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(P/B ratio)

(Dimitrijević 1973)

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(Clapp 1940)

(Pilgrim 1924)

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(Huber and Stöcklin 1954)

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(Gansser 1955)

(Huckriede et al.1962)

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(Mitchel 1996)

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(Fisher et al 1943)

(Mesh No)

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(Murray 1973,1991)

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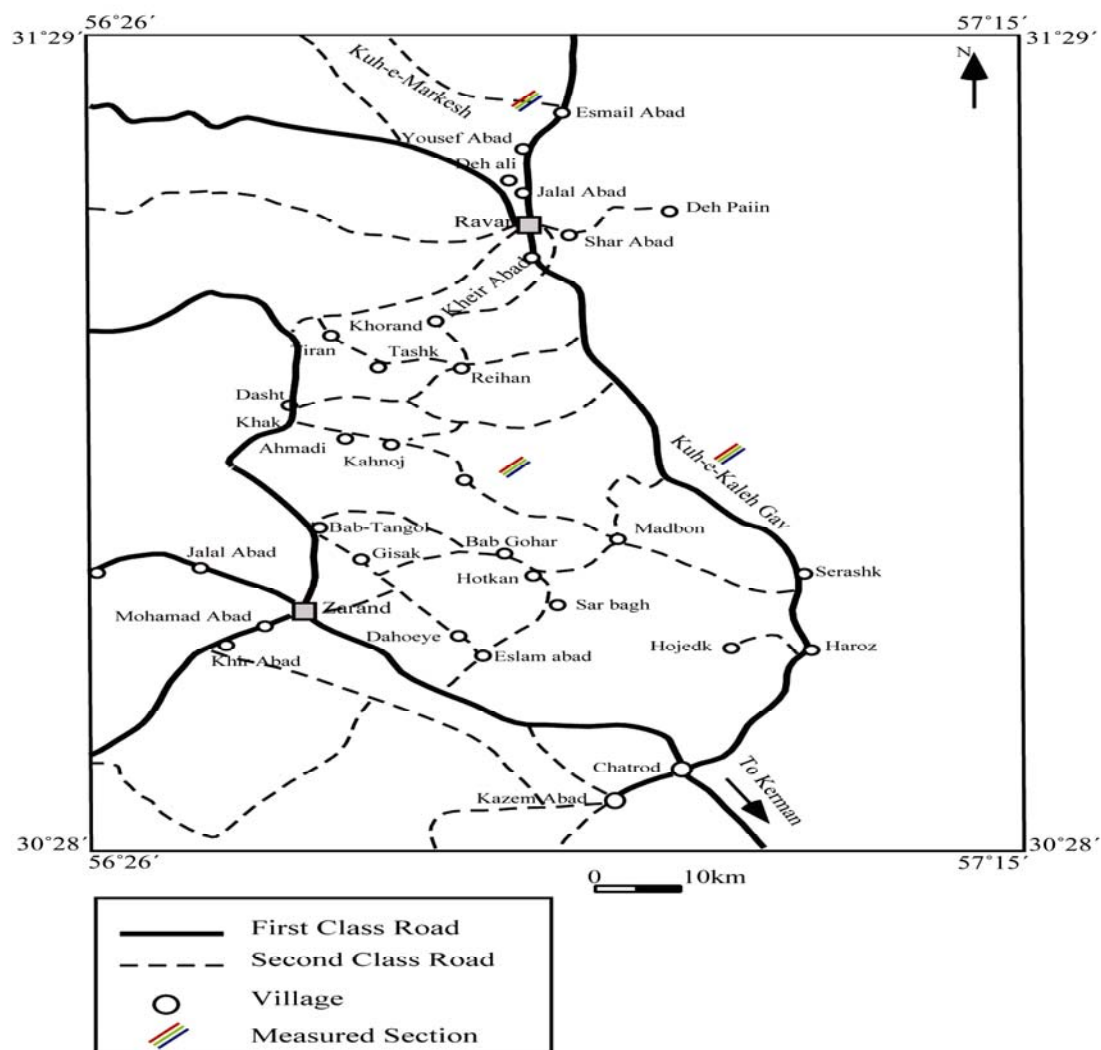
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Exogyra





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Cuneolina,

Nezzazata *Ammobaculites* , *Sabaudia*

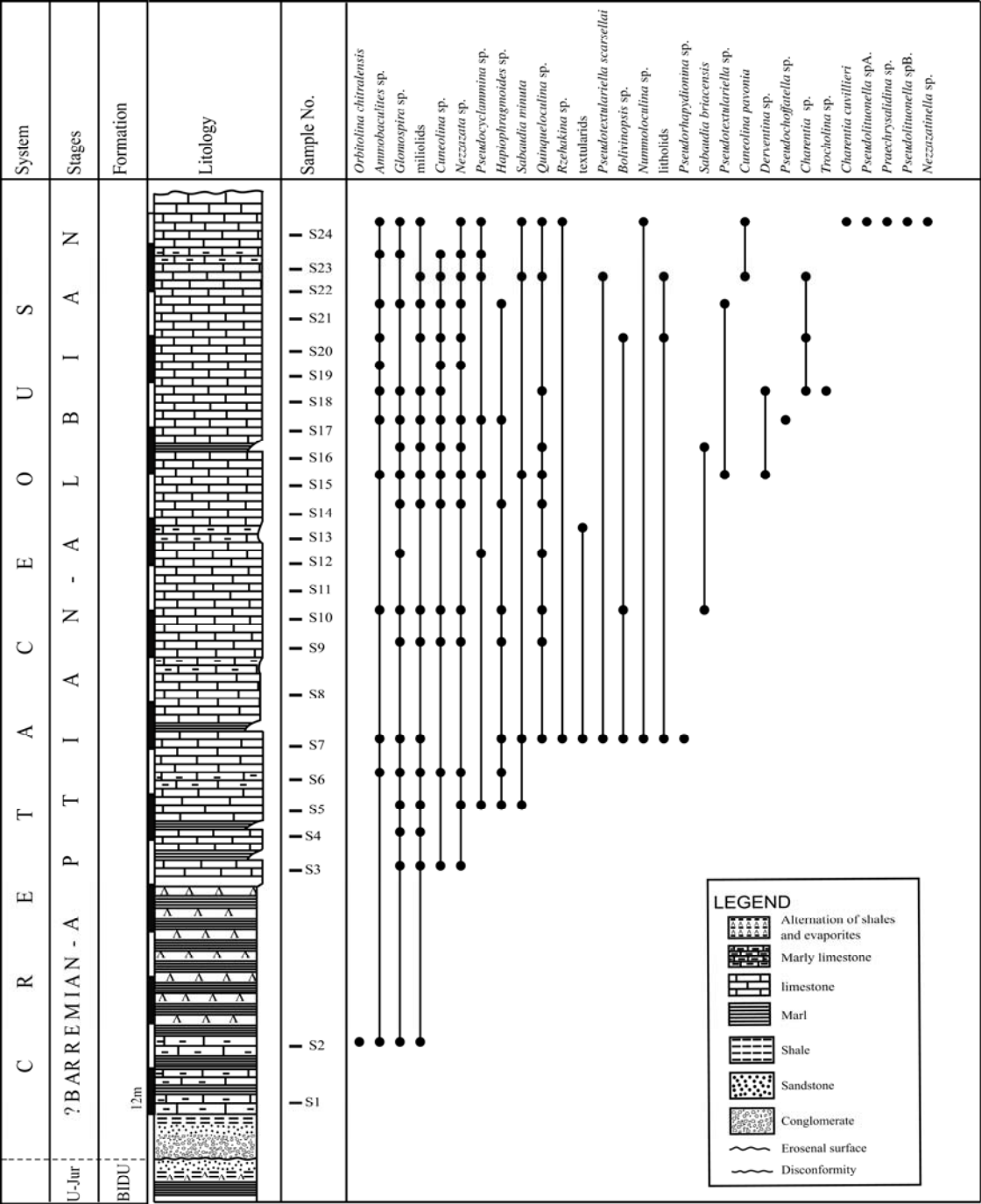
Ammobaculites sp., *Bolivinopsis* sp., *Cuneolina* *pavonia* , *Charentia* sp., *Derventina* sp., *Glomospira* sp., *Haplophragmoides* sp., miliolids, *Nezzazata* sp., *Nummuloculina* sp., *Orbitolina* *chitralensis* , *Pseudocyclammina* sp., *Pseudochoffatella* sp., *Pseudolituonella* sp., *Praechrysalidina* sp., *Pseudotextulariella* *scarsellai* , *Pseudorhapydionina* sp., *Rzehakina* sp., *Sabaudia* *briacensis* , *Sabaudia* *minuta* , *Trocholina* sp., textularids.

