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A study of the type series of *Nautilus pompilius* Linnaeus, 1758 (Mollusca, Cephalopoda, Nautilida)

SVETLANA V. NIKOLAEVA^{1,2}

¹International Commission on Zoological Nomenclature, Natural History Museum (NHM), London SW7 5BD, U.K.
E-mail: s.nikolaeva@nhm.ac.uk

²Borissiak Paleontological Institute, Russian Academy of Sciences, ul. Profsoyuznaya 123, Moscow, 117997 Russia; Kazan Federal University, ul. Kremlyovskaya 4/5, Kazan, 420008 Russia

Abstract

Few animals are treasured by zoologists more than *Nautilus*, and *Nautilus pompilius* Linnaeus, 1758, the type species of the genus, in particular. However, the type series of this species has not been studied in great detail. According to the rules of zoological nomenclature the type series consists of all the specimens included by the author in the new nominal taxon at the time of description (whether directly or by bibliographic reference), and any evidence, published or unpublished, may be taken into account to determine what specimens are included. The type series of *Nautilus pompilius* includes specimens in the Linnean Society of London, the University Museum in Uppsala, and specimens figured by pre-Linnaean authors indicated by reference by Linnaeus (1758). One specimen in London and four specimens in Uppsala, which are still extant, are likely to have been known to Linnaeus at the time when he prepared the 10th Edition of *Systema Naturae* (Linnaeus 1758), although none of these specimens was specifically mentioned by him. Even though it is widely believed that Linnaeus (1767) designated as lectotype a specimen figured by Rumphius (1705) in his *D'Amboinsche Rariteitkamer*, referred to in the *Systema Naturae*, this presumed lectotypification is not valid because Linnaeus did not explicitly indicate that any particular specimen was considered to be the type of the species. Later lectotype designations of Rumphius' illustrations are invalid because they show three different specimens. It seems that the best approach, given the quality of the material and the lack of clarity as to its type status, would be to apply to the ICZN asking to set aside all previous type fixations and designate a neotype, preferably a DNA sequenced specimen of known provenance.

Key words: *Nautilus pompilius*, Cephalopoda, nomenclature, type series, Linnaeus, history of science

Introduction

The chambered, pearly or emperor nautilus, *Nautilus pompilius* Linnaeus, 1758, is an iconic Southeast Asian species, used by scientists as a symbol of marine biodiversity, and to stimulate conservation awareness and promote evolutionary and historical zoogeographic theories. Nautiloids have existed for almost 500 million years, but this once abundant group is now restricted to a relatively small area of Indo-West Pacific, and is represented by a handful of species, whose biology we are only just beginning to understand. At the same time the perfect geometry and translucent beauty of the nautilus shell make it desirable as a decorative ornament which, combined with demand for mother-of-pearl, has led to commercial exploitation that raises concerns about the survival of the two extant nautilid genera (Davis, 2010; Saunders & Landman 2010). In spite of such concerns, trade in *Nautilus pompilius*, the best-known nautiloid of our time, is not regulated and no species is protected by the Convention on International Trade in Endangered Species (CITES). An understanding of the nomenclature of *Nautilus pompilius* is of paramount importance for accurate identification of this species, which is necessary for trade regulation. As for many historically described species, the status of the type series of *Nautilus pompilius* is far from being resolved.

According to the rules of zoological nomenclature (ICZN 1999) the type series of a species consists of all the specimens included by the author in the new nominal taxon at the time of description (whether directly or by