

# Structure and age of phosphorite accumulations at the Jurassic-Cretaceous boundary in the vicinity of Moscow

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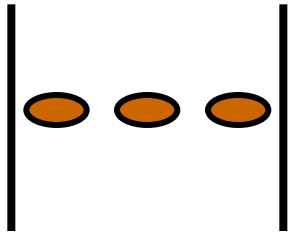




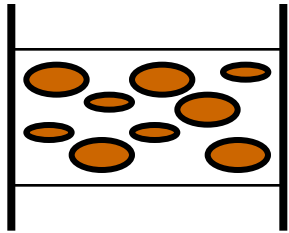
Location of the studied area



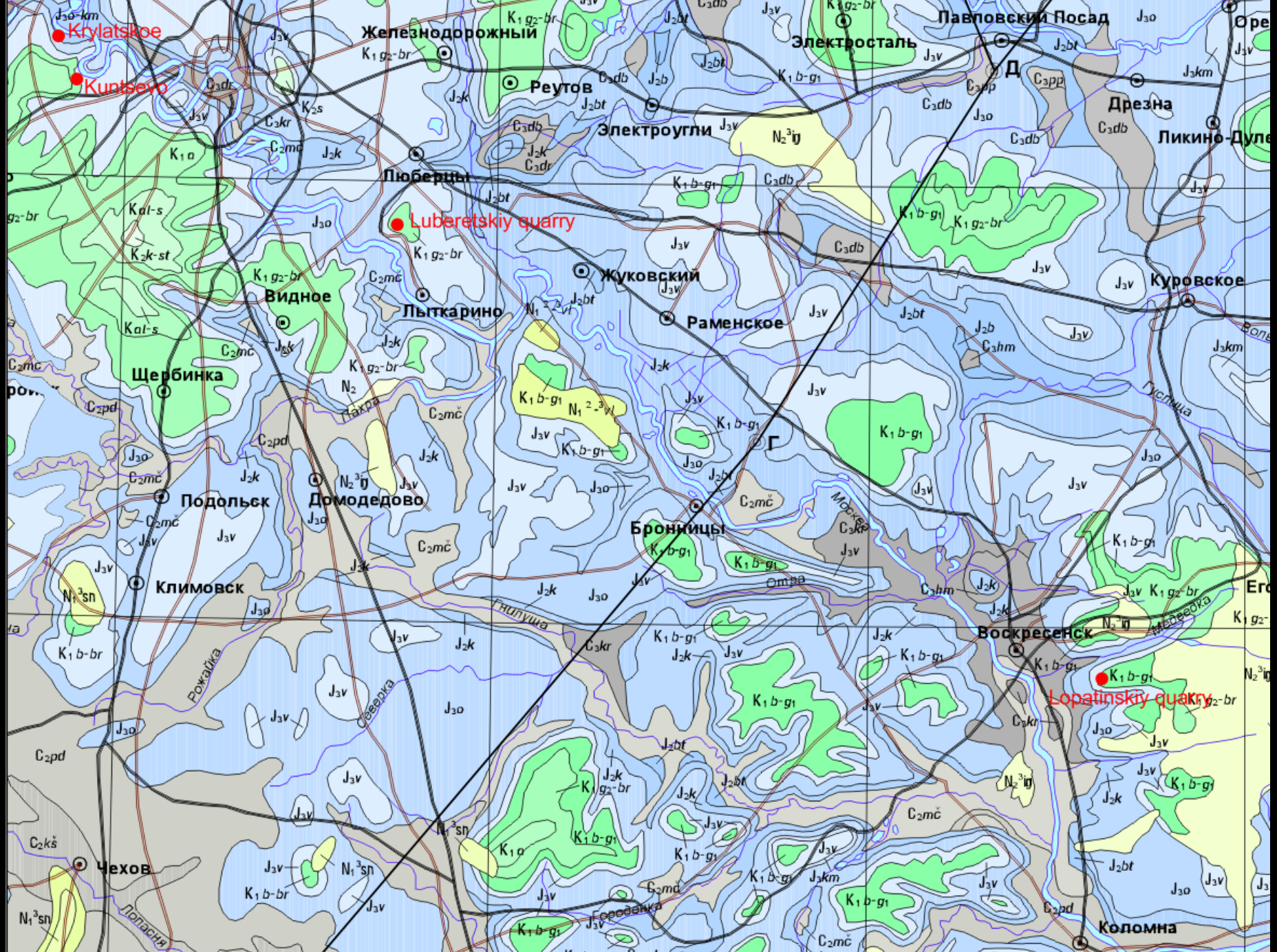
There are two types of structure of phosphorite accumulations occurring on the Jurassic-Cretaceous boundary in the vicinity of Moscow:



Single, scattered phosphate nodules or bed of phosphorite concretions, which, as regarded, are allochthonous, redeposited from Ryazanian to Hauterivian.



