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Upper )

(Lower Red Formation)

(Red Formation

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# Sequence stratigraphy of the Qom Formation at Type Area(Kuh-e-Bichareh section),in Southeast Qom, North of Central Iran

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\* Geology Department, Tarbiat Moallem University

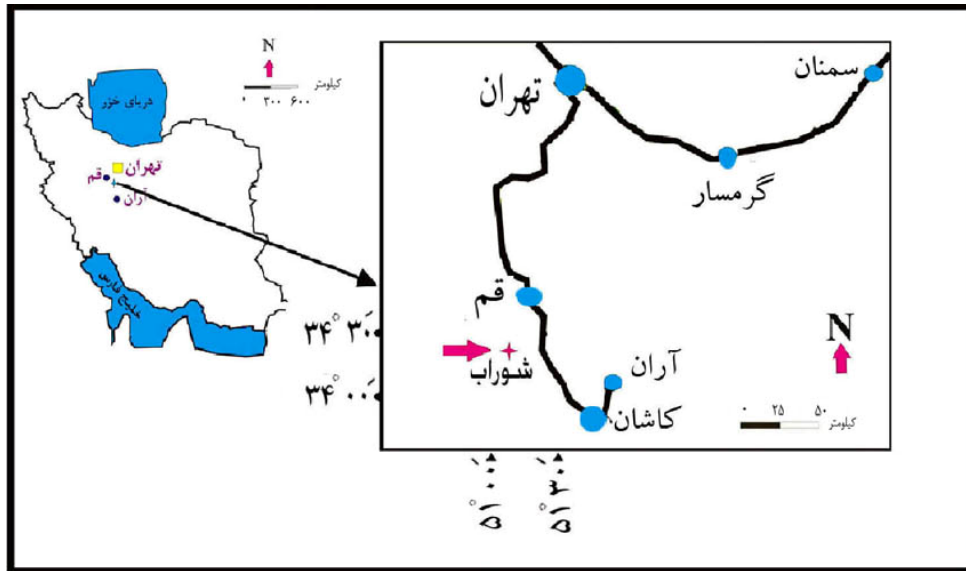
\*\* Geology Department, Damghan University

## Abstract

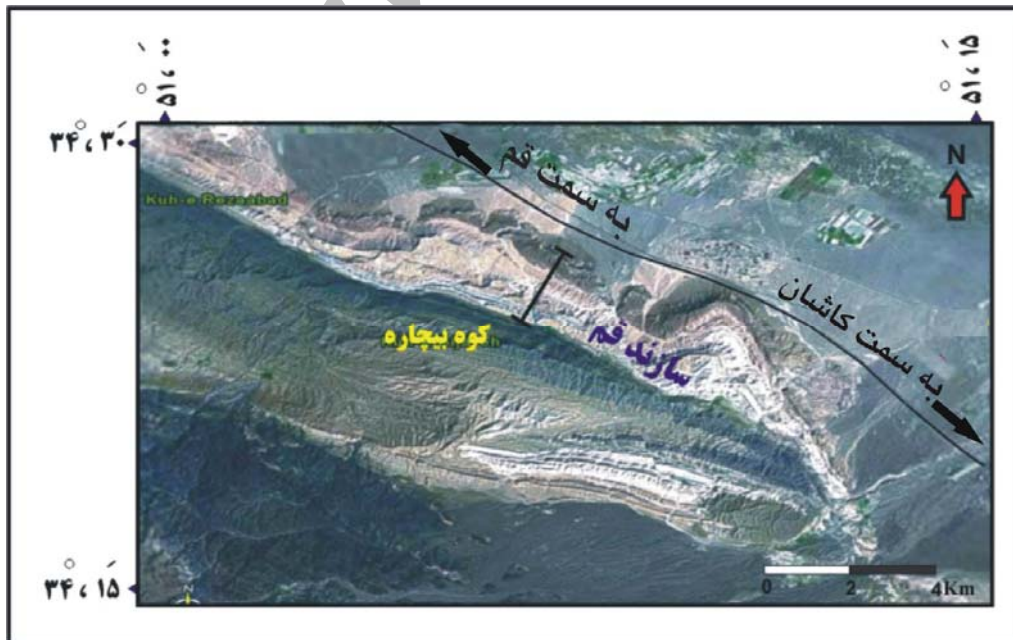
In order to study of sequence stratigraphy of the Qom Formation in southwest of Qom and northwest of Aran, a stratigraphy section in Shourab area was selected. The sediments (Kuh-e-Bichareh) of this section with 631 m thickness overlies the Lower Red Formation and underlies the Upper Red Formation. The studied section is situated at the type area of the Qom Formation, and mainly consists of limestone, sandy limestone, argillaceous limestone, sandstone, shale, marl and gypsum. All members of the Qom Formation, except the unnamed member exist in the examined section. A total 185 samples including 70 soft and 115 hard was collected. Based on the index foraminifera the suggested age of the Qom Formation in Kuh-e-Bichareh section is Aquitanian to Burdigalian. The microfacies studies were led to recognition four facies belts including tidal flat, lagoon, barrier and open marine. According to field & laboratory studies 6 sequences and 7 sequence boundaries introduced which 2 sequence boundaries are comparable with world sea level changes and other probably are related to tectonic in the studied area.

