

(-)

(2002/9/1 2002/5/15)

(Paleocene-Early

(Eocene

New Outlook for the Stratigraphy of Sinjar Formation (Paleocene-Early Eocene) in Sinjar Anticline Northwestern Iraq

Abdul-Aziz M. Al-Hamdani Mohammad A. Al-Haj

*Department of Geology
College of Science
Mosul University*

ABSTRACT

Field and facies analyses have revealed the possibility of dividing the reefal Sinjar Formation (Paleocene–Early Eocene) within Sinjar anticline into three diagnostic stratigraphic units. These are: lagoonal semi Massive lower unit, lagoonal stratified middle unit and massive upper unit, which is lagoonal, reefal and forereefal in its lower, middle and upper parts respectively. The units are characterized by the quick identification and ease lateral correlation across most lithological sections exposed in the area. It has also been revealed that the lower and upper contact surfaces are unconformable.

(Paleocene–Early Eocene)

(Keller, 1941: in Buday, 1980)

()

()

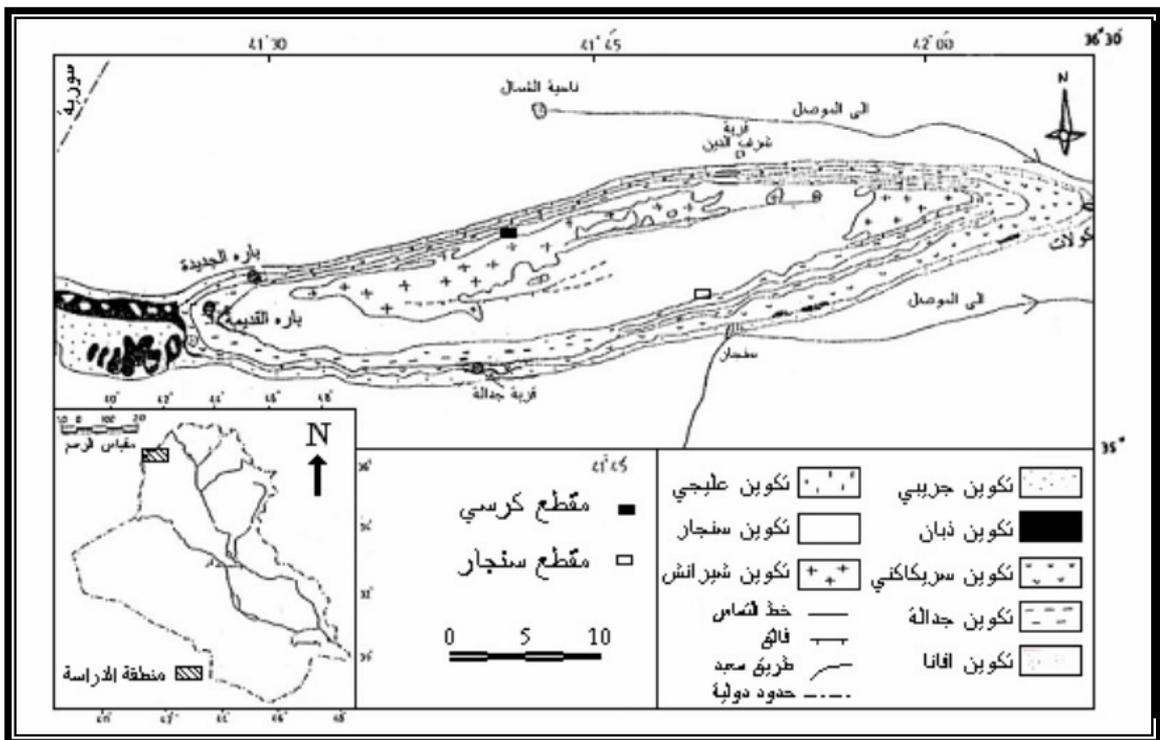
(116)

(202)

(1)

(17)

(86)



(Ma'ala, 1977)

:1

Bellen, et al., 1959; Johnson, 1964; Al-Saddiki, 1968; Al-Sayyab)

.(and Al-Saddiki, 1970

.....