Phosphorite pavement, which, as regarded, are autochthonous, deposited in Ryazanian (Rjazanensis zone of Berriassian)



Location of the studied sections near Moscow





Position of the studied sections of the Krylatskoye





Construction site of transport lines in the Krylatskoe



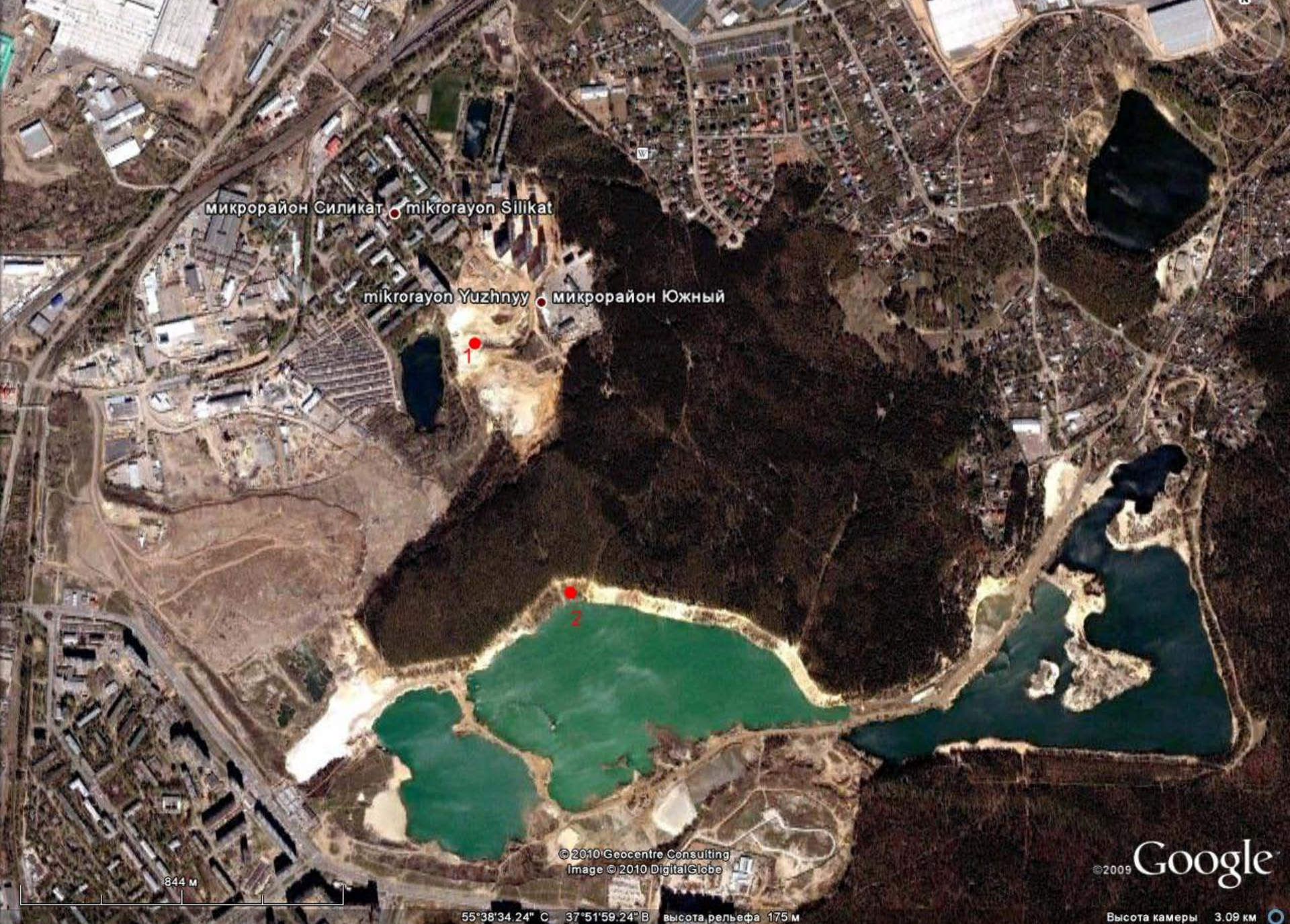
Gnilusha ravine outcrop



Scattered phosphorite nodules  
(with *Riasanites* spp.) perhaps  
redeposited in Hauterivian



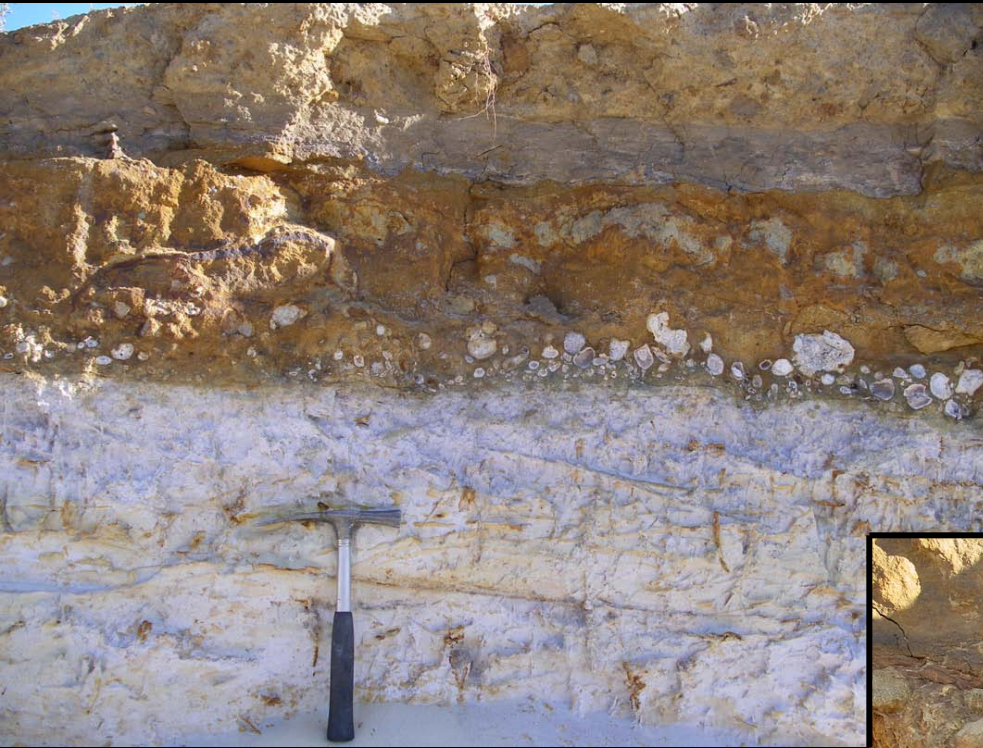




Location of the studied sections of the former Luberetskiy quarry (or Kotelniki)