**Keywords:** Sequence stratigraphy, Qom Formation, Type area.

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(Marine Formation)

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Highstand Systems )

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b Shallowing )  
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Seyrafian and Toraby, )

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(Sharland et al., 2001)

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(Aquitanian)

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Globigerinoides triloba

Globigerna praebulloides

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(Hunt and Tucker,1992 , 1995) (2006

(Hunt and Tucker, 1992, 1995)

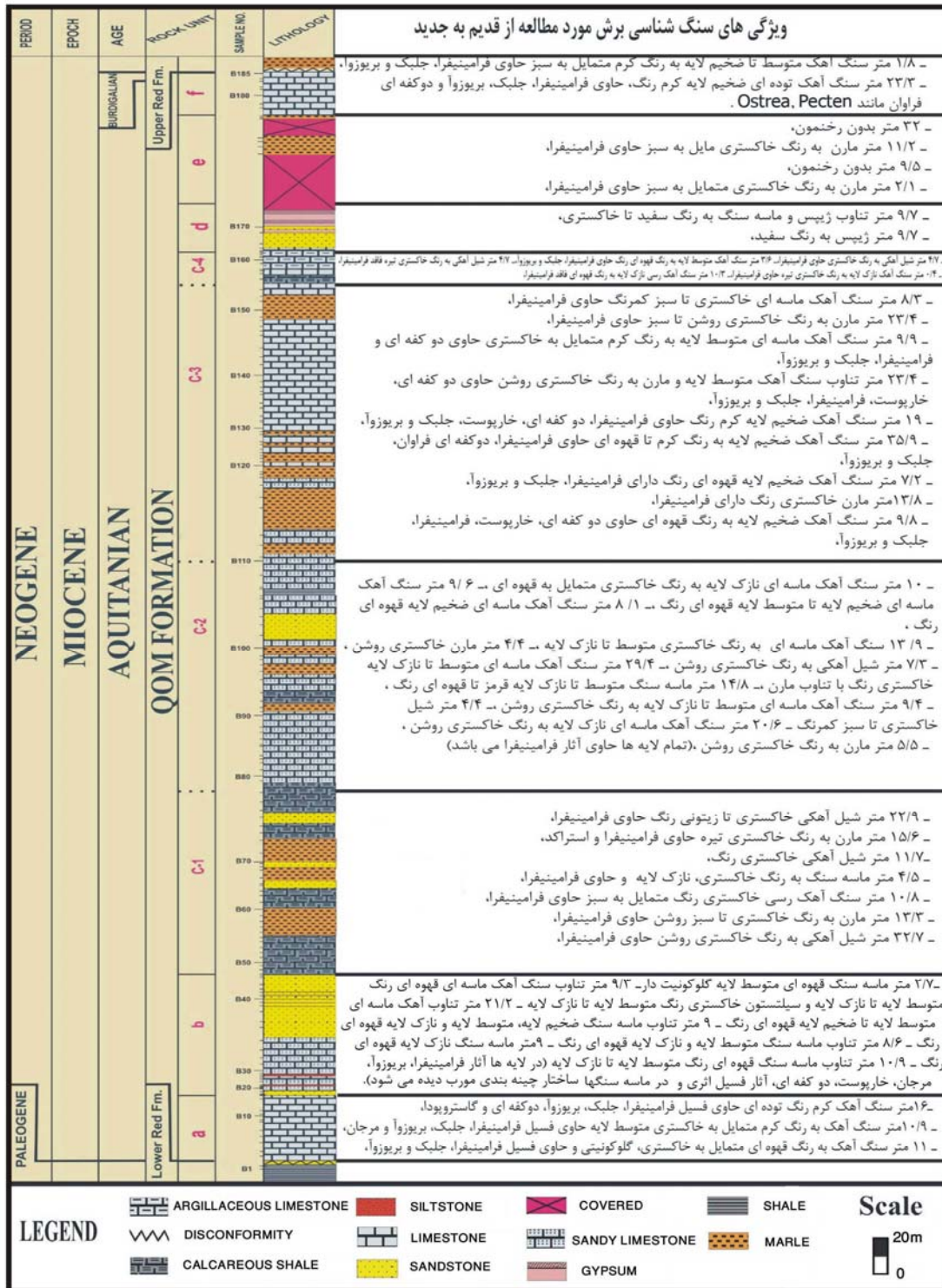
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.(Stocklin and Setudehnia,1971)

