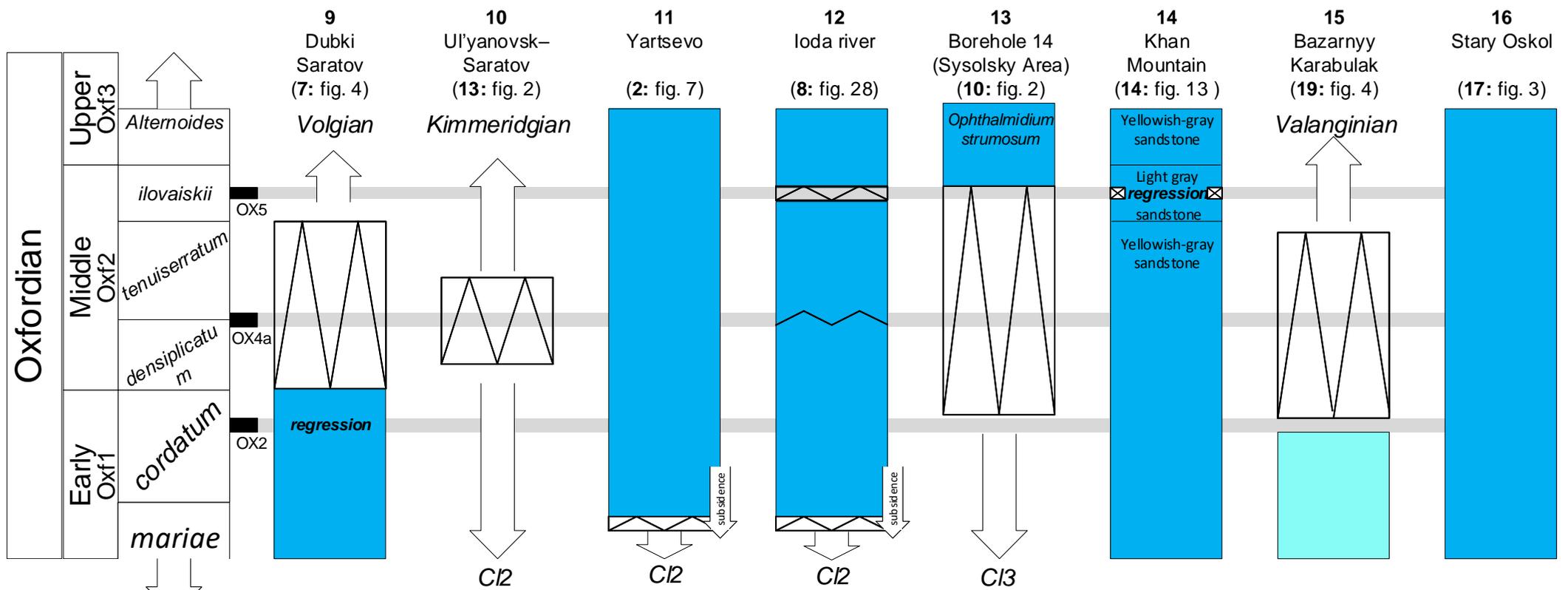


Reconstructing the early exposure regime of the Middle Russian Sea (Jurassic, Russian Platform)

Supplementary Appendix
Stratigraphic sections used in Oxfordian
paleogeographical reconstructions



Interpretation

The sequence is interrupted due to tectonic uplift affected the area of Saratov (Volga right bank). Major regression is evidenced around the *cordatum* unconformity time on the basis of ostracod configuration.

Complete absence of Oxfordian deposits. It's a positive structure element, probably an island.

Area affected by the Late Callovian-Early Oxfordian uplifting

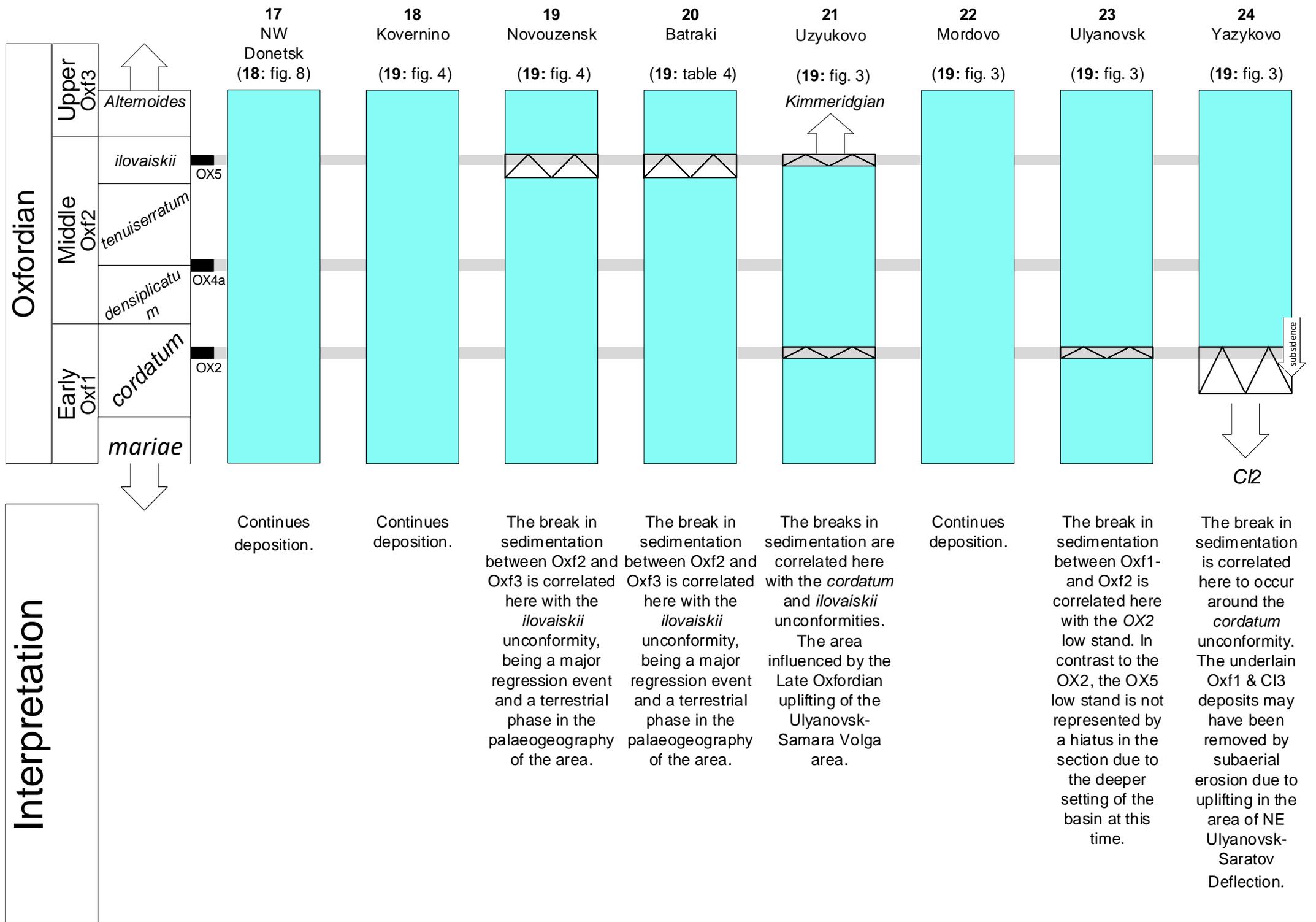
The clear unconformity occurs between the *ilovaiskii* and *alternoides* zones interpreted here to be a major regression event representing a terrestrial phase in the palaeogeography of the area. The occurrence of the OX4a is represented by an unconformity.