## Section 1



The phosphorite pavement, which as believed before, are redeposited phosphorite concretions as in Krylat-scoe

more detail (*Riasanites* spp.) →







The former Luberetskiy quarry outcrop



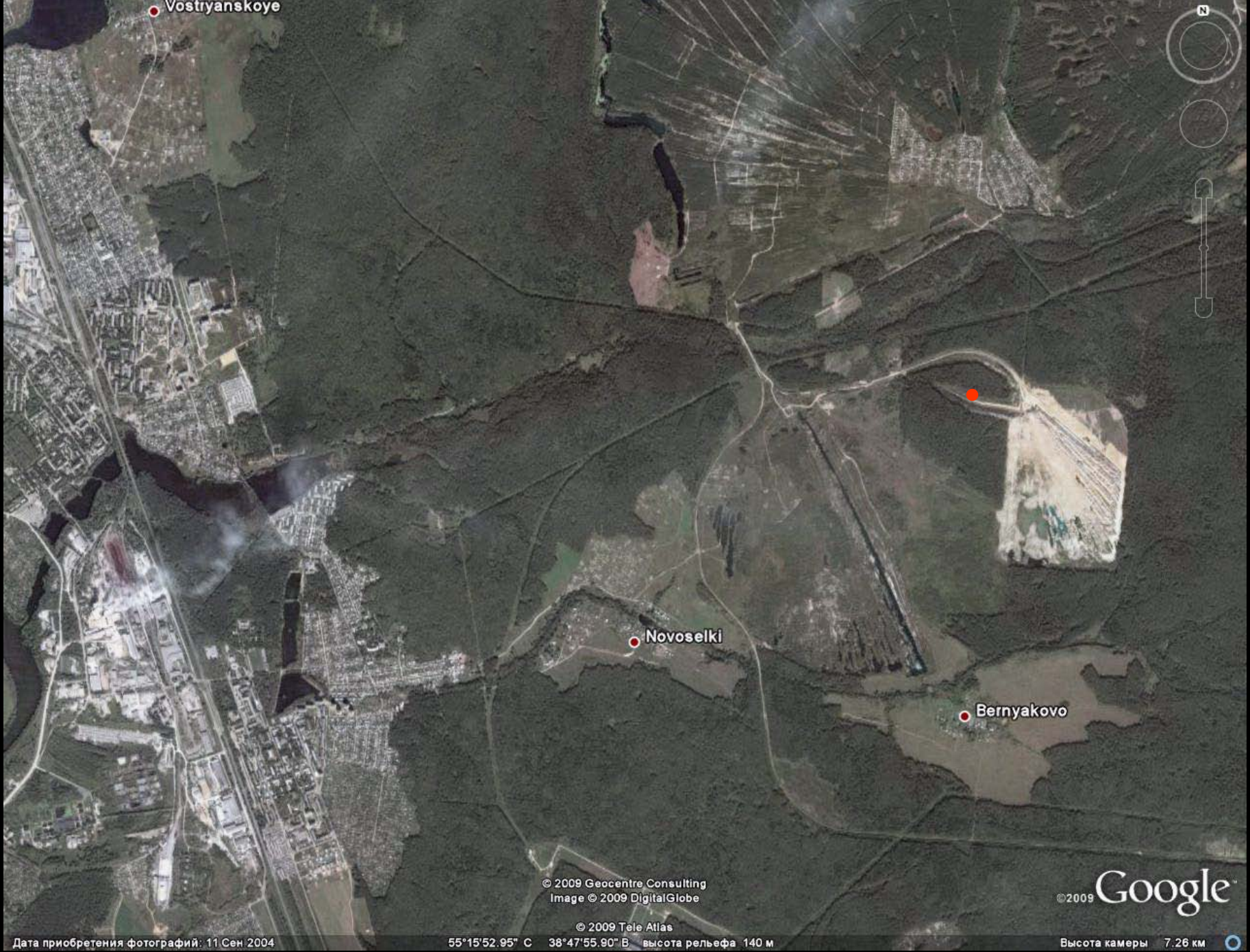


the structure of phosphorite pavement in more detail



some ammonites  
*Riasanites* spp.