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(Furrer & Soder,1955)

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Stocklin and )

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(Stocklin and Setudehnia,1971)

((Furrer & Soder,1955

((Furrer & Soder, 1955

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f,e,d,c,b

Stocklin and )

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(Setudehnia,1971

(& Soder,1955

b

c

(Soder, 1955)

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c-4 c-1

f ,e ,d ,c ,b ,a

a

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d a

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f,e

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e ,d ,c ,b ,a

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c-3, c-2, c-1, b, a

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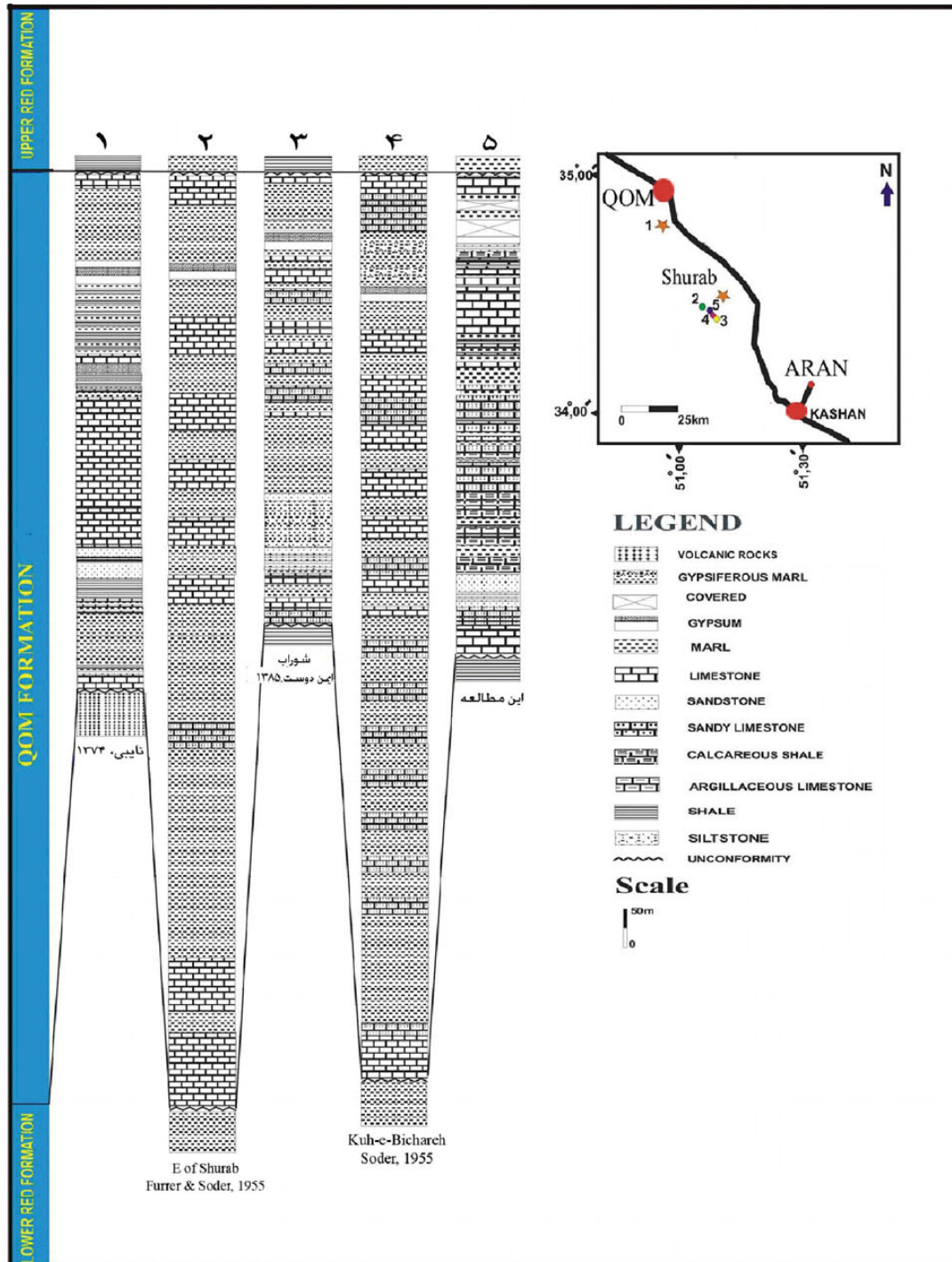
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Borelis melo curdica