(-)

Bellen *et al.*, 1959; Ditmar, 1971; Al-Saddiki,)

.(1980) (1968

(Paleocene-Lower Eocene)

(Tertiary)

(176)

(Aaliji Formation)

(Danian)

(1983) (Al-omari, 1970)

(Cenozoic)

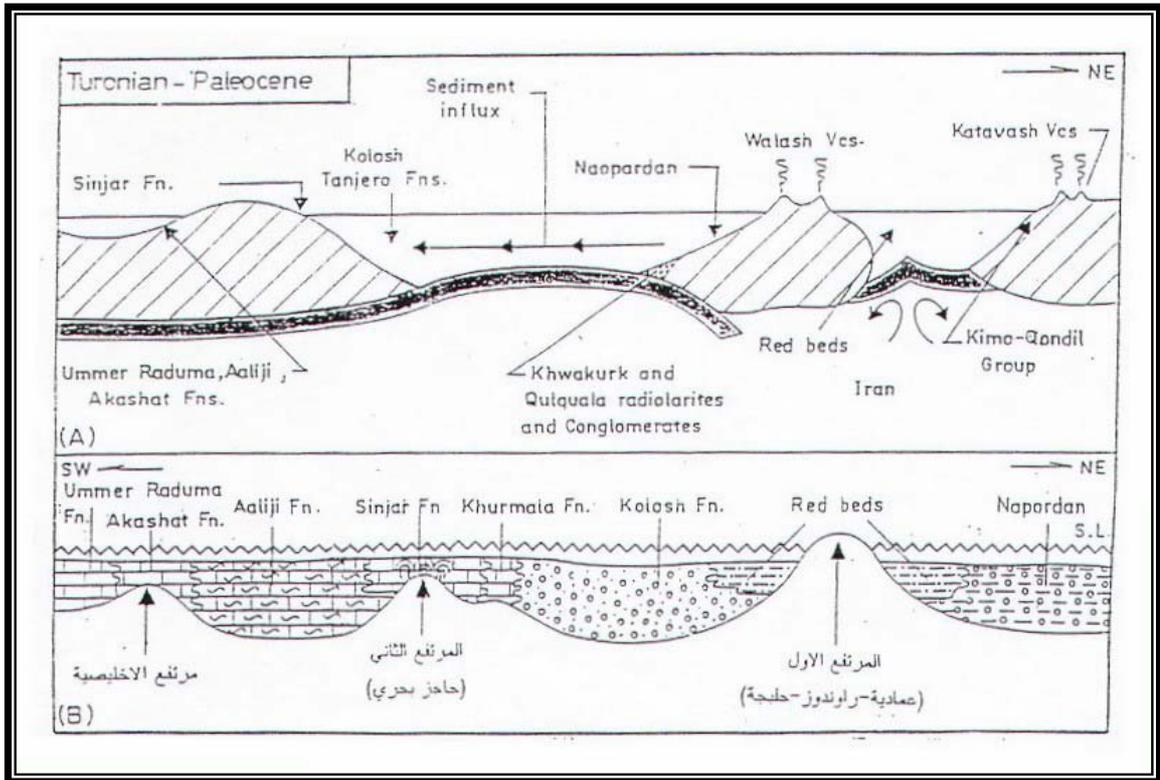
.(-)

(2)

(Flysch)

()

(Numan, 1997; Al-Hamdani, 1995)



(A) . (Paleocene-Lower Eocene) :2

(Numan, 1997) (Turonian-Paleocene)

(Al-Hashimi and Amer, 1985) (B)

(Khurmala Formation)

(Foraminifera)

(Flysch)

(Buday, 1980)

.....

(Buday, 1980)

(2)

(Buday, 1980)

