anterior border, eliminates older shell and brings younger shell deposits in contact with the environment. The individuals counteract this abrasion mainly by posteriorward migration of the soft tissues which leads to the reconstruction of the acute anterior apex as well as to the formation of new ligament layers (2). The fan shell morphology is thus maintained regardless of apex loss; however, the morphology resulting from this reshaping process depends on the quantity and importance of shell abrasion and reconstruction. In this regard, we have observed that all straight and wide specimens show a heavy injury of the shell apex (an extreme form of abrasion), an accelerated migration of the tissues and an abruptly reconstructed apex. Our data indicate that the other morphologies are similarly influenced by the different degrees of abrasion. It therefore appears that the relation between shell proportion and age is different for each morphology. In consequence, the exclusive use of maximum shell length (or any other shell dimension) generates strongly biassed age and PGR estimates. For more reliable estimates it appears fundamental to acquire a better knowledge on the relationship between the amount of shell reshaping and morphology. (1) García-March JR, in press, Aportaciones al conocimiento de la biología de Pinna nobilis Linneo, 1758 (Mollusca: Bivalvia) en el litoral mediterráneo ibérico, Publication Service of the University of Valencia, 332 pp. (2) García-March, et al. in press, J. Paleontol.