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f,e, d, c-4, c-3,



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 ( ( ) ) ( (Furrer & Soder, 1955) )  
 ( ((Soder, 1955



Van )

(Der Zwan and Brugman, 1999

(Unconformity)

(Correlative Conformity)

(Armentrout et al., 1999)

Posamentier et )

al.,1988; Emery and Myers, 1996; Van  
(Wagoner, 1995

(Mangerud et al., 1999)

(Armstrong and Brasier, 2005)

(Jones, 2006)

(system tracts)

(Murray and Alve, 2002)

Rey et al., )

(1993

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(Vaziri-Moghaddam et al., 2005)

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Vaziri-Moghaddam et al., 2005;

TST

(Reuter et al., 2007

HST

(Brett, 1995)

(Brett, 1998)

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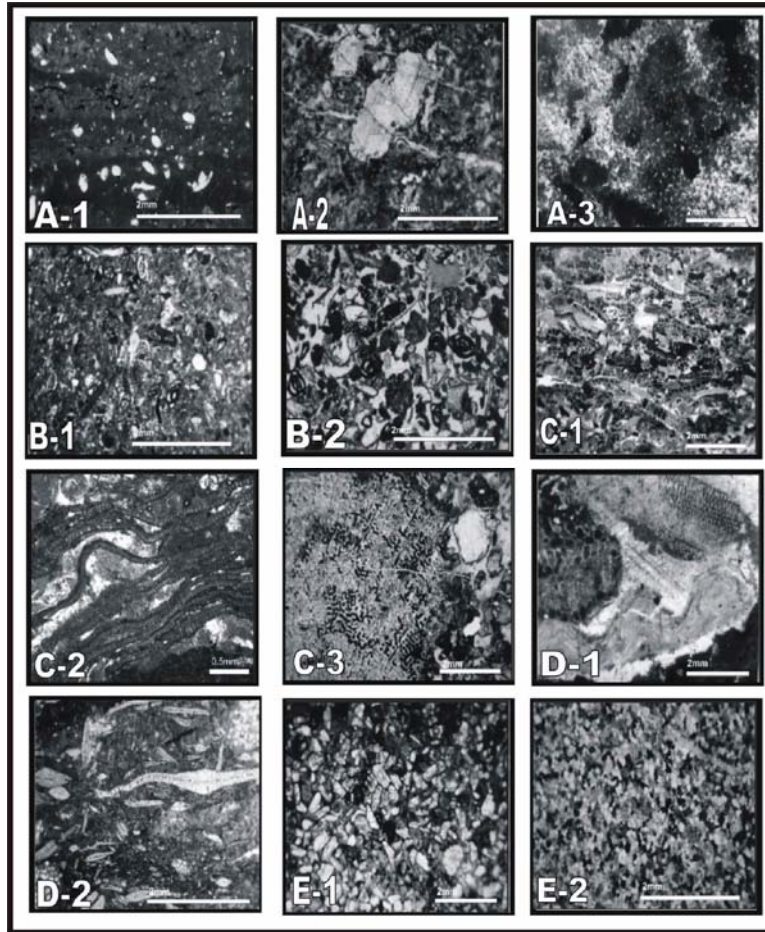
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(B-160 )  
 (B-9 )  
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 (B-158 )  
 (B-165 )  
 ( Tubucellaria sp. )  
 (B-153 ) Lithoporella sp  
 (B-181 )  
 (B-168 )  
 (B-16 )