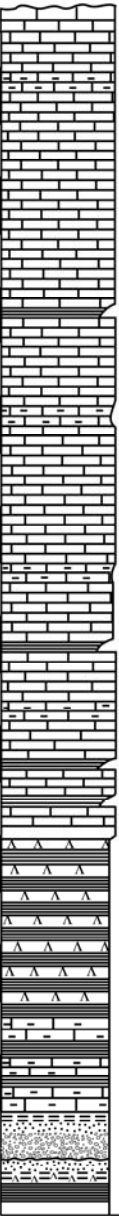
Acicularia sp., *Permocalculus* sp., *Rivularia* *lissaviensis*, *Salpingoporella* sp.

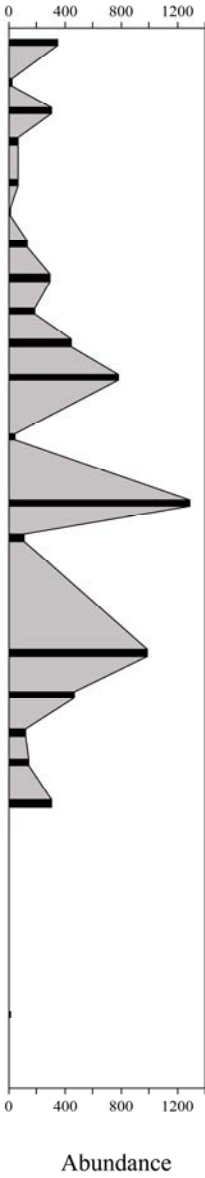
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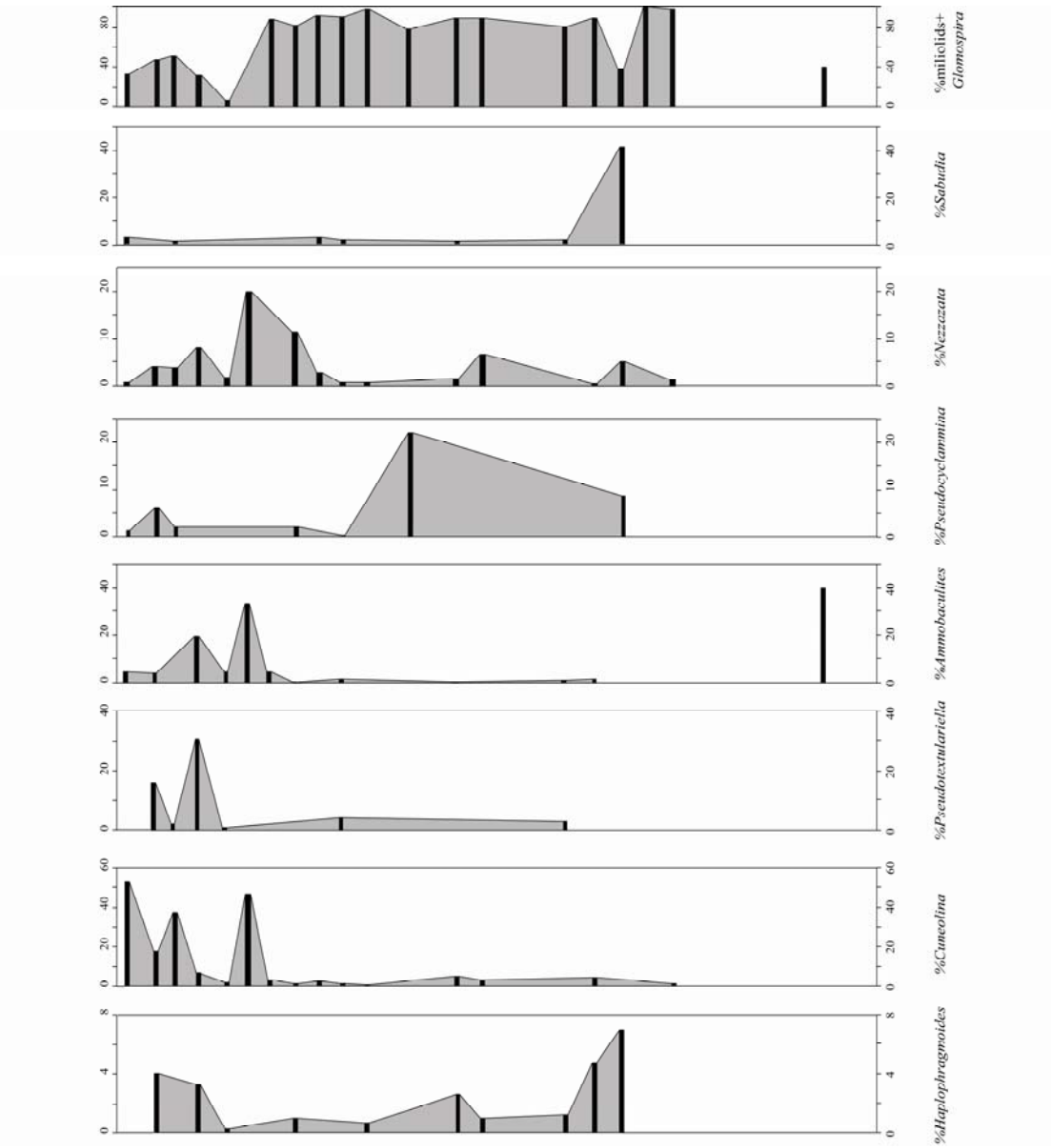
Glomospira miliolids