Дата приобретения фотографий: 11 Сен 2004

55°15'52.95" С 38°47'55.90" В высота рельефа 140 м

©2009 Google  
Высота камеры 7.26 км

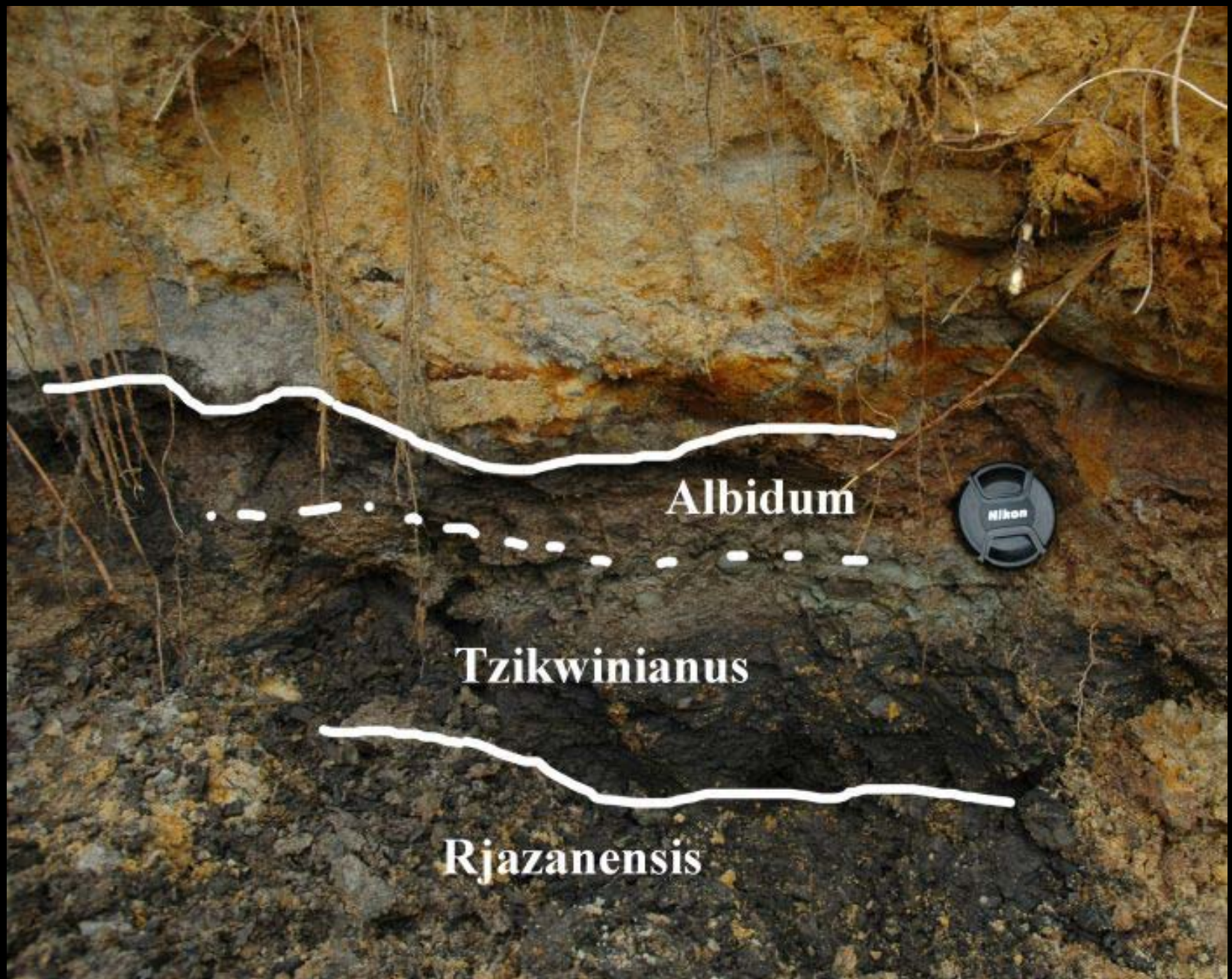
Lopatinskiy quarry