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 :A-1  
 :A-2  
 :A-3  
 :B-1  
 (B-6 )  
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(Bioturbation)

(B-2 B-1 )

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*Peneroplis evolutus*,

*Meandropsina iranica*

(C-3 C-1

:

*Quinqueloculina* spp., *Glomospira* spp.,

(% % ) *Spiroloculina* spp.

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: (E-1 )

Lithophyllum sp.,

Lithoporella Lithothamnium sp.

(% ) % (% ) (% % )sp

% Onychocella sp., Tubucellaria sp.

)Memberanipora sp

)

: (E-2 (% ) (% % ))

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Bozorgniella :

qumiensis, Operculina complanata,

Spiroclypeous blankenhorni,

Textularia sp. Elphidium sp. Heterostegina sp., Spiroclypeous

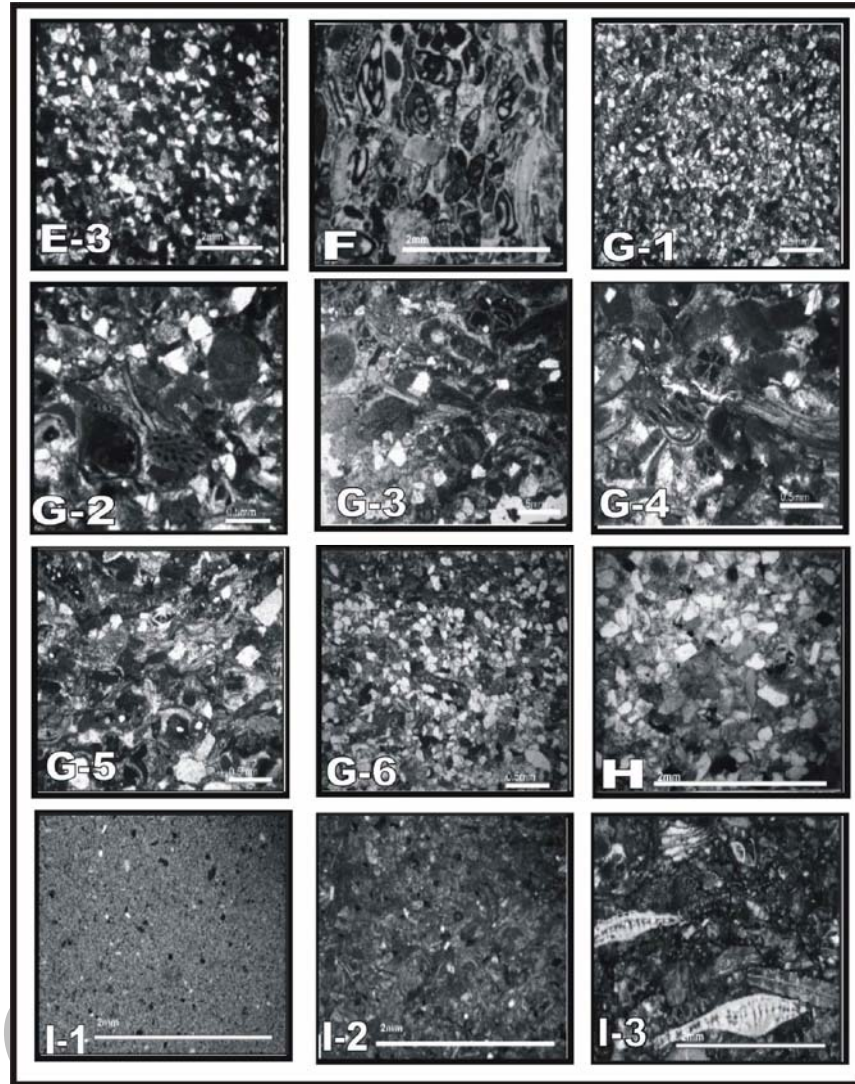
(E-3 ) tidoenganensis,

(D-2 D-1 )

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(Folk, 1974)

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B-, B-34 B-32 B-34 )  
 (B-3 )  
 (B-16 )  
 (B-111 )  
 Heterostegina sp., Bozorgniella qumiensis  
 (B-21 )  
 Globigerinoides sp.  
 (B-105 )  
 (21,  
 E-3  
 F-1  
 G-1  
 G-5 G-1  
 G-6  
 H  
 I-1  
 I-2  
 I-3

Glomospira spp., Spiroloculina spp.