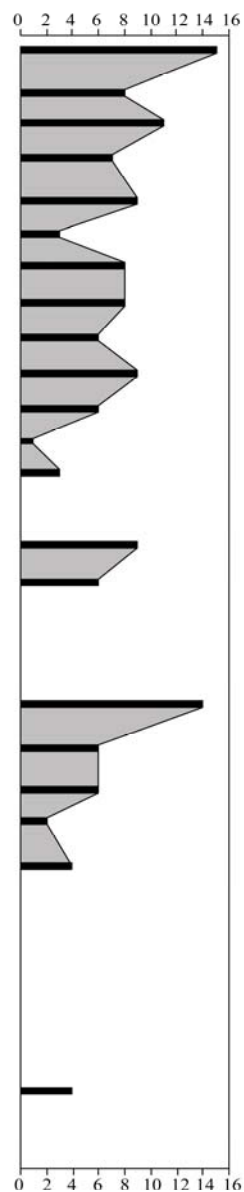
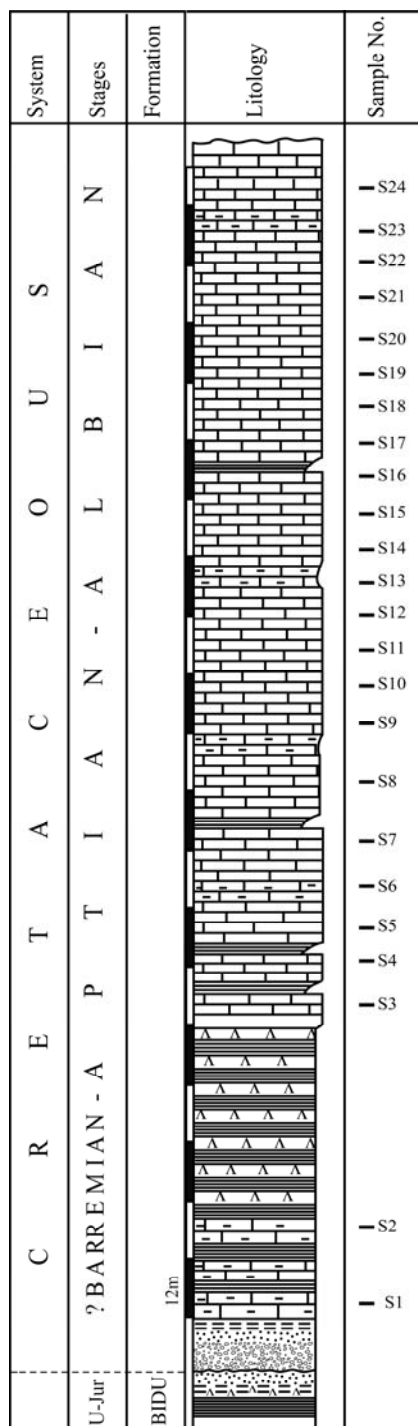


C R E T A C E O U S										System
? BARREMIAN - A P T I A N - A L B I A N										Sta es
BIDU										Formation
12m										Litology
										Sample No.
S1										S24
S2										S23
S3										S22
S4										S21
S5										S20
S6										S19
S7										S18
S8										S17
S9										S16
S10										S15
S11										S14
S12										S13
S13										S12
S14										S11
S15										S10
S16										S9
S17										S8
S18										S7
S19										S6
S20										S5
S21										S4
S22										S3
S23										
S24										

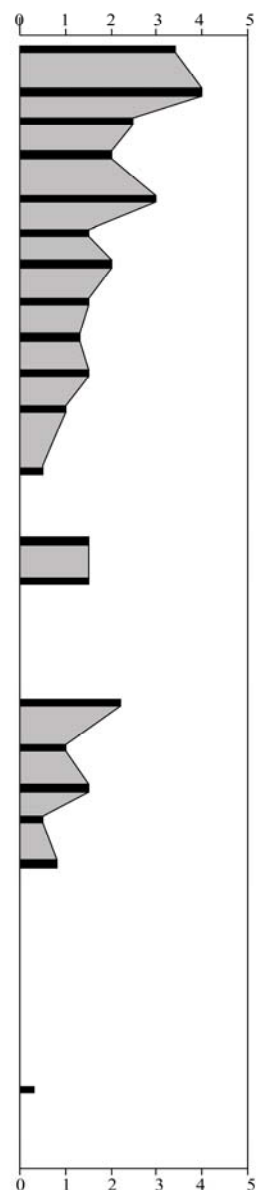


System	Stages	Formation	Lithology	Sample No.
C	U-Jur	BIDU 12m		S1
	?			S2
R	BARREMIAN - A	BIDU 12m		S3
E	P			S4
T	I			S5
A	I			S6
A	A			S7
C	N			S8
E	-			S9
O	A			S10
	L			S11
	B			S12
	I			S13
	A			S14
	N			S15
	S			S16
	S			S17
	N			S18
	I			S19
	A			S20
	A			S21
	N			S22
				S23
				S24





Simple diversity



Fisher diversity

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Ammobaculites sp., *Balkhania balkhanica*,
Bolivinopsis sp., *Cuneolina laurentii*, *Charentia*
Cuvierlli, *Derventina* sp., *Dictyoconus arabicus*,
Glomospira sp., *Haplophragmoides* sp., *Iraqia*
simplex, *Nezzazata* sp., *Nummuloculina* sp.,
Mesorbitolina subconcava, miliolids, *Orbitolina*
discoidea, *Palorbitolina* sp., *Pseudocyclammina*
lituus, *Pseudocyclammina hedbergi*,
Pseudolituonella sp., *Praechrysalidina* sp.,
Pseudotextulariella scarsellai, *Rotalia* sp.,
Rzehakina sp., *Sabaudia briacensis*, *Sabaudia*
minuta, textularids, *Tritaxia* sp., *Trochaminoides*
 sp.

