

### Cretaceous Stratigraphy

The cretaceous period is regarded as a most important stratigraphic and tectonic development in Iraq. During this time the Orthogeosyncline developed into (Eugeosyncline on the Iranian plate and Miogeosyncline on the Arabian plate (Iraq), Neo-Tythes Sea being closed, and Arabo-African plate subducted with Eurasian plate. At this period in northern and central Iraq, several high thickness- Marine formations deposited, which are become source and storing for many giant Oil fields of that region. Cretaceous is divided into three sedimentary cycles, which is in turn subdivided into five secondary cycles:

Upper Cretaceous	U. Campanian- Maastrichtian
Middle Cretaceous	U. Turonian- L. Campanian
	Cenomanian- L. Turonian
Lower Cretaceous	Albian
	U. Berriasian- Aptian

#### Lower cretaceous

##### - ( U. Berriasian- Aptian) cycle

This cycle is represented by many formations, most of them occurring on platform area on both Stable Shelf (south & central) and Unstable Shelf (Northern area). In the Zagros basin of North and Northeastern Iraq, the beds of Garagu (Berriasian-Valanginian), Lower Balambo (Berriasian-Aptian), lower Sarmord (Berriasian- Barremian), and lower Qamchuqa (Aptian-Albian), has been deposited. But the formations of Southern and Central area of this cycle includes; Ratawi (Valanginian-Hauterivian), Zubair (Hauterivian-E. Aptian), Shuaiba (Aptian), and Yamama (Berriasian-Valanginian).

##### - Albian cycle:

During Albian the formations of Southern and Central areas are; Maaddud (Albian), Nahr Omer (Albian), Rim (E. Albian) and Jawan (Albian). But in the north and northeastern areas, the Upper Qamchuqa (Albian), Upper Sarmord (Albian), and Middle Balambo (Albian-Cenomanian) are deposited.

#### Exercise:

1. By using (fig. 1) and Table (1), draw the correlation between the different sections (A, B, C & D) of these two cycles.
2. Which formations is hydrocarbon reservoir, why and where?
3. What happen at the northern basin with the beginning of Cretaceous tectonically?
4. What are the differences between the Jurassic and Cretaceous interms of stratigraphic and tectonic development?
5. What is the reason of highly diversity in facies at Albian Cycle?