(Transgressive Systems Tract)(TST)

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Rotalia viennotti, Bozorgniella qumiensis,  
Asterigerina sp.

Sequence Boundaries )

(HST(Highstand Systems Tract

(SB2)

(SB1)

e d

(maximum )

a

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TST

flooding surface

/

b

HST

(SB1)

LST

b

Peneroplis evolutus

Quinqueloculina spp.,



(SB2) (FRST)  
 b (SB2)  
 Globigerinoides triloba (F-1 )  
 (TST)  
 Globigerina b  
 Globigerinoides triloba praebulloides  
 (mfs) b ((SB2)  
 HST c-1  
 (Transgressive )  
 Systems Tract  
 Heterolepa sp., Cibicides sp., Lenticulina  
 sp., Hanzawaia sp. (mfs)  
 Murray, )  
 H. )(1991  
 c-3 c-2 ((HST  
 /  
 LST )  
 Lime mudstone G-6). G-1  
 (TST) c-1  
 / c-2

HST

(mfs)

Spiroclypeous blankenhorni, Heterostegina  
sp. Spiroclypeous tidoenganensis,  
Amphistegina sp., Asterigerina sp.,

Bozorgniella qumiensis, Operculina

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complanata, Heterostegina sp.

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(I-3 I-1 )

HST

Quinqueloculina spp., :

Glomospira spp., Spiroloculina spp.

/

d c-4 c-3

LST(Lowstand

(systems tract

(TST)

d

(FRST)

Heterostegina sp.

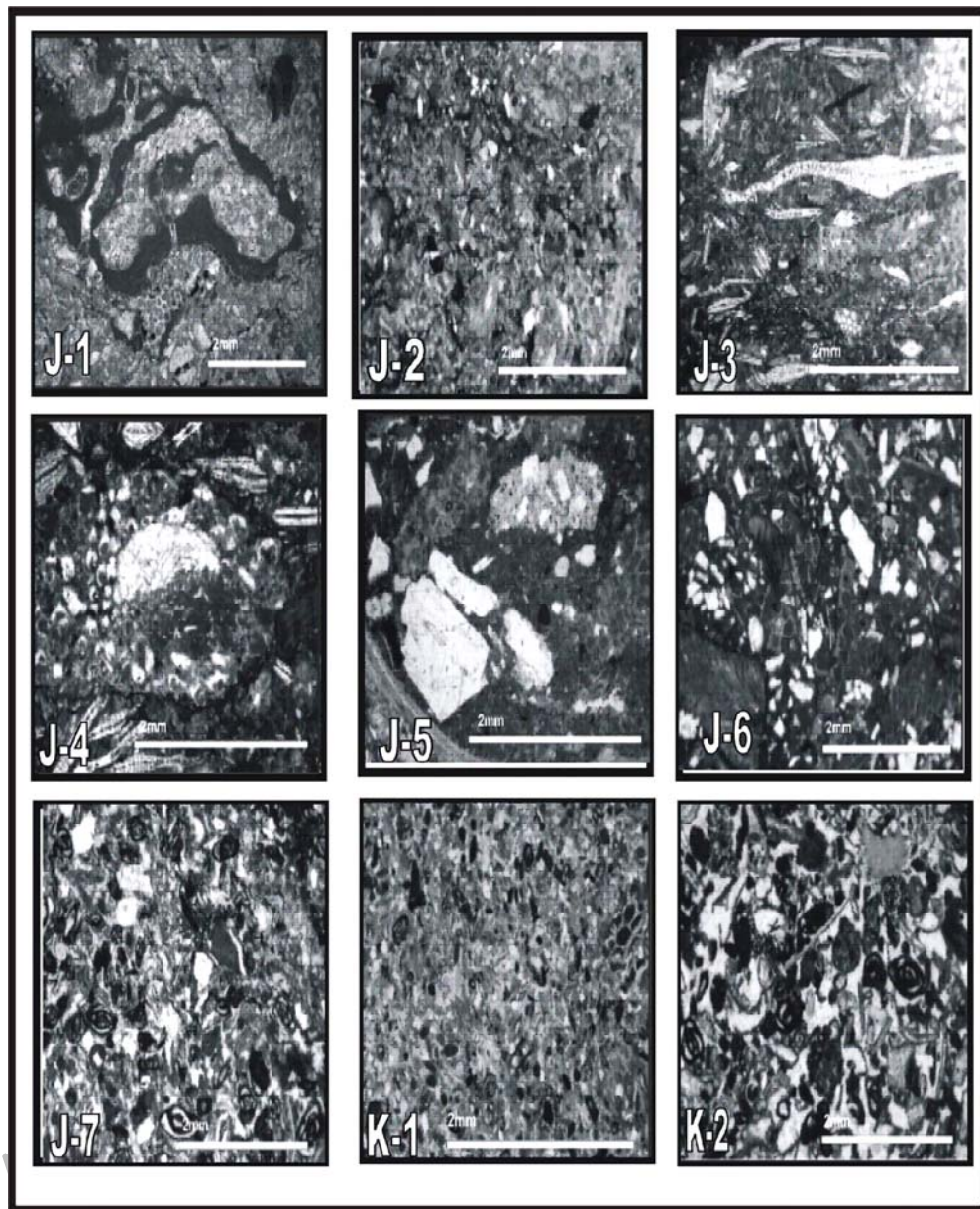
(SB1)