The relatively short sequence (~0,8 meters) of the deposits with *Ophthalmidium strumosum* proposes that they have been deposited after the *ilovaiskii* unconformity. The extended hiatus could be explained by subaerial erosion during the succeeded low-stands.

Continues deposition. The section offers a very good reference sequence for the temporal definition of the *ilovaiskii* low-stand and its regional character, given it is located out of the Moscow Syncline and displays clear evidence of a regressive trend without pause of deposition.

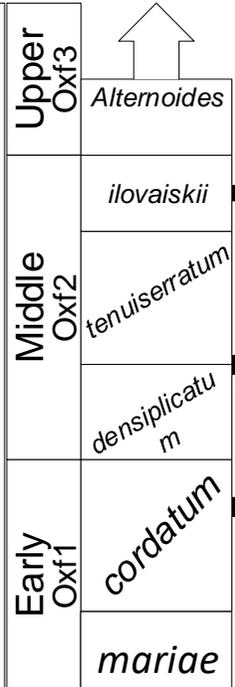
The sequence is probably interrupted around the *cordatum* unconformity due to tectonic uplift affected the area of Saratov (Volga right bank).

Continues deposition.



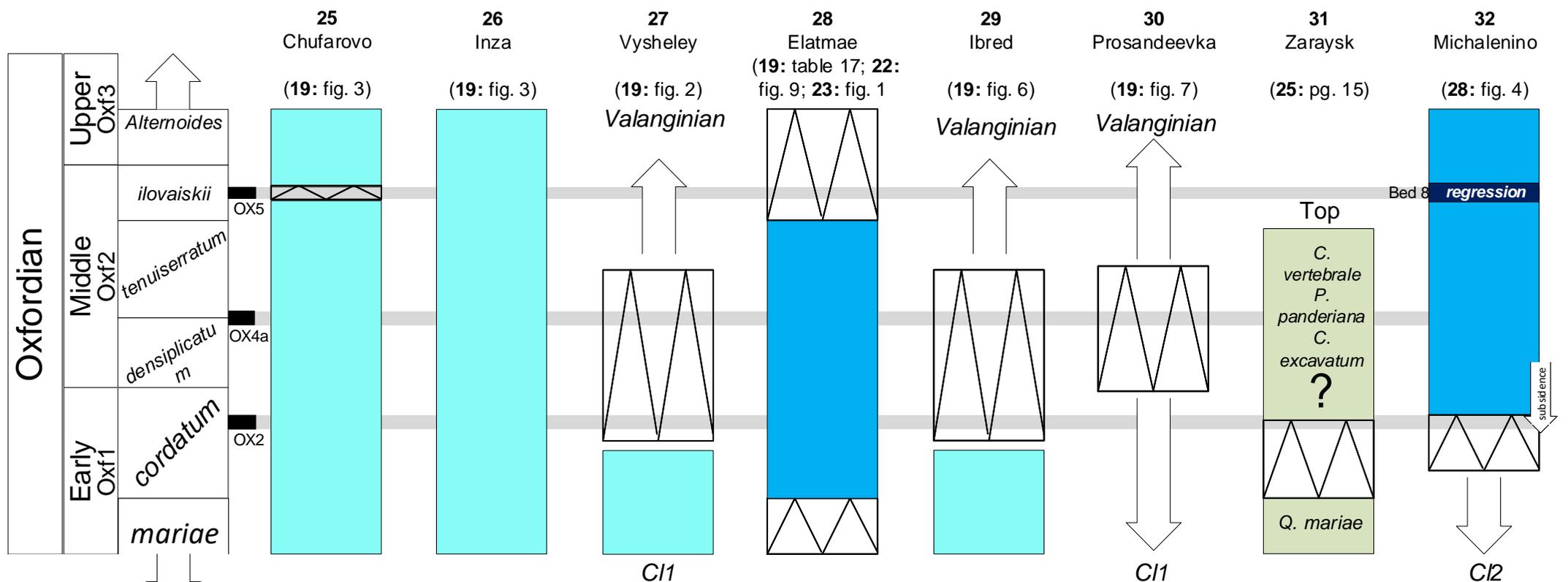
Interpretation

Oxfordian



C12

subsidence



Interpretation

The break in sedimentation between Oxf2 and Oxf3 is correlated here with the *ilovaiskii* unconformity, being a major regression event and a terrestrial phase in the palaeogeography of the area.