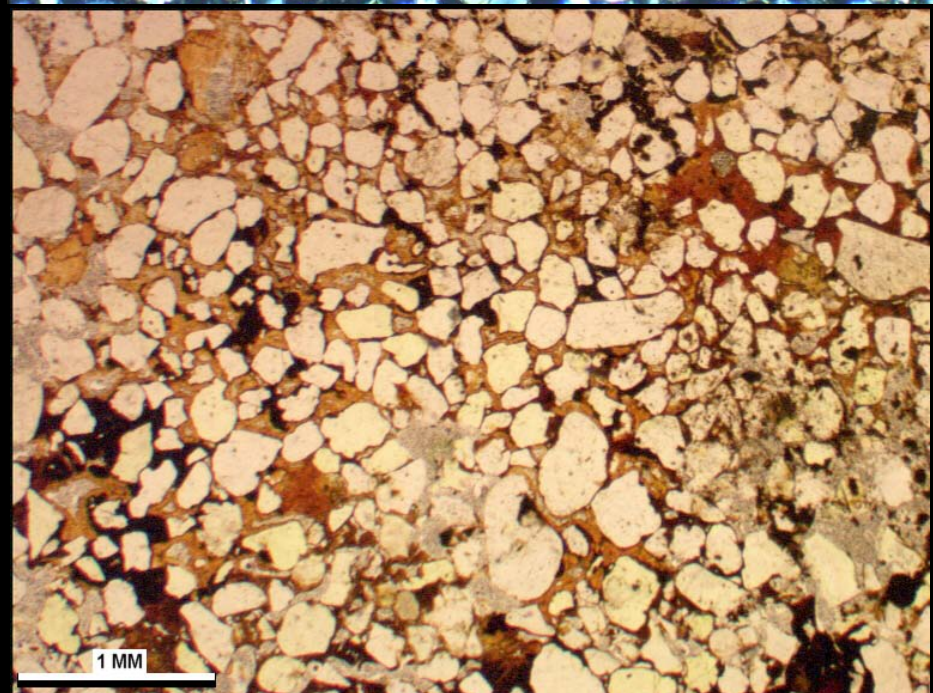
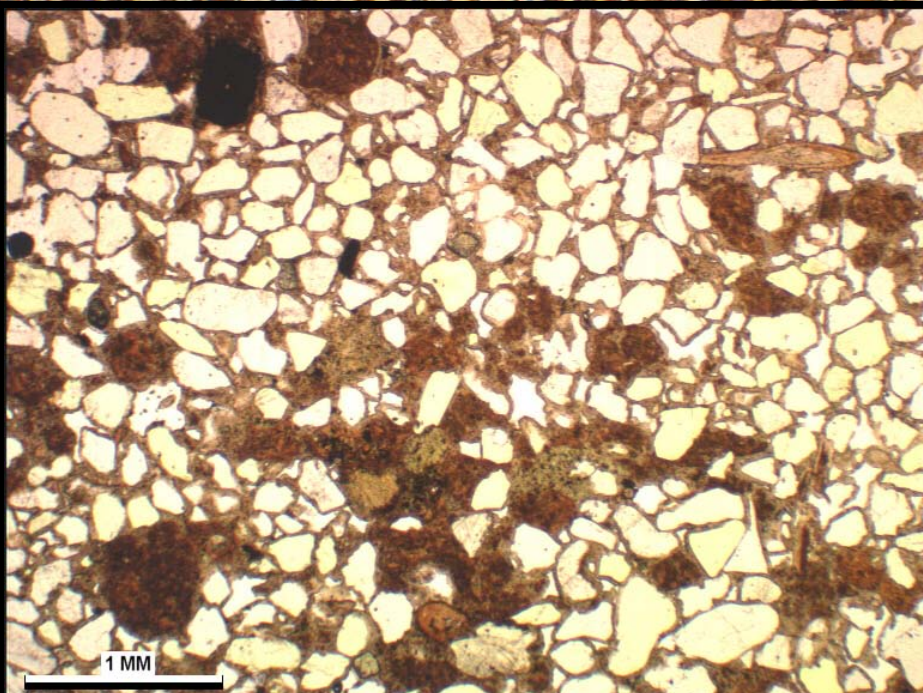
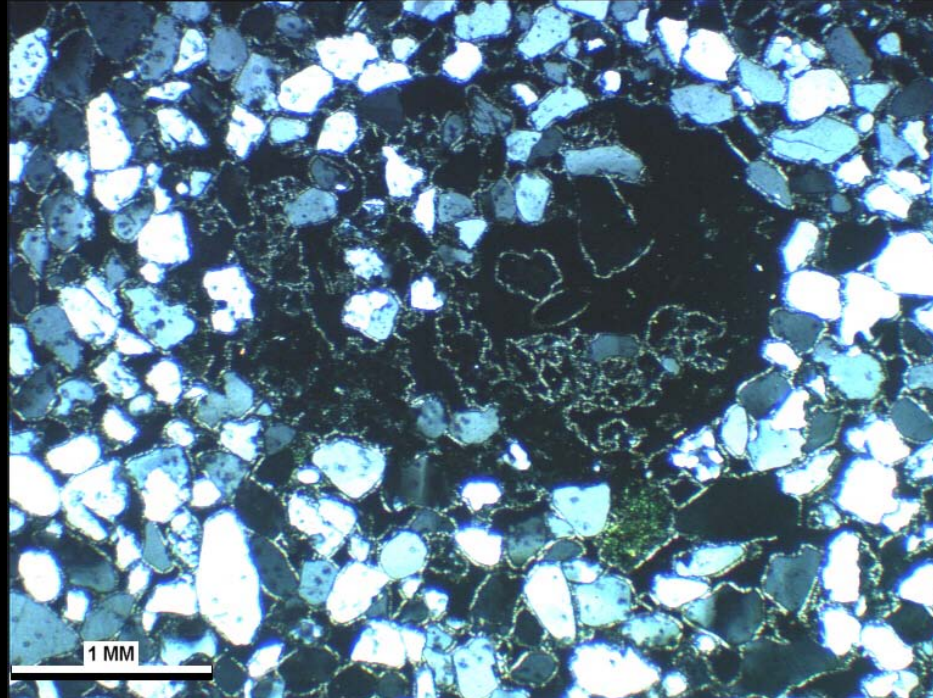
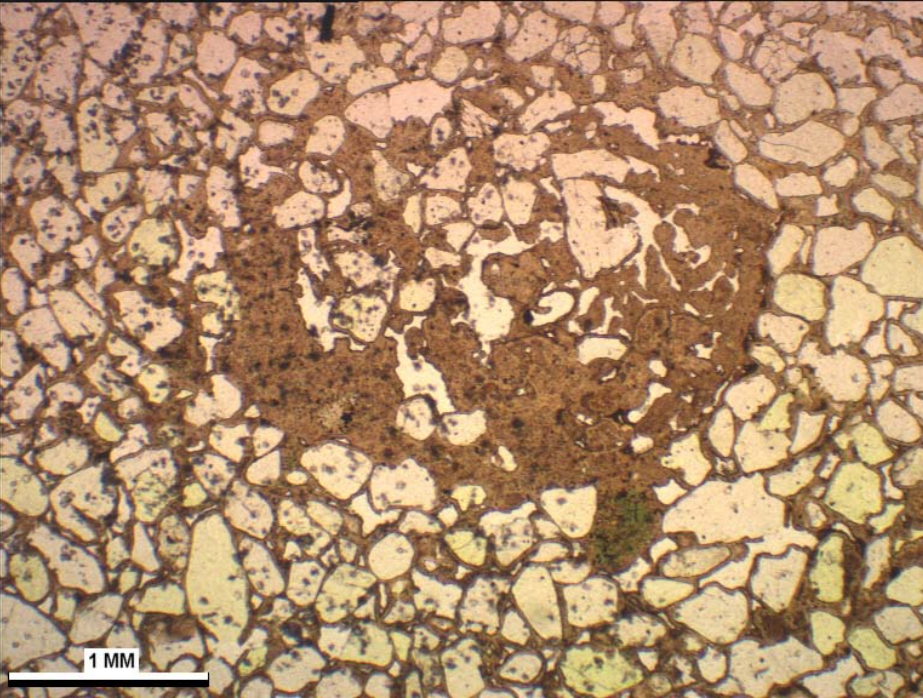
Lopatinskiy quarry outcrop





