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Qahtan A.M. Al Nuaimy

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New quantitative data on *Omphalocyclus* from the Maastrichtian in Northern Iraq

Qahtan A.M. Al Nuaimy

Northern Technical University/Technical College Kirkuk, Iraq

E-mail: qahtaniraqi @yahoo.com, Tel: +9647712895896

ABSTRACT

Omphalocyclus is a well-known genus of large benthic foraminifera; species in the genus mainly occur in the argillaceous limestones and carbonates of the Aqra Formation of the early to late Maastrichtian age from Kurdistan foreland basin in Northern Iraq. Its presence is a significant indicator of its paleogeographic distribution in the Middle East. The Aqra formation was divided by lithology into lower, middle, upper, and transitional parts using Google Earth satellite images. Evolutionary changes were documented in successive *Omphalocyclus* assemblages for the first time in Iraq, and a clear increase in embryon size was found towards the end of the Maastrichtian. This evolutionary development was followed by an increase in the number of epi-embryonic chamberlets. The earliest known *Omphalocyclus* specimens in the studied strata predominantly have three to four primary epi-embryonic chamberlets and one to two accessory epi-embryonic chamberlets, and these occur in horizons attributable to the *Pseudotextularia intermedius* zone. The gain of radial stolons in the tritoconch wall may have led to accessory epi-embryonic in consecutive *Omphalocyclus* populations in horizons attributable to the *Racemiguembelina fructicosa* zone; accordingly, only a few additional epi-embryonic