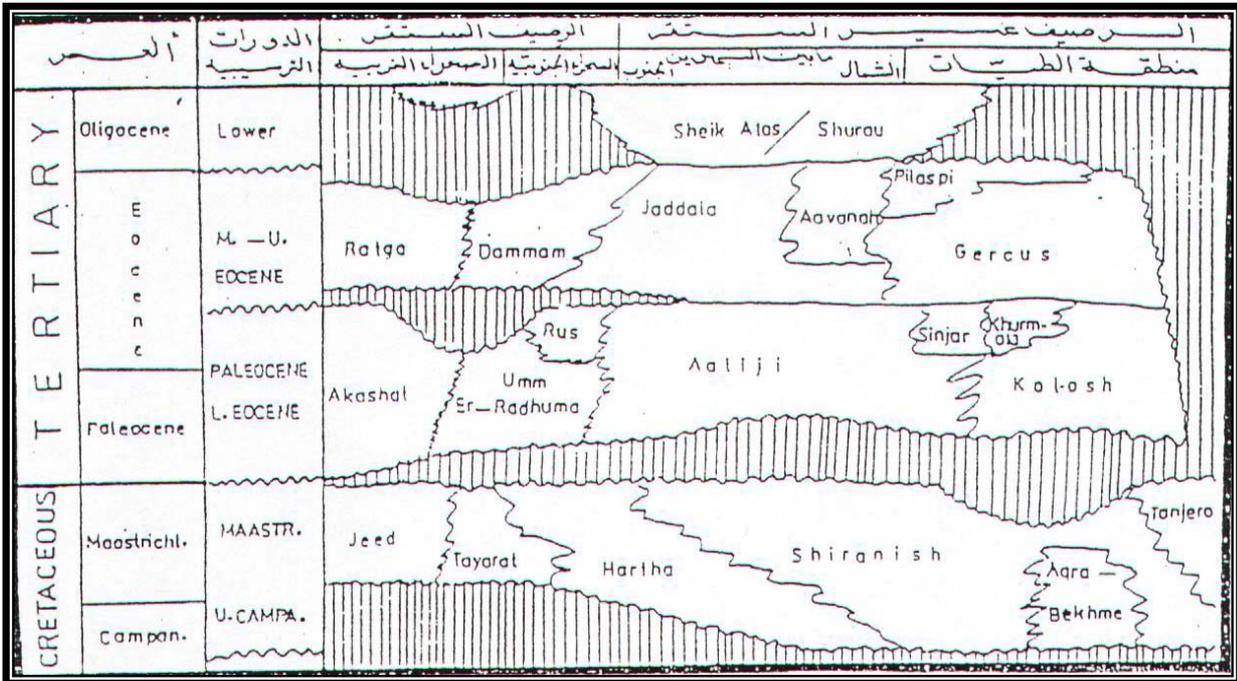
(-)

(Stromatolites)

(Jassim et al., 1984)

(3)

(Buday, 1980)

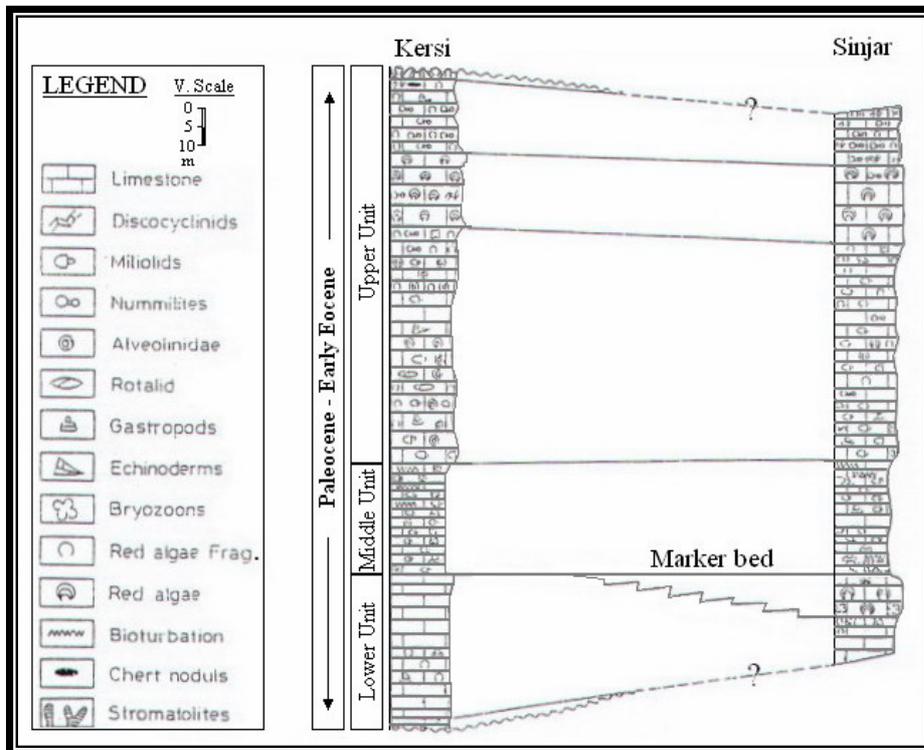


(Jassim et al., 1984)

(Taqiye marle)
 (Becirman)
 (Sinan) ()
 (Germar)
 (Taleh Zany) (Beydoun, 1991)
 (James and Wynd, 1965) (Pabdeh)

()

(4-)



.....