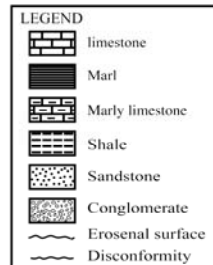
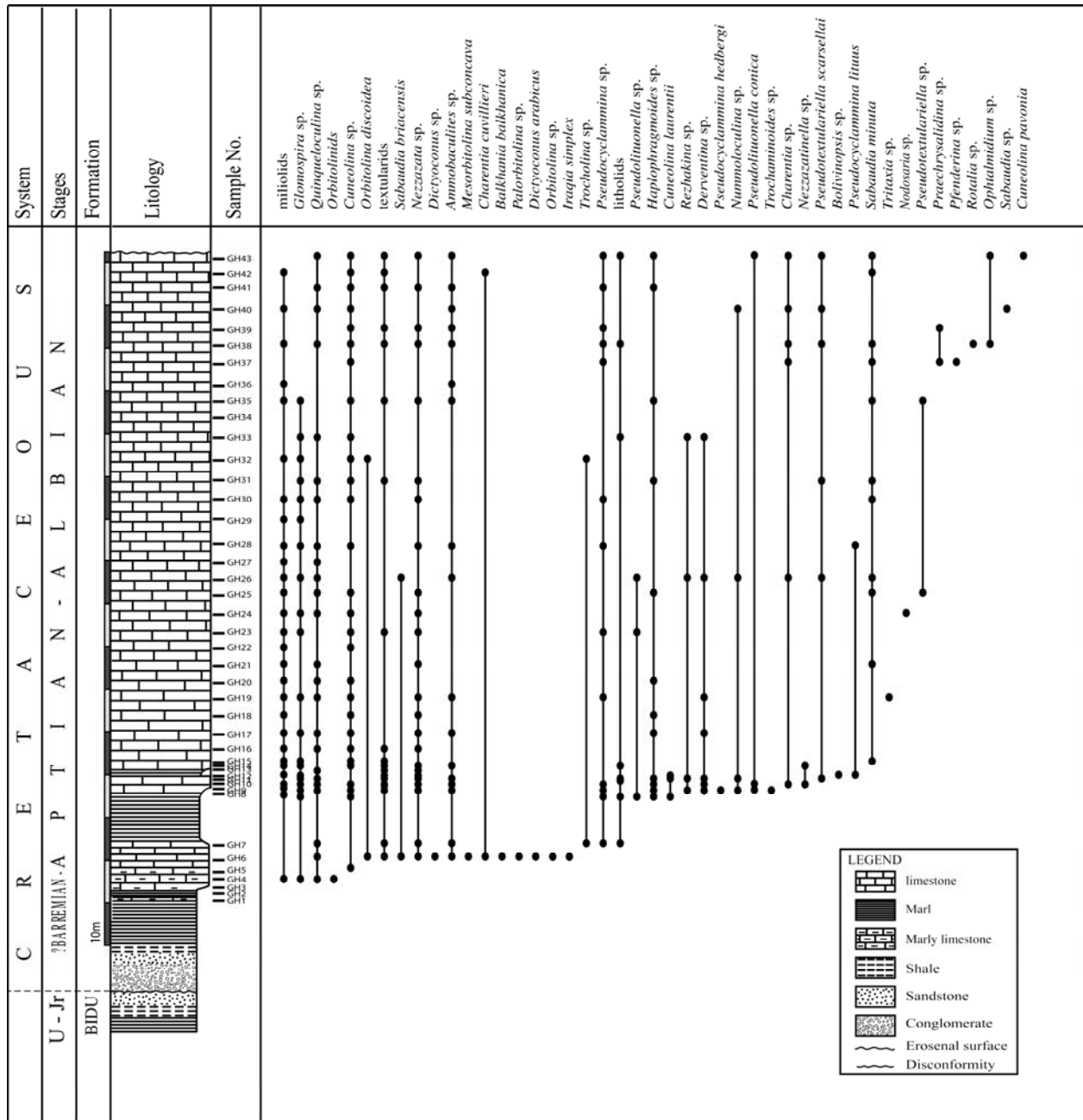
miliolids
 () *Glomospira*

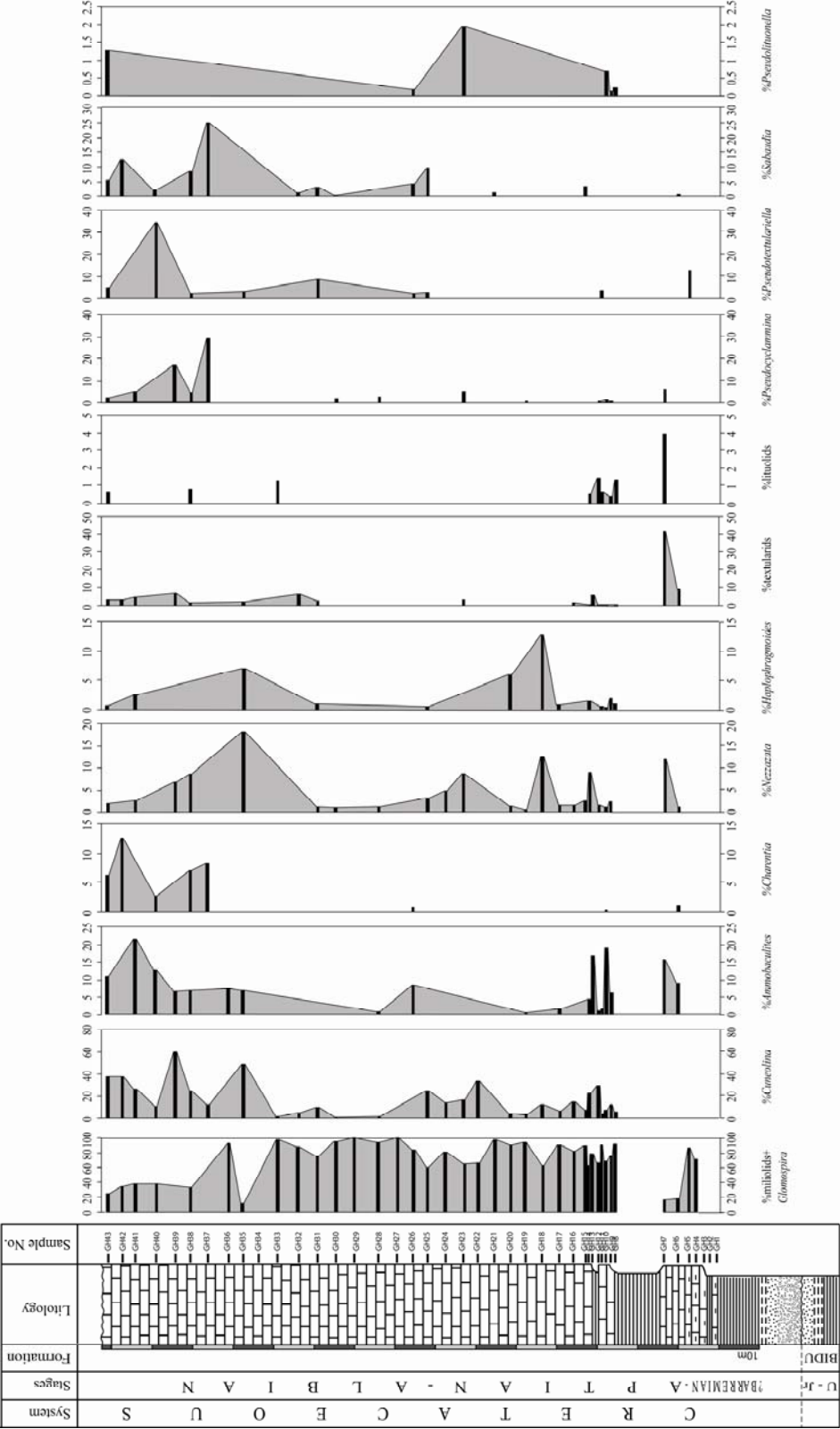
Cuneolina (0-63%) *Ammobaculites* (0-
Sabaudia (0-25%) 43%),

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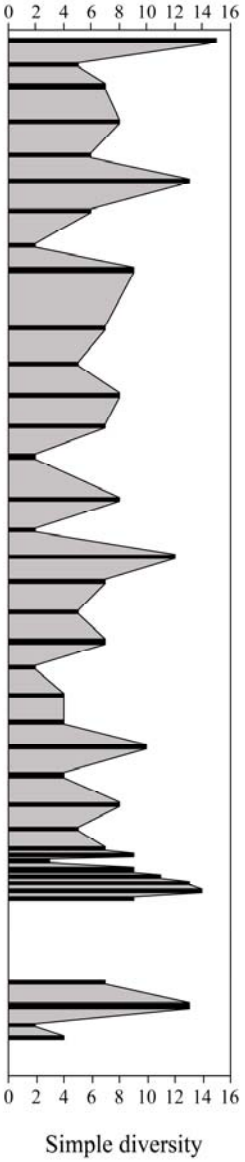
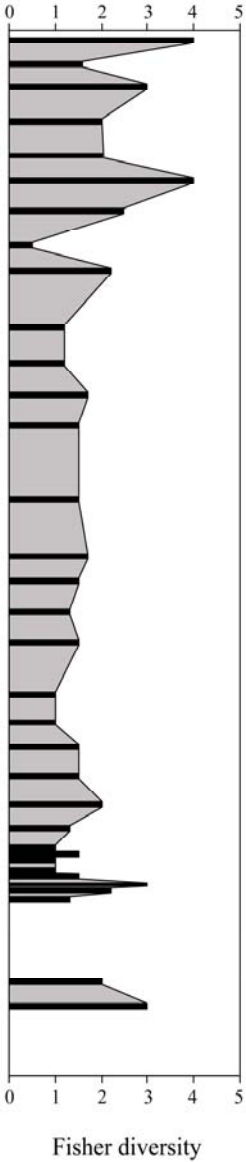
Acicularia sp., *Cylindroporella sugdeni*,
Griphoporella piae, *Neomeris* sp.,
Permocalculus inopinatus, *Rivularia lissaviensis*,
Salpingoporella dinarica