Continues deposition.

Area affected by uplifting and scouring.

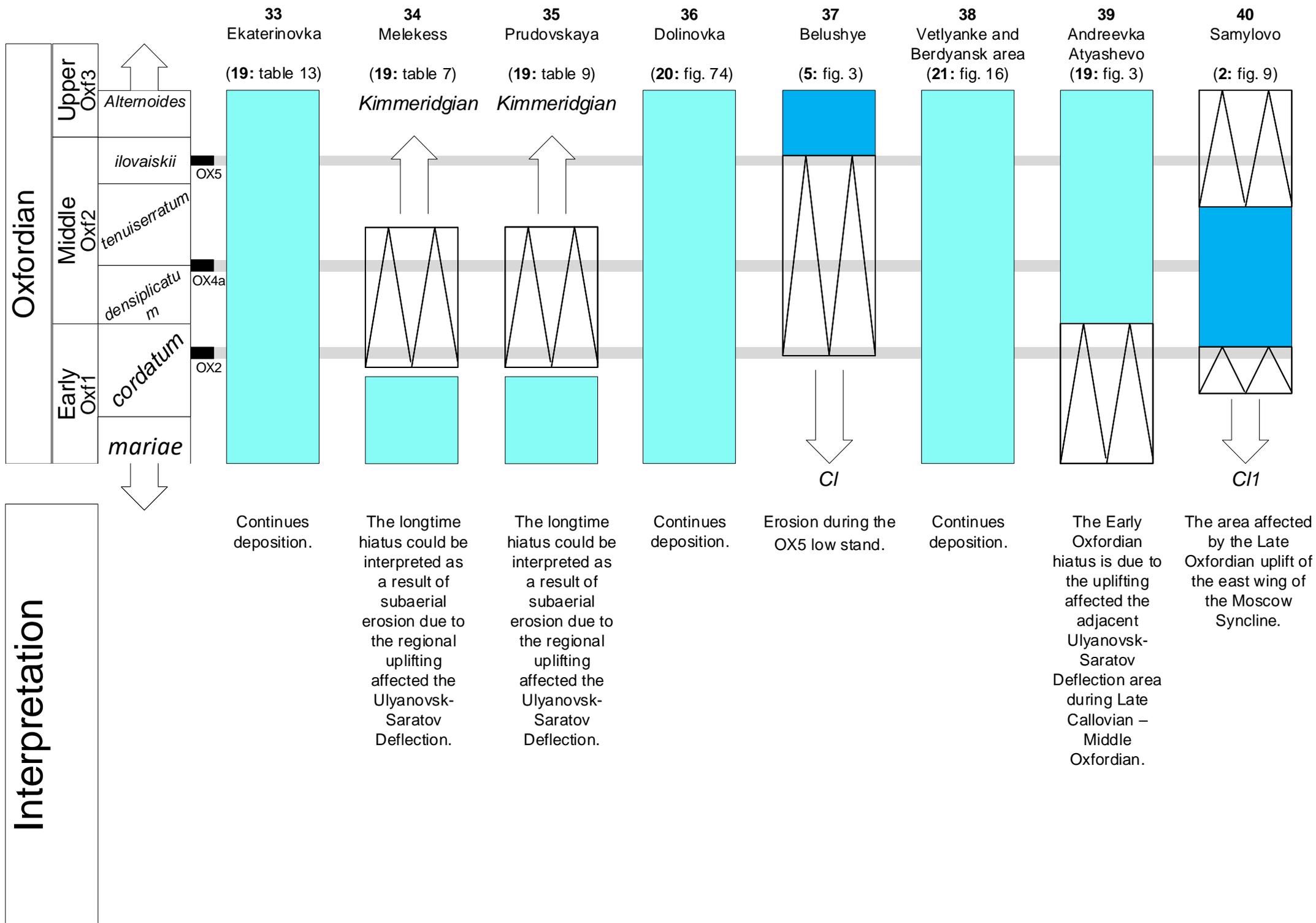
Area affected by uplifting and scouring.

Area affected by uplifting and scouring.

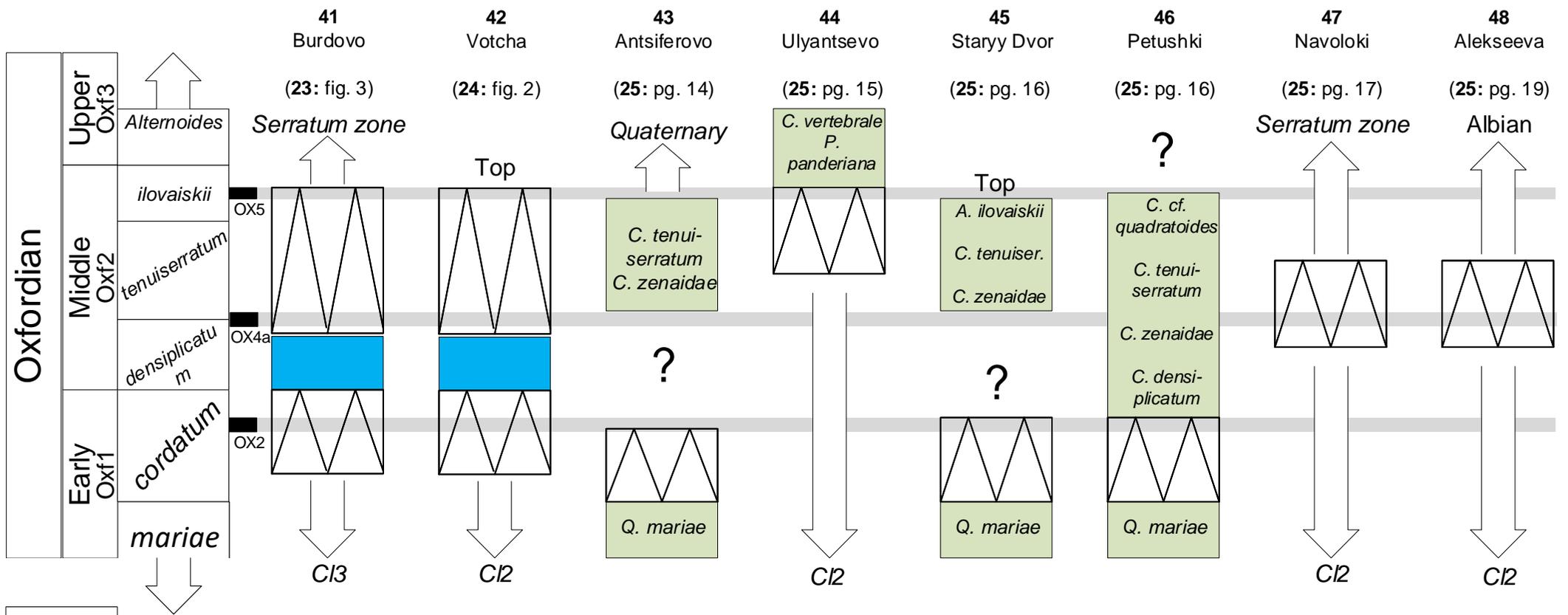
Complete absence of Oxfordian deposits. Area affected by uplifting and scouring.