:

(42)

(6-3)

(30)

(Echinoderm)

(Gastropoda)

:

(27)

(90-50)

(Gastropods)

(Rotalidae)

(Miliolidae)

(30)

(Maliolidae)

(Alveolindae)

(Burrowing)

(Bioturbation)

(107)

(Miliolidae)

(Alveolindae)

(10)

(Nummulites)

()

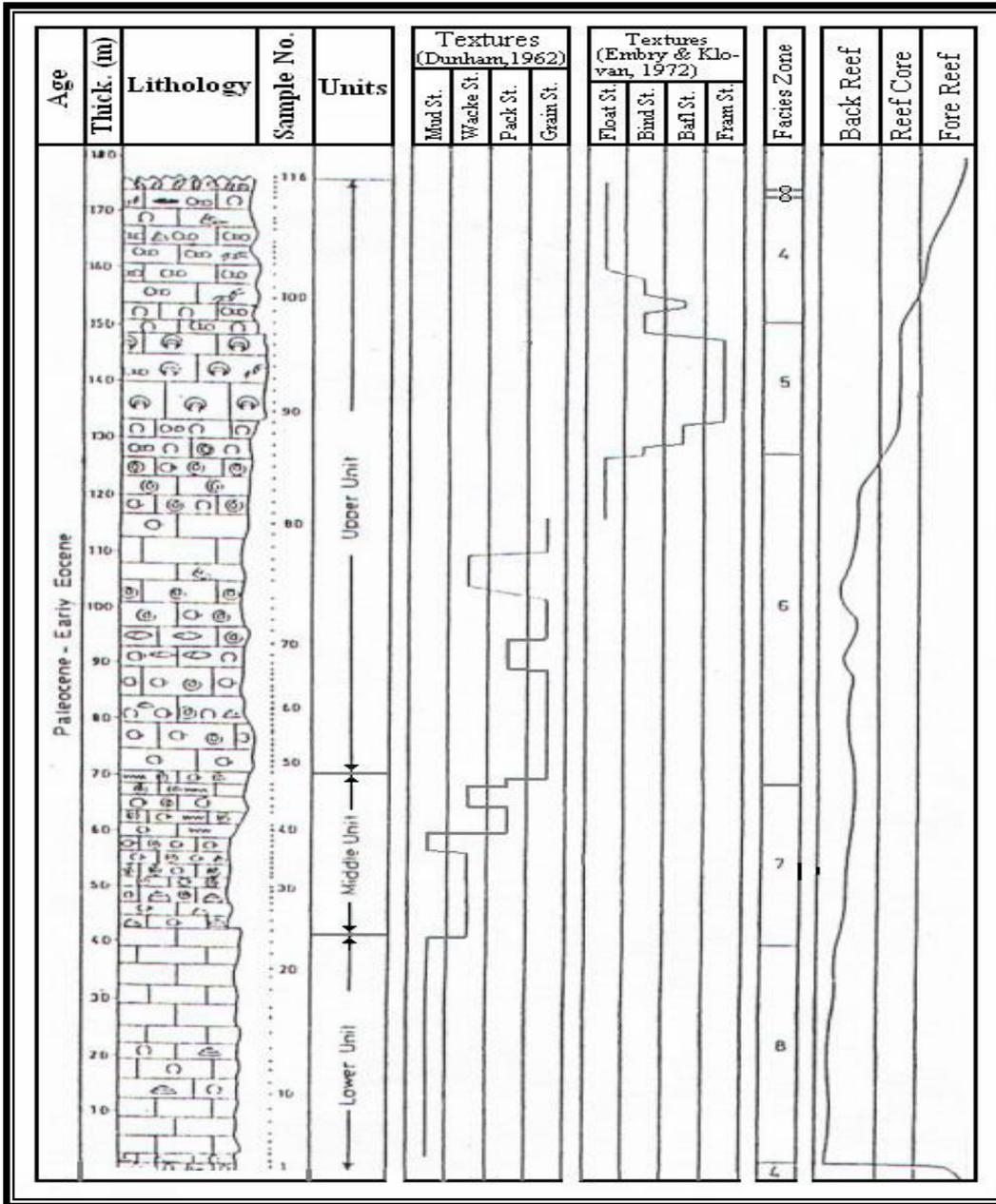
(4-2)