Exogyra





C R E T A C E O U S										System
?BARREMIAN - A L B I A N										Stages
10m										Formation
										Litology
										Sample No.
										GH43
										GH42
										GH41
										GH40
										GH39
										GH38
										GH37
										GH36
										GH35
										GH34
										GH33
										GH32
										GH31
										GH30
										GH29
										GH28
										GH27
										GH26
										GH25
										GH24
										GH23
										GH22
										GH21
										GH20
										GH19
										GH18
										GH17
										GH16
										GH15
										GH14
										GH13
										GH12
										GH11
										GH10
										GH9
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										GH6
										GH5
										GH4
										GH3
										GH2
										GH1



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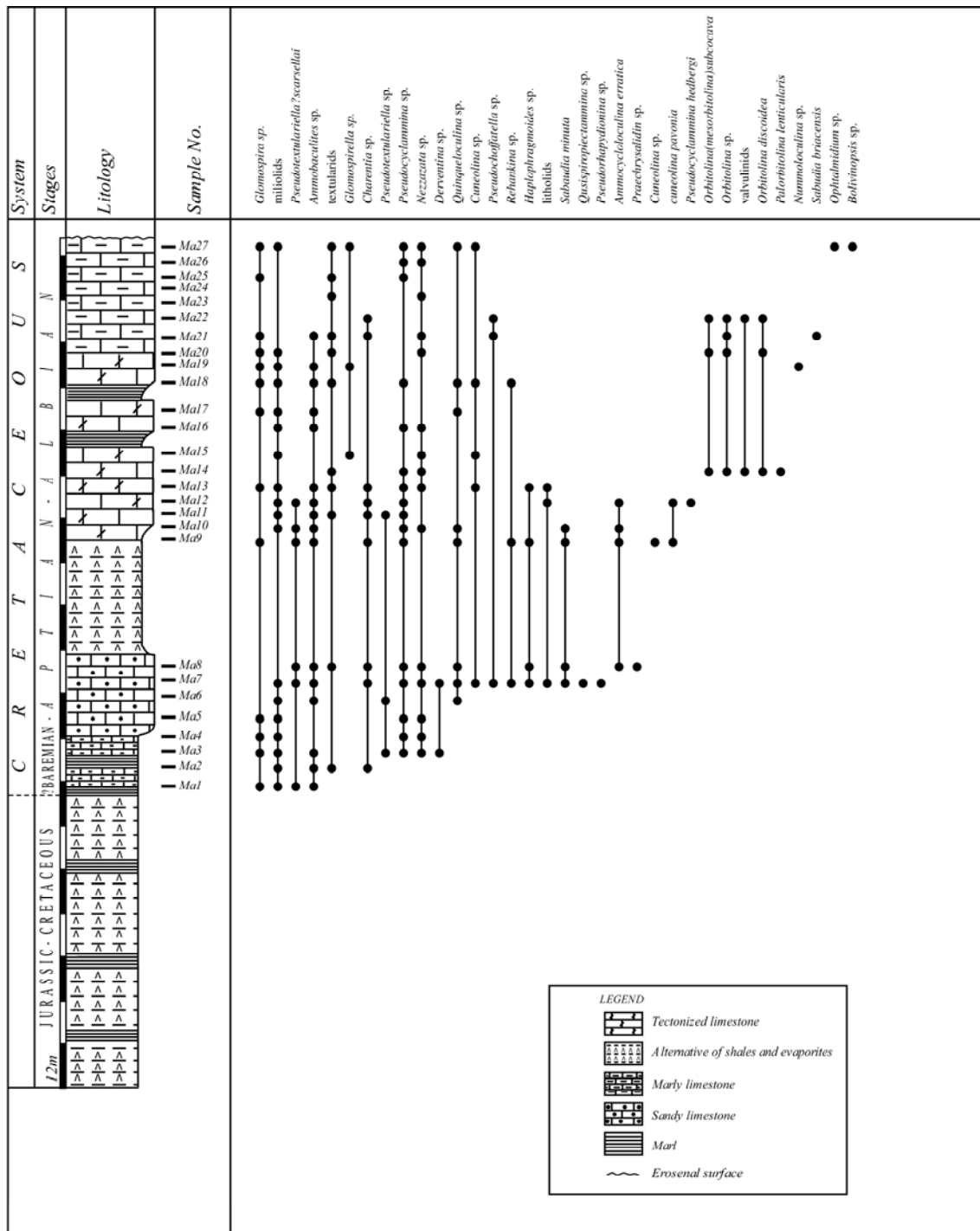
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Ammobaculites sp., *Ammocycloloculina*
erratica , *Bolivinopsis* sp., *Cuneolina pavonia*,
Charentia sp., *Derventina* sp., *Glomospira* sp.,
Glomospirella sp., *Haplophragmoides* sp.,
Mesorbitolina subconcava, miliolids, *Nezzazata*
sp., *Nummoloculina* sp., *Orbitolina discoidea*,
Ophtalmidium sp., *Palorbitolina lenticularis*,
Pseudocyclammina hedbergi, *Praechrysalidina*
sp., *Pseudotextulariella scarsellai*,
Pseudorhapydionina sp., *Quesispiroplectammina*
sp., *Rzehakina* sp., *Sabaudia briacensis*,
Sabaudia minuta, *Trocholina* sp., textularids,
valvulinids.

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(*Exogyra*)

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(Morphogroups)

Bairdoppilata sp., *Baythoceratina* spA.,
Baythoceratina spB., *Cytherella truncata* ,
Cytherella sp., *Cytherella chatamensis* ,
Cytherelloidea spA., *Cytherelloidea*
spB., *Dordoniella* sp., *Paracypris* sp.,
Pontocyprilla harrisiana , *Rehacythereis* sp.,
Xestoleberis spp.