Insufficient access to the sequence dataset. The upper limit of the Middle Oxford deposits is correlated here with the *ilovaiskii* unconformity and the lower limit with the *cordatum* unconformity. The occurrence of *Q. mariae* propose that the lower section falls into the Early Oxfordian.

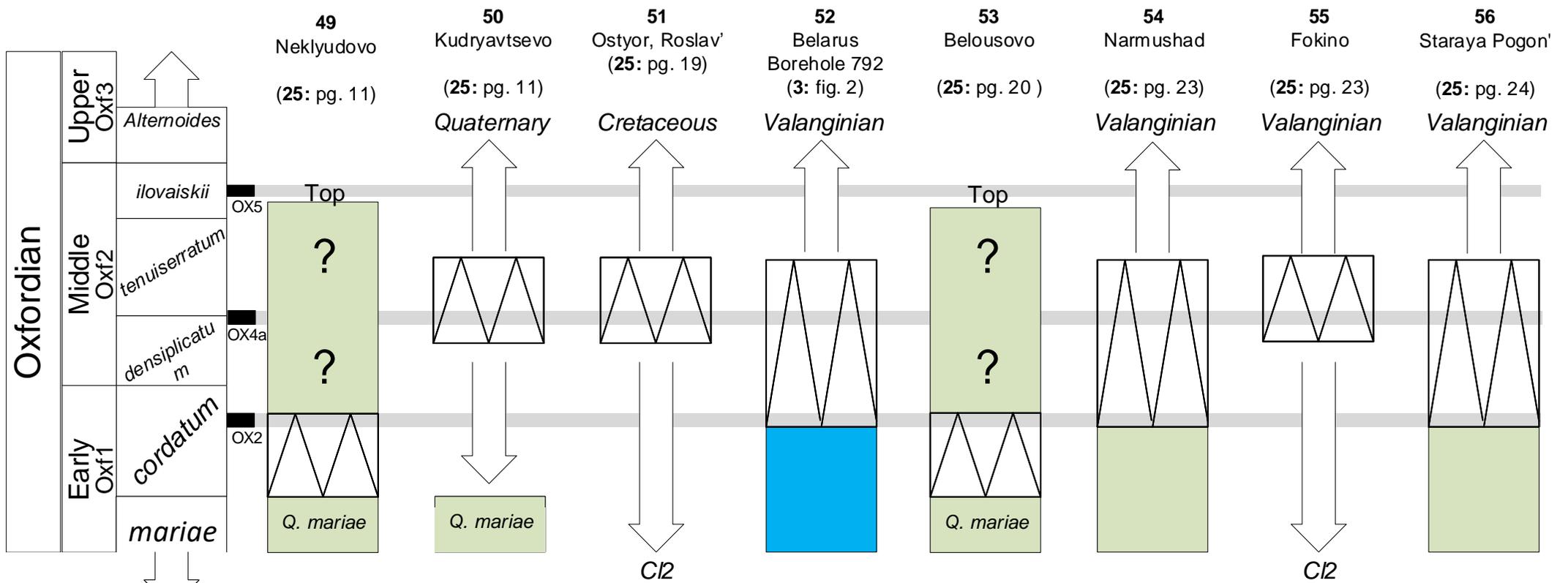
The bituminous oil shale facies (bed 8) falling into *ilovaiskii* unconformity is interpreted to be a proxy of a very shallow and restricted sea resulted by the OX5 sea-level low stand.



Interpretation



Interpretation	41 Burdovo	42 Votcha	43 Antsiferovo	44 Ulyantsevo	45 Staryy Dvor	46 Petushki	47 Navoloki	48 Aleksееva
	Section affected by both subaerial erosion and scouring.	Section affected by both subaerial erosion and scouring.	The section was probably affected by all the OX5, the OX4a and OX2 low stands. The occurrence of <i>Q. mariae</i> propose that the lower section falls into the Early Oxfordian.	The section is probably affected by subaerial erosion during the OX5 low stand.	The section is probably affected by all the OX5, the OX4a and the OX2 low stands.	Insufficient access to the sequence dataset. The occurrence of <i>Q. mariae</i> propose that the lower section falls into the Early Oxfordian. The missing section is due to subaerial erosion during the <i>cordatum</i> low-stand.	All, but the <i>serratum</i> zone, Oxfordian deposits are missing. The area probably was an island during the Early to Middle Oxfordian.	Complete absence of Oxfordian deposits.