Asterigerina sp., Amphistegina sp.

(mfs)

(J-7 J-1 )

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(B-132 B-138 )

(B-142 )

(B-142 )

(B-156 )

(B-160 )

(B-179 )

: J-2 J-1  
 : J-3  
 : J-4  
 : J-6 J-5  
 : J-7  
 : K-1  
 : K-2  
 (B-185 )

e / f

(SB1)

e

((SB1

(TST)

(SB2)

Globigerina praebulloides

:SB1)1)

lobigerinoides triloba

(mfs)

((SB1

HST

(a )

:SB2)2)

( , A )

b

Quinqueloculina spp., Glomospira spp.,

: Spiroloculina spp.

:SB2)3)

(SB2)

Peneroplis evolutus, Meandropsina

(SB2)

(SB1)

iranica

b

K-2). K-1 )

c-1 Globigerinoides triloba

:4(SB2)

(SB2)

c-2

:SB2)5)

:(mfs2)

(SB2)

c-3

b ( )

b

:SB1)6)

d

(SB1)

c-1

:(mfs3)

d

Globigerinoides triloba

:7(SB1)

(SB1)

f

:(mfs4)

f

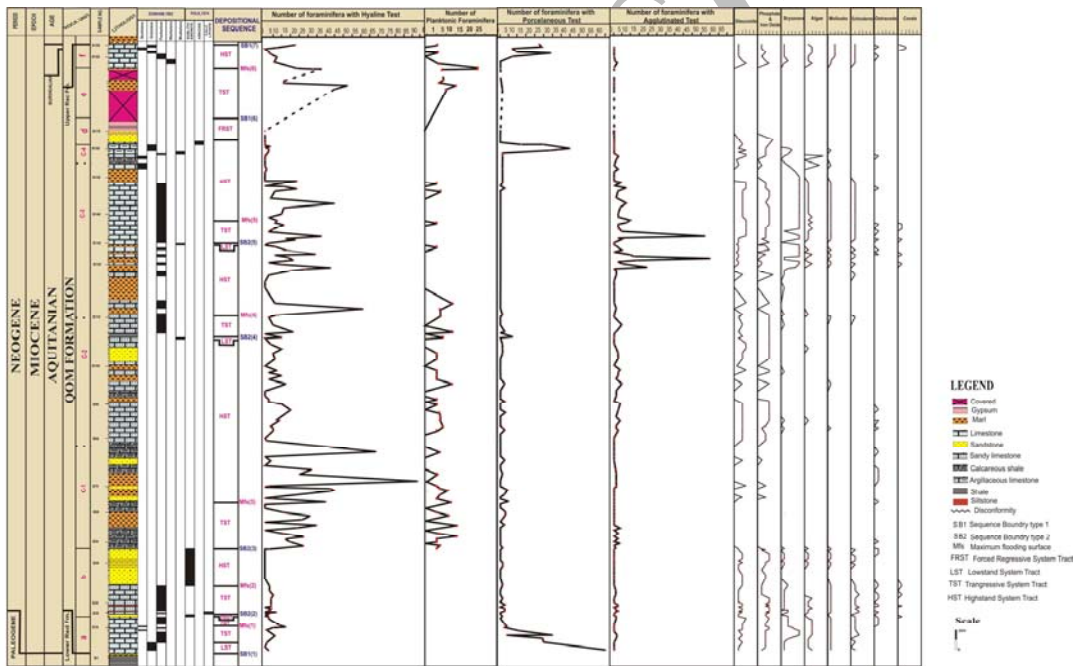
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d

