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Ageing of cephalopods using hard structures.

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Being predominantly ‘soft-bodied’ mollusks, modern cephalopods possess a number of hard structures that grow periodically and for this reason may be used for age determination. These include statoliths, beaks, eye-lenses and vestigial shell (gladius, cuttlebone, stylets). All these structures have been used for age determination with varying degrees of success, each of these structures has some advantages and disadvantages as a tool for age and growth determination. Age determination using statoliths is the most developed and accurate ageing method for cephalopods, but it is rather laborious and not very suitable for wide-scale studies. In some cephalopod species the statoliths are not suitable for age determination due to small size or weak growth marks. Beaks are the easiest structure for processing, but beak growth marks counts could underestimate the actual age due to detrition of the beak edge. The lenses, perhaps, are the most promising ageing structure but periodicity of their growth marks has not been verified yet. Vestigial shells are extremely diverse, some of them are ideal tools for age determination, while others are useful, but do not provide advantages in comparison with statoliths, and still others are not suitable for ageing at all. Taking together, hard recording structures of cephalopods represent reliable tools for determining their age and growth, although some of them are inferior to others in accuracy, while others are not very suitable for mass research. The best result could be achieved through using different recording structures simultaneously – one for mass studies and the other for accurate ageing and verification.

Key words: Cephalopods, hard structures, age determination, statoliths, beaks, lenses, vestigial shells

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