Cytherella

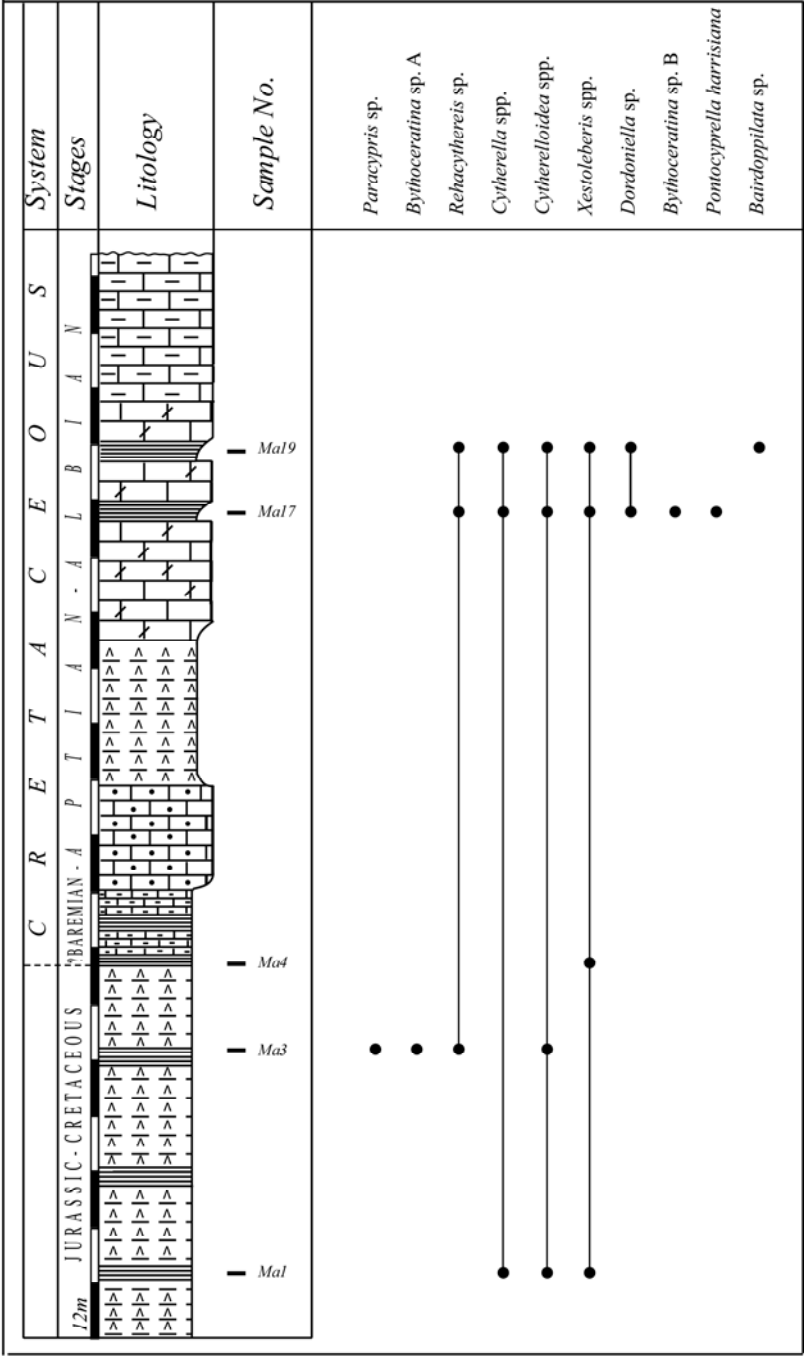
(Koutsoukos et al.

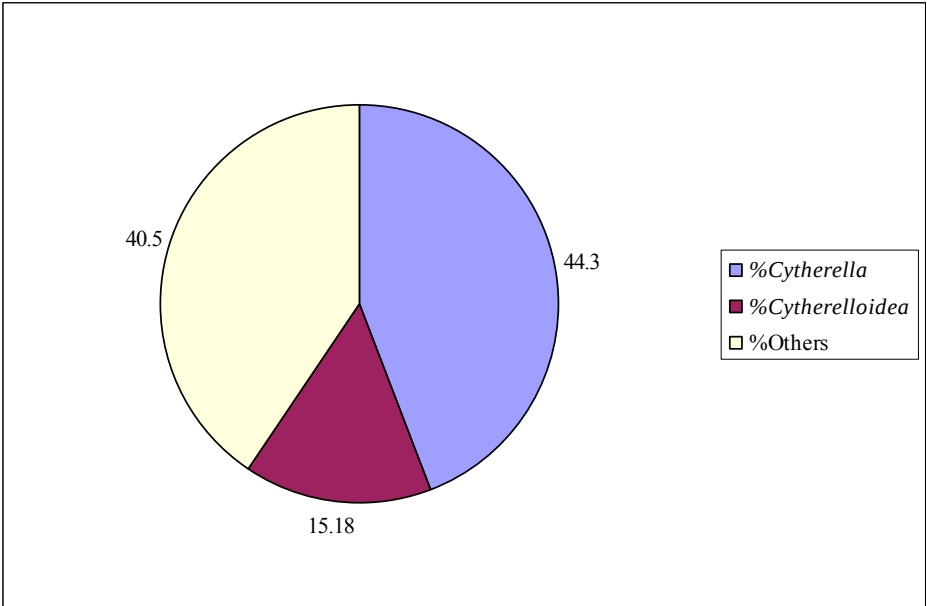
1990)

(Jones and (Koutsoukos and Hart 1990),

Charnock 1985)

Acicularia sp., *Cylindroporella* sp., *Griphoporella*
piae , *Neomeris* sp., *Salpingoporella* sp.





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miliolids, *Haplophragmoides*, *Glomospirella*,

Glomospira, *Trochaminoides*, *Nezzazata*,

Rzehakina

Cp-A

Nezzazata

-

Nezzazatinella

Ammobaculites,

-

Bolivinopsis, *Cuneolina*, *Sabaudia*,

Pseudotextulariella, *Pseudolituonella*, lituolids,

textularids, *Pseudorhapidionina*,

Praechrysalidina

Jones and Charnock 1985 ;)

Koutsoukos et al 1990 ; Koutsoukos and Hart

.(1990

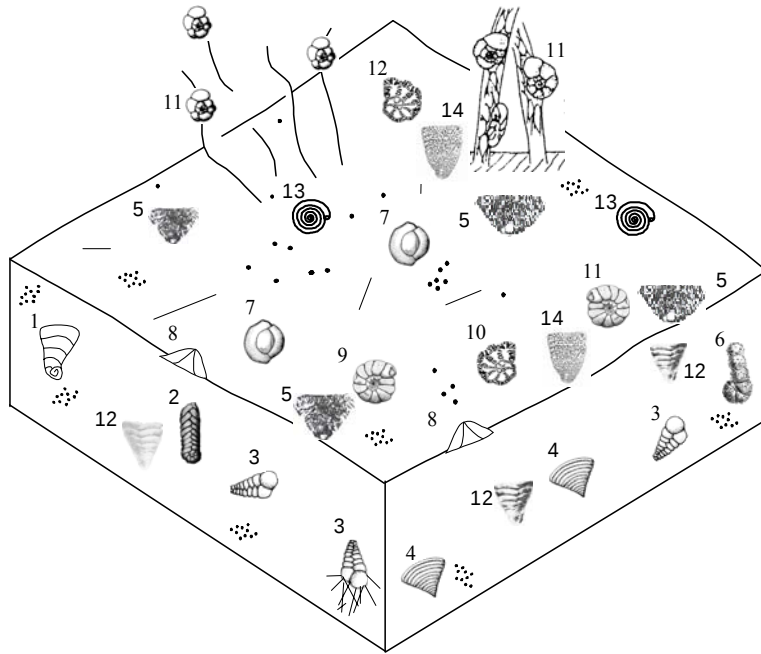
Orbitolina,

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Iraqia, *Dictyoconus*, *Charentia* ,

