

Middle Cretaceous Stratigraphy

The middle Cretaceous Epoch has an important tectonic development within the Geological history. During that time the Arabo-African plate become very nearest to Eurasian plate, which is subducted at the end (i.e. at upper Cretaceous). The time duration of this cycle is about (20 M.Y.). This time interval characterized by tectonic instability within; Geosyncline, Unstable shelf and Stable shelf areas. That causes diversity in both environments and depositional facies.

The middle Cretaceous in Iraq is represented by several low thickness formations and stratigraphic unconformities. The formations of this cycle are; (Dukan, Gulnairi, Mushrif, Kifil, Rumaila, Ahmadi, Rutba, Kometan, Saadi, Tanuma, Khasib and Balambo).

1. Cenomanian – L. Tournonian Cycle:

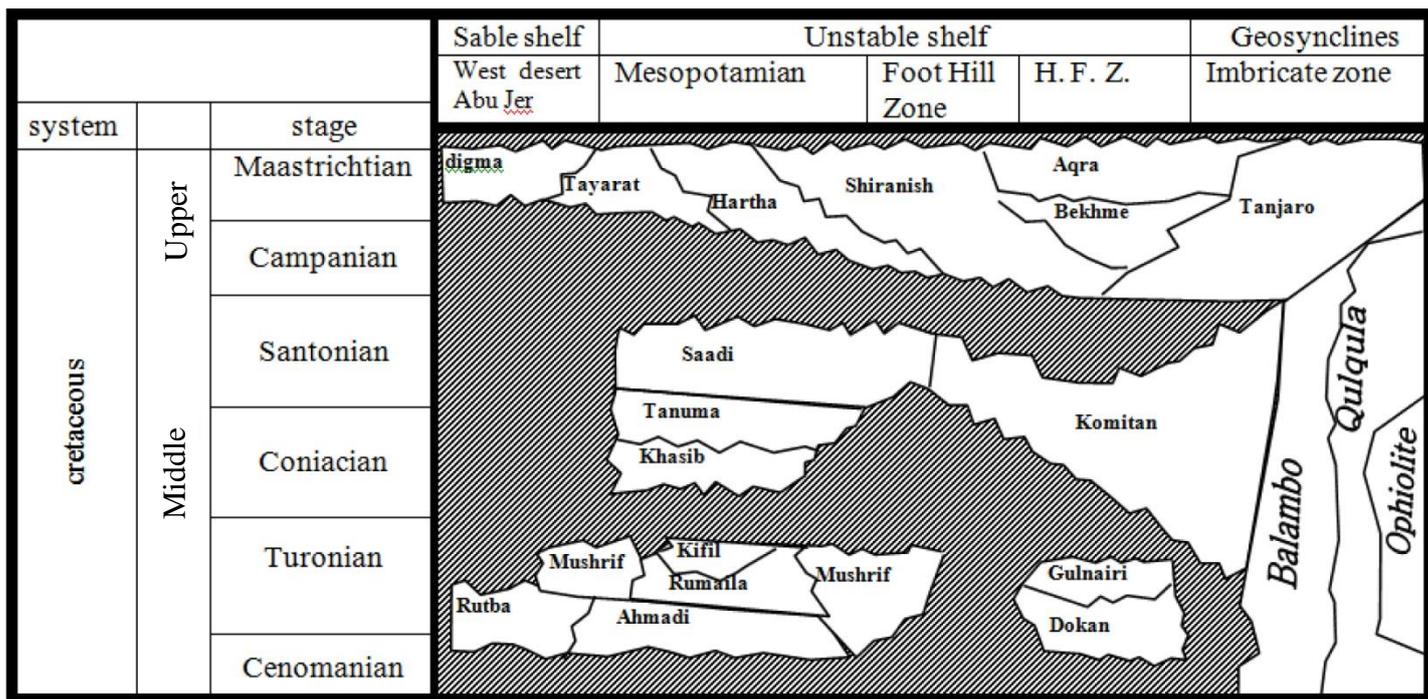
The cycle begins with great and rapid transgression of sea, after that regression which happened at end of Albian by Austerian orogeny. The sea is expanded to stable shelf area. In the Geosyncline to the platform areas these formations are deposited (Qulqula, Balambo, Dukan, Mushrif, Rumaila, Ahmadi, Kifil and Rutba). This cycle is ended by regression and uplifting of the southern area by (Subhercynian Orogeny) which caused major unconformities between this cycle and other cycle that follow this.

2. Tournonian – L. Campanian Cycle:

The cycle represents by partial transgression of sea. The Mosul – Khlesia area and Western part of Iraq is recorded as an exposed area. In Unstable shelf area the basinal to shallow marine sediments for (Gulnairi, Kometan and Saadi) formations are deposited. But in south and southwestern part of Iraq shaley marine sediments for (Khasib and Tanuma) formations are deposited. This cycle is also ended by a partial regression of sea at the end of (L. Campanian) which follows by major unconformities in whole Iraqi territory that represented by missing of (M. Campanian).

Exercise:

1. By using table (1), draw the correlation between sections of both Middle Cretaceous cycles.
2. What are the main differences between two sub cycles interms of rate of subsidence and uplifting?
3. At the end of this cycle the deposition of Balambo formation is completed, which begin at early Cretaceous, what is the reason?
4. Which part of the Iraqi territory is more subjected to subsidence



Formations	Dokan area	Thick.	Rutba area	Thick.	Basrah area	Thick.
Kometan	Thin bedded Globigerinal L.St., with with chert concretions.	150 m.				
Gulneri	Black, bituminous calcareous shale	20 m.				
Dokan	Greyey oligostegina L.st.	40 m.				
Mushrif			Alternation of reefal L.st., chalky L.st., marlstone and sandstone.	80 m.	Algal, shelly, detrital limestone	155 m.
Rutba			Terrigenous cross bedded S.st. & quartzite.	35 m.		
Saadi					Chalky, marly, Globigerinal L.st. with limestone	300 m.
Tanuma					Black shale with streaks of marly detrital L.st.	45 m.
Khasib					Marly limestone alternating with shale beds.	50 m.
Rumaila					Alternation of marly L.st., marl, and chalky L.st.	110 m.
Ahmadi					Alternation of silty shale and detrital limestone	150 m.

Table (1): Lithologic Description, Thickness of Middle Cretaceous Formations in Three selected areas.