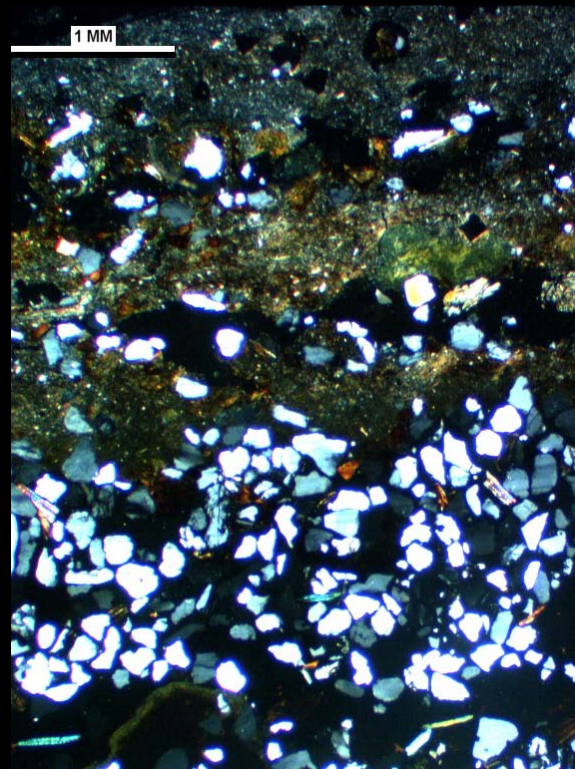
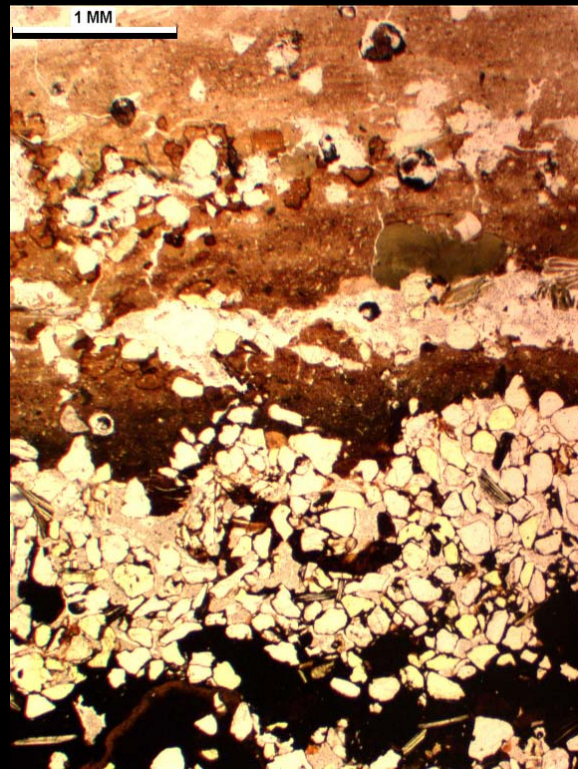
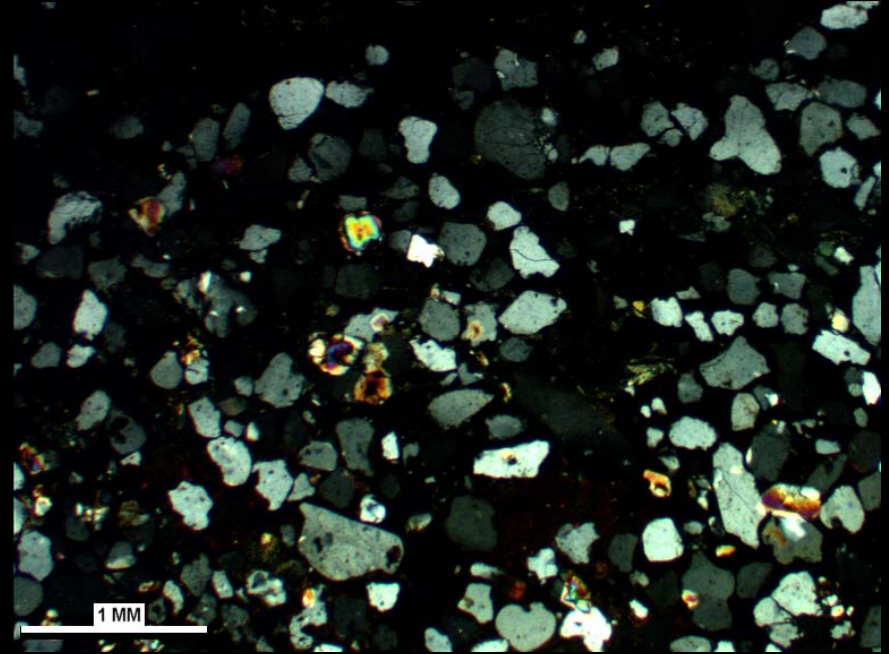
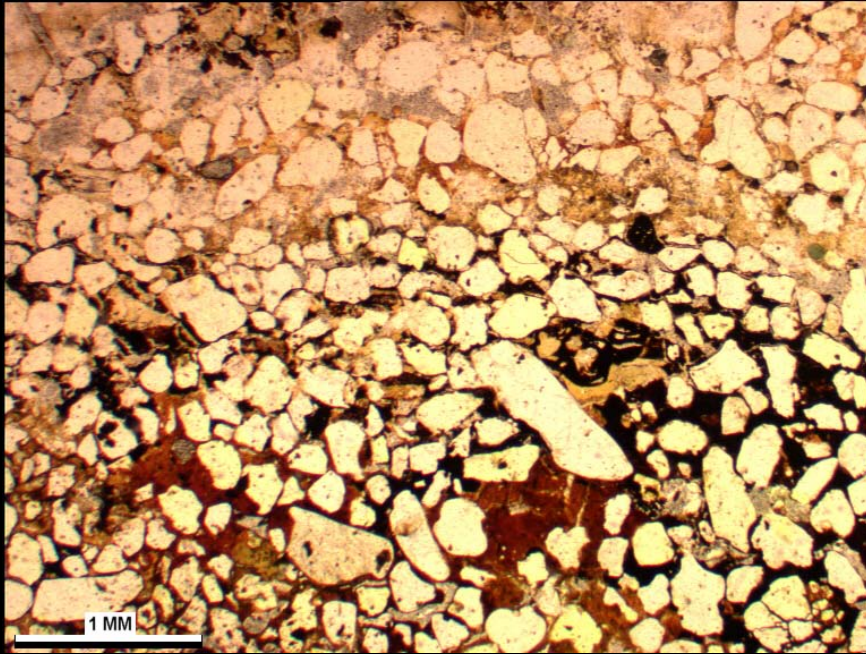
Rogov's allocation zones