Interpretation

Insufficient access to sequence dataset. The section is probably affected by both the OX5 and OX2 low stands.

All, but *mariae* zone, the Oxfordian deposits are missing.

Complete absence of Oxfordian deposits.

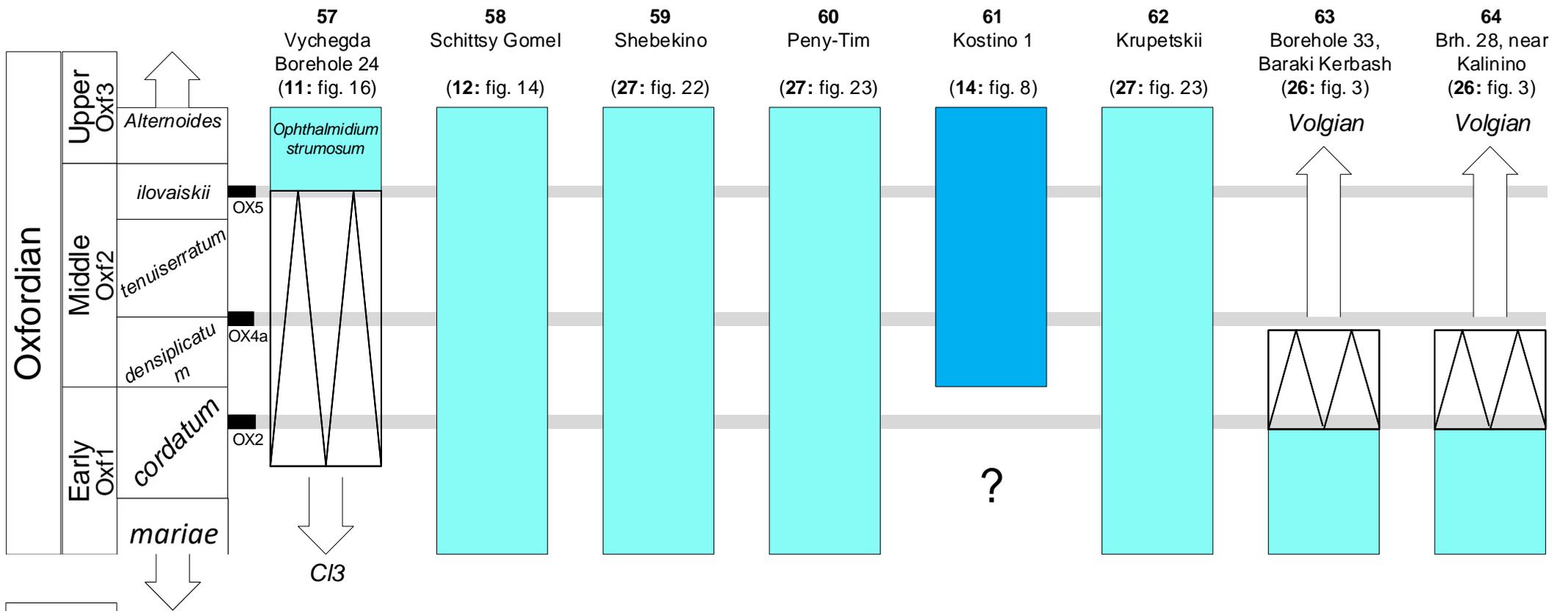
Section affected by more recent uplifting.

Insufficient access to sequence dataset. The section is probably affected by both the OX5 and OX2 low stands.

Section affected by more recent uplifting.

Complete absence of Oxfordian deposits.

Section affected by more recent uplifting.



Interpretation

The extended hiatus could be mainly explained by subaerial erosion during the OX5 low-stand .

Continues deposition.

Continues deposition.

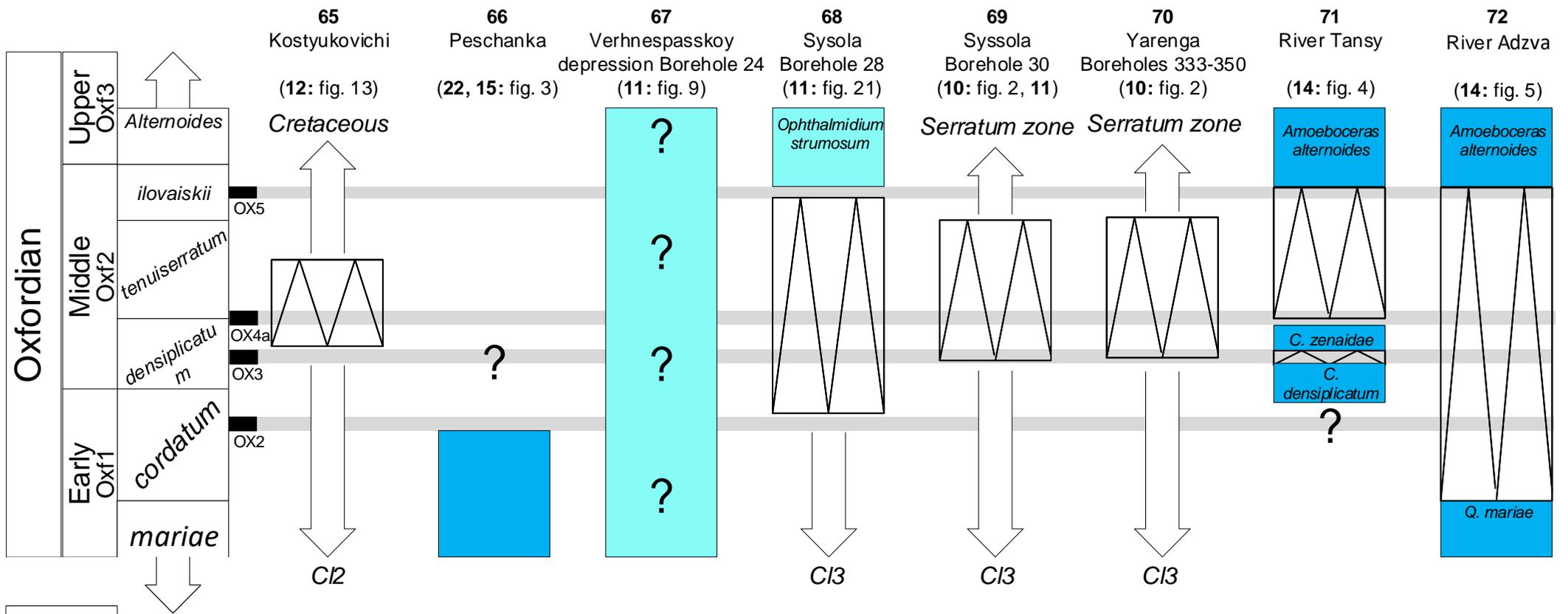
Continues deposition.