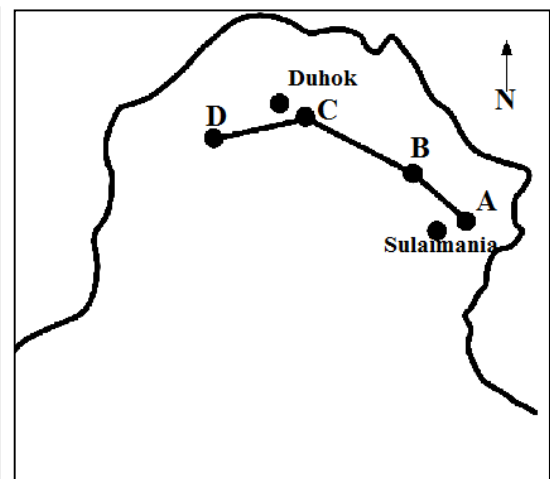
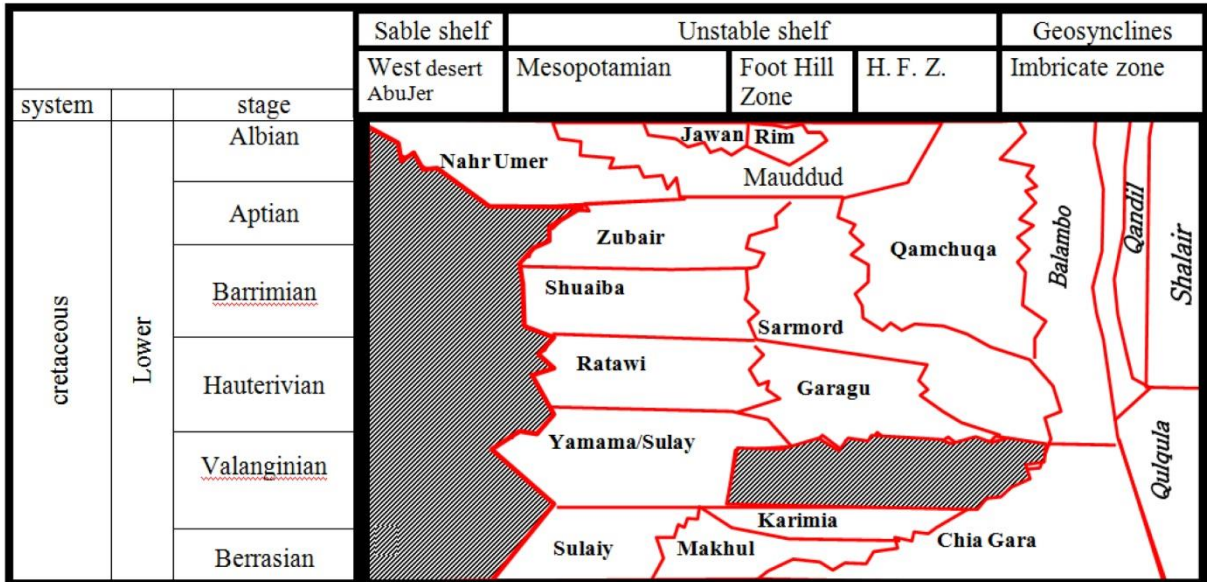


Fig. 1: Location map.

Location	Formation	Environment	Thick. (m.)	Lithology
old  A	Garagu	Lagoonal	210	Oolitic sandy L.st. with marls and sandstone in upper and lower part and organic L.st. in middle part.
	Qamchuqa	Neritic	650	Massive, argillaceous limestone, and dolomitic limestone.
	Sarmord	Deep Marine & Neritic	445	Bluish marl with alternation of marly limestone
	Balambo	Bathyal sed. of Miogeosyncline	280	Thin bedded limestone with marl, black shale, and marly limestone.
new  B	Garagu	Shallow marine	100	Oolitic, argillaceous limestone, Mudstone, and S.st.
	Qamchuqa	Neritic	350	Same as in A
	Sarmord	Open marine	100	Same as in A
	Rim	Neritic-Shoal	68	Silty marl, marly limestone, with thin bedded S.st.
	Jawan	Neritic-Lagoon	300	Marly L.st., Recrystallized L.st. and anhydriote.
C	Ratawi	Eux. Lagoon	-----	-----
	Yamama	Neritic-Shoal	-----	-----
	Zubair	Littoral-Deltaic	200	Marly sandstone and shale
	Shuaiba	Neritic	-----	-----
	Mauddud	Neritic	160	Argillaceous, dolomitic limestone, with silt and shale admixture.
	Sarmord	Open marine	125	Same as in A
	Nahr Omer	Shallow littoral	100	Black shales, interbedded with lignite and S.st.
	Jawan	Neritic-Lagoon	175	Thin bedded of siltstone and limestone
D	Ratawi	Eux. Lagoon	260	Dark pyrite, Shales, interbedded in lower part with oolitic-fossiliferous limestone.
	Yamama	Neritic-Shoal	250	Oolitic limestone
	Zubair	Littoral-Deltaic	390	Alternation of shale and oolitic limestone
	Shuaiba	Neritic	100	Chalky, crystalline, oolitic limestone.
	Mauddud	Neritic	200	Same as in C
	Sarmord	Open marine	150	Same as in A
	Nahr Omer	Shallow littoral	180	Same as in C

Table (1): Lithologic description, Thickness, and environment for Cretaceous Formations.



Correlation chart of the Lower Cretaceous period.