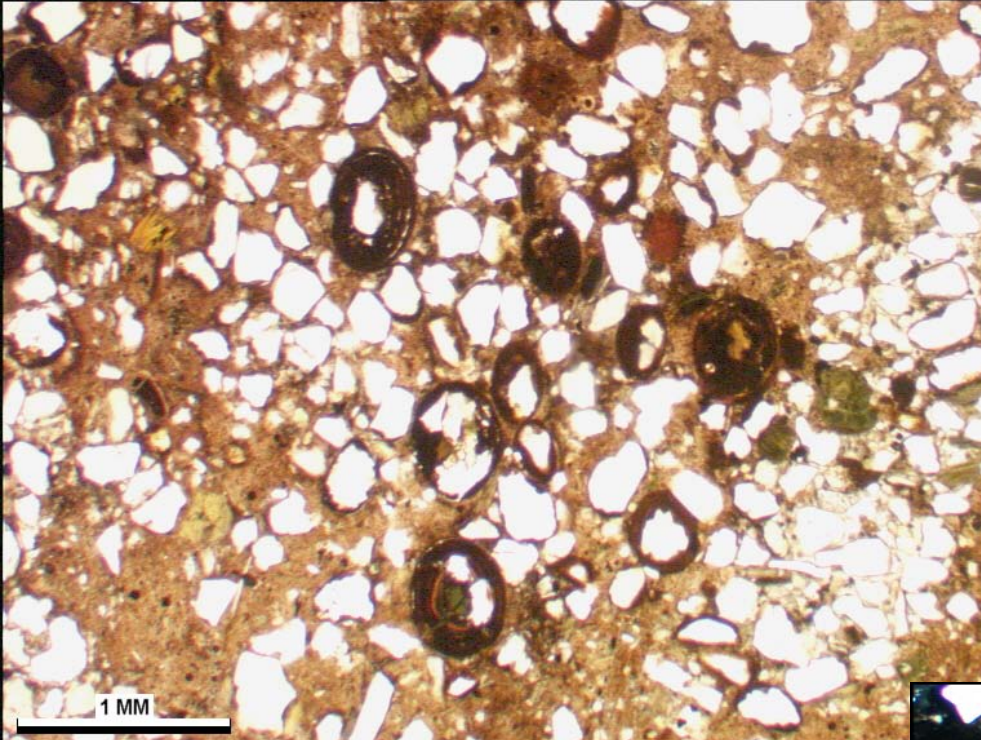
Thin sections of the various phosphate nodules