Continues deposition.

Continues deposition.

The area probably affected by the uplift of the Vyatka-Kama Basin.

The area probably affected by the uplift of the Vyatka-Kama Basin.



Interpretation

Complete absence of Oxfordian deposits.

Insufficient access to the sequence dataset. The presence of *cordatum* zone is the only confirmed.

Possible occurrence of Oxfordian deposits.

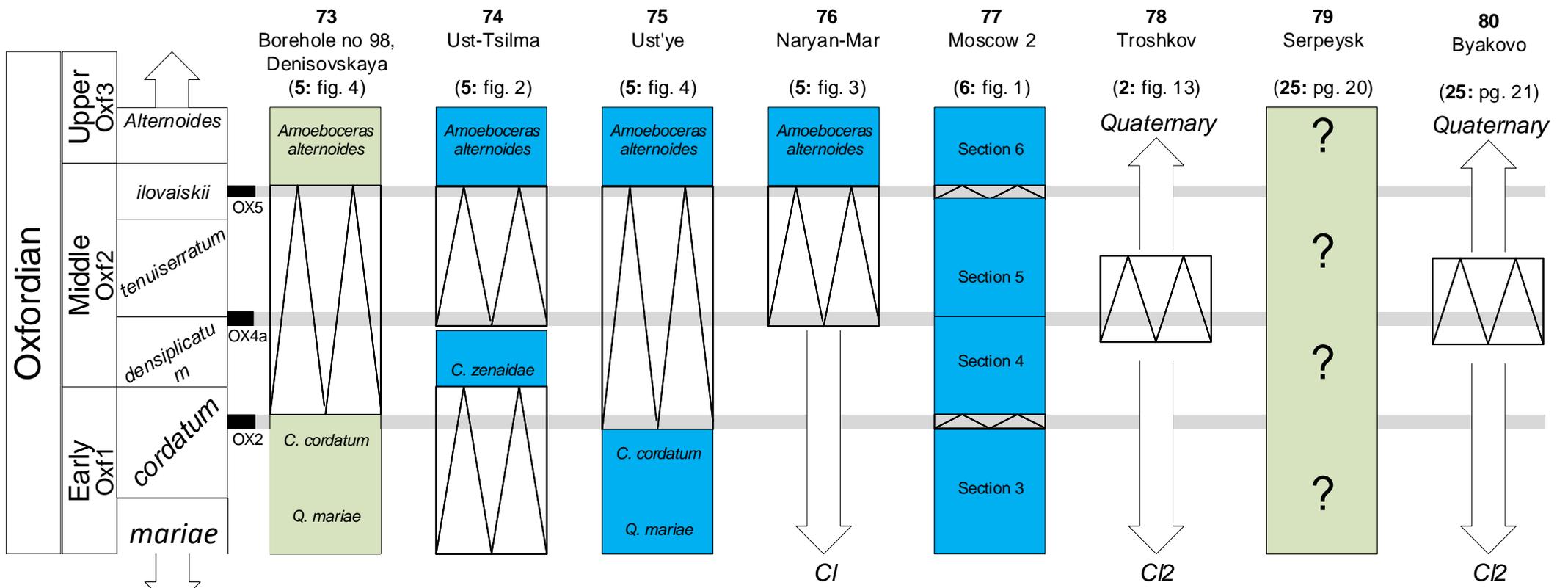
The extended hiatus could be explained by subaerial erosion during the OX5 low-stand.

The extended hiatus could be mainly explained by subaerial erosion during the OX5 low-stand.

The extended hiatus could be mainly explained by subaerial erosion during the OX5 low-stand.

The hiatus at the base of *Amoeboceras alternoides* deposits is correlated with the OX5 low-stand. The unconformity within the *densiplicatum* zone is a good evidence for the occurrence of the OX3 low stand as well.

The hiatus at the base of *Amoeboceras alternoides* deposits is correlated with the OX5 low-stand. The sequence has been probably eroded during the OX2 low stand as well.



Interpretation

The hiatus at the base of *Amoeboeceras alternoides* deposits is correlated with the OX5 low-stand.

The hiatus at the base of *Amoeboeceras alternoides* deposits is correlated with the OX5 low-stand. The sequence has been eroded during the OX2 low stand as well.

The hiatus at the base of *Amoeboeceras alternoides* deposits is correlated with the OX5 low-stand.