:(mfs5)

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d  
:(mfs6)



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(Bozorgnia,1966)

c- c-1 a (Bozorgnia,1966)

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(Haq et al., 1988)

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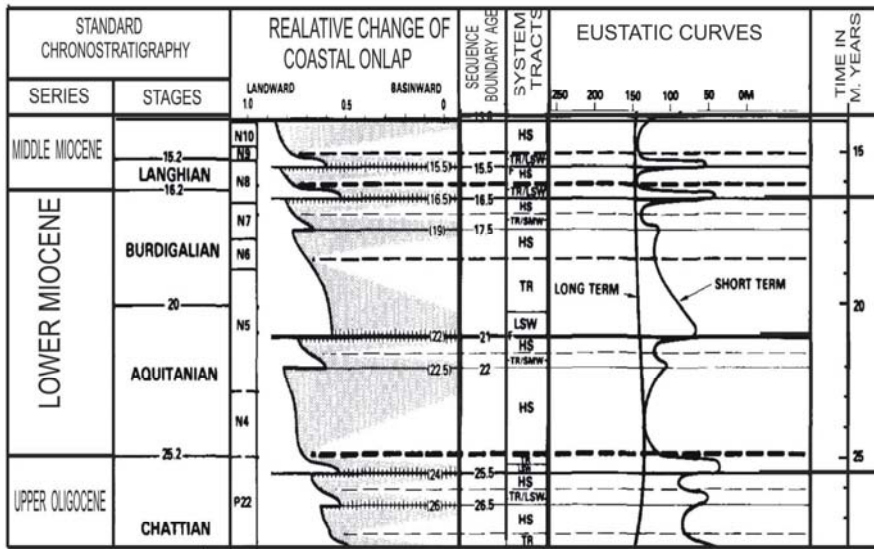
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(Reuter et al., 2007)



شکل ۹) مقایسه مرزهای سکاسی با نمودار جهانی تغییرات آب دریا، برگرفته از (Haq et al., 1988).

(Reuter et al., 2007)

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(Reuter et al., 2007)

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مرزهای سکانشی					عضو	سازندگان
برش مورد مطالعه SB1	روتر و همکاران Reuter et al., 2007	ایمن دوست ۱۳۸۵ SB1	لاسمی و امین رسولی ۱۳۸۲ SB1			
HST	۷	mfs ..... HST TST	? ۷	f		
mfs ..... TST	۶	mfs ..... HST TST	mfs ..... HST TST	e		
SB1		SB2	SB1			
FRST	۵	FRST	HST	d		
HST	۵	HST	mfs ..... TST	c-4		
mfs ..... TST	۴	mfs ..... TST	S B 2			
LST		LST	mfs ..... HST	c-3		
HST	۴	SB2	TST	c-2		
mfs ..... TST		LST	LST			
HST	۳	HST	SB1	c-1		
mfs ..... TST		mfs ..... TST	HST			
SB2		SB2	mfs ..... TST			
HST	۲	mfs ..... TST	S B 2	b		
mfs ..... TST	۲	SB2	mfs ..... TST			
FRST		FRST	SB1			
HST	۱	mfs ..... TST	LST			
mfs ..... TST	۱	mfs ..... TST	mfs ..... HST	a		
LST		LST	SB1			

(Furrer & Soder, 1955)

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(Furrer & Soder, 1955)

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c-4 c-1

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c1 b ,a

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(SB1)

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b, a

(SB2)

((SB1

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