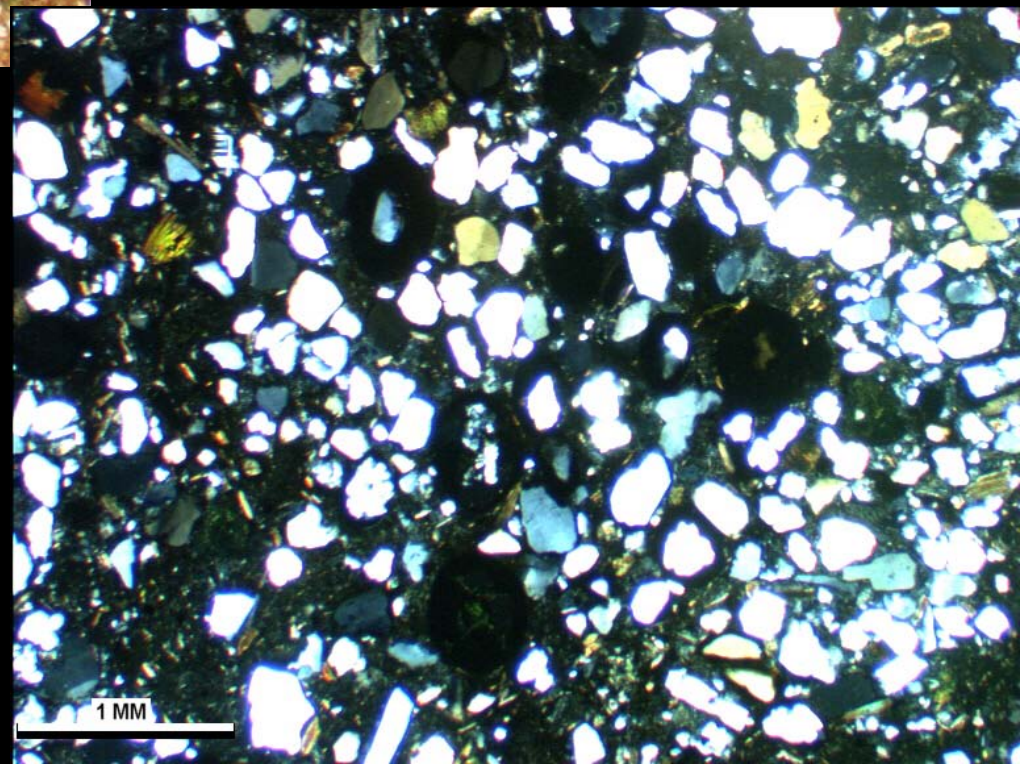


Thin sections of the  
Luberetskiy quarry  
phosphorite pavement



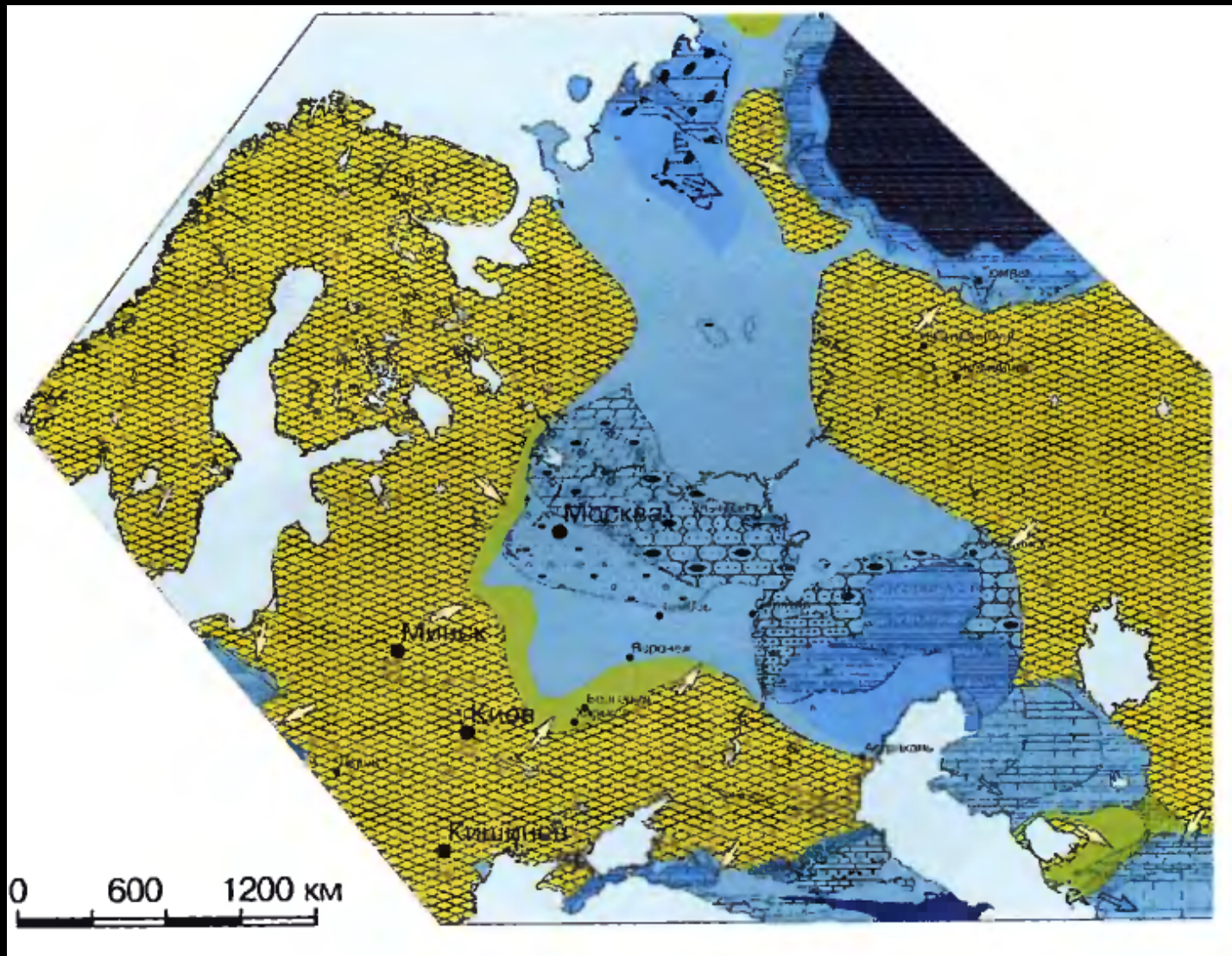


Thin sections of the Lopatinskiy quarry phosphorites with ferruginous ooids





## Late Berriasian palaeogeography





# Conclusions

1. Age of phosphorite pavements (not only nodules that make them) should be clarified. Perhaps both pavements were formed somewhere about the same time.
2. Sedimentary environments of formation of the Luberetskaya pavement remains unclear and should be studied further. Probably a great time it was in anoxic conditions.
3. All of this factors affect on the reconstruction of palaeogeographic conditions and mapping. Other sections should be studied in details.



**Thank you for your attention!**