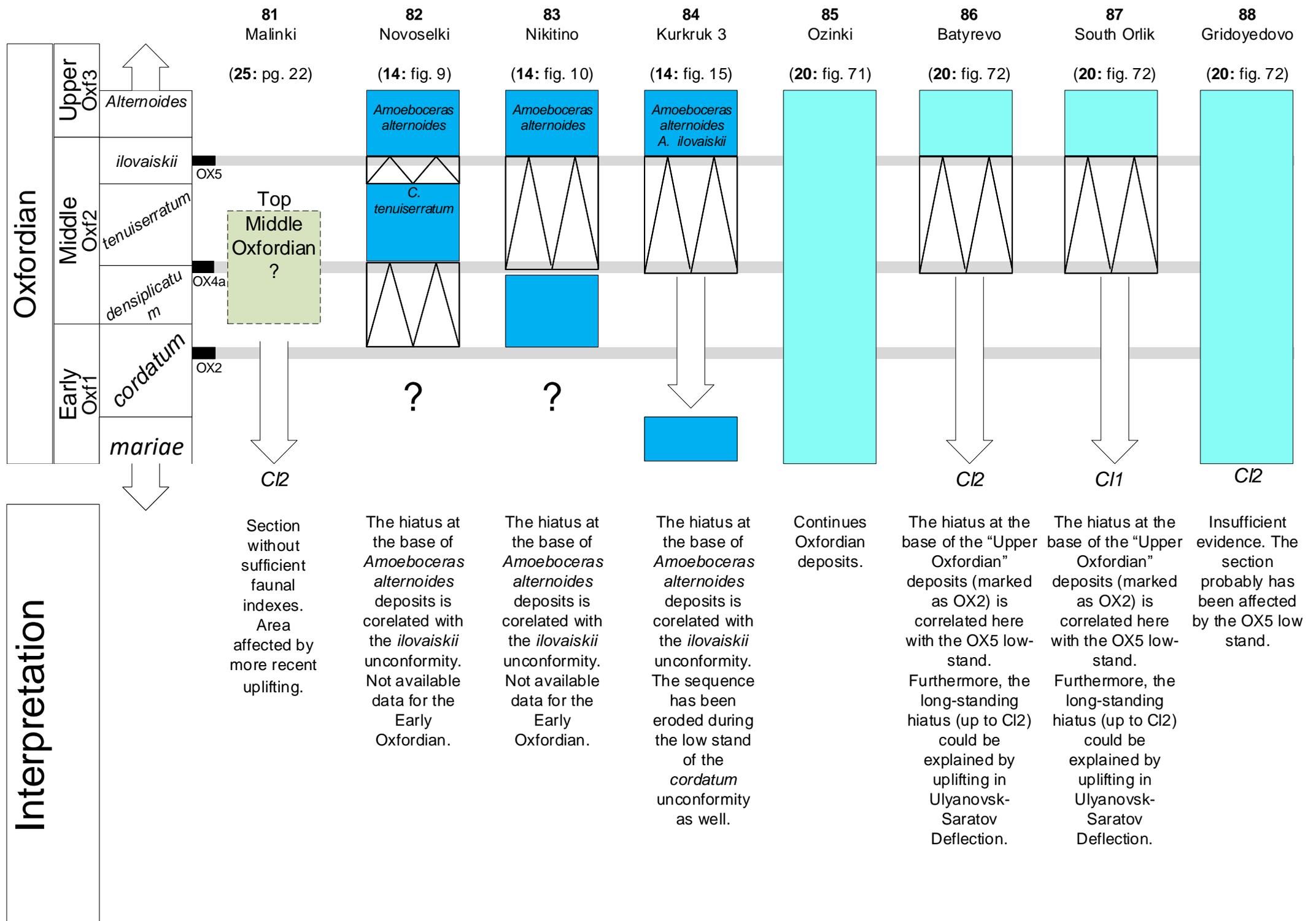
The hiatus at the base of *Amoeboeceras alternoides* deposits is correlated with the OX5 low-stand.

The main breaks in sedimentation are very good correlated with the low stands of the *cordatum* and *ilovaiskii* unconformities.

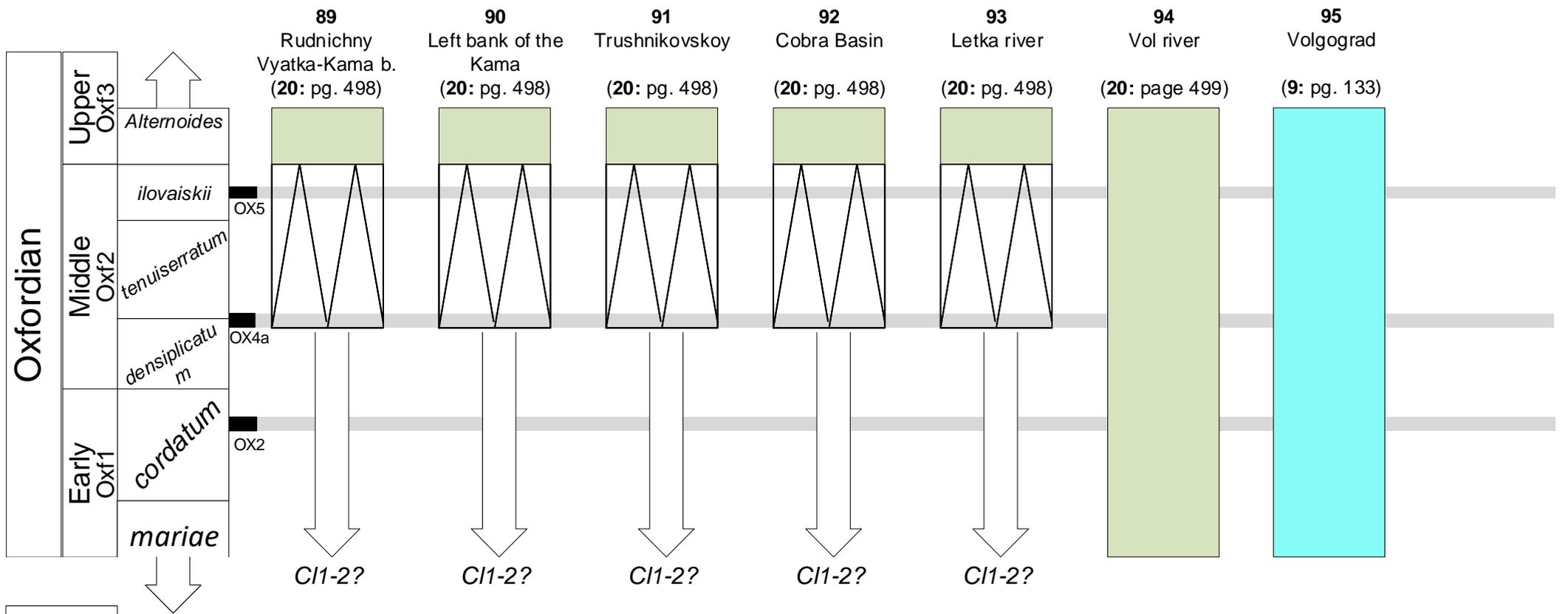
Complete absence of Oxfordian deposits.

