

Revision of the flexible crinoid genus *Ammonicrinus* and a new hypothesis on its life mode

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The lecanocrinid *Ammonicrinus* (Flexibilia) is newly interpreted based on new material from the Middle Devonian of the Rhenish Massif (Eifel and Bergisches Land, Germany). The species have echinoid-like tubercles on the attachment and on the column, which bear articulated spines. The intraspecific variability of the column is discussed for three facies-controlled morphotypes, herein classified as standard “exposed-” or “encased roller-type” and the rare “settler-type”. New specimens have floating transitions between different plate sculpturing and between those individuals with none or one to several columnals with herein termed “lateral columnal enclosure extensions” on the proximal-most, barrel-like dististele and the following mesistele, which is solely distinguished by these extensions. Based on this interpretation, *Ammonicrinus kongieli* is evaluated as a subjective junior synonym of *Ammonicrinus sulcatus*. The latter species was first recognised from the Eifel (Germany). “*Ammonicrinus wachtbergensis*”, from the upper Eifelian of the Eifel, is declared a subjective junior synonym of *Ammonicrinus doliiformis*. The first nearly complete specimen of *Ammonicrinus kerdreoletensis* is described from the lower Eifelian of Vireux-Molhain (southern Ardennes, France). Two new species are described: *Ammonicrinus jankei* sp. nov. and *Ammonicrinus leunissenii* sp. nov. A functional morphologic trend in perfecting the crown encasement by continuous modification of the lateral columnal enclosure extensions of the mesistele from the Eifelian to the Givetian, indicates a vagile benthic “predator”-driven evolution of ammoniacrinids in the Eifel area. Several ammoniacrinid species are herein defined as spined soft-bottom dwellers, feeding in low-intensity current water, possibly through a self-produced water flow. The first known postmortem encrusting epizoans on ammoniacrinid endoskeletons are reported.

Key words: Crinoidea, Flexibilia, *Ammonicrinus*, Devonian, Eifel, Rhenish Massif, Germany.

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