()

(Boundstone)

(5)

.....



. ()

:5

(145)

. (4)

:

(22)

(12)

(10)

(4-2)

()

)

(

:

(35)

(10)

(Burrowing)

(10)

(Miliolidae)

:

(88)

(Nummulitidae)

(Miliolidae)

()

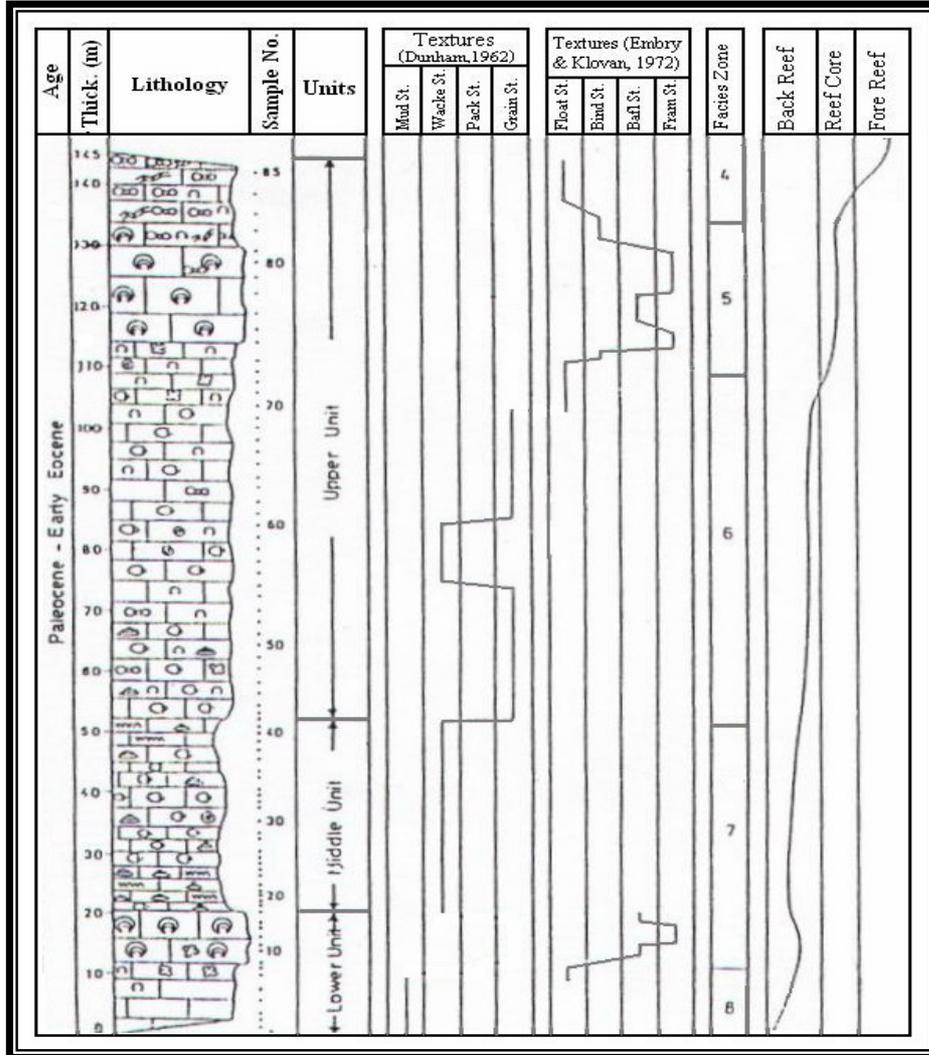
(2)

.....