Insufficient access to the sequence dataset. A general occurrence of Oxfordian deposits is referred.

Complete absence of Oxfordian deposits. Area affected by more recent uplifting.



Interpretation



Interpretation

Insufficient dataset. The hiatus at the base of the "Upper Oxfordian" deposits is correlated here with the OX5 lowstand. Furthermore, the long-standing hiatus could be explained by uplifting of the Vyatka-Kama Basin.

Insufficient dataset. The hiatus at the base of the "Upper Oxfordian" deposits is correlated here with the OX5 lowstand. Furthermore, the long-standing hiatus could be explained by uplifting of the Vyatka-Kama Basin.

Insufficient dataset. The hiatus at the base of the "Upper Oxfordian" deposits is correlated here with the OX5 lowstand. Furthermore, the long-standing hiatus could be explained by uplifting of the Vyatka-Kama Basin.

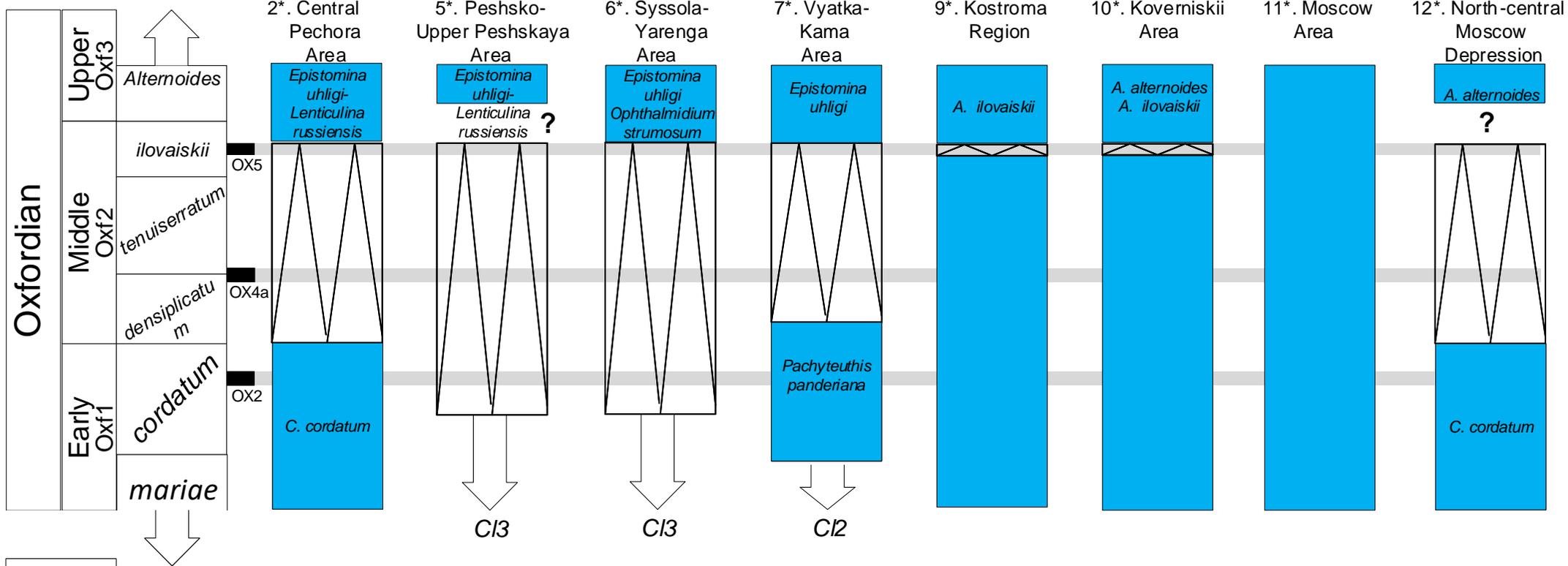
Insufficient dataset. The hiatus at the base of the "Upper Oxfordian" deposits is correlated here with the OX5 lowstand. Furthermore, the long-standing hiatus could be explained by uplifting of the Vyatka-Kama Basin.

Insufficient dataset. The hiatus at the base of the "Upper Oxfordian" deposits is correlated here with the OX5 lowstand. Furthermore, the long-standing hiatus could be explained by uplifting of the Vyatka-Kama Basin.

Continues Oxfordian deposits.

Continues Oxfordian deposits.

Generalized cross-sections from the Regional Stratigraphic Scheme of the Russian Platform 2012 (Mitta et al., 2012)



Interpretation

Area eroded during the OX5 low stand.

The hiatus at the base of the Late Oxfordian deposits is correlated with the OX5 low-stand.

The hiatus at the base of the Late Oxfordian deposits is correlated with the OX5 low-stand.

Area non-affected by the low stands.

The section is considered to have been affected by the OX5 low stand.

*The number of the section corresponds to the original from Mitta et al. (2012)

Abbreviations & Symbols

	Hiatus or unconformity	<i>C1</i>	Early Callovian	<i>C2</i>	Middle Callovian	<i>C3</i>	Late Callovian
4	Section number indicated on the paleogeographic maps.	“Borehole 1”	Section name as referred in the literature cited.	(4: fig. 2)	Exact reference of sequence data		Low stand reference bar



Cross-section described in detail in the referred literature



Cross-section described in general terms (e.g. OX1, OX2, OX3) in the referred literature



Cross-section described without a scheme in the referred literature

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