Pseudocyclammina, *Pseudochoffatella*,

مثال	نحوه تغذیه	نحوه زیست	شکل پوسته	تعداد حجرات	مورفولوژیک
<i>miliolids</i>	رسوب خوار	سطح زی		چند حجره ای	CP-A
<i>Bolivina</i> , <i>Ammobaculites</i>	رسوب خوار	درون زی	طول، مرحله اول پیچیده، مرحله بعد مستقیم و بدون پیچش 	چند حجره ای	A1
<i>Textulariids</i> , <i>Tritaxia</i>	رسوب خوار	درون زی	طول مخروطی، دور دینی یا سه ردینی 	چند حجره ای	A2
<i>Cuneolin</i> , <i>Sabaudi</i> , <i>Pseudotextulariella</i>	رسوب خوار	درون زی	مخروطی، مرحله اول تروکواسپیرال و در مرحله بعد دو ردینی 	چند حجره ای	AG-B
<i>Orbitolina</i> , <i>Dictyoconus</i> , <i>Iraqia</i>	رسوب خوار	سطح زی	مخروطی 	چند حجره ای	AG-C
<i>Haplophragmoides</i> , <i>Trochamminoides</i> , <i>Pseudocyclammina</i> , <i>Charentia</i>	گیاه خوار فعال ذره خوار و همه چیز خوار	سطح زی	پیچش پلاتیسپیرال یا تروکواسپیرال 	چند حجره ای	D1
<i>Glomospira</i> , <i>Glomospirella</i> , <i>Rzehakina</i>	رسوب خوار	سطح زی	پیچش پلاتیسپیرال 	دو حجره ای	D2
<i>Nezzazata</i> , <i>Nezzazatinella</i>	رسوب خوار	سطح زی	مخروط تروکواسپیرال 	چند حجره ای	D3



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|----------------------------|---|--------------------------------|
| 1- <i>Pseudolituonella</i> | 6- <i>Ammobaculites</i> | 11- <i>Trochaminoides</i> |
| 2- <i>Bolivinopsis</i> | 7- miliolids | 12- <i>Pseudotextulariella</i> |
| 3- textularids | 8- <i>Nezzazata</i> , <i>Nezzazatinella</i> | 13- <i>Glomospira</i> |
| 4- <i>Cuneolina</i> | 9- <i>Haplophragmoides</i> | 14- <i>Dictyoconus</i> |
| 5- <i>Orbitolina</i> | 10- <i>Pseudocyclammina</i> | |

(Gooday et al 2000; Culver 2003; Corliss 1985;
 Corliss 1991; Jorissen 1999; Corliss and Emerson
 1990; Corliss and Chen 1988).

(Whatley 1991)

.(Scott 1978)

(*Cytherelloidea*, *Cytherella*)
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Cytherella

Rehacythereis *Bairdopillata* , *Xestoleberis*

(P/B ratio)

.(Corliss & Chen 1988)

P/B ratio

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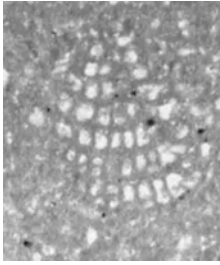
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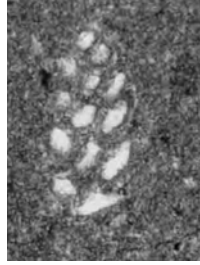
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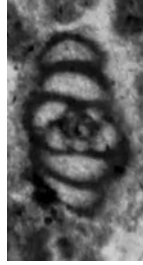
Plate 1



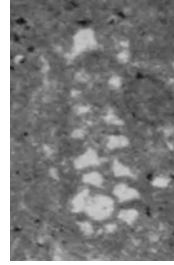
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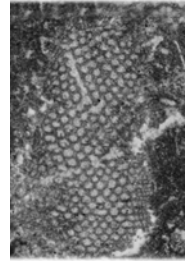
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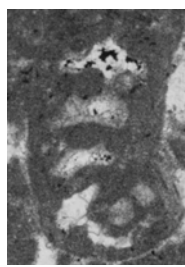
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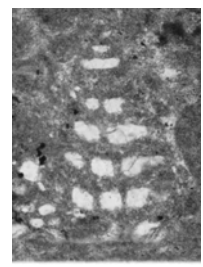
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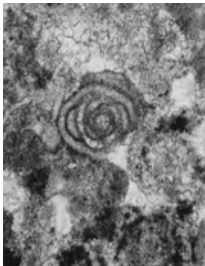
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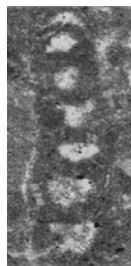
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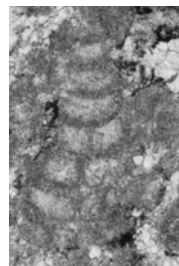
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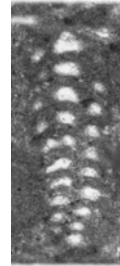
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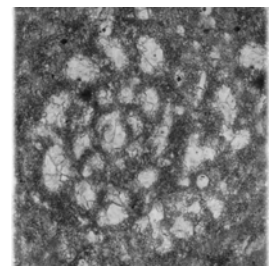
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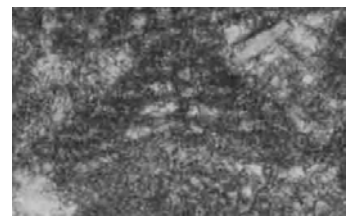
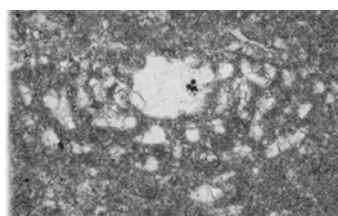
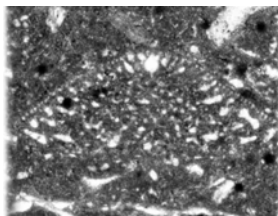
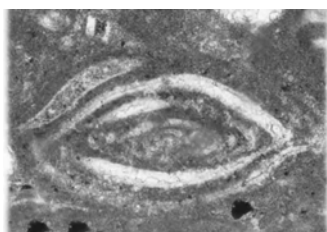


