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Why Cetaceans Stopped Being Fish and Became Mammals: An Analytical Interpretation of Biological Thought from Aristotle to Linnaeus

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Numerous authors including Aristotle and Renaissance naturalists recognized the unique nature of cetaceans which because of the anatomy of their reproductive system did not fit that of fishes. Yet, they were still classified as "fishes" until Linnaeus' 10th edition of his *Systema Naturae*, for which he created the Order Cete. We analyzed Linnean and pre-Linnean documents in order to understand the reasons behind this intellectual inertia. We also looked at Peter Artedi's work, (on which Linnaeus, a botanist, based his ichthyological classification) and tried to discern the reason behind Linnaeus's breakthrough by finally recognizing from a systematic viewpoint not only the characters that made cetaceans being part of mammals (or quadrupeds as known at that time) but also a group onto itself. We concluded that both scholasticism and tradition of classifying animals based on their environmental surroundings were the reasons for the intellectual inertia. Also, we believed that despite Artedi's influence, Linnaeus was completely original in his stance of creating not only the Class Mammalia, but including cetaceans within it in a separate order. We suggest that cetaceans still represent a challenge in systematic biology not only because of their uniqueness as a natural group and evolutionary history, but also because of the high incidence of intergeneric hybrids within the group. We propose that a fresh look is needed at the species and genus concepts used in cetacean systematics.