(Nummulitidae)

(Alveolinidae)

.(6)



:6

(Dunham, 1962)

(Embry and Klovan, 1972 in Flugel, 1982)

.(6) (5)

.(2001)

(Upper

(Campanian-Maastrichtian

()

.(Kassab *et al.*, 1986; Al-Shaibani *et al.*, 1993)

(Late Lower Eocene-Upper Eocene)

.(2000) (Avanah Formation)

.(1)

(Supratidal)

.....

(1983) (Ditmar, 1971)

.(4)

(Gischler and Hudson, 1998)

2000

. 124

2001

. 141

1983

. 108

1983

. 133

1980

. 127

- Al-Hamdani, A.M., 1995, Evolution of Cyclicity in Kolosh clastic deposits using embedded Markov chains, *Raf. Sci.*, 6(1), 33-42.
- Al-Hashimi, H.A. and Amer, R.M., 1985, Tertiary microfacies of Iraq, SOM, Geol. Surv. Min. Inves., Baghdad.
- Al-Omari, F.S., 1970, Upper Cretaceous and Lower Cenozoic Foraminifera of three oil wells in northwestern Iraq, Univ, Missouri at Rolla, Unpub. Ph. D. Thesis, 208p.
- Al-Saddiki, A., 1968, Stratigraphy and microfacies of Sinjar Formation, M. Sc. Thesis, University of Baghdad, Iraq.
- Al-Sayyab, A.S. and Al-Saddiki, A., 1970, Microfossils from Sinjar Formation, *J. Geol. Soc. Iraq*, 13(1), pp.3-7.
- Al-Shaibani, S.K., Al-Hashimi, H.A. and, Chafar, I.M., 1993, Biostratigraphy of the Cretaceous-Tertiary boundary in well Tel-Hajar No.1, Sinjar area, Northwest Iraq, *J. Geol. Soc. Iraq*, 26(2), pp.77-98.
- Bellen, V.R.G., Dunnington, H.V., Wetzel, R. and Morton, D.M., 1959, *Lexique stratigraphic international*, V. 3, Asie Fascicule 10a-Iraq, Paris, 333p.
- Beydoun, Z.R., 1991, Arabian hydrocarbon geology and potential, plate tectonic approach, *AAPG Bull.*, Studies in geology, pp.19-29.
- Buday, T., 1980, The regional geology of Iraq, stratigraphy and paleogeography, Dar Al-Kutub, Mosul, Iraq, 445p
- Ditmar, v., 1971, Geological conditions and hydrocarbon prospects of the Republic of Iraq, V.1, Northern and central parts, Unpubl. Rep. INOC, Baghdad.
- Dunham, R.J., 1962, Classification of carbonate rocks according to depositional texture, in: Ham, W.E. (ed.), *Asymposium*, AAPG. Publ., Memoir-1, Tulsa, Oklahoma, pp.108-121.
- Flügel, E., 1982, *Microfacies of limestone*, Christenson, K. (Translator), Springer-Verlag, Berlin, 633p.
- Gischlor, E. and Hudson, J.H., 1998, Holocene development of three isolated carbonate platforms, Belize central America, *J. Marine Geology*, 144, pp.333-347.
- James, G.A. and Wynd, J.G., 1965, stratigraphic nomenclature of Iranian oil consortium agreement area, *AAPG Bull.*, 49(12), pp.835-870.
- Jassim, S.Z., Karim, S., Basi, M., Al-Mubarak, M.A. and Muniv, J., 1984, The final report on the regional geological survey of Iraq, Inter. Report.
- Johnson, J.H., 1964, Paleocene calcareous red algae from northern Iraq, *J. Micropaleontology*, 10(2), pp.207-216.
- Kassab, I.I., Al-Omari, F.S. and Al-Safawi, N.M., 1986, The Cretaceous-Tertiary boundary in Iraq, represented by the subsurface section of Sasan well No.1, NW Iraq, *J. Geol. Soc. Iraq*, 19(2), pp.129-168.
- Ma'ala, K., 1977, Report on the regional geology of Sinjar area, SOM, Baghdad, Iraq, Unpubl. Report, 41p.
- Numan, N.M., 1997, A plate tectonic Scenario for the Phanerozoic successions in Iraq, *J. Geol. Soc. Iraq*, 30(2), pp.85-110.