Plate 1

- 1- *Cuneolina pavonia*, (×37).
Axial section, Kaleh Gav section, ?Barremian – Aptian – Albian.
- 2- *Tritaxia* sp., (×100).
Longitudinal section, Ghadroon section, ?Barremian – Aptian – Albian.
- 3- *Glomospirella* sp., (×52).
Axial section, Markesh section, ?Barremian – Aptian – Albian.
- 4- *Bolivinopsis* sp., (×64).
Longitudinal section, Ghadroon section, ?Barremian – Aptian – Albian
- 5- *Iraqia simplex*, (×40).
Subaxial section, Ghadroon section, ?Barremian – Aptian – Albian.
- 6- *Atactolituolla* sp., (×100).
Longitudinal section, Ghadroon section, ?Barremian – Aptian – Albian.
- 7- *Sabaudia minuta*, (×100).
Axial section, Ghadroon section, ?Barremian – Aptian – Albian.
- 8- *Ammobaculites* sp. (×100).
Longitudinal section, Markesh section, ?Barremian – Aptian – Albian.
- 9- *Charentia* sp., (×40).
Equatorial section, Kaleh Gav section, ?Barremian – Aptian – Albian.
- 10- *Pseudotextulariella scarsellai* (×100).
Longitudinal oblique section, Ghadroon section, ?Barremian – Aptian – Albian.
- 11- *Glomospira* sp. (100).
Axia section, Ghadroon section, ?Barremian – Aptian – Albian.
- 12- *Ammocycloloculina erratica*. (×100).
Subaxial section, Markesh section, ?Barremian – Aptian – Albian.
- 13- *Cuneolina laurentii*, (×100).
Axial section, Ghadroon section, ?Barremian – Aptian – Albian.
- 14- *Pseudotextulariella scarsellai*, (×100).
Subaxialsection, Ghadroon section, ?Barremian – Aptian – Albian.
- 15- *Charentia cuvillieri*, (×100).
Equatorial section, Ghadroon section, ?Barremian – Aptian – Albian.
- 16- *Palorbitolina lenticularis*, (×40).
Axial section, Markesh section, ?Barremian – Aptian – Albian.
- 17- *Proloculus* of *Palorbitolina lenticularis*, (×100).
Markesh section, ?Barremian – Aptian – Albian.

18- *Sabaudia briacensis*, ($\times 100$).
Subaxial section, Markesh section, ?Barremian – Aptian – Albian.

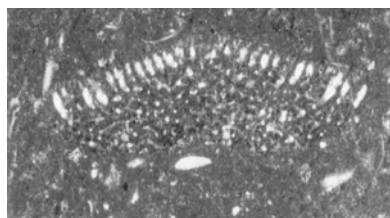
Plate 2



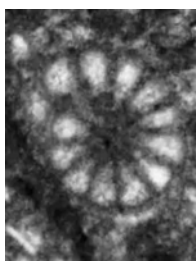
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2



3



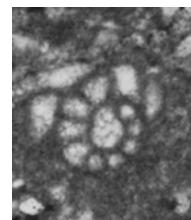
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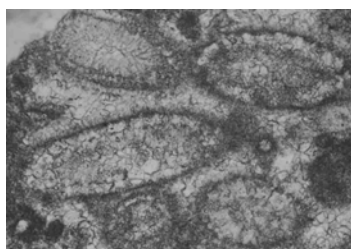
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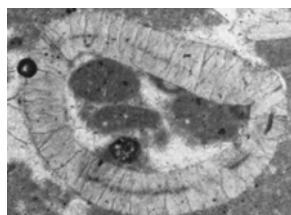
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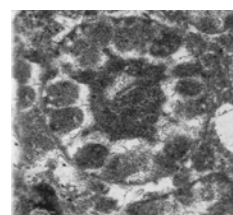
7



8



9



10

Plate 2

1- *Rzehakina* sp. ($\times 100$).

Axial section, Ghadroon section, ?Barremian – Aptian – Albian.

2- *Dictyoconus arabicus*, ($\times 18$).

Subaxial section, Ghadroon section, ?Barremian – Aptian – Albian.

3- *Orbitolina discoidea*, ($\times 40$).

Subaxial section, Markesh section, ?Barremian – Aptian – Albian.

4- *Haplophragmoides* sp., ($\times 100$).

Equatorial section, Ghadroon section, ?Barremian – Aptian – Albian.

5- *Sabaudia minuta*, ($\times 100$).

Cross section, Ghadroon section, ?Barremian – Aptian – Albian.

6- *Praechrysalidina* sp., ($\times 100$).

Longitudinal section, Markesh section, ?Barremian – Aptian – Albian.

7- *Nezzazata* sp., ($\times 100$).

Equatorial section, Ghadroon section, ?Barremian – Aptian – Albian.

8- *Salpingoporella dinarica*, ($\times 100$).

Ghadroon section, ?Barremian – Aptian – Albian.

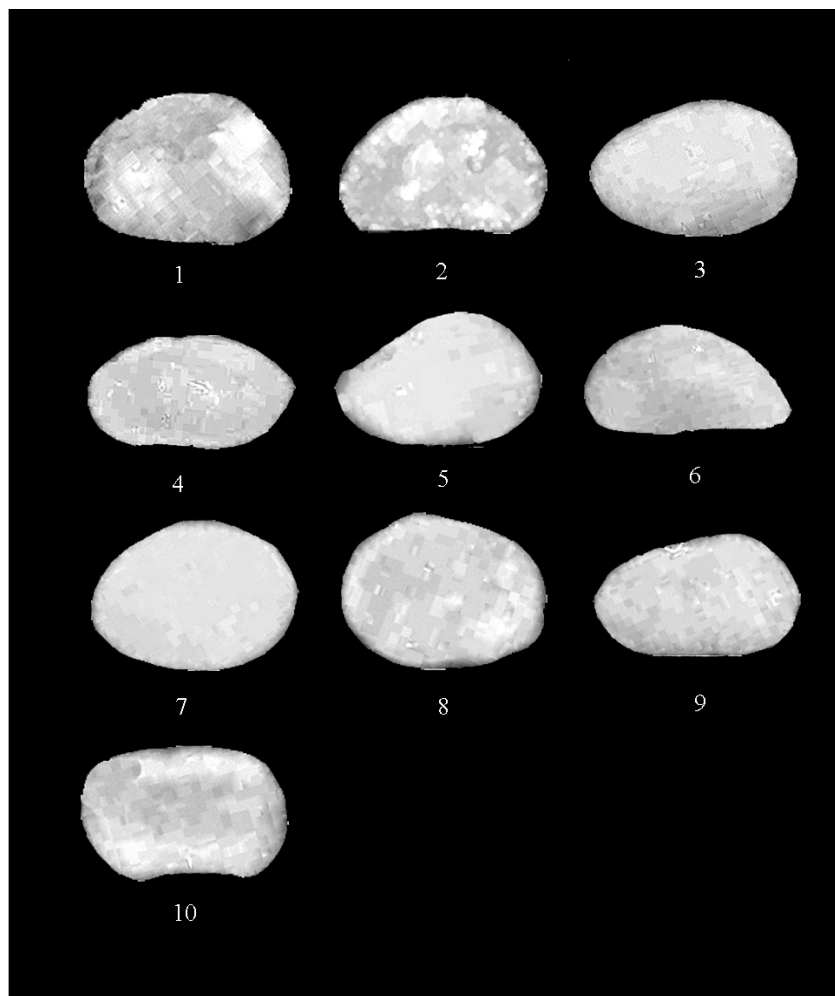
9- *Griphoporella piae*, ($\times 26$).

Ghadroon section, ?Barremian – Aptian – Albian.

10- *Neomeris* sp., ($\times 100$).

Markesh section, ?Barremian – Aptian – Albian.

Plate 3



1- *Dordoniella* sp., (×17.5).

2- *Xestoleberis* sp., (×17.5).

3- *Cytherella truncate*, (×17.5).

4- *Pontocyprrella harrisiana*, (×17.5).

5- *Bairdoppilata* sp., (×17.5).

6- *Paracypris* sp., (×17.5).

7- *Cytherella* sp., (×17.5).

8- *Cytherella chatamensis*, (×17.5).

9- *Rehacythereis* sp., (×17.5).

10- *Cyterelloidea* sp., (×17.5).